NETAJI SUBHAS OPEN UNIVERSITY
School of Social Sciences
DD 26, Sector I, Salt Lake, Kolkata – 700064
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B.A (Hons) History Syllabus (CBCS)

CORE COURSE (14)
Credits: 6 Each

Paper I: History of India-I

Paper-II: Social Formations and Cultural Patterns of the Ancient World

Paper III: History of India-II

Paper IV: Social Formations and Cultural Patterns of the Medieval World

Paper V: History of India-III (c. 750-1206)

Paper VI: Rise of the Modern West-I

Paper VII: History of India IV (c.1206-1550)

Paper VIII: Rise of the Modern West -II

Paper IX: History of India-V (c. 1550-1605)

Paper X: History of India-VI (c. 1605-1750)

Paper XI: History of Modern Europe- I (c. 1780-1939)

Paper XII: History of India-VII (c. 1750-1857)

Paper XIII: History of India-VIII (c. 1857-1950)

Paper XIV: History of Modern Europe- II (1780-1939)

PAPER I: HISTORY OF INDIA- I

Module I: Reconstructing Ancient Indian History

Unit – 1: Early Indian notions of History
Unit – 2: Sources and tools of historical reconstruction.
Unit – 3: Historical interpretations (with special reference to gender, environment, technology, and regions).

Module II: Pre-historic hunter-gatherers

Unit – 4: Paleolithic cultures- sequence and distribution;
Unit – 5: Stone industries and other technological developments.
Unit – 6: Mesolithic cultures- regional and chronological distribution;
Unit – 7: New developments in technology and economy; rock art.

Module III: The advent of food production

Unit – 8: The Neolithic Age and the Beginnings of Food Production
Unit – 9: Understanding the regional and chronological distribution of the Neolithic and Chalcolithic cultures:
Unit – 10: Subsistence, and patterns of exchange

Module IV: The Harappan civilization

Unit – 11: Origins; settlement patterns and town planning;
Unit – 12: agrarian base; craft productions
Unit – 13: Trade
Unit – 14: Social and political organization;
Unit – 15: Religious beliefs and practices; art;
Unit – 16: The problem of urban decline
Unit – 17 The late/post-Harappan traditions.

Module V: Cultures in transition

Settlement patterns, technological and economic developments; social stratification; political relations; religion and philosophy; the Aryan Problem.
Unit – 18: North India (circa 1500 BCE-300 BCE)
Unit – 19: Central India and the Deccan (circa 1000 BCE - circa 300 BCE)
Unit – 20: Tamilakam (circa 300 BCE to circa CE 300)

ESSENTIAL READINGS

R.S. Sharma, India's Ancient Past, New Delhi, OUP, 2007
R. S. Sharma, Material Culture and Social Formations in Ancient India, 1983.
R.S. Sharma, Looking for the Aryas, Delhi, Orient Longman Publishers, 1995
D. P. Agrawal, The Archaeology of India, 1985
Bridget & F. Raymond Allchin, The Rise of Civilization in India and Pakistan, 1983.
A. L. Basham, The Wonder that Was India, 1971.
D. K. Chakrabarti, The Archaeology of Ancient Indian Cities, 1997, Paperback.

D. K. Chakrabarti, The Oxford Companion to Indian Archaeology, New Delhi, 2006.
H. C. Raychaudhuri, Political History of Ancient India, Rev. ed. with Commentary by B. N. Mukherjee, 1996
K. A. N. Sastri, ed., History of South India, OUP, 1966.
Upinder Singh, A History of Ancient and Early Medieval India, 2008. Romila Thapar, Early India from the Beginnings to 1300, London, 2002.
Irfan Habib, A People's History-Vol. -1,PreHistory,2001,
----Vol.-2,Indus Civilization: Including Other Copper Age Cultures and the History of Language Change till 155 B.C., 2002 Suggested Readings
Uma Chakravarti, The Social Dimensions of Early Buddhism. 1997.
Rajan Gurukkal, Social Formations of Early South India, 2010.
R. Champakalakshmi, Trade. Ideology and urbanization: South India 300 BC- AD 1300, 1996.

PAPER II: SOCIAL FORMATIONS AND CULTURAL PATTERNS OF THE ANCIENT WORLD

Module I: Evolution of humankind
Unit – 1: Theories on Evolution and Growth of civilizations – i) Charles Darwin, ii) Thomas Henry Huxley, iii) Arnold Toynbee, iv) V. Gordon Childe.
Unit – 2: Growth of Archaeological Studies.
Unit – 3: Evolution of Human body and mind – From ape to modern man.
Unit – 4: Palaeolithic Culture
Unit – 5: Mesolithic culture.

Module II: Food production
Unit – 6: Neolithic cultures – Beginnings of agriculture and animal husbandry.

Module III: Bronze Age Civilizations
Unit – 7: A survey of Chalcolithic cultures
Unit – 8: Mesopotamia (up to the Akkadian Empire)
Unit – 9: Egypt (Old Kingdom)
Unit – 10: Any one of the following –
i) China (Shang); ii) Eastern Mediterranean (Minoan & Mycenaean), iii) Mesomerica – Maya, Aztec, Inca – Economy, Social stratification, State structure, Religion.

Module IV: Nomadic groups in Central and West Asia and Europe
Unit – 11: Debate on the advent of iron and its implications
Unit – 12: Iron age civilizations – Hittites and Etruscans

Module V: Slave society in ancient Greece
Unit – 13: Agrarian economy
Unit – 14: Urbanization and Trade

Module VI: Polis in ancient Greece
Unit – 15: Athens
Unit – 16: Sparta
Unit – 17: Wars in Hellenic world – Greco-Persian War and Peloponnesian War
Unit – 18: Hellenic Literature and Philosophy
Unit -19: Greek Sports – Olympic
Unit – 20: Rise of Macedon and Hellenistic culture

ESSENTIAL READINGS
Burns and Ralph. World Civilizations.
Cambridge History of Africa, Vol. I.
V. Gordon Childe, What Happened in History.
G. Clark, World Prehistory: A New Perspective.
B. Fagan, People of the Earth.

Amar Farooqui, Early Social Formations.
M. I. Finley, The Ancient Economy.
Jacquetta Hawkes, First Civilizations.
G. Roux, Ancient Iraq.
Bai Shaoyi, An Outline History of China.
H. W. F. Saggs, The Greatness that was Babylon.
B. Trigger, Ancient Egypt: A Social History.
UNESCO Series: History of Mankind, Vols. I - III./ or New ed.
History of Humanity.
R. J. Wenke, Patterns in Prehistory.

SUGGESTED READINGS

G. E. M. Ste Croix, Class Struggles in the Ancient Greek World.
J. D. Bernal, Science in History, Vol. I.
V. Gordon Childe, Social Evolution.
Glyn Daniel, First Civilizations.
A. Hauser, A Social History of Art, Vol. I.

PAPER III: HISTORY OF INDIA II

Module I: Economy and Society (circa 300 BCE to circa CE 300)
Unit – 1: Expansion of agrarian economy: production relations.
Unit – 2: Urban growth: north India, central India and the Deccan; craft Production: trade and trade routes; coinage.
Unit – 3: Social stratification: class, Varna, jati, untouchability; gender; marriage and property relations

Module II: Changing political formations (circa 300 BCE to circa CE 300)
Unit – 4: The Mauryan Empire
Unit – 5: Post-Mauryan Polities with special reference to the Kushanas and the Satavahanas; Gana-Sanghas.

Module III: Towards early medieval India (circa CE fourth century to CE 750)
Unit – 6: Agrarian expansion: land grants, changing production relations;
Unit – 7: Graded Land rights and peasantry.
Unit – 8: The problem of urban decline: patterns of trade, currency, and urban Settlements.
Unit – 9: Varna, proliferation of jatis: changing norms of marriage and property.
Unit – 10: The nature of polities: the Gupta empire and its contemporaries:
Unit – 11: Post- Gupta polities -Pallavas, Chalukyas, and Vardhanas

Module IV: Religion, philosophy and society (circa 300 BCE - CE 750)
Unit – 12: Consolidation of the brahmanical tradition: dharma, Varnashram, Purusharthas, samskaras.
Unit – 13: Theistic cults (from circa second century BC): Mahayana; the Puranic tradition.
Unit – 14: The beginnings of Tantricism

Module V: Cultural developments (circa 300 BCE - CE 750)
Unit – 15: A brief survey of Sanskrit, Pali, Prakrit and Tamil literature.
Unit – 16: Scientific and technical treatises
Unit – 17: Art and architecture & forms and patronage: Mauryan Period
Unit – 18: Art and architecture & forms and patronage: Post-Mauryan Period
Unit – 19: Art and architecture & forms and patronage: Gupta Period
Unit – 20: Art and architecture & forms and patronage: Post-Gupta

ESSENTIAL READINGS

B. D. Chattopadhyaya, The Making of Early Medieval India, 1994.
D. P. Chattopadhyaya, History of Science and Technology in Ancient India, 1986.
D. D. Kosambi, An Introduction to the Study of Indian History, 1975.

S. K. Maity, Economic Life in Northern India in the Gupta Period, 1970.
B. P. Sahu (ed), Land System and Rural Society in Early India, 1997.
K. A. N. Sastri, A History of South India.
R. S. Sharma, Indian Feudalism, 1980.
R.S.Sharma,UrbanDecayinIndia,c.300-
C1000,Delhi,Munshiram Manohar Lal,1987
Romila Thapar, Asoka and the Decline of the Mauryas, 1997.
Susan Huntington, The Art of Ancient India: Buddhist, Hindu, and Jain, New York, 1985.

SUGGESTED READINGS

N. N. Bhattacharya, Ancient Indian Rituals and Their Social Contents, 2nd ed., 1996.
J. C. Harle, The Art and Architecture of the Indian Subcontinent, 1987.
P. L. Gupta, Coins, 4th ed., 1996.
Kesavan Veluthat, The Early Medieval in South India, New Delhi, 2009
H. P. Ray Winds of Change, 1994.
Romila Thapar, Early India: From the Origins to 1300, 2002.

PAPER IV: SOCIAL FORMATIONS AND CULTURAL PATTERNS OF THE MEDIEVAL WORLD

Module I: Roman Republic
Unit – 1: Brief administrative history of Rome – Republic, Principate and Empire
Unit – 2: Unification of Italy under Rome
Unit – 3: Agrarian economy
Unit – 4: Urbanization and trade

Module II: The Roman Society
Unit – 5: Patrician – Plebeian conflict
Unit – 6: Slave society in ancient Rome: Condition of the Slaves
Unit – 7: Condition of Women

Module III: Religion and culture in Ancient Rome
Unit – 8: Eclectic nature of Roman religion
Unit – 9: Roman Literature
Unit – 10: Roman art and architecture

Module IV: Crises of the Roman Empire
Unit – 11: The Third century crisis
Unit – 12: Constantine and his reforms
Unit – 13: End of the Empire in the West
Unit – 14: Causes of the Decline

Module V: Economic developments in Europe from the 7th to the 14th centuries
Unit – 15: The 10th century crisis and rise of Feudalism
Unit – 16: Organization of production, towns and trade, technological developments.
Unit – 17: Crisis of feudalism.

Module VI: Religion and culture in medieval Europe
Unit – 18: Christianity – Church and the Papacy
Unit – 19: Monasticism

Module VII: Societies in Central Islamic Lands
Unit – 20: The tribal background, ummah, Caliphal state; rise of Sultanates
Unit – 21: Religious developments: the origins of shariah, Mihna, Sufism
Unit – 22: Urbanization and trade

ESSENTIAL READINGS
Perry Anderson, Passages from Antiquity to Feudalism.

Marc Bloch, Feudal Society, 2 Vols.
Cambridge History of Islam, 2 Vols.
Georges Duby, The Early Growth of the European Economy.
Fontana, Economic History of Europe, Vol. I (relevant chapters).
P. K. Hitti, History of the Arabs.
P. Garnsey and Saller, The Roman Empire.

SUGGESTED READINGS
S. Ameer Ali, The Spirit of Islam.
J. Barrowclough, The Medieval Papacy.
Encyclopedia of Islam, Ist ed., 4 vols.
M. G. S. Hodgson, The Venture of Islam.

PAPER V: HISTORY OF INDIA III (c. 750 -1206)

Module I: Studying Early Medieval India

Unit – 1: Historical geography Sources: texts, epigraphic and numismatic data
Unit – 2: Debates on Indian feudalism,
Unit – 3: Rise of the Rajputs and the nature of the state

Module II: Political Structures

Unit – 4: Evolution of political structures: Rashtrakutas, Palas, Pratiharas, Rajputs and Cholas
Unit – 5: Legitimization of kingship; brahmanas and temples; royal genealogies and rituals
Unit – 6: Arab conquest of Sindh: nature and impact of the new set-up; Ismaili dawah
Unit – 7: Causes and consequences of early Turkish invasions: Mahmud of Ghazna; Shahab-ud-Din of Ghur

Module III: Agrarian Structure and Social Change

Unit – 8: Agricultural expansion; crops
Unit – 9: Landlords and peasants
Unit – 10: Proliferation of castes; status of untouchables
Unit – 11: Tribes as peasants and their place in the Varna order

Module IV: Trade and Commerce

Unit – 12: Inter-regional trade
Unit – 13: Maritime trade
Unit – 14: Forms of exchange
Unit – 15: Process of urbanization
Unit – 16: Merchant guilds of South India

Module V: Religious and Cultural Developments

Unit – 17: Bhakti, Tantrism, Puranic traditions; Buddhism and Jainism; Popular religious cults
Unit – 18: Islamic intellectual traditions: Al-Biruni; Al-Hujwiri
Unit – 19: Regional languages and literature
Unit – 20: Art and architecture: Evolution of regional styles

ESSENTIAL READINGS

R.S. Sharma, Indian Feudalism (circa 300 - 1200).
B.D. Chattopadhyaya, The Making of Early Medieval India.
R.S. Sharma and K.M. Shrimali, eds, Comprehensive History of India, Vol. IV (A & B).
Mohammad Habib and K.A. Nizami, eds, Comprehensive History of India, Vol. V, The Delhi Sultanate
Hermann Kulke, ed., The State in India (AD 1000 - AD 1700).

N. Karashima, South Indian History and Society (Studies from Inscriptions, AD 850 -1800
Derryl N. Maclean, Religion and Society in Arab Sindh.
Irfan Habib, Medieval India: The Study of a Civilization.

SUGGESTED READINGS

Richard Davis Lives of Indian Images.
Romila Thapar, Somanatha: The Many Voices of a History.
John S. Deyell, Living Without Silver: The Monetary History of Early Medieval North India.
Vijaya Ramaswamy, Walking Naked: Women, Society, and Spirituality in South India.
Burton Stein, Peasant State and Society in Medieval South India. R. Champakalakshmi, Trade, Ideology and Urbanization: South India, 300 BC to 1300 AD.
Al. Beruni's India, NBT edition.
Ali Hujwiri, Kashful Mahjoob, tr. R.Nicholson.
S C Mishra, Rise of Muslim Communities in Gujarat.
J. Schwartzberg, Historical Atlas of South Asia.

PAPER VI: RISE OF THE MODERN WEST - I

Module I: Transition from feudalism to capitalism
Unit – 1: Problems and theories with special reference to the Historiography of the Transition Debates

Module II: Early colonial expansion
Unit – 2: Motives, voyages and explorations;
Unit – 3: The conquests of the Americas: beginning of the era of colonization; mining and plantation; the African slaves.

Module III: Renaissance
Unit – 4: Meaning of Renaissance
Unit – 5: Its social roots,
Unit – 6: City-states of Italy;
Unit – 7: Spread of humanism in Europe;
Unit – 8: Art
Unit – 9: The Historians in the Age of Renaissance

Module IV: Origins, course and results of the European Reformation in the 16th century
Unit – 10: Origins
Unit – 11: Course (I): Martin Luther and the German Reformation
Unit – 12: Course (II): Reformation Movement Outside of Germany
Unit – 13: The Radical Reformation
Unit – 14: The Catholic Reformation
Unit – 15: Results

Module V: Economic developments of the sixteenth century
Unit – 16: The Economic Condition of 16th Century: General Aspects (Rural and Urban)
Unit – 17: Shift of economic balance from the Mediterranean to the Atlantic;
Unit – 18: Commercial Revolution;
Unit – 19: Influx of American silver and the Price Revolution.

Module VI: Emergence of European state system
Unit – 20: Spain;
Unit – 21: France;
Unit – 22: England;
Unit – 23: Russia.

ESSENTIAL READINGS
T.S. Aston and C. H. E. Philpin (eds.), The Brenner Debate H. Butterfield, The Origins of Modern Science.
Carlo M. Cipolla, Fontana Economic History of Europe, Vols. II

Carlo M. Cipolla, Before the Industrial Revolution, European Society and Economy. 1000 -1700. 3rd ed. (1993)
D. C. Coleman (ed.), Revisions in Mercantilism. Ralph Davis, The Rise of the Atlantic Economics. Maurice Dobb, Studies in the Development of Capitalism. J. R. Hale, Renaissance Europe.
R. Hall, From Galileo to Newton. Christopher Hill, A Century of Revolutions.
Rodney Hilton, Transition from Feudalism to Capitalism.
H. G. Koenigsberger and G. L. Mosse, Europe in the Sixteenth Century.
Stephen J. Lee, Aspects of European History, 1494 - 1789. G. Parker, Europe in Crisis. 1598- 1648.
G. Parker and L. M. Smith, General Crisis of the Seventeenth Century.
J. H. Parry, The Age of Reconnaissance.
Meenaxi Phukan, Rise of the Modern West: Social and Economic History of Early Modern Europe.
V. Poliensiky, War and Society in Europe, 1618 - 48.
Theodore K. Rabb, The Struggle for Stability in Early Modern Europe.
V. Scammell, The First Imperial Age: European Overseas Expansion, 1400 - 1715.
Jan de Vries, Economy of Europe in an Age of Crisis 1600 û 1750.

SUGGESTED READINGS

M. S. Anderson, Europe in the Eighteenth Century.
Perry Anderson, The Lineages of the Absolutist State.
Stuart Andrews, Eighteenth Century Europe.
B. H. Slicher von Bath, The Agrarian History of Western Europe. AD. 500 - 1850.
The Cambridge Economic History of Europe. Vol. I - VI.
James B. Collins, The State in Early Modern France: New Approaches to European History.
G. R. Elton, Reformation Europe, 1517 û 1559.
M. P. Gilmore, The World of Humanism. 1453 -1517.
Peter Kriedte, Peasants, Landlords and Merchant Capitalists.
J. Lynch, Spain under the Hapsburgs.
Peter Mathias, First Industrial revolution.
Harry Miskimin, The Economy of Later Renaissance Europe: 1460 û 1600.
Charles A. Nauert, Humanism and the Culture of the Renaissance (1996).
The New Cambridge Modern History of Europe, Vols. I -VII.
L. W. Owie, Seventeenth Century Europe.
D. H. Pennington, Seventeenth Century Europe.
F. Rice, The Foundations of Early Modern Europe.

PAPER VII: HISTORY OF INDIA IV (c.1206 - 1550)

Module I: Interpreting the Delhi Sultanate
Unit – 1: Survey of sources: Persian tarikh tradition; vernacular histories; epigraphy

Module II: Sultanate Political Structures
Unit – 2: Foundation, expansion and consolidation of the Sultanate of Delhi; The Khaljis and the Tughluqs;
Unit – 3: Mongol threat and Timur's invasion; The Lodis: Conquest of Bahlul and Sikandar;
Unit – 4: Ibrahim Lodi and the battle of Panipat
Unit – 5: Theories of kingship;
Unit – 6: Ruling elites; Sufis, ulama and the political authority;
Unit – 7: Imperial monuments and coinage

Module III: Emergence of provincial dynasties and Regional Identities
Unit – 8: Bahamanis,
Unit – 9: Vijayanagar,
Unit – 10: Gujarat,
Unit – 11: Malwa,
Unit – 12: Jaunpur
Unit – 13: Bengal
Unit – 14: Consolidation of regional identities; regional art, architecture and literature

Module IV: Society and Economy
Unit – 15: Iqta and the revenue-free grants
Unit – 16: Agricultural production; technology
Unit – 17: Changes in rural society; revenue systems
Unit – 18: Monetization; market regulations; growth of urban centers; trade and commerce; Indian Ocean trade

Module V: Religion, Society and Culture
Unit – 19: Sufi silsilas: Chishtis and Suhrawardis; doctrines and practices; social roles
Unit – 20: Bhakti movements and monotheistic traditions in South and North India; Women Bhaktas; Nathpanthis; Kabir, Nanak and the Sant tradition
Unit: 21: Sufi literature: malfuzat; premakhayans

ESSENTIAL READINGS

Mohammad Habib and K.A. Nizami, eds, Comprehensive History of India, Vol. V, The Delhi Sultanate.
Satish Chandra, Medieval India I.
Peter Jackson, The Delhi Sultanate.
Catherine Asher and Cynthia Talbot, India Before Europe.
Tapan Raychaudhuri and Irfan Habib, eds, Cambridge Economic History of India, Vol. I.

K.A. Nizami, Religion and Politics in the Thirteenth Century.
W.H. McLeod, Karine Schomer, et al, Eds, The Sants.
S.A.A. Rizvi, A History of Sufism in India, Vol. I.
Mohibul Hasan, Historians of Medieval India.

SUGGESTED READINGS

Cynthia Talbot, Pre-colonial India in Practice.
Simon Digby, War Horses and Elephants in the Delhi Sultanate.
I.H. Siddiqui, Afghan Despotism.
Burton Stein, New Cambridge History of India: Vijayanagara.
Richard M. Eaton, ed., India's Islamic Traditions.
Vijaya Ramaswamy, Walking Naked: Women, Society, and Spirituality in South India.
Sheldon Pollock, Languages of the Gods in the World of Men.
Pushpa Prasad, Sanskrit Inscriptions of the Delhi Sultanate.
Andre Wink, Al-Hind, Vols. I-III.

PAPER VIII: RISE OF THE MODERN WEST - II

Module I: 17th century European crisis
Unit – 1: Decline of the Mediterranean Economy
Unit – 2: Decline of Spain
Unit – 3: Decline of Italy
Unit – 4: Nature and the extent of the Crisis: Economic, social and political dimensions
Unit – 5: The Thirty Years War

Module II: The English Revolution
Unit – 6: Major issues
Unit – 7: Fermentation of Ideas: political and intellectual currents
Unit – 8: Commonwealth and Protectorate
Unit – 9: Restoration of 1660
Unit – 10: Socio-Economic Changes
Unit – 11: The Revolution of 1688
Unit – 12: Consequences
Unit – 13: Intellectual and Cultural Trends

Module III: Rise of modern science in relation to European society from the Renaissance to the 17th century
Unit – 14: Origins
Unit – 15: Social Context of the Modern Science
Unit – 16: Major Developments
Unit – 17: The Formulation of Scientific Method
Unit – 18: Science and Religion

Module IV: Mercantilism and European economics: 17th and 18th centuries
Unit – 19: Origins
Unit – 20: The Theory of Mercantilism
Unit – 21: (a) Mercantilism in Action; (b) Rejection of Mercantilism

Module V: European politics in the 18th century
Unit – 22: (a) Parliamentary monarchy; (b) Patterns of Absolutism in Europe

Module VI: Political and economic issues in the American Revolution
Unit – 23: Understanding the American Revolution – Political and Economic issues

Module VII: Preludes to the Industrial Revolution
Unit – 24: Causal Origin of Industrial Revolution

ESSENTIAL READINGS

T.S. Aston and C.H.E. Philpin (eds.), The Brenner Debate.
H. Butterfield, The Origins of Modern Science.
Carlo M. Cipolla, Fontana Economic History of Europe, Vols. II and III.Carlo M. Cipolla, Before the Industrial Revolution, European Society and Economy, 1000 - 1700. 3rd ed. (1993) . D.C. Coleman (ed.), Revisions in Mercantilism.
Ralph Davis, The Rise of the Atlantic Economics.
Maurice Dobb, Studies in the Development of Capitalism.
J.R. Hale, Renaissance Europe.
R. Hall, From Galileo to Newton.
Christopher Hill, A Century of Revolutions.
Rodney Hilton, Transition from Feudalism to Capitalism.
H.G. Koenigsberger and G.L. Mosse, Europe in the Sixteenth Century.
Stephen J. Lee, Aspects of European History, 1494 - 1789.
G. Parker, Europe in Crisis, 1598 - 1648.
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Jan de Vries, Economy of Europe in an Age of Crisis 1600 û 1750.

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M. S. Anderson, Europe in the Eighteenth Century.
Perry Anderson, The Lineages of the Absolutist State.
Stuart Andrews, Eighteenth Century Europe.
B. H. Slicher von Bath, The Agrarian History of Western Europe. AD. 500 - 1850.
The Cambridge Economic History of Europe. Vol. I - VI.
James B. Collins, The State in Early Modern France, New Approaches to European History.
G. R. Elton, Reformation Europe, 1517 û 1559.
M. P. Gilmore, The World of Humanism. 1453 û-1517.
Peter Kriedte, Peasants, Landlords and Merchant Capitalists.
J. Lynch, Spain under the Hapsburgs.
Peter Mathias, First Industrial revolution.
Harry Miskimin, The Economy of Later Renaissance Europe: 1460 û 1600.
Charles A. Nauert, Humanism and the Culture of the Renaissance (1996).
The New Cambridge Modern History of Europe, Vols. I - VII.
L. W. Owie, Seventeenth Century Europe.
D. H. Pennington, Seventeenth Century Europe.
F. Rice, The Foundations of Early Modern Europe

PAPER IX: HISTORY OF INDIA V (c. 1550 - 1605)

Module I: Sources and Historiography
Unit – 1: Persian literary culture; translations;
Unit – 2: Vernacular literary traditions
Unit – 3: Modern Interpretations

Module II: Establishment of Mughal rule
Unit – 4: India on the eve of Babur's invasion
Unit – 5: Fire arms, military technology and warfare
Unit – 6: Humayun's struggle for empire
Unit – 7: Sher Shah and his administrative and revenue reforms

Module III: Consolidation of Mughal rule under Akbar
Unit – 8: Campaigns and conquests: tactics and technology
Unit – 9: Evolution of administrative institutions: zabt, mansab, jagir, madad-i-maash
Unit – 10: Revolts and resistance

Module IV: Expansion and Integration
Unit – 11: Incorporation of Rajputs and other indigenous groups in Mughal nobility
Unit – 12: North-West frontier, Gujarat and the Deccan
Unit – 13: Conquest of Bengal

Module V: Rural Society and Economy
Unit – 14: Land rights and revenue system; Zamindars and peasants
Unit – 15: Rural tensions
Unit – 16: Extension of agriculture; agricultural production; crop patterns
Unit – 17: Trade routes and patterns of internal commerce;
Unit – 18: Overseas trade; rise of Surat

Module VI: Political and religious ideals
Unit – 19: Inclusive political ideas: theory and practice
Unit – 20: Religious tolerance and sulh-i-kul; Sufi mystical and intellectual interventions
Unit – 21: Pressure from the ulama

PAPER X: HISTORY OF INDIA VI (c. 1605 - 1750s)

Module I: Sources
Unit – 1: Persian and vernacular literary cultures, histories, memoirs and travelogues

Module II: Political Culture under Jahangir and Shah Jahan
Unit – 2: Extension of Mughal rule;
Unit – 3: Changes in mansab and jagir systems
Unit – 4: Imperial culture
Unit – 5: Orthodoxy and syncretism - Naqshbandi Sufis, Miyan Mir, Dara Shukoh, Sarmad

Module III: Mughal Empire under Aurangzeb
Unit – 6: State and religion under Aurangzeb
Unit – 7: Issues in the war of succession
Unit – 8: Policies regarding Religious groups and institutions
Unit – 9: Conquests and limits of expansion
Unit – 10: Beginning of the crisis: contemporary perceptions
Unit – 11: Agrarian and jagir crises; revolts

Module IV: Visual Culture: Paintings and Architecture
Unit 12: Paintings
Unit 13: Architecture

Module V: Patterns of Regional Politics
Unit – 14: Rajput political culture and state formation
Unit – 15: Deccan kingdoms; emergence of the Marathas; Shivaji;
Unit – 16: Expansion under the Peshwas
Unit – 17: Mughal decline
Unit – 18: Emergence of successor states
Unit – 19: Interpreting eighteenth century India: recent debates

Module VI: Trade and Commerce
Unit – 20: Crafts and technologies
Unit – 21: Monetary system
Unit – 22: Markets; transportation; urban centres
Unit – 23: Indian Ocean trade network

ESSENTIAL READINGS

M. Athar Ali, The Mughal Nobility under Aurangzeb.
Muzaffar Alam and Sanjay Subramanian, eds, The Mughal State, 1526 - 1750.
J.F. Richards, The Mughal Empire.
Satish Chandra, Essays on Medieval Indian History.
Irfan Habib, Agrarian System of Mughal India, 1526 û 1707.

Ashin Dasgupta, Indian Merchants and the Decline of Surat, 1700 - 1750.
Stewart Gordon, The Marathas 1600 - 1818.
Ebba Koch, Mughal Art and Imperial Ideology.
S.A.A. Rizvi, Muslim Revivalist Movements in Northern India.
K. R. Qanungo, Dara Shikoh.

SUGGESTED READINGS

S. Nurul Hasan, Religion, State, and Society in Medieval India.
S. Arsaratnam, Maritime India in the Seventeenth Century.
Muzaffar Alam, The Crisis of Empire in Mughal North India.
Catherine Asher, Architecture of Mughal India.
Milo Beach, Mughal and Rajput Paintings.
Satish Chandra, Parties and Politics at the Mughal Court.
Andre Wink, Land and Sovereignty in India.
Harbans Mukhia, The Mughals of India.
J.F. Richards, Mughal Administration in Golconda.
Z.U. Malik, The Reign of Muhammad Shah.
Iqbal Husain, Ruhela Cheiftancies in 18th Century India.

Paper XI: History of Modern Europe- I (c. 1780-1939)

Module I: The French Revolution and its European repercussions
Unit – 1: Crisis of Ancien Regime
Unit – 2: Intellectual currents.
Unit – 3: Social classes and emerging gender relations.
Unit – 4: Phases of the French Revolution 1789 - 99.
Unit – 5: Art and Culture of French Revolution.
Unit – 6: Napoleonic consolidation - reform and empire.

Module II: Restoration and Revolution: c. 1815 - 1848
Unit – 7: Forces of conservatism & restoration of old hierarchies.
Unit – 8: Social, Political and intellectual currents.
Unit – 9: Revolutionary and Radical movements, 1830 - 1848.

Module III: Capitalist Industrialization and Social and Economic Transformation (Late 18th century to AD 1914)
Unit – 10: Process of capitalist development in industry and agriculture: Case Studies
Unit – 11: Britain
Unit – 12: France
Unit – 13: The German States
Unit – 14: Russia.
Unit – 15: Evolution and Differentiation of social classes: Bourgeoisie, Proletariat, land owning classes and peasantry.
Unit – 16: Changing trends in demography and urban patterns.
Unit – 17: Family, gender and process of industrialization.

Module – IV: Varieties of Nationalism and the Remaking of States in the 19th and 20th Centuries: *Intellectual currents, popular movements and the formation of National identities*
Unit – 18: Germany
Unit – 19: Italy
Unit – 20: Ireland
Unit – 21: The Balkans.

Module – V: Varieties of Nationalism and the Remaking of States in the 19th and 20th Centuries: *Specificities of economic development, political and administrative reorganization*
Unit – 22: Italy
Unit – 23: Germany.

ESSENTIAL READINGS

Gerald Brennan: The Spanish Labyrinth: An Account of the Social and Political Background of the Civil War.
C.M. Cipolla: Fontana Economic History of Europe, Volume III: The Industrial Revolution.
Norman Davies, Europe.
J. Evans: The Foundations of a Modern State in 19th Century Europe.
T.S. Hamerow: Restoration, Revolution and Reaction: Economics and Politics in Germany [1815 - 1871].
E.J. Hobsbawn: The Age of Revolution.
Lynn Hunt: Politics, Culture and Class in the French Revolution.
James Joll, Europe Since 1870.
David Landes: Prometheus Unbound.
George Lefebvre, Coming of the French Revolution.
George Lichtheim : A Short History of Socialism.
Peter Mathias, First Industrial Revolution.
Alec Nove: An Economic History of the USSR.
Andrew Porter, European Imperialism, 18760 û 1914 (1994).
Anthony Wood, History of Europe, 1815 û 1960 (1983).
Stuart Woolf: History of Italy, 1700 û 1860.

SUGGESTED READINGS

G. Barrowclough, An Introduction to Contemporary History.
Fernand Braudel, History and the Social Science in M. Aymard and H. Mukhia Ed. French Studies in History, Vol. I (1989).
Maurice Dobb: Soviet Economic Development Since 1917.
M. Perrot and G. Duby [eds.]: A History of Women in the West, Volumes 4 and 5.
H.J. Hanham; Nineteenth Century Constitution, 1815 - 1914.
E.J. Hobsbawm, Nations and Nationalism.
Charles and Barbara Jelavich: Establishment of the Balkan National States, 1840 û 1920.
James Joll, Origins of the First World war (1989).
Jaon B. Landes: Women and the Public Sphere in the Age of the French Revolution.
David lowenthal, The Past is a Foreign Country.
Colin Licas: The French Revolution and the Making of Modern Political Culture, Volume
Nicholas Mansergh: The Irish Question, 1840 û 1921.
K.O. Morgan: Oxford Illustrated History of Britain, Volume 3 [1789 - 1983].
R.P. Morgan: German Social Democracy and the First International.
N.V. Riasanovsky: A History of Russia.
J.M. Robert, Europe 1880 û 1985.
Roth (ed.), World War I : A Turning Point in Modern History.
Albert Soboul: History of the French Revolution (in two volumes).
Lawrence Stone, History and the Social Sciences in the Twentieth Century The Past and the Present (1981).
Dorothy Thompson: Chartists: Popular Politics in the Industrial Revolution.

E.P. Thompson: Making of the English Working Class.
Michel Vovelle, Fall of the French Monarchy (1984).
H. Seton Watson: The Russian Empire.
Raymond Williams: Culture and Society.

PAPER XII: HISTORY OF INDIA VII (c. 1750 - 1857)

Module – I: India in the mid 18th Century
Unit – 1: Society
Unit – 2: Economy
Unit – 3: Polity

Module II: Expansion and Consolidation of colonial Power
Unit – 4: Mercantilism, foreign trade and early forms of exactions from Bengal.
Unit – 5: Dynamics of expansion, with special reference to Bengal, Mysore, Western India, Awadh, Punjab, and Sindh.

Module III: Colonial State and Ideology
Unit – 6: Arms of the colonial state: army, police, law.
Unit – 7: Ideologies of the Raj and racial attitudes.
Unit – 8: Education: indigenous and modern.

Module IV: Rural Economy and Society
Unit – 9: Land revenue systems
Unit – 10: Forest policy
Unit – 11: Commercialization and indebtedness
Unit – 12: Rural society: change and continuity
Unit – 13: Famines
Unit – 14: Pastoral economy and shifting cultivation

Module V: Trade and Industry
Unit – 15: De industrialization
Unit – 16: Trade and fiscal policy
Unit – 17: Drain of Wealth
Unit – 18: Growth of modern industry

Module – VI: Popular Resistance
Unit – 19: Santhal uprising (185-7); Indigo rebellion (1860); Pabna agrarian Leagues (1873); Deccan riots (1875)
Unit – 20: Uprising of 1857

ESSENTIAL READINGS

C. A. Bayly, Indian Society and the Making of the British Empire, New Cambridge History of India.
Bipan Chandra, Rise and Growth of Economic Nationalism in India. Suhash Chakravarty, The Raj Syndrome: A Study in Imperial Perceptions, 1989.
J.S. Grewal, The Sikhs of the Punjab, New Cambridge History of India
Ranajit Guha, ed., A Subaltern Studies Reader.
Dharma Kumar and Tapan Raychaudhuri, eds., The Cambridge Economic History of India, Vol. II.

P.J. Marshall, Bengal: The British Bridgehead, New Cambridge History of India.
R.C. Majumdar, ed., History and Culture of Indian People, Vols. IX and X. British Paramountcy and Indian Renaissance.
Rajat K. Ray, ed., Entrepreneurship and Industry in India, 1800-1947, Oxford In India Readings.
Eric Stokes, English Utilitarians and India.

SUGGESTED READINGS

David Arnold and Ramchandra Guha, eds, Nature, Culture and Imperialism.
Amiya Bagchi, Private Investment in India.
Bipan Chandra, K.N. Panikkar, Mridula Mukherjee, Sucheta Mahajan and Aditya Mukherjee, India's Struggles for Independence. A.R. Desai, Peasant Struggles in India.
R.P. Dutt, India today.
M.J. Fisher, ed., Politics of Annexation (Oxford in India Readings). Ranajit Guha, Elementary Aspects of Peasant Insurgency in Colonial India (1983).
P.C. Joshi, Rebellion 1857: A Symposium.
J.Krishnamurti, Women in Colonial India.
Dadabhai Naroji, Poverty and Un-British Rule in India.

PAPER XIII : HISTORY OF INDIA VIII (c. 1857 - 1950)

Module I: Cultural Changes and Social and Religious Reform Movements
Unit – 1: The advent of printing and its implications
Unit – 2: Reform and Revival: Brahmo Samaj, Prarthna Samaj, and Ramakrishna and Vivekananda, Arya Samaj, Wahabi, Deoband, Aligarh and Singh Sabha Movements.
Unit – 3: Debates around gender
Unit – 4: Making of religious and linguistic identities
Unit – 5: Caste: Sanskritising and anti Brahminical trends

Module II: Nationalism: Trends up to 1919
Unit – 6: Political ideology and organizations, formation of INC
Unit – 7: Moderates and extremists.
Unit – 8: Swedish movement
Unit – 9: Revolutionaries

Module III: Gandhian nationalism after 1919: Ideas and Movements
Unit – 10: Mahatma Gandhi: his Perspectives and Methods
Unit – 11: Impact of the First World War
Unit – 12: Rowlett Satyagraha and Jallianwala Bagh
Unit – 13: Non- Cooperative and Civil Disobedience
Unit – 14: Provincial Autonomy, Quit India and INA
Unit – 15: Left wing movements
Unit – 16: Princely India: States people movements
Unit – 17: Nationalism and Culture: literature and art

Module IV: Nationalism and Social Groups: Interfaces
Unit – 18: Landlords, Professionals and Middle Classes
Unit – 19: (a) Peasants, (b) Tribal/Indigenous Communities and (c)Labour
Unit - 20: (a) Dalits, (b) Women and (c) Business Groups

Module V: Communalism: Ideologies and practices, RSS, Hindu Maha Sabha, Muslim League
Unit – 21: Origin of Communalism in Colonial India: Theory and Ideology
Unit – 22: RSS, Hindu Maha Sabha, Muslim League

Module VI: Independence and Partition
Unit – 23: Negotiations for independence, and partition
Unit – 24: (a) Popular movements, (b) Partition riots
Unit – 25: Emergence of a New State: (a) Making of the Constitution (b) Integration of princely states, (c) Land reform and beginnings of planning

ESSENTIAL READINGS

Judith Brown, Gandhi's rise to Power, 1915-22.
Paul Brass, The Politics of India Since Independence, OUP, 1990.
Bipan Chandra, Nationalism and Colonialism in Modern India, 1979.
Bipan Chandra, Rise and Growth of Economic Nationalism in India.
Mohandas K. Gandhi, An Autobiography or The Story of My Experiments with Truth.
Ranajit Guha, ed., A Subaltern Studies Reader.
Peter Hardy, Muslims of British India.
Mushirul Hasan, ed., India's Partition, Oxford in India Readings.
D.A. Low, ed., Congress and the Raj.
John R. McLane, Indian Nationalism and the Early Congress.
Jawaharlal Nehru, An Autobiography.
Gyanendra Pandey, The Construction of Communalism in colonial north India.
Sumit Sarkar, Modern India, 1885-1947.
Anil Seal, Emergence of Indian Nationalism.
Ram Lakhan Shukla (ed.), Adhunik Bharat ka Itihas.
Eleanor Zelliot, From Untouchable to Dalit: Essays on the Ambedkar Movement.

SUGGESTED READINGS

Judith Brown, Gandhi: (et al) A Prisoner of Hope.
Bipan Chandra, Communalism in Modern India, 2nd ed., 1987. Bipan Chandra, K.N. Panikkar, Mridula Mukherjee, Sucheta Mahajan and Aditya Mukherjee, India's, Struggles for Independence. A.R. Desai, Social Background of Indian Nationalism.
A.R. Desai, Peasant Struggles in India.
Francine Frankel, India's Political Economy, 1947-77.
Ranajit Guha, and G.C. Spivak, eds. Select Subaltern Studies.
Charles Heimsath, Indian Nationalism and Hindu Social Reform.
F. Hutchins, Illusion of Permanence.
F. Hutchins, Spontaneous Revolution.
V.C. Joshi (ed.), Rammohan Roy and the process of Modernization in India.
J.Krishnamurti, Women in Colonial India.

PAPER XIV: HISTORY OF MODERN EUROPE II (c. 1780 - 1939)

Module 1: Liberal Democracy, Working Class Movements and Socialism in the 19th and 20th Centuries

Unit – 1: The struggle for parliamentary democracy and civil liberties in Britain.
Unit – 2: Forms of protest during early capitalism: food riots in France and England: Luddites and Chartism.
Unit – 3: Early socialist thought; Marxian Socialism û the First and the Second International.
Unit – 4: German Social Democracy, Politics and Culture.
Unit – 5: Christian Democracy as a political and ideological force in western and central Europe

Module 2: The Crisis of Feudalism in Russia and Experiments in Socialism

Unit – 6: Emancipation of serfs.
Unit – 7: Russian Populism and Social Democracy.
Unit – 8: Revolutions of 1905; the Bolshevik Revolution of 1917.
Unit – 9: Programme of Socialist Construction.

Module 3: Imperialism, War, and Crisis: c. 1880 û-1939

Unit – 10: Theories and mechanisms of imperialism; growth of Militarism; Power blocks and alliances: expansion of European empires - War of 1914 - 1918
Unit – 11: The post 1919 World Order: economic crises, the Great Depression and Recovery.
Unit – 12: Fascism and Nazism.
Unit – 13: The Spanish Civil War.
Unit – 14: Origins of the Second World War.

Module 4: Cultural and Intellectual Developments since circa 1850

Unit – 15: Changing contexts: (a) Notions of Culture (b) Creation of a New public sphere and mass media (c) Mass education and extension of literacy.
Unit – 16: Creation of new cultural forms: from Romanticism to Abstract Art.
Unit – 17: Major intellectual trends:
Unit – 18: Institutionalization of disciplines history Sociology and Anthropology.
Unit – 19: Darwin and Freud.
Unit – 20: Culture and the making of ideologies: Constructions of Race, Class and Gender, ideologies of Empire.

ESSENTIAL READINGS
Gerald Brennan: The Spanish Labyrinth: An Account of the Social and Political Background of the Civil War

C.M. Cipolla: Fontana Economic History of Europe, Volume II the Present (1981).
I : The Industrial Revolution.
Norman Davies, Europe.
J. Evans: The Foundations of a Modern State in 19th Century Europe.
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Stuart Woolf: History of Italy, 1700 û 1860.

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N.V. Riasanovsky: A History of Russia.
J.M. Robert, Europe 1880 - 1985.
Roth (ed.), World War I: A Turning Point in Modern History. Albert Soboul: History of the French Revolution (in two volumes).

Lawrence Stone, History and the Social Sciences in the Twentieth Century, The Past and the Present (1981).
Dorothy Thompson: Chartists: Popular Politics in the Industrial Revolution.
E.P. Thompson: Making of the English Working Class.
Michel Vovelle, fall of the French Monarchy (1984).
H. Seton Watson: The Russian Empire.
Raymond Williams: Culture and Society.

NETAJI SUBHAS OPEN UNIVERSITY
School of Social Sciences
DD 26, Sector I, Salt Lake, Kolkata – 700064
Website: www.wbnsou.ac.in

Syllabus of Discipline Specific Elective (History)
(Interdisciplinary: Any Four)
Credits- 6 Each

Paper I: HISTORY OF THE USSR – I (C.1917-1964)

Module -1: Russia before the Revolutions

Unit -1 Russian Society and Economy
Unit -2 Revolutionary traditions- Revolution of 1905 and its impact on Russia
Unit -3 First World War and Crisis of the Empire

Module -2: The Revolutions of February and October 1917

Unit -4 The February Revolution of 1917
Unit -5 Dual power
Unit -6 The Provisional government.
Unit -7 The Crisis of Summer
Unit -8 The October Revolution
Unit -9 Debates over the Character of February and October Revolution
Unit -10 The Establishment of Soviet Power.

Module -3: Civil War and War-Communism 1918-1921

Unit -11 The First Eight Months.
Unit -12 Red and Whites.
Unit -13 Economic Policies

Module -4: The Bolsheviks in power

Unit -14 The Establishment of Soviet Power.
Unit -15 Nationalities Question.

Module -5: The New Economic Policy (NEP)

Unit -16 Political Debates.
Unit -17 Economy and Society and Culture.
Unit -18 Social Institutions and Gender Relations.
Unit -19 Birth of The Soviet Union.
.

Module -6: Soviet Russia after Lenin

Unit -19 Struggle for Power.
Unit -20 The Disintegration of The NEP System and the Search for New Solutions: The Great Debate over Soviet Industrialization.
Unit -21 Collectivization of Soviet Agriculture.

Module -7. Soviet Russia and The World
Unit -22 Soviet Foreign Policy (1917 -1928).
Unit -23 The Comintern.

References

E.H. Carr: A History of Soviet Russia, 4 Volumes (1952).
Stephen F. Cohen: Bukharin and the Bolshevik Revolution: A Political Biography, 1888 - 1938 (1973).
Isaac Deutscher: Stalin (1949).
Maurice Dobb: Soviet Economic Development Since 1917 (1972).
Marc Ferro: The Russian Revolution of February 1917 (1972).
Sheila Fitzpatrick: Cultural Revolution in Soviet Russia (1978).
Arch Getty: The Origins of the Great Purges (1985).
Graeme Gill: Peasants and Government in the Russian Revolution (1979).
John Keep: The Last of the Empires : A History of the Soviet Union, 1945 û 1991 (1995).
John Keep: The Russian Revolution: A Study in Mass Mobilization (1976).
A. Kollontai: Selected Writings.
Moshe Levin: The Making of the Soviet System (1985).
Roy & Zhores Medvedev: Khrushchev: The Years in Power (1977).
Alec Nove: An Economic History of the USSR (1993).
Richard Pipes: Russia of the Old Regime.
L.Szamuely: First Models of Socialist Economic Systems.
Trotsky: The History of the Russian Revolution (translated by Max Eastman) (1959).
A.B. Ulam: Expansion and Coexistence: A History of Soviet Foreign Policy, 1917 û 67
(1968).
K. Vaidyanathan: The Formation of the Soviet Control Asian Nationalities

Paper II: HISTORY OF THE USSR – II (C.1917-1964)

Module – 1: Socialism in one country- Soviet Russia under Stalin (1928-1932)
Unit -1 Introduction of planned economy and the First Five Year Plan (1928 -1932)
Unit -2 Industrialization
Unit -3 Creation of an urban labour force
Unit -4 Collectivized agriculture.

Module – 2: Soviet Russia from 1933 -1938 –High Stalinism
Unit -5 Terror.
Unit -6 Economic progress
a) Industry
b) Agriculture

Module -3: Soviet Russia (1939 - 1945)
Unit -7 Russia and the Second World War (1939-1941)
Unit -8 Russia against the Axis Powers (1941-1945)
Unit -9 The War and the Soviet People

Module -4: Soviet Russia under Stalin (1945 - 1953) –The Last Phase
Unit -10 Industrial and Agricultural Reconstruction
Unit -11 Political Culture

Module – 5: The Khruschev Era.
Unit -12 Power Struggle after Stalin and Khruschev's Victory
Unit -13 De-Stalinization.
Unit -14 Soviet Economy under Khruschev
a) Industry
b) Agriculture
Unit -15 Khruschev's Defeat

Module -6: Political, Social, Economic and Cultural Changes (1928-1964)
Unit -16 Economic and Demographic Changes.
Unit -17 Workers and Industrialization.
Unit -18 Women and the State.
Unit -19 Science, Technology and Modernity.
Unit -20 Soviet Culture

Module -7: Foreign Policy of Soviet Russia (1928-1964)
Unit -21 Soviet Foreign Policy (1928-1941).
Unit -22 Wartime Diplomacy –Cold War –Sovietization of the Eastern Europe.
Unit-22 Soviet Foreign Policy under Khruschev.

References

E.H. Carr: A History of Soviet Russia, 4 Volumes (1952).
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1938 (1973).
Isaac Deutscher: Stalin (1949).
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Richard Pipes: Russia of the Old Regime.
L.Szamuely: First Models of Socialist Economic Systems.
Trotsky: The History of the Russian Revolution (translated by Max Eastman) (1959).
A.B. Ulam: Expansion and Coexistence: A History of Soviet Foreign Policy, 1917 - 67 (1968).
K. Vaidyanathan: The Formation of the Soviet Control Asian Nationalities.

Paper III: HISTORY OF SOUTHEAST ASIA - (19th & 20th CENTURIES)

Madule-1 Economy and Society in early 19th Century
Unit-1 Patterns of Production in agriculture and the crafts.
Unit-2 Organization of trade and banking.
Unit-3 Cultural expressions: Folk and Classical.
Unit-4 Islam and popular culture

Madule-2 Colonization and Colonial Transformations
Unit-5 Processes of colonial control and the Informal Empire in Thailand.
Unit-6 Peasant society and agrarian transformations, plantations, forests, mining
Unit-7 Urbanization: Colonial cities in Plural Societies.
Unit-8 Colonial Discourses: Culture
Unit-9 Creation of National Culture
Unit-10 Oral traditions, literacy and the case of Malay Hikayats
Unit-11 Creation of Perfect Natives
Unit-12 Education

Madule-3 Movements of Resistance and the making of new identities
Unit-13 Emergence and phases of nationalism in South-East Asia
Unit-14 Peasant resistance
Unit-15 Radicalism and the Origins of the Vietnamese Revolution, 1920-1946
Unit-16 Indonesian Revolution, 1945-1949

Madule-4 Emergence of Modern Nations and States
Unit-17 The Union of Burma (Myanmar), 1948-1962
Unit-18 Indonesia, the Sukarno Era, 1949-1965.
Unit-19Cambodia under Norodom Sihanouk, 1955-1970
Unit-20 South-East Asian in contemporary politics after Second World War

ESSENTIAL READING

B. Anderson: Imagined Communities.
H. Benda: The Crescent and the Rising Sun.
Furnivall: Colonialism and the Plural Society.
G. Hart, ed., Agrarian Transformations: Local Processes and the State in South-East Asia.
J. Kemp, ed., Peasants and Cities, Cities and Peasants: Rethinking Southeast. Asian Models.

Milton Osborne, South East Asia: An Introductory History. Nicholas Tarling, ed., Cambridge History of South-east Asia, Vol.II

SUGGESTED READINGS

B. Anderson: Mythology and the Tolerance of the Javanese.
C. Van Dijk, Trousers, Sarongs and Jubbahs
C. Dobbin, Islamic Revivalism in a Changes Peasant Economy (1784-1847).
Charles F. Keys, The Golden Peninsula.
Daniel S. Lev and Ruth T. McVey, eds., Making Indonesia û Essays on Modern Indonesia.
Victor Purcell, The Chinese in Southeast Asia.
Tongchai Winichakul; Siam Mapped.

Paper IV: HISTORY OF EAST ASIA - I (c. 1840-1950)

Module –I: Imperialism and China during the 19th century

Unit 1: Chinese feudalism: Gentry, bureaucracy and peasantry; the Confucian value system; Sino centrism; the Canton commercial system.
Unit 2: The transformation of China into an informal colony; the Opium Wars
Unit 3: Unequal Treaties; the scramble for concessions; Finance Imperialism; the Open Door policy.
Unit 4: Agrarian and Popular Movements: Taiping and Yi Ho Tuan.
Unit 5: Attempts at Self-Strengthening (Tzu-chiang): Reforms of 1860-95; 1898; and 1901-08.

Module-II: The Emergence of Nationalism in China

Unit 6: Boxer Rebellion and its consequence, failure etc.
Unit 7: The Revolution of 1911: Causes, nature and significance; the social composition of the Revolution
Unit 8: Sun Yat-sen and his contribution; principles and politics
Unite 9: The formation of the Republic; Yuan Shih Kai; Warlordism (1916-1925)
Unit 10: May Fourth Movement of 1919: origin, nature and significance

Module III: History of China, c1919-1949

Unit 11: Nationalism &Communism in China (1921-1937)
Unite 12: Formation of CCP; and the Kuomintang (National Party of KMT)
Unite 13: The First United Front
Unit 14: Ten years of Nanking Government

Module IV: The Communist Movement (1938-1950)

Unit 15: The Jiangxi Period
Unit 16: The rise of Mao Tse Tung, Communist Party under Mao Tse Tung,
Unit 17: Red Army, Second United Front and Long March
Unit 18: Sino Japan war 1937,
Unit 19: Chinese revolution 1949; ideology, causes and significance
Unit 20: The establishment of People's Republic in China

ESSENTIAL READINGS

George Allen, A Short Economic History of Japan.
Jean Chesneaux, et al, China from Opium War to 1911 Revolution. Jean Chesneaux, et al, China from the 1911 Revolution to Liberation.

Tan Chung, Triton and Dragon: Studies on the Nineteenth Century China and Imperialisms.
John K. Fairbank, et al., and East Asia: Modern Transformation
Y. Immanuel Hsu. The Rise of Modern China
Chalmers A Johnson, Peasant Nationalism and Communist Power:
The Emergence of Red China, 1937 - 1945.
Nathaniel Peffer, The Far East: A Modern History.
Victor Purcell, The Boxer Uprising: A Background Study.
Kenneth B. Pyle, The Making of Modern Japan.
Franz Schuramann and Orville Schell (eds.), China Readings, 2 Volumes (Imperial China, and Republican China)
Benjamin I. Schwartz, Mao and the Rise of Chinese Communism
Hu Sheng, Imperialism and Chinese Politics
Chow Tse tung, The May Fourth Movement: Intellectual Revolution in Modern, China.
Mao Tse tung's Selected Writings, National Book Agency, Calcutta.
Mary C. Wright, China in Revolution: The First Phase, 1900 -1913.

SUGGESTED READINGS

George M. Beckmann, Modernization of China and Japan.
George M. Beckmann, The Making of the Meiji Constitution.
Lucien Bianco, Origins of the Chinese Revolution, 1915 -1949.
Jean Chesneaux, Peasant Revolts in China, 1840 û 1949
Tan Chung, China and the Brave New World: A Study of the Origins of the Opium War, 1840 û 42.
Wolfgang Franke, A Century of Chinese Revolution.
John W. Hall, Japan From Prehistory to Modern Times.
History of Modern China Series: The Opium War, The Taiping Revolution, The Reform Movement (1898).
M.B. Jansen, Japan and China: From War to Peace, 1894 û 1972.
Franz Michael, The Taiping Rebellion.
Harold Z. Schifrin, Sun Yat-Sen and the Origin of the Chinese Revolution
Ssu Yu-teng and john K. Fairbank, China's Response to the West
The Yi Ho Tuan Movement, The Revolution of 1911 (all published by Foreign Language Press Beijing)

Paper V: HISTORY OF EAST ASIA - II (c. 1868-1945)

Module-I: Transition from feudalism to capitalism: Japan (c.1868-1945)
Unit 1: Crisis of Tokugawa Bakuhan system
Unit-2: Meiji Restoration: Its nature and Significance
Unit 3: Political Reorganization
Unit 4: Military Reforms
Unit 6: Social, cultural and educational reforms (bunmeikaika)
Unit 7: Financial reforms and educational development in the 'Meiji' era
Unit 8: Meiji Constitution

Module- II: Japanese Imperialism
Unit 9: China
Unit 10: Manchuria
Unit 11: Korea

Module III: Democracy and Militarism/Fascism
Unit 12: Popular/People's Rights Movement
Unit 13: Nature of political parties
Unit 14: Rise of Militarism-Nature and significance
Unit 15: Second World War; American occupation
Unit 16: Post-War Changes

Module-IV: Emergence of Modern Korea
Unit 17: The old order and Institutional Decay: Joseon Korea
Unit 18: Korea's interactions with the western powers and Korea's unequal treaties with Japan
Unit 19: Attempts at social, political and economic reforms in Korea
Japan's colonization: March First Movement and the growth of Korean nationalism; in situational transformation 1910-1945
Unit 20: Post-War Changes

ESSENTIAL READINGS
George Allen, A Short Economic History of Japan.
G. Beasley, The Modern History of Japan.
John K. Fairbank, et al., East Asia: Modern Transformation
Mikiso Hane, Modern Japan: A Historical Survey.
Y. Immanuel Hsu, The Rise of Modern China.
Jon Livingstone, et. al., The Japan Reader (Imperial Japan: 1800 û 1945), Vol-I

E.H. Norman, Japan's Emergence as a Modern State
Nathaniel Peffer, The Far East: A Modern History.
Kenneth B. Pyle, The Making of Modern Japan.
Chow Tse Tung, The May Fourth Movement: Intellectual Revolution in Modern, China. 1913.
Michael J. Seth, A concise history of Modern Korea, Rowman and Littlefield,2009

SUGGESTED READINGS

Nathaniel Peffer, The Far East: A Modern History. Ann Arbor: University of Michigan Press, 1958.
Bruce Cummings, Korea's place in the Sun: Modern History, W.W. Norten and Co., 1992
Ramon H. Mayers and Mark R. Peattie (ed.), The Japanese Colonial Empire, 1895-1945, Princeton: Princeton University Press, 1984

NETAJI SUBHAS OPEN UNIVERSITY
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Syllabus of Generic Elective (History)
(Interdisciplinary: Any Four)
Credits- 6 Each

Paper I: EASTERN INDIA (WITH SPECIAL REFERENCE TO BENGAL): (EARLIEST TO 1203/1204):

Module 1: Ancient Bengal: Geography, Regional Subdivision and Population Structure

Unit 1: Eastern India: Geography (Landscape, River System and Ecological Pattern)

Unit 2: The Regional Subdivisions of Ancient Bengal (Gauda, Vanga, Samatata, Harikela, Chandradvipa, Vangala, Pundra and Varendri, Tamralipta, Pundravardhana-bhukti, Vardhamana-bhukti, Kankagrama-bhukti) and Physical Connectivity

Unit 3: The Population Structure (Understanding Population Studies, Caste and Population, The Bengalis in the Indian Population Structure, Language, Material Culture and the Bengalis)

Module 2: Early History of Bengal up to 320 A.D.

Unit 4: Bengal in the Classical Literature; Gangaridai

Unit 5: Bengal before the Gupta Rule; Bengal under the Guptas

Module 3: Bengal during the Guptas and Post-Gupta

Unit 6: Independent Kingdoms in Bengal

Unit 7: The Kingdom of Samatata or Vanga

Unit 8: Rise of Gauda

Unit 9: Sasanka

Module 4: The Pala Empire

Unit 10: Condition of Bengal before the Formation of Pala Empire: Political Disintegration and Social Instability

Unit 11: The Origin and the Early History of Palas

Unit 12: The Pala Empire: Dharmapala (c. 770-810 A.D.), Debapala (c. 810-850 A.D.)

Unit 13: The Decline and Fall of the Pala Empire

Unit 14: Minor Independent Kingdoms during the Pala Period: I. The Chandras; II. The Varmans

Module 5: The Senas

Unit 15: The Origin of the Sena Kings

Unit 16: The Sena Kings: I. Samantasena, II. Hemantasena, III. Vijayasena, IV. Vallalsena, V. Lakshmanasena

Unit 17: The Successors of the Lakshmanasena

Module 6: Administration, Economy, Society

Unit 18: Overview of the Administration: Basic Features and Evolution

Unit 19: The Condition of Economy and Social Formation

Unit 20: Bengali Society: I. Literature; II. Cultural Pattern; III. Religious Tradition

References

R. C. Majumdar (ed.), History of Bengal, Vol I, Hindu Period, B. R. Publications, 1943

A.Bhattacharyya, Historical Geography of Ancient and Early Medieval Bengal, Calcutta: Sanskrit Pustak Bhandar, 1977.

A.Maitreya, Gauda Lekhamala (Rajshahi)

Barry.M.Morrison, Political Centers and Cultural Region in Early Bengal, Arizona: University of Arizona Press, 1970.

B.N.Mukherjee, Coins and Currency System of Early Bengal, Calcutta, Progressive Publishers, 2000.

……., Coastal and Overseas Trade in Pre-Gupta Vanga and Kalinga.

B.C.Sen, Some Historical Aspects of the Inscriptions of Bengal, Calcutta 1942

D.C.Sircar, Epigraphic Discoveries In East Pakistan, Calcutta,1973

……., Pal-Purba Yuger Vangshanucharita, Calcutta,1985

……,Pal-Sen Yuger Vangshanucharita, Calcutta,1982

Niharranjan Ray, Bangalir Itihas, Adi Parba (in Bengali), 3rd revised edition, Calcutta: Paschimvanga Niraksharata Durikaran Samiti, 1980

R.C.Majumder, History of Ancient Bengal, Calcutta, G.Bharadwaj and Co., 1971.

Rakhaldas Bandyapadhyaya, Bangalar Itihas: first edition, Calcutta

Ranabir Chakravarti, 'Maritime Trade and Voyages in Ancient Bengal', in Trade and Traders in Early Indian Society, New Delhi, Manohar

Paper II: EASTERN INDIA (WITH SPECIAL REFERENCE TO BENGAL): (1203/1204-1757)

Module 1: Eastern India: Political Development (1201-1575)
Unit 1: Advent of Islam in Eastern India
Unit 2: Bengal under the Mamluks (1227-87)
Unit 3: Bengal under Ilyas Shahi Dynasty
Unit 4: Bengal under Husain Shahi Dynasty
Unit 5: Afghan Rule in Bengal

Module 2: Eastern India: Political Development (1575 – 1757)
Unit 6: Mughal Conquest of Bihar and Bengal
Unit 7: Bengal under Jahangir and Shah Jahan
Unit 8: Bengal under Aurangzeb
Unit 9: The Rise of Murshid Quli Khan
Unit 10: The Development of Nawabi Bengal as a Regional Power
Unit 11: Bengal under Siraj-ud-daulah
Unit 12: The Battle of Plassey (1757): Impact

Module 3: Medieval Bengal: Economy and Society
Unit 12: The Medieval Agrarian Structure: Evolution of the Zamindar Class and Talukdari System; Peasant Society and Process of Peasantization
Unit 13: The Economy: Indigenous Trade and the Role of the Foreign Companies
Unit 14: Urbanization in Medieval Bengal
Unit 15: Society and Literature: An Overview

Module 4: Medieval Eastern India: Religion and Culture
Unit 17: Religious Traditions
Unit 18: Sufism in Bengal
Unit 19: Rise and Growth of Vaishnavism: The Bhakti Cult
Unit 20: The Jagannatha Cult: Formation, Features and Impact

References

Jadunath Sarkar (ed.), A History of Bengal, Muslim Period, Vol II, 1948
R M Eaton, The Rise of Islam and the Bengal Frontier, Berkeley, 1996
Tapan Raychaudhuri, Bengal under Akbar and Jahangir: An Introductory Study in Social History, New Delhi, 1969
Asim Roy, The Islamic Syncretistic Tradition in Bengal, Princeton, 1983
Anjali Chatterjee, Bengal in the Reign of Aurangzeb, 1658-1707, Calcutta, 1967
Kalikinkar Datta, Alivardi and His Times, Calcutta, 1939
Atul Chandra Roy, History of Bengal: Mughal Period, 1526-1765, Calcutta, 1968
Sirajul Islam, History of Bangladesh, 1704-1971, Vol 1,2,and 3, Dhaka, 1992

Suniti Kumar Chatterjee, The Origin and Development of Bengali Language, Vol 1,2 and 3, Calcutta, 1975

গোলাম মুরশিদ, হাজার বছরের বাঙালি সংস্কৃতি, ঢাকা, ২০০৬

কালীপ্রসন্ন বন্দ্যোপাধ্যায়, মধ্যযুগে বাঙ্গলা, কলকাতা, ২০০২

আবদুল করিম, বাংলার ইতিহাস, সুলতানী আমল, ঢাকা, ২০০৭

Paper III: EASTERN INDIA (WITH SPECIAL REFERENCE TO BENGAL): (1757-1947)

Module 1: Ecology and Demography
Unit 1: Ecology and Demography

Module 2: Transition towards Colonialism and Foundation of Colonial State
Unit 2: Consolidation of Colonial Rule

Module 3: Colonialism and the Economy
Unit 3: Colonialism and Agrarian Social Structure
Unit 4: Colonialism, Trade and Industry

Module 3: Social and Cultural Development
Unit 5: The Spread of English Education
Unit 6: The Rise of Middle Class
Unit 7: Socio-Religious Reform Movements
Unit 8: The Bengal Renaissance: Issues and Interpretations

Module 4: Political Development: Colonialism Challenged
Unit 9: Growth of Nationalist Consciousness and Nationalism
Unit 10: Colonialism Challenged – The Institutional Approach
Unit 11: Colonialism Challenged – The Revolutionary Approach
Unit 12: Colonialism Challenged – The Subaltern Approach

Module 5: Political Development: The Other Sides
Unit 13: Communalism or 'Different Nationalisms'? The Debate
Unit 14: The Forging of Class Consciousness I: Trade Union Movement and Working Class Consciousness
Unit 15: The Forging of Class Consciousness II: Krishak Sabha and Peasant Movements
Unit 16: The Caste Question and Politics of Depressed Social Classes: The Alternative Vision
Unit 17: The Women Movement and Gender Question: Struggle for Equality and Liberation

Module 6: Towards the End of Colonialism
Unit 18: Society at Crossroads and Crisis: War and Famine
Unit 19: The Communal Politics in Late Colonial Bengal
Unit 20: Partition and Independence: A New Society?

References

Sirajul Islam, History of Bangladesh, 1704-1971, Vol 1,2,and 3, Dhaka, 1992

Sugata Bose: Peasant Labour and Colonial Capital: Rural Bengal since 1770, CUP, 1993
Sugata Bose and Ayesha Jalal, Modern South Asia: History, Culture and Political Economy, New Delhi, OUP, 1998.
Sugata Bose, Agrarian Bengal, 1919-1947, New Delhi, 1987
Ratnalekha Ray, Change in Bengal Agrarian Society, Manohar, 1979
Joya Chatterjee, Bengal Divided: Hindu Communalism and Partition, 1932-1947. CUP, 1994
Joya Chatterjee, The Spoils of Partition: Bengal and India, 1947-1967, CUP, 2007
Sabyasachi Bhattacharya, The Defining Moments in Bengal, 1920-1947, OUP, 2014
Rafiuddin Ahmed, The Bengal Muslims, 1871-1906, A Quest for Identity, Delhi, 1981
Sekhar Bandyopadhyay, Caste, Politics and Raj: Bengal, 1872-1937, Calcutta, 1990
Sekhar Bandyopadhyay, Caste, Culture and Hegemony: Social Dominance in Bengal, New Delhi, 2004
Sekhar Bandyopadhyay (ed.), Bengal: Rethinking History: Essays in Historiography, Manohar, 2001
Meredith Borthwick, The Changing Roles of Women in Bengal, 1844-1905
Partha Chatterjee, Bengal: The Land Question, 1920-47, Kolkata, 1984
J.H. Broomfield, Elite Conflict in Plural Society: Twentieth Century Bengal, Berkeley, 1968
Semanti Ghosh, Different Nationalism: Bengal, 1905-1947, OUP, 2017
Kamruddin Ahmed, A Social History of Bengal, Dhaka, 1970
Nilesh Bose, Recasting the Region: Language, Culture and Islam in Colonial Bengal, OUP, 2014
Leonard A. Gordon, Bengal: The Nationalist Movement, 1876-1940
Harun-or Rashid, The Foreshadowing of Bangladesh: Bengal Muslim League and Muslim Politics, 1936-47, Dhaka, 1987.
Sumit Sarkar, The Swadeshi Movement in Bengal, 1903-8, Delhi, 2010
Shila Sen, Muslim Politics in Bengal, 1937-47, Delhi, 1976
Dipesh Chakrabarty, Rethinking Working-Class History: Bengal, 1890-1940, Princeton University Press, 1989.

Paper IV: MAKING OF CONTEMPORARY INDIA

Module 1: Towards Independence and Emergence of the New State

Unit 1: Government of India Act 1935; Working of the GOI Act
Unit 2: Negotiations for Independence and Popular Movements
Unit 3: Partition: Riots and Rehabilitation

Module 2: Making of the Republic: The Constituent Assembly

Unit 4: Drafting of the Constitution: Framing of Indian Constitution - Constituent Assembly – Draft Committee Report – declaration of Indian Constitution, Indian Constitution- Basic Features and Institutions
Unit 5**:** The Initial Years: Process of National Consolidation and Integration of the Indian States – Role of Sardar Patel – Kashmir issue-Indo – Pak War of 1948

Module 3: Indian Democracy at Work c. 1950- 1970s

Unit 6: The Language Question: Movements for re-mapping India on linguistic lines – Formation of State Reorganisation Commission and After -- Movement against Bengal-Bihar Merger Proposal (1956) -- Currents and cross-currents on the issue of National Language/Languages for India
Unit 7: Waves of Democratic Movements: -- Food Movements (1959-1966)— Agrarian Unrest and the Outbreak of Naxalite Movement (1967 Onwards) -- Railway Strikes (1974) –Civil Rights movements (1974-75)
Unit 8: Region and Regional Identity Formation: Movements for autonomy and Statehood –Trends toward Separatism and Growing Insurgencies – Second round of State Reorganisation in North East India -- Birth of 'Seven Sisters' –Growing upsurge of regional political forces and emergence of regional political parties.
Unit 9: Caste in Indian Democracy –Colonial-post colonial continuum – Caste and Politics in Post-colonial India – Caste-based polarizations in different regions -- Formation of 'Dalit' identity
Unit 10: Religion in Indian Democracy: Communal Politics and Hindu-Muslim Relations in Independent India
Unit 11: Electoral Politics and the Changing Party System: Developments since Fourth General Election –Gradual disintegration of one-party dominance and beginning of coalition experiments – 'United Front' experiments in West Bengal – Emergence of 'Parliamentary Communism' – Rise of Regional Political Parties – Coalition era in Indian Politics
Unit 12: Nation in Crisis: Proclamation of Emergency and its consequences; Fall of the Congress in 1977 and the Reorientation of the Indian Politics – 42nd and 44th Constitutional Amendments and Aftermaths
Unit 13: Regional Experiences: India and the World -- Nonaligned movement – India and her Neighbours – Indo-China Border Conflict (1962) -- Indo-Pak rivalry over 'Kashmir' Issue -- India's Role in the 'Liberation War of Bangladesh' — Indo-Nepal Treaty (1950) and its multifarious consequences.

Module 4: Economy Society and Culture c 1950-1970s

Unit 14: The Land Question I: Agrarian Structure of Post-Colonial India
Unit 15**:** The Land Question II: Agrarian Relations and Class Struggle
Unit 16: The Planned Economy: State and the Political Economy of Development
Unit 17: Industry and Labour: Capital and Trade Union Movements
Unit 18: Science, Education (The Government Policy and Institutional Developments) and Cultural Trends (Institutions and Ideas, Literature, Media, Arts)
Unit 19: The Women's Question: Movements and Legislation
Unit 20: The Crisis of Environment and Ecology and the Protest from the Margins

References

Ramchandra Guha, India after Gandhi: The History of World's Largest Democracy, Picador, 2012
Granville Austin, Indian Constitution: Cornerstone of a Nation, OUP, 2011
Francine Frankel, India's Political Economy, 1947-2004, New Delhi: Oxford University Press, 2006.
Paul Brass, The Politics of India Since Independence, Cambridge: Cambridge University Press, 1994.
Sekhar Bandyopadhyay, Decolonization in South Asia: Meanings of Freedom in Post-Independence West Bengal, 1947-1952, Routledge, 2009
Sekhar Bandyopadhyay (ed), Decolonisation and the Politics of Transition in South Asia, Orient BlackSwan, 2016
Pranab Bardhan, The Political Economy of Development in India, OUP, 1984
Dipesh Chakrabarty and Others (Eds.), From the Colonial to the Postcolonial: India and Pakistan in Transition, OUP, 2007
Bipan Chandra and Others: India after Independence, Penguin, 1999
Joya Chatterjee, The Spoils of Partition: Bengal and India, 1947-1967, CUP, 2007
G.D. Overstreet and M. Windmiller, Communism in India, California University Press, 1959
M. Fisher and J. Bondurant (eds.), Indian Experience with Democratic Elections, University of California Press, 1956
A.H. Hanson, The Process of Planning: A Study of India's Five-Year Planning, 1950-1964, Clarendon Press, 1966
Christophe Jaffrelot, India's Silent Revolution: The Rise of the Lower Caste in North India, Columbia University Press, 2002

Paper V: MAKING OF CONTEMPORARY WORLD

Module 1: Colonialism and Nationalism

Unit 1 - Colonialism and Nationalism: Definition and Different Interpretations
Unit 2- Decolonization: Different Theories, Causes, Regional Variation with special importance on Asia and Africa
Unit 3- Impact of Decolonization and Afro-Asian Freedom Movement on International Politics
Unit 4 - Neo-Colonialism: Definition, Characteristics, Several Devices

Module 2: Aftermath of the Second World War

Unit 5 - Cold War - Definition, Different Views regarding the Origins, Characteristics, Background and onset of the Cold War, Initiation of the Cold War
Unit 6 - The Founding of the United Nations: Attempts to the lay of foundation, a synoptic view of the organisation, The Activities of the U.N.O with special emphasis on UNESCO, Comparison between League and U.N.O.
Unit 7- The Emergence of the Third World and the Non-Alignment Movement: Definition and dimension of the Third World, Origin of the Third World, Common Features of the Third World, Impact of the Cold War on the Third World, Role of the Third World in Contemporary World, Policy of the Non-Alignment and its salient features, Brief history of NAM and Contemporary relevance.
Unit 8 - Tensions in the Soviet Bloc: Stalinization and its nature, Sovietization of Eastern Europe, De-Stalinisation and its Impact on Soviet Bloc, The Prague Spring of 1968, Collapse of USSR.

Module 3

Perspectives on Development and Underdevelopment

Unit 9 - The World Division: North and South- An overview.
Unit 10 - Globalization: Background, Introduction and Characteristics features, Impact of Globalization upon Third World with special emphasis on India.
Unit 11 - Globalization and Multinational Corporation (MNC), Information Technology, Transfer of Technology– An interrelation.
Unit 12 - Globalization and 'debt trap'–Myth or Reality?

Module 4: Social Movements in the North and the South

Unit 13 - Global environmental debate and the North-South Divide
Unit 14 - Issues in the 20th Century World-Feminist Movement: Ideologies, Various Schools, Women's movement with special emphasis on India.

Unit 15 - A Brief History of Human Rights Movement, The practice of Human Rights Activism and the Role of NGOs, Various kinds of issues relating to Human Rights, Criticism

Module 5: Modernity and Cultural Transformation
Unit 16 - Aspects, Meanings and Beginnings of Modernity
Unit 17 - Cultural Themes of Modernity
Unit 18 - Media and Modernity: An interrelation
Unit 19 - Modernity, Urbanism and Modern Consumption
Unit 20 - Is Modernity a Western project- An Overview.

Essential Readings

E.J. Hobsbawm, The Age of Extremes 1994-1991, New York, Vintage, 1996.
Norman Lowe, Mastering Modern World History, London, Palgrave Macmillan, 1997.
Peter Calvocoressi, World Politics Since 1945, Pearson, 2004.
Wayne C. McWilliams and Harry Piotrowski, The World Since 1945, Lynne Rienner Publishers, London, 1997.
অমিয়কুমার বাগচী (সভাপতি) ও ঈশিতা মুখার্জী এবং অন্যান্য সম্পাদিত, বিশ্বায়ন ভাবনা-দুর্ভাবনা (প্রথম ও দ্বিতীয় খন্ড), ন্যাশনাল বুক এজেন্সি প্রাইভেট লিমিটেড, কলকাতা, ২০০২।
রাধারমণ চক্রবর্তী ও সুকল্পা চক্রবর্তী, সমসাময়িক আন্তর্জাতিক সম্পর্ক, প্রগতিশীল প্রকাশক, কলকাতা, ২০০৬।
C. Rajkumar and K. Chocklingam(ed.), Human Rights, Justice and Constitutional Empowerment, New Delhi, OUP, 2007.
David Arnold and Ramchandra Guha (ed.), Nature, Culture, Imperialism, New Delhi, OUP, 1995.
Ramchandra Guha, Environmentalism: A Global History, New Delhi, OUP, 2000.
A. Giddens, The Consequences of Modernity, Cambridge, England, Polity Press, 1990.
Malcolm Waters (ed.), Modernity: Critical Concepts, vol.1, Routledge, 1999.
Stuart Hall and others (ed.), Modernity: An introduction to modern societies, Polity Press, 1995.
Nivedita Menon (ed.), Gender and Politics in India, New Delhi, OUP, 1999.
V. Geetha, Gender, Calcutta, Stree, 2002.
Radha Kumar, The History of Doing, New Delhi, Kali for Women, 1998.

SYLLABUS OF BDP POLITICAL SCIENCE PROGRAMME

Under Choice Based Credit System

CORE COURSE

CORE COURSE – I

Introducing Political Theory

Block: I

Unit-I : What is Politics: Theorizing the 'Political'

Unit-2 : Traditions of Political Theory: Liberal Theory

Unit-3 : Marxist Theory

Unit-4 : Anarchist Theory

Unit-5 : Conservative Theory

Block: II

Unit-6: Approaches to Political Theory: Normative Approach & Historical Approach

Unit-7: Approaches to Political Theory: Empirical Approach

Unit-8: Critical and Contemporary Perspectives in Political Theory: Feminist

Unit-9 : Critical and Contemporary Perspectives in Political Theory: Postmodern

Unit-10: Critical and Contemporary Perspectives in Political Theory: Post-Colonial

Block: III

Unit-11: Democracy: The history of an idea - Classical and Modern Democracy

Unit-12 : Debates on Democracy

Unit-13: Forms of Democracy: Liberal and Socialist

Unit-14: Procedural Democracy; Critique of Procedural Democracy

Unit-15 : Deliberative Democracy: An idea/ Concept, Characteristics and forms of Deliberative Democracy

Block: IV

Unit-16 : Models of Democracy

Unit-17: Participation

Unit-18: Representation-Forms of representation

Unit-19: Fractional

Unit-20: Territorial

CORE COURSE - II

Constitutional Government and Democracy in India

Block: I

Unit-I : Historical Background of the Constitution

Unit-2 : The Preamble

Unit-3 : Features of the Constitution

Unit-4 : Fundamental Rights

Unit-5: Directive Principles of State Policy

Block: II

Unit-6 : The Legislature: Parliament: House of the people.

Unit-7 : Legislative Procedure - Types of Bill, Law making, procedure, Committee System, Speaker.

Unit-8: The Executive: President

Unit-9 : Prime Minister

Unit-10 : Council of States

Block: III

Unit-11 The Judiciary: Supreme Court High court, Judicial Activism

Unit-I2: Federalism: Meaning, Nature of Indian Federation.

Unit-13: Division of Powers- Constitutional Provisions

Unit-14 : Emergency Provisions

Unit-15: Fifth & Sixth Schedule

Block: IV

Unit-16 : Government in states – state legislature

Unit-17 : State Executive - Chief Minister & Council of Ministers

Unit-18: Panchayati Raj : The Concept

Composition and function of Panchayati Raj in West Bengal

Unit-19: Municipal Corporations & Municipalities

Unit-20: Constitutional Amendment

CORE COURSE - 3

Paper III - Political Theory–Concepts and Debates

Block: I

Unit–I : Concept of Freedom

Unit–2 : Negative Freedom: Liberty

Unit–3: Positive Freedom: Freedom as Emancipation and Development

Unit–4 : Concept of Equality, Forms of Equality–Formal Equality; Equality of opportunity; Political equality

Unit–5: Egalitarianism: Background of inequalities and differential treatment

Block: II

Unit–6: Concept of justice

Unit–7 : Social Justice

Unit –8: Procedural Justice

Unit–9: Distributive Justice

Unit–10: Global Justice

Block: III

Unit–I1: Concept of Rights

Unit–12 : Natural Rights, Moral Rights and Legal Rights

Unit –13: Concept of Human Right

Unit–14 : Three Generations of Rights

Unit–15 : Rights and Obligations– Relation

Block: IV

Unit–16: Political Obligation and its Limits

Unit–17 : Civil disobedience

Unit–18 :Issue of cultural relativism.

Unit–19: plural society and multiculturalism

Unit–20 : Issues of toleration.

CORE COURSE - 4

Political Process in India

Block: I

Unit-I: Party System in India: History and evolution

Unit-2: Congress System

Unit-3: Multi party Coalitions

Unit-4: Regionalism and Regional Political Parties Unit-5: Major National Political Parties in India- Ideologies & Programme

Block: II

Unit-6: Voting Behavior in India - Overview

Unit-7: Caste as a determinant of voting behaviour

Unit-8: Class as a determinant of voting behaviour

Unit-9: Gender as a determinant of voting behaviour

Unit-10: Religion as a determinant of voting behaviour

Block: III

Unit-11: Politics of Secession and Accommodation

Unit-12: Secularism in India: Concept and Debates

Unit-13: Communalism in India

Unit-14: Caste in Politics

Unit-15: Politicization of Caste

Block: IV

Unit-16: Affirmative Action Policies: Women

Unit-17: Affirmative Action Policies: Class

Unit-18: Affirmative Action Policies Environment

Unit-19: Affirmative Action Policies: Caste

Unit-20: Changing Nature of the Indian State: Developmental, Welfare and Coercive Dimensions

CORE COURSE - V

Introduction to Comparative Government and Politics

Block: I

Unit-I: Comparative Politics: Nature and scope

Unit-2: Methods of Comparative Politics

Unit-3: Eurocentrism in Comparative Politics

Unit-4: Going beyond Eurocentrism

Unit-5: Recent trends in Comparative Politics

Block: II

Unit-6: Capitalism: Meaning and development Unit-7: Globalization

Unit-8: Socialism: Meaning, growth and development

Unit-9: Socialism in Practice

Unit-10: Limitations of Capitalism and Socialism

Block: III

Unit-11: Colonialism: Meaning and context

Unit-12: Forms of colonialism

Unit-13: Decolonization: Meaning and context

Unit -14: Anti-Colonialist Struggle

Unit -15: Process of decolonization

Block: IV

Unit -16 Political & Constitutional development of Britain, Brazil, Nigeria & China.

Unit -17 Major changes in the economy of Britain, Brazil, Nigeria & China.

Unit -18 Major political institutions of Britain, Brazil, Nigeria & China.

Unit -19 Party and Party system in Britain, Brazil, Nigeria & China.

Unit -20 Civil society in Britain, Brazil, Nigeria & China.

CORE COURSE - VI

Perspectives on Public Administration

Block -I

Unit-I: Public Administration: Nature and Scope

Unit: 2: Significance of Public Administration as a discipline

Unit-3: Public and Private Administration

Unit-4: Evolution of Public Administration

Unit-5: Public Administration in a Globalized era

Block -II

Unit-6: Classical Theory- Meaning and Significance

Unit-7: Scientific Management (F.W. Taylor)

Unit-8: Administrative Management (Gullick Urwick and Fayol)

Unit-9: Bureaucracy: Marx

Unit-10: Ideal-type Bureaucracy (Max Weber) Post Weberian model of bureaucracy

Block -III

Unit-11: Neo Classical Theory-Meaning and Significance

Unit-12: Human relations theory (Elton Mayo)

Unit-13: Rational decision-making (Herbert Simon)

Unit-14: Ecological approach (Fred Riggs)

Unit-15: Innovation and Entrepreneurship (Peter Drucker)

Block -IV

Unit-16: Public Policy: Concept, relevance and approaches

Unit-17: Public Policy: Formulation, implementation and evaluation

Unit-18: Nature of Policy Cycle

Unit-19: New Public Administration

Unit-20: New Public Management

CORE COURSE - VII

Perspectives on International Relations and World History

Block –I

Unit–I: Nature of Scope of International Relations

Unit–2: History and IR: Emergence of the International State System

Unit–3: Pre–Westphalia

Unit–4: Westphalia to Second World War

Unit –5: Post–Westphalia

Block –II

Unit–6: Classical Realism

Unit–7: Neo–Realism

Unit–8: Marxist Approaches

Unit–9: Feminist Perspectives

Unit–10: Eurocentrism and Perspectives from the Global South

Block –III

Unit–I1: World War I: Causes and Consequences

Unit–12: Bolshevik Revolution & its significance.

Unit–13: The Rise of Fascism /Nazism

Unit–14: World War II: Causes and Consequences

Unit–15: Cold War: Different Phases

Block –IV

Unit–16: Crisis in Socialist Block and Collapse of the USSR

Unit–17: Post Cold War Developments and emergence of other Centers of Power

Unit–18: The emergence of the Third World

Unit –19: Developments International Relations since 9/11

Unit–20: Rise of Islam and its impact in International Relations

CORE COURSE - VIII

Political Processes and Institution

Block - I

Unit-I : Major Approaches: Behavioral and Political Economy

Unit-2 : System Approach and Structural Functional Approach

Unit-3 : Institutionalism

Unit -4: New Institutionalism

Unit-5 : Contemporary Approach-Postmodern and Feminist

Block - II

Unit-6: Election System: Definition and procedures

Unit-7: Types of election system- Hare and List System

Unit-8: First Past the Post Representation

Unit-9: Proportional Representation

Unit-10: Mixed Representation

Block - III

Unit-11: Historical contexts of emergence of the party system

Unit-12: Types of party system: Bi-Party system USA & UK

Unit-13: Uniparty System: China

Unit-14: Multi party: France

Unit-15: Party system in post-Communist Society

Block - IV

Unit-16: Nation state - Meaning; Historical evolution of nation states in West and in the East.

Unit-17: Post colonial context of 'Nation' & 'State'debate

Unit-18: Process of democratization in post authoritarian and post-communist countries

Unit-19: Historical context of Federation & Confederation

Unit-20: Debates around territorial division of Power.

CORE COURSE - IX

Public Policy and Administration in India

Block - I

Unit-I : Definition, characteristics and models of public policy

Unit-2 : Public Policy Process in India

Unit-3 : Meaning, significance Approaches and Types of Decentralization

Unit-4 : Local Self Government in India : Rural

Unit-5 : Local Self Government in India : Urban

Block - II

Unit-6 : Concept and Significance of Budget

Unit-7: Budget Cycle in India

Unit-8 : Various Approaches of Budgeting

Unit-9 : Types of Budgeting

Unit-10: Role of Finance Ministry in the framing of a budget

Block - III

Unit-11: Public Service Delivery

Unit-12: Redressal of Public Grievances: RTI,

Unit-13: Lokpal

Unit-14: Citizens' Charter

Unit-15: E-Governance

Block - IV

Unit-I6: Social Welfare: Concept and Approaches

Unit-17: Social Welfare Policies: Right to Education

Unit-18: Social Welfare Policies: National Health Mission

Unit-19: Social Welfare Policies: Right to Food Security

Unit-20: Social Welfare Policies: MNREGA

CORE COURSE - X

Global Politics

Block: I

Unit-I: Understanding Globalization

Unit-2: Alternative Perspectives of Globalization

Unit-3: Global Economy: Its Significance and Anchors of Global Political Economy: IMF

Unit-4: Global Economy: Anchors of Global Political Economy: World Bank

Unit-5: Global Economy: Anchors of Global Political Economy: WTO, & Transnational Corporation

Block: II

Unit-6: Political Dimension of Globalization

Unit-7: Cultural dimension of Globalization

Unit-8: Technological Dimension of Globalization

Unit-9: Global Social Movements

Unit -10: Global Resistances: Role of NGO

Block: III

Unit-11: Gender issues and Global Politics

Unit -12: Ecological Issues: Historical Overview of International Environmental Agreements

Unit-13: Ecological Issues: Climate Change,

Unit-14: Ecological Issues: Global Commons Debate

Unit-15: Proliferation of Nuclear Weapons

Block: IV

Unit-16: International Terrorism: Non-State Actors and State Terrorism

Unit-17: International Terrorism: Post 9/11 development

Unit-18: Human Security

Unit-19: Migration

Unit-20: Global Shifts: Power and Governance

CORE COURSE - XI

Classical Political Philosophy

Block-I

Unit-I: Plato: Justice

Unit-2: Plato: Communism

Unit-3: Plato: Women and Guardianship

Unit-4: Aristotle: State and Citizenship

Unit-5: Aristotle: Forms of Government

Block-II

Unit-6: St. Thomas Aquinas: Church- state controversy

Unit-7: Machiavelli - Secularism

Unit-8: Machiavelli- Morality and Statecraft

Unit-9: Machiavelli- Republicanism

Unit-10: Significance of Machiavelli's thought

Block-III

Unit-11: Hobbes on human nature

Unit-12: Hobbes- Social Contract

Unit-13: Hobbesian State

Unit-14: Hobbesian method

Unit-15: Significance of Hobbesian theory

Block-IV

Unit-16 : Social Contract

Unit-17: Natural Rights

Unit-18: Right to Resistance

Unit -19: Justification of Property

Unit-20: Locke as a theorist of Liberalism

CORE COURSE -XII

Indian Political Thought-I

Block-I

Unit-I: Ancient Indian Poliical Thought-An Overview

Unit-2: Nature of Ancient Indian Polity and Institutions.

Unit-3: Concept of Dharma in Indian context

Unit-4: Brahmanic Tradition

Unit-5: Shantiparva

Block-II

Unit-6: Manu-Social laws

Unit-7: Kautilya- Spatanga Theory

Unit-8: Kautilya - Dandaniti

Unit-9: Kautilya - Diplomacy

Unit-I0: Shramanic Tradition

Block-III

Unit-11: Theravada Buddhism: An Introduction

Unit-12: Society and State in Theravada Buddhism (Digha Nikaya)

Unit-13: Islamic Tradition in India- Historical background

Unit-14: Medieval Political Thought-An overview

Unit-15: Barni - Legitimacy of Kingship

Block-IV

Unit-16: Barni- Ideal Polity

Unit-17: Abul Fazl- Monarchy

Unit-18: Sufism- Major Ideas

Unit-19 : Syncretism in Islam in the Mughal period

Unit-20 : Islamic Institutions

CORE COURSE - XIII

Modern Political Philosophy

Block-I

Unit-I: Idea of Modernity

Unit-2: Rousseau: Theory of Contract

Unit-3: Rousseau: General Will

Unit-4: Rousseau: Direct Democracy

Unit-5: Rousseau's Romanticism: an evaluation

Block-II

Unit-6: Mary Wollstonecraft: Women and Paternalism

Unit-7: Mary Wollstonecraft: as a critic of Rousseau's idea on education

Unit-8 : Mary Wollstonecraft: On Legal rights

Unit-9 : J.S.Mill: Doctrine of Utilitarianism

Unit-I0 : J.S.Mill : On Liberty

Block-III

Unit-11 : J.S.Mill: On Suffrage

Unit-12 : Karl Marx : On Alienation

Unit-13: Dialectical Materialism

Unit-14 : Historical Materialism

Unit-15 : Marxian concept of State

Block-III

Unit-16 : Marxian concept of class and class struggle

Unit-17: Allexandra Kollontai: Winged and wingless eros

Unit-18: Allexandra Kollontai: Proletarian Women

Unit-19: Allexandra Kollontai: Socialization of Housework

Unit-20: Kollontai- Lenin differences

CORE COURSE - XIV

Indian Political Thought-II

Block-I

Unit-I : Introduction to Modern Indian Political Thought

Unit-2 : Rammohan Roy: Rights

Unit-3 : Rammohan Roy: Liberalism

Unit-4 : Vivekananda:Socialism and Ideal Society

Unit-5 : Vivekananda: Nationalism

Block-II

Unit-6: Gandhi: Sarvodaya

Unit-7 : Gandhi: Swaraj

Unit-8 : Gandhi: Satyagraha

Unit-9 : Gandhi: Trusteeship

Unit-I0 : M.N.Roy: Radical Humanism

Block-III

Unit-11 : Pandita Ramabai: Gender

Unit-12 : Jyotiba Phule

Unit-13: Ambedkar: Social Justice

Unit-14 : Gandhi-Ambedkar Debate

Unit-15 : Tagore: Critique of Nationalism

Block-IV

Unit-16 : Tagore : State and Society

Unit-17: Iqbal: Community

Unit-18 : Savarkar: Hindutva

Unit-19 : Lohia: Socialism

Unit-20 : Nehru : Secularism

SYLLABUS OF BDP POLITICAL SCIENCE PROGRAMME
Under Choice Based Credit System

Discipline Specific Elective (DSE)

DSE-I

Human Rights in a Comparative Perspective

Block: I: Human Rights: Theory and Institutionalization
Unit-I : Meaning, Nature and scope
Unit-II : Historical Development of Human Rights and Universal Declaration of Human Rights
Unit-III : Three Generation of Human Rights'
Unit-IV : Theories of Human Rights: (Natural, Liberal and Marxist Theory).
Unit-V : Human Rights and Cultural Relativism

Block: II- Human Rights: A Comparative Study (India and South Africa)
Unit-I : Constitutionalism: Civil and Political Rights
Unit-II : Constitutional Rights: Economic, Social and Cultural
Unit-III: Human Rights Movement
Unit-IV: National Human Rights Commissions.
Unit-V : Constitutional Mechanisms: Redressal and Promotion of Human Rights

Block: III- Major Issues
Unit-I : Torture: Concept, Meaning and Forms.
Unit-II : Impact of Torture on the Individual, Family and Society in the United States and India.
Unit-III : United Nations Human Rights Monitoring Mechanisms against Torture
Unit-IV : Censorship and Surveillance: Impact on Human Rights in India and China.
Unit-V : Terrorism and Insecurity of Minorities: USA and India

Block: IV- Structural Violence
Unit-I : Caste and Race: Concepts and Interrelationships in South Africa and India.
Unit-II : Caste Violence in India and Racial Discrimination in South Africa: A Comparative Study
Unit-III : Gender and Violence: India and Pakistan.
Unit-IV Women and Religion: India and Pakistan
Unit-V : Adivasi, Aboriginals and the Land Question: India and Australia.

DSE-II
Women, Power and Politics

Block: I-Feminism: Issues and Challenges

Unit-I : Patriarchy: Meaning, Nature and Forms
Unit-II: Sex-Gender Debate
Unit-III: Biologism and Social Constructivism
Unit-IV: Empowerment of Women
Unit-V: Debate over LGBT Rights

Block: II: Women and Violence
Unit-I : Public- Private Debate
Unit-II : Understanding gender violence
Unit-III Women in Family: Position of Women, Domestic violence and legal Protection
Unit-IV : Gender violence in Community
Unit-V: Gender violence and the State

Block: III -Feminisms: Different Schools
Unit-I : Liberal Feminism
Unit-II: Socialist and Marxist Feminism
Unit-III: Radical Feminism
Unit-IV: Post-Modern Feminism.
Unit-V: Ecofeminism

Block: IV -Women's movement, Rights and Work
Unit-I: Women's Movement and Women's Studies
Unit-II: Women's Movements in India
Unit-III: Women's Rights and Law in India
Unit-IV: Sex Workers and Legal Protection in India
Unit-V: Women's work and Labour

DSE- III

Understanding Global Politics

Block- I: From Nation States to system of states

Unit-I : Nation-state system: From society of states to system of states.

Unit-II : Evolution of the State system: From Westphalia to Post Treaty of Versailles

Unit-III : State system: Features, Growth and changes since World War II

Unit-IV : Sovereignty: Definition, Features and Challenges in the post-Cold War era

Unit-V: Globalization and state sovereignty

Block: II- Global Economy

Unit-I : Global Economy: Meaning, Nature and Significance,

Unit-II : Perspectives on Global Economy: Liberal and Neo Liberal, Nationalist and Marxist

Unit-III: Contemporary perspectives of political Theory: World System and Dependency theory

Unit-IV : Bretton Woods System: context and emergence

Unit-V : Transnational Economic Actors: GATT, WTO, IMF and Asian Development Bank

Block: III- Identity and Culture

Unit-I : North-South Divide: Global poverty and Inequalities

Unit-II : South-South Cooperation

Unit-III : Globalization of Culture: Consumerism, Cultural imperialism and Resistance movement.

Unit-IV : International Conflict and War: Nature and dynamics

Unit-V : Terrorism: Meaning, Forms and Impact

Block: IV: Environment and Global Civil Society

Unit-I : Environmentalism: Meaning and Significance.

Unit-II : Major global environmental issues: Global warming, Bio diversity and Resource scarcity, Globalization and Environment

Unit-III : Environmental Protection: Different initiatives
Unit-IV: Sustainable development: Issues and Debate
Unit-V: Global Civil Society: Role and emerging trends.

DSE-IV:

India's Foreign Policy in a Globalizing World

Block: I- From Post-Colonial State to an Aspiring Power.

Unit-I : Foreign Policy: Definition, Distinction with Domestic Policy.
Unit-II : India's Foreign Policy: Genesis, Principles and Objectives.
Unit-III : Determinants of India's Foreign Policy making
Unit-IV: Understanding Non-alignment in a Globalizing World
Unit-V: India as an Emerging Global Power- A Debate.

Block: II- India's Foreign Relations

Unit-I : India and USA during Cold War
Unit-II : India and USA since 1990s
Unit-III : Indo-Soviet Relations during Cold War
Unit-IV : India and Russia in the post Cold War
Unit-V : India and China: Changing Perspective

Block: III Debating Regional Strategies

Unit-I : South Asia as a Regional Entity: Geo-strategic and Geo-Political Significance.
Unit-II : Role of India in South Asia
Unit-III: India's role in SAARC
Unit-I V: Role of China in South Asia: Implications for India
Unit-V: Environmental Problem in South Asia

Block: IV Emerging Multipolar World

Unit-I : From Bipolarity to Multi-polarity
Unit-: Multipolarism: Meaning, Features and reasons for its emergence
Unit-III: China as an emergent power
Unit-IV : Asia in a multipolar World : Role and significance

Unit-V: India in a Multi-Polar World: Role and significance

DSE-V:

Understanding South Asia

Module-1 South Asia: Historical Legacy

Unit-I: India

Unit-II: Pakistan
Unit-III: Sri Lanka
Unit-IV: Nepal
Unit-V: Bhutan

Module-2 Politics and Governance

Unit-I: Indian Democracy: Nature and Trends
Unit-II: Authoritarianism in Pakistan: Politics, Governance, Recent Trends.
Unit-III: Monarchical System of Nepal: Recent Trends
Unit-IV: Constitutional debate in Bhutan
Unit-V: Military in Politics: Pakistan and Bangladesh

Module-3 Identity Politics in South Asia

Unit-I: Identity Politics in Pakistan.
Unit-II: The Chakma Identity in Bangladesh
Unit-III: Inequality and Relative Deprivation in Nepal
Unit-IV: Ethnic Crisis in Sri Lanka
Unit-V: Identity Politics and Globalization.

Module-4 Regional Issues and Challenges.

Unit-I: SAARC: Evolution, Objectives.
Unit-II: SAARC: Role in South Asia.

Unit-III: SAARC: Achievements and Failures.
Unit-IV: Terrorism: Impact on Inter-State Relations.
Unit-V: Inter-State Migration in South Asia

SYLLABUS OF BDP POLITICAL SCIENCE PROGRAMME
Under Choice Based Credit System

GENERIC ELECTIVE COURSE

Generic Elective - 1
Nationalism in India

Block – I: Approaches to the Study of Nationalism in India
Unit-I: Nationalist
Unit-II: Imperialist
Unit-III: Marxist
Unit-IV: Postcolonial Interpretations
Unit-V: An Evaluation

Block - II: Nationalist Politics and Movements
Unit-I: Reformism and Conservatism in the Nineteenth Century
Unit-II: Phases of Nationalist Movement: Liberal Constitutionalists, Swadeshi
Unit-III: Gandhi and Mass Mobilization: Non-Cooperation and Civil Disobedience
Unit-IV: Congress Socialists,
Unit-V: Communists and Radicals

Block - III: Social Movements
Unit-I: The Women's Question: Participation in the National Movement and its impact
Unit-II: Caste Question
Unit-III: Peasant Movements
Unit-IV: Tribal Movements
Unit-V: Workers' Movement

Block - IV: Towards Independence
Unit-I: Quit India Movement and INA Movement
Unit-II: Communalism in Indian Politics
Unit-III: The Two-Nation Theory
Unit-IV: Negotiations over Partition
Unit-V: Making of the Indian Constitution

Generic Elective -2
Feminism: Theory and Practice

Block I Introduction

Unit- 1: What is Feminism?
Unit-2: Sex- Gender distinction
Unit-3: Biologism and Social Constructivism
Unit-4: Public- Private Divide
Unit-5: Diaspora and Hybridity- Changing ways of representation

Block II Feminist Tradition

Unit 1: Understanding Patriarchy
Unit2: Liberal Feminism
Unit3: Socialist Feminism
Unit4: Radical Feminism
Unit-5: Eco Feminism

Block III Feminism in Practice

Unit 1: Feminism in the west
Unit2: Feminism in the Socialist countries
Unit3: Islam and Feminism in West Asia
Unit4: Social Reform Movement and the Women's question in colonial India
Unit-5: Feminism in post-independence India

Block IV Women, Law and Labour

Unit 1: Domesticity and domestic labour
Unit2: Industrialization and Women's work
Unit3: Women in peasant movement
Unit4: Women and Trade Union
Unit-5: Women, law and Property Rights

Generic Elective -3
Gandhi and the Contemporary World

Block I Life and Political Philosophy

Unit- 1: Gandhi- A brief biography
Unit-2: Ahimsa
Unit-3: Gram Swaraj and social reconstruction
Unit-4: Sarvodaya
Unit-5: Truth

Block II Satyagraha and Trusteeship

Unit- 1: Theory of Satyagraha
Unit-2: Satyagraha as an approach to conflict resolution
Unit-3: Peasant Satyagraha
Unit-4: Satyagraha: An Assessment
Unit-5: Idea of Trusteeship

Block III Gandhian Theories

Unit- 1: Critique of modern civilization
Unit-2: Gandhi and alternative development
Unit-3: Theory of State
Unit-4: Caste and Social Justice- Temple Entry Movement
Unit-5: Concept of Swadeshi

Block IV Contemporary Issues

Unit- 1: Gandhi on Women
Unit-2: Influence of Gandhi on World Reform Movements: Anti-Apartheid Movement and Pacifist Movement
Unit-3: 'Gandhigiri' – Perceptions in Popular Culture
Unit-4: Gandhi and his Critics
Unit-5: Contemporary relevance of Gandhian Thought

Generic Elective -4
Understanding Ambedkar

Block I- Introduction

Unit- 1: Life and political philosophy of Ambedkar
Unit-2: Ambedkar and Political Reforms in colonial India
Unit-3: Ambedkar's conception of Freedom and his role in Freedom struggle
Unit-4: Constitutionalism and Ambedkar
Unit-5: Ambedkar's perception of New India

Block II -Ambedkar and Indian Society

Unit- 1: Nature of Indian society
Unit-2: Caste, Adivasi and Minorities
Unit-3: Women's question
Unit-4: Dalit movement
Unit-5: Hinduism and Buddhism

Block III State and Economy

Unit- 1: Ambedkar's interpretation on land and labour
Unit-2: Ambedkar on Planning and development
Unit-3: Place of Ambedkar in Indian Economic Thought
Unit-4: Ambedkar's views on Indian Federalism
Unit-5: Ambedkar's views on Social Justice

Block IV Ambedkar in contemporary times

Unit- 1: Gandhi- Ambedkar Debate
Unit-2: Ambedkar and Ram Manohar Lohia
Unit-3: Ambedkar and Marx
Unit-4: Ambedkar and Nehru
Unit-5: Contemporary relevance of Ambedkar in Indian Thought

Generic Elective - 5
UNITED NATIONS AND GLOBAL CONFLICTS

Block- I: United Nations: Origin and Major Organs

Unit-I : A historical overview of the United Nations

Unit-II: UN Charter : Principles and Purposes

Unit-III: General Assembly: Structures, Functions and Role

Unit-IV: Security Council: Structures, Functions and Role

Unit-V : Economic and Social Council and the International Court of Justice: Structures, Functions and Role

Block: II- Specialized agencies of UNO

Unit -I: International Labour Organization [ILO]

Unit-II : United Nations Educational, Scientific and Cultural Organization [UNESCO]

Unit-III : World Health Organization [WHO],

Unit-IV: UN: United Nations Children's Fund [UNICEF],

Unit-V: United Nations High Commissioner for Refugees[UNHCR]

Block: III-UN and Major Global Conflicts

Unit-I : Korean War

Unit-II : Vietnam War

Unit-III : Afghanistan Wars

Unit-IV : Balkans: Serbia and Bosnia

Unit-V : Iraq War

Block: IV- UNO: An Appraisal

Unit-I : Peace Keeping

Unit-II : Millennium Development Goals

Unit-III : Major Programme: United Nations Environment Programme [UNEP], United Nations Development Programme [UNDP]

Unit-IV : An Evaluation

Unit-V : Reforms Proposal

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Sociology
ESO

Syllabus for NSOU
Under Choice Based Credit System (CBCS)\
2019
UGC Model Syllabus for Sociology has been adopted while framing the Syllabus Below:

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SEMESTER-1

CC-1-Introductory Sociology– I

Module I. Sociology: Discipline and Perspective

1. Thinking Sociologically
2. Emergence of Sociology.
3. Emergence of Social Anthropology
4. Sociology as a Science.
5. Sociological Imagination.
6. Sociology and Common sense.
7. Applied Sociology

Module: II: Sociology and Other Social Sciences:

8. Sociology and Social Anthropology.
9. Sociology & Psychology
10. Sociology & History
11. Sociology & Political Science
12. Sociology & Economics
13. Interrelationship among Social Sciences/ Cultural Studies

Module: III: Basic Concepts

14. Individual
15. Group
16. Associations
17. Institutions
18. Culture
19. Society
20. Social Change.

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CC-2-Sociology of India – I

Module I. India: An Object of Knowledge

1. The Colonial Discourse
2. The Nationalist Discourse
3. The Subaltern Critique

Module II. Indian Society: Concepts and Institutions

4. Caste: Concept and Critique
5. Varna & Jati
6. Jajmani system
7. Dominant Caste
8. Caste Mobility: Sanskritization
9. Agrarian Classes
10. City and urban life
11. Industry and Labor
12. Tribe: Profile and Location
13. Tribes: Culture, economy and polity.
14. Village: Structure and Change
15. Village Solidarity
16. Kinship: Principle and Pattern
17. Religion and Society
18. Religion as an institution
19. Relation between Magic, Science and Religion
20. Religion and Globalization/Social Conflict

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SEMESTER-2

CC-3: Introduction to Sociology II

Module I: On the Plurality of Sociological Perspective
1.The Nature and Task of Sociological Perspectives
Module II. Functionalism
2. General arguments;
3. Contributions of Parsons and Merton;
4. Critical Overview.
Module III. Interpretive Sociology
5. General Arguments;
6. Contributions of Weber
Module IV: Conflict Perspective
7. General Arguments;
8. Contributions of Dahrendorf
9. Contributions of Coser
10. Critical Overview
Module V: Exchange Theory
11. Basic Arguments.
12. Contributions of Homans &Blau: Critical Appraisal.
Module VI: Structuralism
13. General arguments
14. Contributions of Levi-Strauss
Module: VII: Interactionism
15. General Arguments
16. Contributions of Mead
17. Contributions of Blumer
18. Critical Overview
Module VIII: Feminist Perspective
19. General Arguments;
20. Stages of Development of Feminism;
21. Varieties of Feminist Sociology.

CC-4-Sociology of India – II

Module I: Ideas of India

1. Gandhi and Ambedkar
2. Gandhi on Harijan
3. Ambedkar: Dalit &Hindu Society
4. Indological and Ethnographic Approaches

Module II: Resistance, Mobilization and Change

5. Dalit Politics
6. Changing Nature of Dalit Politics: Caste & Religious Minorities.
7. Scheduled Castes, Other Backward Classes & Minorities.
8. Mobility and Change in Rural and Urban India
9. Middle Class Phenomenon: Role & Significance
10. Women's Movement: Chipko and Gulab Gang
11. Peasant Movements: Tebhaga and Naxalbari/Farmer's Movement
12. Ethnic Movements: Pre and Post
13. Disaster management: Man-Made (Bhopal Disaster) and Physical (Tsunami).

Module III: Challenges to Civilization, State and Society

14. Communalism: Factors
15. Communalism: Control measures
16. Secularism: Concept/Definition
17. Secularism and its Challenges
18. Nationalism: Concept, Growth and Challenges
19. Regionalism: Issues and Challenges
20. Terrorism: Causes and Consequences

CC-5-Political Sociology

Module I:Contextualising the study of Politics

1. Political Sociology: Emergence, Nature and Scope

Module II: Basic Concepts

2. Power and Authority: Meaning and Types of Influence.
3. Power Distribution and Resistance.
4. State, Governance and Citizenship
5. Citizenship and Rights
6. Civil Society
7. Elites and the Ruling Classes: Nature and Types

Module III: Political Systems

8. Segmentary: Meaning and Characteristics
9. Totalitarian: Meaning and Characteristics
10. Democratic: Meaning and Characteristics.

Module IV: Everyday State and Local Structures of Power in India:

11. Caste, Class and Patriarchy.
12. Local Governance: Panchayat System and Municipalities.

Module V: Culture and Power

13. Political Culture---Classification: Civic Culture.
14. Power---Forms of Power.

Module VI: Socialization, Participation and Development.

15. Political Socialization: Agencies.
16. Interest Groups and Pressure Groups
17. Political Party
18. Military in Politics.
19. Political Participation and Electoral Process----Voting Behavior.
20. Political Change and Development

CC-6-Sociology of Religion

Module. I: Social and Religious
1. Formulating Religious
2. Asceticism and Accumulation
3. State, Religion and Emancipation
4. Religious and Solitude
Module II: Elements of Religious
6. Sacred, Myth, Ritual
7. Totemism
8. Rationality
Module III: Techniques of Religious
9. Prayer
10. Craft
11. Body
Module IV: Religion and Society:
12. Social Functions of Religion: Contemporary Trends
13. Religious Charisma: The Sociology of the Religious Sects
14. Religious Congregations and their Social Role.
15. The Religious Ideas
16. Religious Fundamentalism
17. Religious Pluralism
18. Diversity in Religion and Identity: Class, Caste and Gender.
19. Religion and the State
20. Religion and Politics
21. Religion and Public Welfare.

CC-7-Sociology of Gender and Sexuality

Module I:

Module I: Gender as a Social Construct

1. Gendering Sociology: An Overview
2.Gender, Sex and Sexuality
3. Gender Stereotyping and Socialization
4. Gender in Modern Bengali Literature: Tagore and Mahashweta Devi.
5. Production of Masculinity and Femininity

Module II: Gender: Differences and Inequality

6. Gender Discrimination and Patriarchy
7. Family, Work: Sites of Inequality
8. Class and Caste: Sites of Inequality
9. Third Gender
10. Sexual Violence

Module III: Gender, Power and Resistance

11. Power and Subordination
12. Resistance and Movements
13. Gender and the State
14. Women in the Labour Market
15. The Feminist Movements in Bengal: Connections with the Global

Module IV: Gender and the Mass Media

16. Projection of Gender in the Mass Media: (Print and Electronic)
17. The Evolution of Images of Gender and Sexuality in Hindi cinema.
18. Social Media and the Changing Femininity
19. Regionalism and the Feminist Perspectives: The case of Bengali Cinemas
20. Gender and Advertisement: (Print and Electronic)

SEMESTER-4

CC-8-Economic Sociology

Module I: Perspectives in Economic Sociology

1. Formalism and Substantivism
2. New Economic Sociology

Module II: Forms of Exchange

3. Reciprocity and Gift
4. Exchange and Money

Module III: Systems of Production, Circulation and Consumption

5. Hunting and Gathering
6. Domestic Mode of Production
7. Feudalism
8. Capitalism
9. Socialism
10. Peasant and the Land Revenue System in India.
11. Land Reforms in India.
12. Rural Indebtedness and Suicide of Farmers
13. Mode of Production Debate.

Module IV: Some Contemporary Issues in Economic Sociology

14. Development and Under-development: Rostow, Frank and Wallerstein
15. Globalisation and the Third World: Education, Health and Migrant Labour.

Module V: Economy and Culture

16. Sociology of Economic life: Principal Perspectives.
17. Economic Institutions: Division of Labour, Property & Market.
18. Economy as a Social System:Max Weber & Talcott Parsons.
19. Modernisation and Development
20. Globalisation, Culture and Culture Industry.

CC-9-Sociology of Kinship
Module I. Introduction:
1. Descent
2. Consanguinity,
3. Filiation
4.Incest Taboo
5. Affinity
6. Family
7.Residence
Module II: Approaches:
8. Descent
9. Feminist and Gendered approach to Kinship.
Module III: Family, Household and Marriage
11.Changing Structure and Functions of Marriage
12. Family and Household
13. Types of Family: Extended, Joint, Nuclear and single parent family.
14. Changing Structures and Functions of Family: Future of Family.
15. Choice and Regulations in Marriage.
Module IV: Re-Casting Kinship
15. Relatedness: Types of Kin Relationships: Lineal and Collateral.
16. Kinship and Gender
17. Marriage Migration
18. Re-imagining Families: Lesbian, Gay, Bisexual, Transgender and Queer and Live-in Relationships.
19. New Reproductive Technologies
20. Newer Ties of Kinship: Adoption and Surrogacy.

CC-10-Social Stratification

Module I: Introducing Stratification:

1. Meaning and Forms

Module II: Theories of Stratification

2. Marx: Class
3. Max Weber: Class, Status and Power
4. Functionalism: Talcott Parsons and Robert K. Merton
5. Functionalism: Davis and Moore.
6. Neo-Functionalism: Jeffry Alexander
7. Pierre Bourdieu: Social Capital
8. Feminist Theory: Patriarchy

Module III: Identities and Inequalities

9. Caste
10. Race: Prejudice and Discrimination
11. Ethnicity.
12. Linguistic Groups
13. Feminism and Gendered Stratification

Module IV: Mobility and Reproduction

14. Meaning, Forms and Nature
15. Institutionalised Practices: Education

Module V: Migration and Inequality

16. Migration: Forms and causes
17. Refugees and Immigrants
18. Development Induced Displacees
19. Women, Children and Migration.
20. Migration and State.

SEMESTER 5

CC-11-Sociological Thinker I

Module I: Origin & development of sociology as a distinct discipline
1 Enlightenment
2. French and American Revolutions.
3. Industrial Revolution.
4. Contributions of Montesquieu
5. Contributions of St. Simon
6.Auguste Comte: Positivism
7.Law of Three Stages
Module II: Karl Marx
8.Materialist Conception of History
9.Capitalist Mode of Production
10.Alienation
Module III: Max Weber
11.Social Action
12.Ideal Types
13.Religion & Economy
14.Bureaucracy
Module IV: Emile Durkheim
15.Methodology: Social Fact
16.Collective Conscience and forms of law
17.Individual & Society: Division of Labour
18.Sacred and Profane
19.Totemism
20.Suicide

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CC-12-Research Methods – I

Module I: The Logic of Social Research

1. Relationship between Theory and Research
2. Concept, Conceptualization and Operationalization
3. Hypothesis
4. Objectivity and Reflexivity

Module II: Methodological Perspectives I

5. The Positivist Method
6. Interpretative Method
7. Humanist Method

Module III: Methodological Perspectives II

8. The Comparative Method
9. Feminist Method

Module IV: Research Design and Data

10. Research Design
11. Steps of Research Design

Module V: Tools and Techniques of Data Collection

12. Types of Data
13. Observation
14. Questionnaire
15. Interview

Module VI: Modes of Enquiry

16. Quantitative Research
17. Qualitative Research
18. Analyzing Data: Quantitative and Qualitative
19. The Mixed Method
20. ICT in Research

CC-13-Sociological Thinkers II

Module I. Orientation to Post Classical Theories

1. Talcott Parsons: Action Systems
2. Robert Merton: Relative Functionalism

Module II: Structuralism

3. Claude Levi-Strauss

Module C. Interactionism

4. G. H. Mead
5. Blumer

Mod III: Dramaturgy

6. Goffman

Module IV. Phenomenology & Ethnomethodology

7. Phenomenology: Basic Arguments.
8. Ethnomethodology: Basic Arguments.
9. Contributions of Schutz
10. Contributions of Garfinkel.

Module V: Social Construction of Reality: Basic Arguments

11. Peter L. Berger
12. Thomas Luckmann
13. Society as Objective Reality: Institutionalization
14. Society as Subjective Reality: Socialization

Module VI: Critical Social Theory

15. Max Horkheimar
16. T.W. Adorno
17. Herbert Marcuse

Module VII: Theory of Practice

18. Pierre Bourdieu

Module G: Post-Modern Sociology

19. Basic Arguments.

20.Foucault: Power/Knowledge

21.Baudrillard: Hyper-reality.

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CC-14-Research Methods – II

Module I: Doing Social Research

1. Human Inquiry and Science
2. Paradigms, Theory, and Research
3. The Ethics and Politics of Social Research

Module II: The Structuring of Inquiry

4. Research Design
5. Reliability in Social Research
6. Validity in Social research
7. Indexes, Scales, and Typologies
8. The Logic of Sampling

Module III: Modes of Observation:

9. Experiments
10. Survey Research
11. Field Research: Ethnography
12. Unobtrusive Research
13. Evaluation Research

Module IV: Statistical Methods:

14. Levels of Measurement
15. Frequency Distribution
16. Graphical and Diagrammatic Presentation of Data
17. Measures of Central Tendency (Simple Arithmetic Mean, Median and Mode).
18. Measures of Dispersion (Standard Deviation, Variance and Covariance).
19. Writing the Research Report
20. Bibliography and Citation.

Discipline Specific Elective 01: Urban Sociology

Module I: Introducing Urban Sociology

1. Urban Sociology: Nature and Scope
2. Urban, Urbanism and the City

Module II: Perspectives in Urban Sociology

3. Ecology
4. Political Economy
5. Network
6. City as Culture

Module III: Urban Social Dynamics

7. Urban in the census
8. Urban Citizen
9. Dynamics of Urbanization in the Hill Areas

Module IV: Global Flows and Rural-Urban Connections

10. Rural-Urban Continuum
11. Public Spaces in the Globalizing Cities: Issues and Challenges

Module V: Decentralization and Urbanization

12. Directed Decentralization in Urban Spaces
13. Public Transport: The case of JNNURM.

Module VI: Crime in Urban Spaces

14. Underworld and the Police
15. Communalism and Violence in Cities: Some Case Studies.
16. Digitization and Crime.

Module VII: Movements and Settlements

17. Migration and Urbanization
18. Problems of Slums and Squatting
19. Urban Community: Attributes and Types.

Module VIII: Politics of Urban Space

20. Culture and Leisure
21. Caste, Class and Gender.

Discipline Specific Elective 02: Agrarian Sociology

Module I: Agrarian Societies and Agrarian Studies

1. Agrarian Societies
2. Agrarian Studies

Module II: Key Issues in Agrarian Sociology

3. The Agrarian Question
4. The Moral Economy
5. Agrarian Commodity Systems.

Module III: Themes in Agrarian Sociology of India

6. Labor and Agrarian Class Structure
7. Markets, Land Reforms and Green Revolution: Impact of WTO on Indian agriculture
8. Agrarian Movements
9. Agrarian Realities: Caste, Gender and Religion.

Module IV: Recent Issues in Agrarian Sociology

10. Prospects of Contract Farming and Corporate Farming
11. Genetically modified crops: Challenges.

Module V: Dispossession without Development: Neoliberal India

12. Land Grabs in Neoliberal India: Land Wars and development
13. State Funded Land Brokerage
14. The Politics of Dispossession of Land.

Module VI: Agrarian Crisis

15. Agricultural Credit and Indebtedness
16. Agrarian Transition, Agrarian Crisis and Farmers' Suicide

Module VII: Ending agrarian poverty: Some Strategies

17. India's milk revolution
18. Micro Finance: Empowering Women through Self-Help Groups
19. Computerizing Land Records for Farmers' Access
20. E-Choupals and Rural Transformation: Marketing in Rural Societies.

Discipline Specific Elective 03: Sociology of Work

Module I: Interlinking Work and Industry

1.Studying Work and Industry: Classical Approaches of Marx, Durkheim and Weber.

2.Choices, Constraints and Opportunities in Work and Society

Module II: Forms of Industrial Culture and Organization.

5. Industrialism.

6. Post-Industrial Society

7. Information Society.

8. Occupations and Professions in Industrial society.

Module III: Dimensions of work.

9. Alienation

10. Gender and Work.

11. Unpaid Work and Forced Labor.

12. Workplace of the Future.

13. Labor Market

14. Labor Union.

Module IV: Work in the Informal Sector.

15. Meaning and Definition of Informal Sector.

16. Workers in Informal Economy.

17. Displacement, Migration and work.

18. Globalization and Work.

Module V: Risk, Hazard and Disaster.

19. Child Labor.

20. Industrial Tragedies and their Social Effects: A Case Study Bhopal Gas Tragedy.

21. Man- made and Natural Disasters -- Effects on Work and Employment.

22. Government Policies and Protective Laws on Labor.

Discipline Specific Elective 04. Environmental Sociology.

Module I: Envisioning Environmental Sociology.
1 Definition & Meaning of Environmental sociology.
2 Realist Theory.
3 Constructionist Theory.
4 Realist-Constructionist Debate.
Module II: Different Approaches.
5. Treadmill of Production.
6. Ecological Modernization.
7. Risk
8. Eco-Feminism & Feminist Environmentalism.
9. Political Ecology.
Module III: Environmental Movements in India
10. History of Environmental Movements in India.
11. Recent Trends in Environmental Movements in India: Issues and Challenges.
12.Forest-based Movements--Chipko.
13.Water-based Movements-- Narmada.
14.Anti-Mining and Seeds
15. Emerging trends of Environmental Movement in India.
16. Global Warming, Policy Making & Sustainable Development in India.
Module IV: Major Environmental Issues in India.
17. Air-Pollution.
18. Water-Pollution & Ground-Water Depletion
19. Deforestation.
20. Use of Plastic & E-Waste.
21. Medical Waste Pollution & Health Risk.

Discipline Specific Elective 05: Indian Sociological Traditions

Module I: Emergence of Sociology and Recent Trends in India

1. Bhudev Mukhopadhyay: Search for Order and Harmony in Indian Society
2. Patrick Geddes: Urban Sociology.
3. Benoy Kumar Sarkar—Positivism and Sociology of Progress.
4. Lucknow and Bombay Schools: An Over-view
5. Recent trends in Indian Sociology.

Module II: Radhakamal Mukerjee

1. Personality, Society and Values.
2. Social Ecology.

Module III: D.P.Mukerji.

1. Tradition & Modernity.
2. Middle class.

Module IV: Nirmal Kumar Bose

1. Caste-Tribe Continuum
2. Calcutta: A Premature Metropolis

Module V: Irawati Karve

1. Kinship Organisation.
2. Group relations in village community.

Module VI: M N Srinivas.

1. Sanskritisation and Dominant Caste.

Module VII: Ramkrishna Mukherjee

3. Sociology of Indian Sociology
4. Village Study and Rural Class Structure
5. Family Structure in West Bengal

Module VIII: S.C.Dube

1. Indian Society--- Trends and Change.

Module IX: Leela Dube

6. Caste and Gender.

Module X: G.S. Ghurye

7. Caste & Race.
8. Sociology of Conflict & Integration.

Module XI: Andre Béteille

22. Caste, Class and Power.
23. Backward Classes in Contemporary India.

Generic Elective 01-Indian Society.

Module-I: Ideas of India: Civilization, Colony, Nation and Society

1. Dynamics of Indian Civilization: An Overview
2. Religious, Linguistic and Cultural Plurality: Unity in Diversity.
3. Great Tradition and Little Tradition.
4. Nation Building: Issues and Challenges

Module-II: Institutions and Processes

5. Village, Town and Region
6. Religion: Its functions
7. Family: Concept, Types and Functions
8. Gender: Types, Roles and Functions
9. Ethnic Groups and their Distinctions.

Module-III: Kinship and Marriage.

10. Kinship and Marriage: Meanings and Types
11. Changes in Kinship and Marriage: Nature & Factors.
12. Relevance of Marriage, Family and Kinship today.

Module-IV: Social Stratification in India

13. Varna, Caste and Jati: Changing Dimensions
14. Bourgeoisie, Working Class and Middle Class
15. Scheduled Castes, Scheduled Tribes and Other Backward Classes.
16. Religious Minorities and Ethnic groups: Issues and Problems

Module-V: Social Change

17. Social Mobility
18. Sanskritization
19. Urbanization
20. Westernization

Generic Elective 02-Population and Society

Module-I. Introducing Population Studies

1. Social Demography-Nature & Scope
2. Approaches to study of Demography

Module-II: Theories of Population

3. Pre-Malthusian theories of Population
4. Malthusian theory of Population
5. Theory of optimum Population
6. Marxist theory of Population;
7. Theory of Demographic transition.

Module-III: Population, Social Structure and Processes

8. Population Size and Growth, Population Explosion
9. Fertility and Reproduction: Determining Factors

Module-IV: Mortality, Morbidity and Health

10. Mortality – Trends, Levels and Determinants in India
11. Health, Sanitation and Morbidity: Issues and Problems.

Module-V: Migration

12. Migration: Types and Problems
13. Politics of Migration
14. Migration, Integration and Assimilation: Issues and Problems
15. Displacement and Rehabilitation: Problems and Policies

Module-VI: Population, Development and Environment

16. Population Growth, Environment and Sustainable Development: The Inter-relationship.
17. Human Development Index.

Module VII: Population Dynamics and Development

18. Population as Constraints and Resources for Development
19. Population Programmes and Policies
20. Women Empowerment: Its Demographic Consequences.

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Generic Elective 03-Gender and Violence

Module-I: Defining Gendered Violence?

1. Social Construction of Gender
2. Gender Discrimination and Inequality
3. Gender Stereotypes: Facilitators of Violence
4. Gendered Violence: Meaning

Module-II: Structural and Situated Violence

5. Caste, Gender and Violence: dynamics of power and violence
6. Structural and Situated Violence
7. Domestic Violence: Causes and Consequences
8. Divorce, Separation, Desertion and Abandonment: Basic Concepts
9. Workplace Harassment

Module-III: Sexual Violence

10. Sexual Violence: Nature and Concept
11. Rape and Molestation
12. Infanticide and Foeticide
13. Child Abuse
14. Consequences, Treatment and Prevention
15. Feminist perspective on Sexual Violence

Module-IV: Addressing Gendered Violence: Politics and Public Policy

16. Gender-Motivated and Gender Differentiated Violence
17. Policy Making Process: Gender as an Agency
18. National Laws and Policies
19. International Laws
20. Role of Civil Society.

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Generic Electives 04-Sociology of Social Movements

Module-I: Contextualizing Social Movements

1. Conceptualizing Social Movements and its Types: Old and New
2. Social Movements: Emergence and Coalescence
3. Social Movements: Bureaucratization and Decline

Module-II: Theories of Social movement

4. Marxist Theory of Social Movements
5. Collective behavior Theory
6. Relative deprivation Theory
7. Resource mobilization Theory
8. Structural Strain Theory
9. Political Process Theory

Module-III: Ideology, Participation and Mobilization: Case studies

10. Naxalbari Movement in West Bengal
11. The Women's Movement: The Manipuri Naked Women's Movement
12. Jan-Lokpal Bill: Anti-Corruption Movement of Anna Hazare.
13. Singur Movement

Module-IV: Contemporary Movements in India

14. Environmental movements in India: Chipko and Narmada Bachaon Andolan
15. Human Rights Movement
16. Farmers' Movement
17. Women's Movement
18Rights' Movement
19. Student Movement
20. LGBT Movement

Generic Elective-05-Rethinking Development

Module-I: Unpacking Development

1. Conceptualizing Development
2. Development and Underdevelopment
3. Human Development: Indicators
4. Participatory development: Gender and Development GAD; Grassroots initiatives: SHG and NGO
5. Private–Public Partnership-PPP

Module-II: Theorizing Development

6.Modernization Theory

7.Dependency Theory

8. World System Theory

9. Post-Development Theory

Module-III: Developmental Regimes in India

10. Slow Growth 1947-1974 and Moderate Growth 1975-1990: Historical overview

11. Mixed Economy and Planned Economy: Problems and Consequences

12. The New Economic Policy, 1991: Changing Growth Rate

13. Growth-Development Debate

Module-IV: Issues in Developmental Practice

14. Sustainable Development

15. Developmental Inequality: Caste, Tribe and Gender

16. Developmental Inequality: Class, Religious Minorities

17. Development: Displacement, Relocation and Rehabilitation

18. Civil Society and Public Policy on Development

19. Decentralisation of Development: Panchayat & Municipality

20. Corporate Social Responsibility CSR.

Netaji Subhas Open University

Syllabus on Public Administration inclusive of Core Courses (CC), Discipline Specific Electives (DSE) and Generic Electives (GE) segments for UG Level modelled on CBCS dispensation

Sl. No.	CC	Title
1.	1	Introduction to Public Administration
2.	II	Theories of Public Administration
3.	III	Indian Administration
4.	IV	State Administration
5.	V	Comparative Public Administration
6.	VI	Development Administration
7.	VII	Urban Local Government
8.	VIII	Rural Local Government
9.	IX	Personnel Administration
10.	X	Financial Administration
11.	XI	Public Policy
12.	XII	Welfare Administration
13.	XIII	Good Governance
14.	XIV	Contemporary Issues in Indian Administration

Sl. No	DSE	Title
1	I	Human Resource Management
2	II	Rural Develpment in India
3	III	Diaster Management
4	IV	E-Governance
5	V	Leadership and Conflict Management

Sl. No	GE	Title
1	I	Elements of Public Administration
2	II	Indian Administration
3	III	Rural Local Government
4	IV	Urban Local Government
5	V	Contemporary Issues in Indian Administration

CC : I Introduction to Public Administration

Block : I Introduction

Unit : I Public Administration : Definition : Nature and Scope
Unit : II Public and Private Administration
Unit : III Evolution of Public Administration
Unit : IV Impact of Globalization on Public Administration
Unit: V Comparative Public Administration, Development Administration, New Public Administration, New Public Management

Block : II Relationship between Public Administration and other Social Sciences

Unit : I Political Science
Unit : II Sociology
Unit : III History
Unit : IV Economics
Unit : V Psychology

Block : III Basic Concepts

Unit : I Centralization, Decentralization and Delegation
Unit : II Supervision
Unit : III Communication
Unit : IV Hierachy and Leadership
Unit : V Unity of Command, Span of Control, Line and Staff

Block : IV Society, Politics and Administration

Unit : I Politics and Administration
Unit : II Politicians and Bureaucrats
Unit : III Ministers and Civil Servants Relations : Case Studies
Unit : IV Bureaucracy and the public
Unit: V Administration and Civil Society

CC : II Theories of Public Administration

Block : I Classical Theory

Unit : I Classical Theory : Basic tenets
Unit : II Henry Fayol
Unit : III Luther Gulick
Unit : IV Lyndall Urwick
Unit : V Contributions and Limitations

Block : II Scientific Management Theory

Unit : I Origin
Unit : II Principles of Scientific Managment
Unit : III Fredrick Taylor
Unit : IV Limitations of Scientific Management
Unit : V Significance of Scientific Management

Block : III Theories of Bureaucracy

Unit : I Karl Marx
Unit : II Critique of the Marxist Theory
Unit : III Max Weber
Unit : IV Critique of Weberian Theory
Unit : V Post-Weberian development

Block : IV Human Relations and Behavioural Schools

Unit : I Elton Mayo – Human Relations Theory
Unit : II Herbert Simon – Decision Making Theory
Unit : III Socio – Psychological Theory : Maslow
Unit : IV Socio-Psychological Theory : McGregor
Unit : V Ecological Theory : F.W. Riggs

CC : III Indian Administration

Block : I Historical Background

Unit : I Indian Administration in Pre-British Era

Unit : II Indian Administration in British Era
Unit: III Indian Administration after independence : Continuity and Change
Unit : IV Role of Indian Administration in Social Development and Social Justice
Unit: V Role of Indian Administration in Economic Development

Block : II Indian Administration : Structure and Functions

Unit : I President
Unit: II Prime Minister, Council of Ministers : Power and Functions
Unit : III Role and Functios of the PMO - PM's Secretary
Unit : IV Functions of the Secretariat
Unit : V Cabinet Secretariat and the Role of the Central Secretariat

Block III Key Ministries and Commissions : Organization and Role

Unit : I Ministry of Home Affairs
Unit : II Ministry of Finance : organization and functions
Unit : III Ministry of External Affairs
Unit : IV Finance Commission
Unit : V Election Commission

Block : IV Problems of Corruption and Indian Administration

Unit : I Lokpal
Unit : II Lokayukta
Unit : III CVC
Unit : IV CBI
Unit : V Right to Information,: objectives, Information Commission – Composition and Role

CC : IV State Administration

Block : I Constitutional Framework

Unit : 1 Structure of State Administration
Unit : II Governor : As Head of State Administration
Unit : III Governor's Role as Representative of the Centre
Unit : IV Chief Minister : Power and Position
Unit : V Speaker: Role and functions

Block : II Headquarter Administration

Unit : I Structure of the Secretariat
Unit : II Functions of the Secretariat
Unit : III Relations between the Secretariat and Directorate
Unit : IV Chief Secretary : Role and Position
Unit : V CM's Secretariat

Block : III Field Administration

Unit : I Divisional Commissioner : Power and functions
Unit : II Evolution of District Administration
Unit: III Role of the District Magistrate
Unit : IV Role of the SDO
Unit : V Role of the BDO

Block : IV District Police Administration

Unit : I Organisation of the Police Administration
Unit : II Superintendent of Police : Functions and role
Unit : III DM-SP Relations
Unit : IV Police and the Public
Unit : V Issues confronting the Police Administration

CC : V Comparative Public Administration

Block : I Introduction

Unit : I Definition
Unit : II Nature and Scope
Unit : III Evolution
Unit : IV Relationship with Public Administration
Unit : V An Assessment

Block : II Theories and Models of Comparative Public Administration

Unit : I Rationale behind Theory and Model building

Unit : II Fred Riggs
Unit : III A Critique
Unit : IV F. Heady
Unit : V A Critique

Block : III Public Choice Theory

Unit : I Background
Unit : II Basic tenets
Unit : III Contributions
Unit : IV Limitations
Unit : V New Public Management

Block : IV Recent Trends

Unit : I Minnowbrook –I
Unit : II Minnowbrook –II
Unit : III Minnowbrook –III
Unit : IV Changing Agenda of New Public Administration
Unit : V Future of Comparative Public Administration

CC : VI Development Administration

Block : I Introduction

Unit : I Meaning and Scope
Unit : II Features of Development Administration
Unit : III Background of Development Administration
Unit : IV Administrative Development and Development Administration
Unit : V Development Administration – Prismatic Sala Model of Fred Riggs

Block : II Bureaucracy and Development

Unit : I Bureaucracy and Develpment dynamics
Unit : II Social background
Unit : III Role of Bureaucracy
Unit : IV Neutral vs. Committed Bureaucracy

Unit : V Technocrats vs. Bureaucrats

Block : III Problems of Development

Unit : I Problems of development in developing countries .
Unit : II Sustainable development : Meaning
Unit : III Features and Significance
Unit : IV A few case studies
Unit : V Limitations

Block : IV Planning and Development Machinery in India

Unit : I Planning Commission : organization , function and role
Unit : II NDC : Functions and role
Unit : III State Planning Board
Unit : IV Niti Aayog : Role and functions
Unit : V New Actors of Development Administration : NGOs and Self-help Groups

CC : VII Urban Local Government

Block-I Introduction

Unit : I Rationale and Necessity of Local Government
Unit : II Approaches to the Study of Local Government
Unit : III Democratic Decentralization
Unit : IV Local Government, Democracy and Development
Unit : V Local Government and Globalization

Block-II Origin and Growth of Urban Local Government in India

Unit : I Evolution of Urban Local Government in Pre-independent India
Unit : II Evolution of Urban Local Government in Post- independent India
Unit : III Constitutional Status of Urban Local Government
Unit : IV 74th Constitutional Amendment Act : features
Unit : V Implications of the 74th Constitutional Amendment Act

Block-III Organization and Structure

Unit : I Urban Local Government – organisation and structure
Unit : II Corporation and Municipalities
Unit : III Mayor-in- Council System in Municipal Corporation
Unit : IV Chairman-in-Council System in Municipalities
Unit : V Urban Development Authorities

Block–IV Local Government Finance

Unit : I Sources of revenue
Unit : II Relationship between State and Urban local bodies
Unit : III Methods of control over Municipal Corporation and Municipalities
Unit : IV Metropolitan Planning Committee
Unit : V Municipal Finance Commission

CC : VIII Rural Local Government

Block–I Origin and Growth

Unit : I Evolution of Rural Self–government in Pre-independent India
Unit : II Panchyati Raj System in Post-independent period : Balwant Rai Mehta Committee Report
Unit : III Asoke Mehta Committee : Background and Recommendations
Unit : IV 73rd Constitutional Amendment Act : Basic Features
Unit : V Implications of the 73rd Constitutiona Amendment Act

Block : II Organization and Structure

Unit : I Structure and Composition of the Panchayati Raj Institutions
Unit : II Development of Local Self-government in West Bengal upto 1973
Unit : III West Bengal Panchayat Act, 1973 : Basic features
Unit : IV Gram Samsad
Unit : V Gram Sabha

Block : III Power and Functions

Unit : I Power anfd functions of Panchayati Raj Institutions
Unit : II Power and functions of Gram Panchayat
Unit : III Power and Functions of the Panchayat Samiti

Unit : IV Power and Functions of the Zilla Parishad
Unit : V Relation between DM and Zilla Sabhadhipati

Block : IV Panchayatiraj Finance

Unit : I Sources of revenue
Unit : II State control over the Panchayat
Unit : III District Planning Committee
Unit : IV Block Planning Committee
Unit : V Evaluation of Panchayati Raj System with special Reference to West Bengal

CC : IX Personnel Administration

Block : I Introduction

Unit : I Nature and Scope of Personnel Administration
Unit : II Evolution of Personnel Administration
Unit :III Function and Significance of Personnel Administration
Unit : IV Public Service and their role in Administration Structure
Unit : V Features of Public Personnel Administration . in India

Block–II Civil Service in India

Unit : I Development of Civil Service in India
Unit : II Classification of Civil Services
Unit : III Generalists and Specialists
Unit : IV Concept of Representative Bureaucracy
Unit : V Changing Role of Civil Service in India

Block : III Personnel Management and Practices

Unit : I Personnel Agencies : UPSC and SPSC
Unit : II Recruitment in All India Services (IAS and IPS)
Unit : III Training of IAS and IPS
Unit : IV Promotion of IAS and IPS
Unit : V Performance Appraisal

Block : IV Employer– Employee Relations

Unit : I- Employees Union
Unit : II Joint Consultative Mechinery
Unit : III Rights of Public Servants
Unit : IV Motivation and Morale
Unit : V Administrative Ethics and Integrety in Civil Service

CC : X Financial Administration in India

Block : I Introduction

Unit : I Nature and Scope of Financial Administration
Unit: II Objectives and Principles of Financial Administration
Unit : III Significance of Financial Administration
Unit : IV Distinctions between Public and Private Financial Administration
Unit : V Impact of Neo-liberalism on Financial Administration

Block II Fiscal Policy

Unit : I Concept of Fiscal Policy – equality and social justice
Unit: II Government Budgeting : principles and functions
Unit : III Resource mobilization
Unit : IV Deficit Financing
Unit : V Role of Finance Ministry

Block : III Budget

Unit : I Concept and Types of Budget
Unit : II Process of Budget formulation in India
Unit : III Classification of Government Expenditure
Unit: IV Performance-based Budgeting
Unit : V Zero-based Budgeting

Block-IV Control over Finance

Unit : I Legislative
Unit : II Executive
Unit : III Financial Committees : Public Accounts Committee, Estimates Committee
Unit : IV Accounts and Audit : Role of CAG
Unit : V Role of RBI

CC : XI Public Policy

Block : I Introduction

Unit : I Concept of Public Policy
Unit : II Nature and features of Public Policy
Unit : III Approaches to Public Policy
Unit : IV Models of Public Policy
Unit : V Constraints in Public Policy Making

Block : II Structure and Processes

Unit : I Role of Legislature
Unit : II Role of Political Executive
Unit : III Role of Non-political Executive
Unit : IV Role of Judiciary
Unit : V Interactions among different organs of government

Block : III Determinants

Unit : I Political parties
Unit : II Interest groups
Unit : III Mass media
Unit : IV Civil Societies- Social Movements
Unit : V World Bank and IMF

Block : IV Policy Implementation

Unit : I Role of Legislature
Unit : II Role of Judiciary
Unit : III Relations between Legislature and Judiciary
Unit : IV Role of Executive
Unit : V Problems of Policy Implementation

CC : XII Welfare Administration

Block –I Social Welfare : Introduction

Unit : I Concept of Social Welfare
Unit : II Approaches to Social Welfare
Unit : III Social Welfare and Welfare State
Unit : IV Limitations and Prospect of Social Welfare
Unit : V Social Welfare Administration

Block : II Social Welfare Programme

Unit : I Concept of Affairmative Action and Social Welfare
Unit : II Social Welfare Programmes for Women
Unit : III Social Welfare Programmes for Children
Unit : IV Social Welfare Programmes for SC, ST and OBC
Unit : V Evaluation of Social Welfare Programmes in India

Block : III Major Social Sectors

Unit : I Health
Unit : II Education
Unit : III Food and Social Security
Unit : IV Housing
Unit : V Senior Citizens

Block : IV Social Welfare in India : Institutions and Schemes

Unit : I Structure of Social Welfare Ministry
Unit : II Fuctions of Social Welfare Ministry
Unit : III Central Social Welfare Board
Unit : IV Major social Welfare Schemes in West Bengal
Unit : V Impact of Social Welfare Schemes

CC : XIII Good Governance

Block : I Meaning and definition

Unit : I From Government to Governance
Unit : II Changing notion of Governing
Unit : III Concept of Good Governance: Theories and Models
Unit : IV Debates concerning Good Governance
Unit : V Actors promoting Good Governance

Block : II State and Governance

Unit : I State and Democratic Governance
Unit : II Neo-liberalism and rolling back of state
Unit : III Role of the Market
Unit : IV Role of Civil Society
Unit : V State, Market and Civil Society- Linkage

Block : III Citizen and Governance

Unit : I Citizen as Stake-holder
Unit : II Rule of Law
Unit : III Participative Governance Accountability
Unit : IV E-governance
Unit : V Evaluation (Implications of Citizen-centric Governance)

Block –IV Techniques and Issues of Governance

Unit : 1 Citizen Charter
Unit : II Social Audit
Unit : III Gender Budgeting
Unit : IV Autonomy and Control of State Agencies
Unit : V Problems and Prospects

CC : XIV Contemporary Issues in Indian Administration

Block : I Introduction

Unit : I Concept of Globalization
Unit : II Challenges of Globalization
Unit : III Market Reforms in India
Unit : IV Public–Private Partnership
Unit : V Corporate Social Responsibility

Block : I Human Rights

Unit : I National Human Rights Commission
Unit : II State Human Rights Commission (West Bengal)
Unit : III National Womens' Commission
Unit : IV State Womens' Commission
Unit : V Visakha Guidelines and ICC

Block : III Environmental Administration

Unit : I Concept and Significance
Unit : II Environment Protection Acts
Unit : III National Green Tribunal – Central and State Control Board
Unit : IV Green Audit
Unit : V Pollution Control Board

Block : IV Administrative Reforms

Unit : I Need for Administrative Reforms
Unit :II Redressal of Citizens' Grievances
Unit : III Transparancy and Accountability in Admininistration
Unit : IV Administrative Reforms Commission, 1968
Unit : V Administrative Reforms Commission, 2005

DSE : I Human Resource Management

Block : I Introduction

Unit : I Evolution of Human Resource Management
Unit : II Meaning , Nature, Scope and Significance of Human Resource Management
Unit: III Objective and Functions of Human Resource Management
Unit : IV Difference between Personnel Management and Human Resource Management
Unit : V Challenges of Human Resource Management

Block : II Human Resource Planning

Unit: I Meaning, Objective and Need
Unit : II Factors affecting Human Resource Planning
Unit : III Role of Human Resource Manager
Unit : IV Barriers to Human Resource Planning
Unit : V Strategic Human Resource Planning Model

Block : III Human Resource Development

Unit : I Recruitment and Selection
Unit : II Performance and competency mapping system
Unit : III Employee Capacity Building Strategies : Training
Unit : IV Total Quality Management and Productivity Management
Unit : V Labour- Management Relation

Block : IV Emerging Trends of Human Resource Management

Unit : I Redressal of Employee Grievances
Unit : II Right Sizing Outsourcing and Consultancies
Unit : III Inter-Personal Skill
Unit : IV Social trends in Human Resource Management
Unit : V Problems of Human Resource Management

DSE : II Rural Development in India

Block : I Introduction

Unit: I Rural Development : Concept and Definition -Need for Rural Development
Unit: II Social , Economic and Political Contexts
Unit: III Historical Overview of Rural Development in Pre-independent India

Unit: IV Rural development in post independent India
Unit: V Rural Development in the context of Globalization

Block : II Aspects of Rural Development

Unit: I Major Approaches to Rural Development in India
Unit: II Strategies for Rural Development (Land Reform, Green Revolution Development of Khadi and Village Industries)
Unit: III Technology for Rural Development (Role of Information and Communication Technology(ICT) Technolog relating to Conservation of Water Resources , Rural Housing , Organic Farming and Energy Creation ;Technology Mission of Rural Development.
Unit: IV Sectors of Rural Development (A)Physical : Agriculture ,Irrigation, Electrification (B) Human : Health , Education and Employment
Unit: V Challenges and remedies

Block : III Institutions of Rural Development

Unit: I PRI
Unit: II Bureaucracy
Unit: III NGOs
Unit: IV Co-operatives
Unit: V NABARD and Rural Banks

Block: IV Rural Development Programmes

Unit: I Programme for Education (Sarva Siksha Aviyan)
Unit: II Programme for Rural Infrastructure (Pradhan Mantri Gram Sadak Yojna
Unit: III Programme for Employment Generation (MGNREGA)
Unit: IV Programme for Health (National Rural Health Mission)
Unit: V Rural Development Programmes in West Bengal : an overview

DSE : III Disaster Management

Block: I Disaster Management - Introduction

Unit: I Disaster: Basic Concepts
Unit: II Causes of Disasters.
Unit: III Impact of Disasters on Health, Human Settlement and Economy
Unit: IV Aims and Scope of Disaster Management
Unit: V Relationship between Disasters and Development

Block : II Classification of Disasters

Unit: I Natural Disaster
Unit: II Human made Disasters
Unit: III Slow disasters and Rapid Disasters
Unit: IV Technological Disaster
Unit: V Simple and Complex Disasters

Block : III Approaches to Disaster Risk Reduction

Unit: I Prevention and Preparedness for Disaster
Unit: II Mitigation and Risk Reduction Steps
Unit: III Rescue and Relief Operation
Unit: IV Rehabilitation and Reconstruction
Unit: V Monitoring and Evaluation Plan for Disaster Response.

Block : IV : Disaster Risk Management in India

Unit: I Evolution
Unit: II Institutional and Legal Framework (National and State)
Unit: III Policy and Programmes (National and State Level)
Unit: IV Roles and Responsibilities of Panchayat and Urban Local Bodies in Disaster Management
Unit: V A few case studies

DSE : IV E- Governance

Block ; I Introduction

Unit : I Rise and Growth of E -Governance
Unit : II Concept and Scope of E-Governance
Unit : III Objectives and Types of E-Governance
Unit : IV Benefits/Needs of E-Governance
Unit : V CT and E-Governance

Block-II : E- Governance and Democracy

Unit: I Government, Governance and Democracy
Unit : II Good Governance and E-Governance
Unit : III Information Society and Community Empowerment
Unit : IV E-Governance and Transformation of Administrative Culture
Unit : V E-Governance in the context of Globalisation

Block: III Methods and Institutions with reference to India

Unit : I Methods and Institutions : an Overview
Unit :II GIS – based Management System
Unit : III Citizen Database and Human Development
UniT : IV National Information Centre
Unit : V National E- governance Plan

Block : IV E- Governance in India

Unit : I Origin of E-Governance in India
Unit : II E-Govrenance Projects/Initiatives
Unit : III Workplan and Infrastructure
Unit :IV Challenges of E-Governance in India
Unit : V Prospects of E-Governance in India

DSE : V Leadership and Conflict Management

Block : I Introduction

Unit : I Meaning and Concept of Leadership
Unit : II Types of Leadership
Unit : III Functions of Leadership
Unit : IV Conditions for effective leadership
Unit : V Leadership Styles

Block : II Organisational Conflict

Unit : I Meaning and Nature of Organizational Conflict
Unit : II Factors influencing organizational Conflict
Unit : III Types and levels of Organizational Conflict
Unit : IV Criteria of conflict management in organisation
Unit : V Organizational conflict and its effect on organization`s performance

Block : III Bargaining and Negotiation

Unit : I Bargaining: meaning and definition
Unit : II Bargaining Strategies in Negotiation

Unit : III Collective bargaining , distributive and integrative bargaining
Unit : IV Stages of Negotiation Process
Unit : V Techniques of Negotiation: Third Party Negotiation

Block-IV Conflict Management and Resolution

Unit : I Concept of Conflict Management
Unit : II Conflict management strategies
Unit : III Styles of handling inter-personal conflicts and Managing Conflict Management Process
Unit : IV Conflict Resolution : Indian Perspective and experiences
Unit : V The Arbitration and Conciliation Act.2015 in India

GE:I Elements of Public Administration

Block:- I Introduction

Unit: I Definition, Nature, Scope

Unit: II Evolution of Public Administration

Unit: III Public Administration in the globalized world

Unit: IV Difference between Public and Private Administration

Unit : V New Public Administration

Block:- II Theories of Public Administration

Unit : I Classical Theory

Unit : II Scientific Management Theory

Unit :III Human Relations Theory

Unit : IV Bureaucratic Theory

Unit : V Ecological Theory

Block:- III Concepts

Unit : I Organisation : Conceptual Overview

Unit : II Formal and Informal Organisation

Unit : III Line and Staff

Unit:IV Centralization and decentralization

Unit : V Communication

Block: IV **Principles of Public Administration**

Unit : I Hierarchy

Unit : II Unity of Command

Unit : III Span of Control

Unit : IV Delegation

Unit :V Co-ordination

GE- II : Indian Administration

Block – I **Evolution of Indian Administration System**

Unit :I Ancient Era

Unit : II Mughal Era

Unit : III British Era

Unit : IV Post- Independent Era

Unit : V Recent Developments

Block -II **Central Administration**

Unit : I . Organisational Structure

Unit :II Prime Minister`s Office

Unit : III Central Secretariat

Unit : IV Cabinet Secretariat

Unit :V Role of Cabinet Secretary

Block:-III **State Administration**

Unit :I Organisation and Structure

Unit :II C.M.O

Unit :III Chief Secretary

Unit :IV Secretariat and Directorate

Unit :V Role of District Magistrate

Block : IV Key Institutions

Unit :I . Finance Commission

Unit : II Planning Commission

Unit : III National Development Council

Unit : IV Comptroller and Auditor General of India

Unit : V Niti Aayog

GE : III Rural Local Government

Block : I Rural Self- Government

Unit : I Democratic Decentralisation : Concept

Unit : II Evolution of Rural Local Government in India under British Rule

Unit : III Developments in the Post- independence period

Unit : IV Balawant Rai Mehta Committee Report

Unit: V Ashok Mehta Committee Report

Block : II Panchayati Raj System

Unit : I 73rd Constitutional Amendment Act : salient features

Unit : II Implications of the 73rdconstituonal Amendment Act

Unit : III Panchayati Raj : Structure and function

Unit : IV Gram Sabha

Unit : V Gram Samsad

Block : III Panchayat Resources

Unit: I Sources of Revenue

Unit II Central Control over the Panchayati System

Unit : III State Control over the Panchayati Raj institutions

Unit : IV District Planning Committee

Unit : V Block Planning Committee

Block : IV Rural Development : Institutions and Strategies

Unit : I NABARD

Unit : II Rural Development Bank

Unit :III Self Help Group

Unit : IV Micro Credit

Unit : V Evaluation of the Panchyati Raj System in West Bengal

GE : IV Urban Local Government

Block : I Introduction

Unit : I Evolution of Urban Local Self Government in India in the British era

Unit : II Growth and Development of Urban Local Government in the Post- independent Period

Unit : III 74thConstitution Amendment Act: Basic features

Unit : IV Implications of the 74th constitution Amendment Act

Unit : V Local Self Government , Democracy and Development.

Block : II Municipal Administration

Unit : I Structure and Function

Unit : II Mayor- in- Council

Unit : III Power and Functions of Mayor and Commissioner

Unit : IV Chairman-in-Council

Unit : V Municipal committee system

Block : III Urban Development : Strategies and Programme

Unit : I Urban Development Authorities

Unit : II Role of NGO in Urban development

Unit : III Urban Development Planning

Unit : IV Ward Committee

Unit : V Borough Committee

Block : IV Revenue Generation

Unit : I Sources of Revenue

Unit : II Central Control over Urban Local Government

Unit : III State Control over Urban Local Government

Unit : IV Self-sustenance of Urban Local Government

Unit : V An Appraisal

GE : V Contemporary Issues in Indian Administration

Block : I Impact of Globalisation

Unit : I Challenges of Globalisation

Unit : II Corporate Social Responsibility

Unit : III Public private Partnership

Unit : IV Issues of Decentralisation

Unit : V Citizen Centric Administration

Block : II Problems of Governance

Unit : I Good Governance

Unit : II E-Governance

Unit : III Citizen Charter

Unit : IV Right to Information Act, 2005

Unit : V Right to Education Act, 2009

Block : III Empowerment

Unit :I Women Empowerment

Unit : II Welfare of weaker sections

Unit : III Visakha Guidelines

Unit : IV Domestic Violence Act

Unit : V National Women Commission

Block : IV Environmental Issues

Unit : I Environmental Administration

Unit : II Environmental Protection Act , 1986

Unit : III Green Audit

Unit : **IV** National Green Tribunal

Unit : **V** Central Pollution Board

NETAJI SUBHAS OPEN UNIVERSITY

Bachelor Degree Programme (BDP)

Zoology Honours Course Syllabus

(Under CBCS System: To be Implemented from 2020 Session)

COURSE STRUCTURE

Semester	Courses	Paper Code	Credit	Marks
I	Animal Diversity, Structure and Development Lab	CC 1 (Practical)	6	70
	Animal Physiology, Molecular Biology and Evolution Lab	CC 2 (Practical)	6	70
	English Communication	AECC 1	2	70
	General Elective – 1: From available options	GE1	6	70
		Total Credit	***20***	
II	Basic Concept of Taxonomy and Diversity of Non-chordates	CC 3	6	70
	Diversity of Chordates	CC 4	6	70
	Environmental Sciences	AECC 2	2	70
	General Elective – 2: From available options	GE2	6	70
		Total Credit	***20***	
III	Ecology and Biochemistry Lab	CC 5 (Practical)	6	70
	Cell Biology and Parasitology Lab	CC 6 (Practical)	6	70
	Cell and Molecular Biology	CC 7	6	70
	Sericulture	SEC -1	2	60
	General Elective 3: From available options	GE3	6	70
		Total Credit	***26***	
IV	Biochemistry and Metabolic Processes	CC 8	6	70
	Principals of Ecology	CC 9	6	70
	Developmental Biology	CC 10	6	70
	Aquarium Fish Keeping	SEC - 2	2	60
	General Elective 4: From available options	GE4	6	70
		Total Credit	***26***	
V	Genetics and Developmental Biology Lab	CC 11 (Practical)	6	70
	Genetics	CC 12	6	70
	Animal Behaviour and Chronobiology	DSE-1	6	70
	Animal Behaviour and Insect Biology Lab	DSE-2 (Practical)	6	70
		Total Credit	***24***	
VI	Animal Physiology: Controlling and Coordinating System	CC 13	6	70
	Evolutionary Biology	CC 14	6	70
	Biology of Insecta	DSE-3	6	70
	Aquatic Biology	DSE-4	6	70
		Total Credit	***24***	
TOTAL CREDIT & MARKS			***140***	***1800***

CC: Core Course, **AECC:** Ability Enhancement Compulsory Course; **DSC:** Discipline Specific Course; **SEC:** Skill Enhancement Course

DETAILED SYLLABUS

SYLLABUS OF ZOOLOGY CORE COURSES

FM-Full Marks; TEE-Term End Exam; ASG-Assignment

Core Papers	*Details of Syllabus*
CC 1: Animal Diversity, Structure and Development Lab ***Practical Paper*** ***(70 marks, 6 Credit)*** ***FM-70*** ***TEE-70***	**1.** Study of the following specimens with proper reasons *Amoeba, Euglena, Plasmodium, Paramecium, Sycon, Hyalonema, and Euplectella, Obelia, Physalia,* Jellyfish, Sea Anemone, *Taenia,* Male and female *Ascaris, Aphrodite, Nereis, Earthworm, Hirudinaria, Palaemon, Scylla, Carcinoscorpius, Penaeus, Scolopendra,* Millipede, *Periplaneta, Apis, Chiton, Dentalium, Pila, Lamellidens, Loligo, Sepia, Octopus,* Star fish,*Ophiura, Echinus, Cucumaria* and *Antedon, Balanoglossus, Herdmania, Branchiostoma, Petromyzon, Sphyrna, Pristis, Torpedo,Scoliodon,Labeo, Exocoetus, Anguilla, Teniolosa,Ureotyphlus,* Salamander, *Bufo, Hyla,*Turtle,*Calotes, Chamaeleon,Draco,Vipera, Naja,Crocodylus, Gavialis,* Any six common birds from different orders available in the concerned college laboratory, *Sorex*, Mega-and Micro chiroptera, Squirrel. **2.** Study of the following permanent slides: T.S. and L.S. of Sycon, Study of life history stages of Mosquito/ Toad, T.S. of Male and female *Ascaris* **3.** Key for Identification of poisonous and non-poisonous snakes **4.**Osteology: a) Disarticulated skeleton of fowl and white rat b) Carapace and plastron of turtle c) Mammalian skulls: One herbivorous (rat) and one carnivorous animal(dog). **5.** Examination of gametes Frog/Rat - sperm and ova through permanent slides or photo-micrographs. **6.** Chick:- developmental stages Study of developmental stages - whole mount of permanent slides – 24 hrs, 48 hrs and 72 hrs embryo. **7.** Demonstration of whole mount preparation of chick embryo An "animal album" containing photographs, with appropriate write up about the above mentioned taxa. Different taxa/ topics may be given to different sets of students for this purpose. (Laboratory Note Book must be prepared on day-to-day basis and should be signed by the concerned teacher immediately after the laboratory work. The Laboratory Note Book should contain all the items in the syllabus and must be submitted on the day of examination.)
CC 2: Animal Physiology, Molecular Biology and Evolution Lab ***Practical Paper***	**1.** Preparation of hemin crystals **2.** Study of permanent histological sections of mammalian pituitary, thyroid, pancreas, adrenal gland, testis, ovary. **3.** Study of permanent histological slides of duodenum, intestine, liver, lung, kidney, bone, cartilage **4.** Study of human blood group by agglutination reactions. **5.** Isolation of DNA from blood Fish Blood (Demonstration) **6.** Quantitative estimation of DNA using colorimeter (Diphenylamine reagent) or spectrophotometer. **7.** Quantitative estimation of RNA using Orcinol reaction. **8**. Demonstration of Preparation of permanent slide to demonstrate : DNA by Feulgen reaction; DNA and RNA by MGP; Proteins by Mercurobromophenol blue/Fast Green **9**. a) Study of fossil evidences from plaster cast models and pictures;

(70 marks, 6 Credit) ***FM-70*** ***TEE-70***	b) Study of homology and analogy from suitable specimens/ pictures **10**. Charts: a) Phylogeny of horse with diagrams/ cut outs of limbs and teeth of horse ancestors; b) Darwin's Finches with diagrams/ cut outs of beaks of different species **11**. Visit to any National Museum and submission of report **(Laboratory Note Book must be prepared on day-to-day basis and should be signed by the concerned teacher immediately after the laboratory work. The Laboratory Note Book should contain all the items in the syllabus and must be submitted on the day of examination.)**
CC 3: **Basic Concept of Taxonomy and Diversity of Non-chordates** ***(70 marks, 6 Credit)*** ***FM-70*** ***TEE-50*** ***ASG-20***	**Unit 1: Basics of Animal Classification** Definitions: Classification, Systematics and Taxonomy; Hierarchy, Taxonomic types; Codes of Zoological Nomenclature; Principle of priority; Synonym and Homonym; Species Concept – Biological and evolutionary; basic idea of numerical taxonomy, Molecular taxonomy. **Unit 2: Protista, Parazoa and Metazoa** General characteristics and Classification upto classes Study of *Euglena*, *Amoeba* and *Paramecium* (Structure, locomotion, reproduction & nutrition) Life cycle and pathogenicity of *Plasmodium vivax* and *Entamoeba histolytica* Evolution of symmetry, grade of organization and segmentation ofMetazoa **Unit 3: Porifera and Cnidaria and Ctenophora** General characteristics and Classification upto classes, Canal system and spicules in sponges. Metagenesis in *Obelia,* Polymorphismin Cnidaria, Corals and coral reefs **Unit 4: Platyhelminthes** General characteristics and Classification upto classes Life cycle and pathogenicity of *Fasciola hepatica* and *Taenia solium* **Unit 5 : Nemathelminthes** General characteristics and Classification upto classes of phylum Nematoda Lifecycle, and pathogenicity of *Ascaris lumbricoides* and *Wuchereria bancrofti* Parasitic adaptations in helminthes **Unit 6 : Arthropoda** General characteristics of crustacea and arachnida, Crustacean larvae, Bionomics and affinites of Peripatus (Onycophora) **Unit 7: Echinodermata** General characteristics and Classification. Ambulacral system. **Unit 8 : Mollusca** General characteristics, Classification, Torsion and detorsion mechanism, Larval stages. ***NOTE: Classification to be followed from Ruppert and Barnes Invertebrate Zoology VI edition, except for Protozoa (American Association of Protozoologist ref: Levine 1980) and Porifera (Brusca and Brusca 2002; IV edition. Invertebrate Zoology)***
CC 4: **Diversity of Chordates** ***(70 marks, 6 Credit)***	**Unit 1: Protochordata:** General characteristics of Hemichordata, Urochordata and Cephalochordata; Study of larval forms in protochordates; Retrogressive metamorphosis in Urochordata **Unit 2: Origin of Chordata** Dipleurula concept and the Echinoderm theory of origin of chordates **Unit 3: Agnatha** General characteristics and classification of cyclostomes up to class **Unit 4: Pisces** General characteristics of Chondrichthyes and Osteichthyes, classification up to Order, Migration, Osmoregulation and Parental care in fishes

FM-70 ***TEE-50*** ***ASG-20***	**Unit 5: Amphibia** General characteristics and classification up to order; Parental care and Metamorphosis in Amphibians **Unit 6: Reptilia** General characteristics and classification up to order; Affinities of *Sphenodon*; Poison apparatus and Biting mechanism in snakes **Unit 7: Aves** General characteristics and classification up to order, *Archaeopteryx*-- a connecting link; Flight adaptations and Migration in birds **Unit 8: Mammals** General characters and classification up to order; Affinities of Prototheria; Adaptive radiation with reference to locomotory appendages **Unit 9: Comparative Anatomy** Heart, Brain and Kidney
CC 5: **Ecology and Biochemistry Lab** ***Practical Paper*** ***(70 marks, 6 Credit)*** ***FM-70*** ***TEE-70***	**1.** Preparation of nested quardrat and estimation of effective quardrat size. **2.** Calculation of Sorenson's Similarity & Shannon-Weiner diversity indices for a community. **3.** Study of an aquatic ecosystem: Major Phytoplankton (Up to Family) and zooplankton (Up to Genus), temperature, turbidity/ penetration of light, determination of pH, and Dissolved Oxygen content (Winkler's method) and free CO_2. **4.** Estimation of Primary productivity by light & dark bottle method. **5.** Report on a visit to National Park/Biodiversity Park/Wild life sanctuary/Sea Shore. **6.** Qualitative tests to identify functional groups of carbohydrates in given solutions (Glucose, Fructose, Sucrose, Lactose) **7.** Paper chromatography of amino acids. **8.** Estimation of total protein in given solutions by Lowry's method. **9.** Study of activity of salivary amylase under optimum conditions. **10.** Effect of pH, temperature and inhibitors on the action of salivary amylase. **(Laboratory Note Book must be prepared on day-to-day basis and should be signed by the concerned teacher immediately after the laboratory work. The Laboratory Note Book should contain all the items in the syllabus and must be submitted on the day of examination.)**
CC 6: **Cell Biology and Parasitology Lab** ***Practical Paper*** ***(70 marks, 6 Credit)*** ***FM-70*** ***TEE-70***	**1.** Study of polytene chromosome from chironomid larvae **2.** Study of mitosis from bone marrow of goat/ Onion root tip **3.** Study of various stages of meiosis grasshopper/ testis of mouse **4.** Preparation of stained blood film to study various types of white blood cells **5.** Demonstration of ELISA. **6.** Study of life stages of *Entamoeba histolytica, Leishmania donovani*and *Plasmodium vivax*, *Taeniasolium, Ascaris lumbricoides, Ancylostoma duodenale, Wuchereria bancrofti* through permanent slides/microphotographs **7.** Study of *Pediculus humanus*, *Ctenocephalides* spp. and *Cimex lectularius* through permanent slides/photographs **8.** Study of nematode/cestode parasites from the intestines of Poultry bird **(Laboratory Note Book must be prepared on day-to-day basis and should be signed by the concerned teacher immediately after the laboratory work. The Laboratory Note Book should contain all the items in the syllabus and must be submitted on the day of examination.)**
CC 7: **Cell and Molecular Biology**	**Unit 1: Plasma Membrane** Fluid Mosaic model of plasma membrane; Transport across membranes: Active and Passive transport, Facilitated transport; Cell junctions: Tight junctions, Gap junctions, Desmosome **Unit 2: Mitochondria and Peroxisomes**

(70 marks, 6 Credit) *FM-70* *TEE-50* *ASG-20*	Mitochondria: Structure, Mitochondrial Respiratory Chain, Chemi-osmotic hypothesis, Peroxisome **Unit 3: Cytoskeleton** Structure and Functions: Microtubules, Microfilaments and Intermediate filaments **Unit 4: Nucleus** Structure of Nucleus: Nuclear envelope, nuclear pore complex, nucleolus **Unit 5: Cell division** Mitosis; Meiosis; Cell cycle and its regulation; **Unit 6: Nucleic Acids** Salient features of DNA and RNA; Watson and Crick model of DNA **Unit7 : DNA Replication** DNA Replication in prokaryotes and eukaryotes, DNA polymerases, primosome, RNA priming, Replication of circular and linear *ds*-DNA, replication of telomeres **Unit 8: Transcription and Translation** RNA polymerase and transcription Unit, mechanism of transcription in prokaryotes and eukaryotes, transcription factors, Split genes: concept of introns and exons, splicing mechanism, Genetic code, Degeneracy of the genetic code and Wobble Hypothesis; mechanism of protein synthesis in prokaryotes: Ribosome structure and assembly in prokaryotes, amino acyl tRNA synthetases and charging of tRNA; Proteins involved in initiation, elongation and termination of polypeptide chain. **Unit 9: Gene Regulation** Transcription regulation in prokaryotes: lac operon and trp operon; Transcription regulation in eukaryotes: Activators, repressors, enhancers.
CC 8: Biochemistry and Metabolic Processes *(70 marks, 6 Credit)* *FM-70* *TEE-50* *ASG-20*	**Unit 1: Biological macromolecules** Structure, types and biological importance: carbohydrate, protein, lipid and nucleic acids **Unit : II : Bioenergetics** Laws of thermodynamics and its relevance to biological systems. High-energy phosphate bonds and its role in energy capture and transfer. **Unit III: Enzymes** Enzymes: Nomenclature and classification; Cofactors; Specificity of enzyme action; Isozymes; Mechanism of enzyme action; Enzyme kinetics; Factors affecting rate of enzyme-catalyzed reactions; Derivation of Michaelis-Menten equation, Concept of Km and Vmax, Lineweaver-Burk plot; Multi-substrate reactions; Enzyme inhibition; Allosteric enzymes and their kinetics; Regulation of enzyme action. **Unit 1V: Overview of Metabolism** Catabolism *vs* Anabolism, Stages of catabolism, Compartmentalization of metabolic pathways, Shuttle systems and membrane transporters; ATP as "Energy Currency of cell"; coupled reactions; Use of reducing equivalents and cofactors; Intermediary metabolism and regulatory mechanisms **Unit V: Carbohydrate Metabolism** Glycolysis and its regulation; Citric acid cycle; Phosphate pentose pathway Gluconeogenesis, Glycogenolysis and Glycogenesis **Unit VI: Lipid Metabolism** β-oxidation and omega -oxidation of saturated fatty acids with even and odd number of carbon atoms; Biosynthesis of palmitic acid; Ketogenesis **Unit VII: Protein Metabolism**

	Catabolism of amino acids: Transamination, Deamination, Urea cycle; Fateof C- skeleton of Glucogenic and Ketogenic amino acids
CC 9: Principles of Ecology ***(70 marks, 6 Credit)*** ***FM-70*** ***TEE-50*** ***ASG-20***	**Unit 1: Introduction to Ecology** Levels of organization, Laws of limiting factors, study of physical factors **Unit 2: Population** Population attributes: Density, natality, mortality, life tables, fecundity tables, survivorship curves, age ratio, sex ratio, dispersal and dispersion Exponential and logistic growth, equation and Patterns, r and k strategies Population regulation-density-dependent and independent factors Population interactions; Gause's Principle with laboratory and field examples, Lotka- Volterra equation for competition **Unit 3: Community** Community characteristics: species richness, dominance, diversity, abundance, vertical stratification, Ecotone and edge effect, Ecological succession **Unit 4: Ecosystem** Types of ecosystems with one example in detail, Food chain: Detritus and grazing food chains, Linear and Y-shaped food chains, Food web, Energy flow through the ecosystem, Ecological pyramids and Ecological efficiencies Nutrient and biogeochemical cycle with one example of Nitrogen cycle **Unit 5: Wild life Conservation** Wild life Conservation (ideas of *in-situ* and *ex-situ* conservation) Management strategies for tiger conservation; protection laws for wildlife conservation. **Unit 6 : Ecological , Faunal and Floral characteristics** Tropical rain forest, Manogrove, Island and Desert Ecosystem **Unit 7: Zoogeography** Zoogeographical realms, Theories pertaining to distribution of animals
CC 10: Developmental Biology ***(70 marks, 6 Credit)*** ***FM-70*** ***TEE-50*** ***ASG-20***	**Unit 1: Introduction to Developmental Biology** Historical perspective and basic concepts: Phases of development, Cell-Cell interaction, Pattern formation, Differentiation and growth, Differential gene expression, Cytoplasmic determinants and asymmetric cell division. **Unit 2: Early Embryonic Development** Gametogenesis, Spermatogenesis, Oogenesis; Types of eggs, Egg membranes; Fertilization :(acrosome reaction & egg activation, blocks to polyspermy); Planes and patterns of cleavage; Types of blastula;Fate map construction; Early development of frog and chick upto gastrulation; Embryonic induction and organizers. **Unit 3: Late Embryonic Development** Fate of Germ Layers; Extra-embryonic membranes in birds; Implantation of embryo in humans, Placenta (Structure, types and functions of placenta). **Unit 4: Post Embryonic Development** Metamorphosis: hormonal regulations in amphibians and insects; Regeneration with special reference to *Hydra.* **Unit 5: Implications of Developmental Biology** Teratogenesis: Teratogenic agents and their effects on embryonic development; *In vitro* fertilization, Stem cell (ESC), Amniocentosis.
CC11:	**1.** Pedigree analysis of some human inherited traits **2.** Study of Mendelian Inheritance and gene interactions (Non Mendelian Inheritance) using suitable examples. Verify the results using Chi-

Genetics and Developmental Biology Lab ***Practical Paper*** ***(70 marks, 6 Credit)*** ***FM-70*** ***TEE-70***	square test. **3.** Study of Linkage, recombination, gene mapping using the data. **4.** Study of human karyotype (normal and abnormal) **5.** Pedigree analysis of some human inherited traits **6.** Study of sections of developmental stages of frog through permanent slides: Cleavage stages, blastula, gastrula, neurula, tail-bud stage, tadpole (external and internal gill stages) and sections of chick embryos of 48 and 72 hrs passing through eye, brain, heart and gut region. **7.** Study of the developmental stages and life cycle of *Drosophila* from stock culture **8.** Study of different sections of placenta (photomicrograph/ slides) **9.** Project report on *Drosophila* culture/chick embryo development. **(Laboratory Note Book must be prepared on day-to-day basis and should be signed by the concerned teacher immediately after the laboratory work. The Laboratory Note Book should contain all the items in the syllabus and must be submitted on the day of examination.)**
CC12: Genetics ***(70 marks, 6 Credit)*** ***FM-70*** ***TEE-50*** ***ASG-20***	**Unit 1: Mendelian Genetics and its Extension** Principles of inheritance, Incomplete dominance and co-dominance, Multiple alleles, Lethal alleles, Epistasis, Pleiotropy, Sex-linked, sex influenced and sex-limited characters inheritance **Unit 2: Linkage, Crossing Over and Chromosomal Mapping** Linkage and crossing over, Cytological basis of crossing over, Molecular mechanisms of crossing over including models of recombination, Recombination frequency as a measure of linkage intensity, Two factor and three factor crosses, Interference and coincidence, Somatic cell hybridization **Unit 3: Mutations** Types of gene mutations (Classification), Types of chromosomal aberrations (Classification, figures and with one suitable example of each), Molecular basis of mutations in relation to UV light and chemical mutagens; Detection of mutations: CLB method, attached *X* method **Unit 4: Sex Determination** Chromosomal mechanisms of sex determination in *Drosophila* and Man **Unit 5: Polygenic Inheritance** Polygenic inheritance with suitable examples; simple numericals based on it **Unit 6: Recombination in Bacteria and Viruses** Conjugation, Transformation, Transduction, Complementation test in Bacteriophage
CC 13: Animal Physiology: Controlling and Coordinating System ***(70 marks, 6 Credit)*** ***FM-70***	**Unit 1: Physiology of Digestion** Structural organization and functions of gastrointestinal tract and associated glands; Mechanical and chemical digestion of food; Absorptions of carbohydrates, lipids, proteins. **Unit 2: Physiology of Respiration** Histology of trachea and lung; Mechanism of respiration, Pulmonary ventilation; Respiratory volumes and capacities; Transport of oxygen and carbon dioxide in blood; **Unit 3: Renal Physiology** Structure of kidney and its functional unit; Mechanism of urine formation; Regulation of water balance; Regulation of acid-base balance **Unit 4: Nervous System** Structure of neuron, resting membrane potential, Origin of action potential

TEE-50 ***ASG-20***	and its propagation across the myelinated and unmyelinated nerve fibers. **Unit 5: Muscle** Histology of different types of muscle; Ultra structure of skeletal muscle; Molecular and chemical basis of muscle contraction; Characteristics of muscle twitch. **Unit 6: Reproductive System** Histology of testis and ovary; Physiology of male and female reproduction; Puberty. **Unit 7: Endocrine System** Histology of endocrine glands - pituitary, thyroid, parathyroid, pancreas, adrenal; hormones secreted by them and their mechanism of action; Classification of hormones; Regulation of their secretion; Mode of hormone action.
CC 14: Evolutionary Biology ***(70 marks, 6 Credit)*** ***FM-70*** ***TEE-50*** ***ASG-20***	**Unit 1:** Life's Beginnings: Chemogeny, RNA world, Biogeny, Evolution of eukaryotes **Unit 2:** Historical review of evolutionary concept: Lamarckism, Darwinism, Synthetic theory **Unit 3:** Evidences of Evolution: Fossil record (types of fossils), transitional forms, geological time scale, evolution of horse. **Unit 4:** Sources of variations: Heritable variations and their role in evolution **Unit 5:** Population genetics: Hardy-Weinberg Law (statement and derivation of equation, application of law to human Population); Evolutionary forces upsetting H-W equilibrium; Natural selection, Genetic Drift (mechanism, founder's effect, bottleneck phenomenon); Role of Migration and Mutation in changing allele frequencies **Unit 6:** Product of evolution: Micro evolutionary changes (inter-population variations, clines, races), Species concept, Isolating mechanisms, modes of speciation—allopatric, sympatric, Adaptive radiation/ macroevolution (exemplified by Galapagos finches). **Unit 7:** Origin and evolution of man, Unique hominid characteristics contrasted with primate characteristics, primate phylogeny from *Australopithecus* leading to *Homo sapiens*

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Discipline Specific Elective Course Syllabus (DSE) in ZOOLOGY

DSE Paper	*Details of Syllabus*
Paper 1: Animal Behaviour and Chronobiology ***(70 marks, 6 Credit)*** ***FM-70*** ***TEE-50*** ***ASG-20***	**Unit 1: Introduction to Animal Behaviour** Origin and history of Ethology; Brief profiles of Karl von Frish, Ivan Pavlov, Konrad Lorenz, Niko Tinbergen, Proximate and ultimate causes of behaviour **Unit 2: Patterns of Behaviour** Stereotyped Behaviours (Orientation, Reflexes); Individual Behavioural patterns; Instinct vs. Learned behaviour; Associative learning, classical and operant conditioning, Habituation, Imprinting. **Unit 3: Social Behaviour** Social Behaviour: Concept of Society; Communication and the senses; Altruism; Insects' society with Honey bee as example; Foraging in honey bee and advantages of the waggle dance. **Unit 4: Biological Rhythm** Types and characteristics of biological rhythms: Short- and Long- term rhythms; Circadian rhythms; Tidal rhythms and Lunar rhythms; Circannual rhythms; **Unit 5: Biological Clocks** Relevance of biological clocks; Adaptive significance of biological clocks
Paper 2: Animal Behaviour and Insect Biology Lab ***Practical Paper (70 marks, 6 Credit)*** ***FM-70*** ***TEE-70***	**1.** To study nests and nesting habits of social insects (Termites and Ants). **2.** To study geotaxis behaviour in earthworm. **3.** Visit to Forest/ Wild life Sanctuary/Biodiversity Park/Zoological Park to study behavioural activities of animals and prepare a short report. **4.** Study of different kinds of mouth parts of insects **5.** Study of insect wings and their venation. **6.** Methodology of collection, preservation and identification of insects **7.** Study of any three insect pests and their damages **8.** Study of any three beneficial insects and their products **9.** Field study of insects and submission of a project report on the insect diversity
Paper 3: Biology of Insects ***(70 marks, 6 Credit)*** ***FM-70*** ***TEE-50*** ***ASG-20***	**Unit 1: Introduction** General Features of Insects Distribution and Success of Insects on the Earth **Unit 2: Insect Taxonomy** Basis of insect classification; Classification of insects up to orders **Unit 3: General Morphology of Insects** External Features; Head – Eyes, Types of antennae, Mouth parts w.r.t. feeding habits, Types of Legs adapted to diverse habitat **Unit 4: Physiology of Insects** Structure and Physiology of Insect respiratory & endocrine systems Sensory receptors Growth and metamorphosis **Unit 5: Insect Society** Group of social insects and their social life Social organization and social behaviour (with reference to any one example)

	Unit 6: Insect Plant Interaction Theory of co-evolution, role of allelo-chemicals in host plant mediation **Unit 7: Insects as Vectors** Insects as mechanical and Biological vectors, Brief discussion on houseflies and mosquitoes as important insect vectors
Paper 4: Aquatic Biology ***(70 marks, 6 Credit)*** ***FM-70*** ***TEE-50*** ***ASG-20***	**UNIT 1: Aquatic Biomes** Brief introduction of the aquatic biomes: Freshwater ecosystem (lakes, wetlands, streams and rivers), estuaries, intertidal zones, oceanic pelagic zone, marine benthic zone and coral reefs. **UNIT 2: Freshwater Biology** **Lakes:** Origin and classification, Lake as an Ecosystem, Physico–chemical Characteristics: Light, Temperature, Thermal stratification, Dissolved Solids, Carbonate, Bicarbonates, Phosphates and Nitrates, Turbidity; dissolved gases (Oxygen, Carbon dioxide). Nutrient Cycles in Lakes-Nitrogen:- Sulphur and Phosphorous. **Streams:** Different stages of stream development, Physico-chemical environment, Adaptations of hill-stream fishes. **UNIT 3: Marine Biology** Salinity and density of Sea water, Continental shelf, Adaptations of deep sea organisms. **UNIT 4: Management of Aquatic Resources** Causes of pollution: Agricultural, Industrial, Sewage, Thermal and Oil spills, Eutrophication, Management and conservation (legislations), Sewage treatment Water quality assessment- BOD and COD.

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Generic Elective Papers of Zoology will be opted by Honours students of other Core Courses

Zoology Honours Students will opt GE courses from available Subject Courses offered

Generic Elective (GE) ZOOLOGY Syllabus

GE Papers	*Details of Syllabus*
Paper 1: ***Animal Diversity*** ***(70 marks, 6 Credit)*** ***FM-70*** ***TEE-50*** ***ASG-20***	**Unit 1.** Protista General characters of Protozoa; Life cycle of *Plasmodium* **Unit 2.** Porifera General characters and canal system in Porifera **Unit 3**. Radiata General characters of Cnidarians and polymorphism **Unit 4.** Aceolomates General characters of Helminthes; Life cycle of *Taenia* solium **Unit 5.** Pseudo coelomates General characters of Nemethehelminthes; Parasitic adaptations **Unit 6.** Coelomate Protostomes General characters of Annelida; Metamerism. **Unit 7.** Arthropoda General characters. Social life in insects. **Unit 8.** Mollusca General characters of mollusca; Pearl Formation **Unit 9**. Coelomate Deuterostomes General characters of Echinodermata, Water Vascular system in Starfish. **Unit 10.** Protochordata Salient features **Unit 11**. Pisces Osmoregulation, Migration of Fishes **Unit 12**. Amphibia General characters, Adaptations for terrestrial life, Parental care in Amphibia. **Unit 13.** Amniotes; Origin of reptiles. Terrestrial adaptations in reptiles. **Unit 14**. Aves: The origin of birds; Flight adaptations **Unit 15**. Mammalia- Early evolution of mammals; Primates; Dentition in mammals.
Paper 2: Aquatic Biology ***(70 marks, 6 Credit)*** ***FM-70*** ***TEE-50*** ***ASG-20***	**Unit 1:** Aquatic Biomes Brief introduction of the aquatic biomes: Freshwater ecosystem (lakes, wetlands, streams and rivers), estuaries, intertidal zones, oceanic pelagic zone, marine benthic zone and coral reefs. **Unit 2:** Freshwater Biology Lakes: Origin and classification, Lake as an Ecosystem, Lake morphometry, Physico–chemical Characteristics: Light, Temperature, Thermal stratification, Dissolved Solids, Carbonate, Bicarbonates, Phosphates and Nitrates, Turbidity; dissolved gases (Oxygen, Carbon dioxide). Nutrient Cycles in Lakes- Nitrogen, Sulphur and Phosphorous. Streams: Different stages of stream development, Physico-chemical environment, Adaptation of hill-stream fishes. **Unit 3:** Marine Biology Salinity and density of Sea water, Continental shelf, Adaptations of deep sea organisms, Coral reefs, Sea weeds. **Unit 4:** Management of Aquatic Resources Causes of pollution: Agricultural, Industrial, Sewage, Thermal and Oil spills, Eutrophication, Management and conservation (legislations), Sewage treatment Water quality assessment- BOD and COD.
Paper 3: ***Insect Vector and Disease***	**Unit I:** Introduction to Insects General Features of Insects, Morphological features, Head – Eyes, Types of antennae, Mouth parts with respect to feeding habits **Unit II:** Concept of Vectors Brief introduction of Carrier and Vectors (mechanical and biological vector),Reservoirs, Host-vector relationship, Vectorial capacity, Adaptations as vectors, Host Specificity

(70 marks, 6 Credit) *FM-70* *TEE-50* *ASG-20*	**Unit III:** Insects as Vectors Classification of insects up to orders, detailed features of orders with insects as vectors – Diptera, Siphonaptera, Siphunculata, Hemiptera **Unit IV:** Dipteran as Disease Vectors Dipterans as important insect vectors – Mosquitoes, Sand fly, Houseflies; Study of mosquito-borne diseases – Malaria, Dengue, Chikungunya, Viral encephalitis, Filariasis; Control of mosquitoes Study of sand fly-borne diseases – Visceral Leishmaniasis, Cutaneous Leishmaniasis, Phlebotomus fever; Control of Sand fly Study of house fly as important mechanical vector, Myiasis, Control of house fly **Unit V:** Siphonaptera as Disease Vectors Fleas as important insect vectors; Host-specificity, Study of Flea-borne diseases – Plague, Typhus fever; Control of fleas **Unit VI:** Sipunculata as Disease Vectors Human louse (Head, Body and Pubic louse) as important insect vectors; Study of louse-borne diseases –Typhus fever, Relapsing fever, Trench fever, Vagabond's disease, Phthiriasis; Control of human louse **Unit VII:** Hempitera as Disease Vectors 6 Bugs as insect vectors; Blood-sucking bugs; Chagas disease, Bed bugs as mechanical vectors, Control and prevention measures.
Paper 4: Food, Nutrition and Health *(70 marks, 6 Credit)* *FM-70* *TEE-50* *ASG-20*	**Unit 1:** Basic concept of food and nutrition Food Components and food-nutrients Concept of a balanced diet, nutrient needs and dietary pattern for various groups--- adults, pregnant and nursing mothers, infants, school children, adolescents and elderly **Unit 2:** Nutritional Biochemistry: Carbohydrates, Lipids, Proteins--- Definition, Classification, their dietary source and role Vitamins--- Fat-soluble and Water-soluble vitamins- their dietary source and importance Minerals--- Iron, calcium, phosphorus, iodine, selenium and zinc: their biological functions **Unit 3:** Health Introduction to health--- Definition and concept of health Major nutritional Deficiency diseases- Protein Energy Malnutrition (kwashiorkor and marasmus), Vitamin A deficiency disorders, Iron deficiency disorders, Iodine deficiency disorders- their causes, symptoms, treatment, prevention and government programmes, if any. Life style related diseases- hypertension, diabetes mellitus, and obesity- their causes and prevention through dietary and lifestyle modifications Social health problems--- smoking, alcoholism, drug dependence and Acquired Immuno Deficiency Syndrome (AIDS) --- their causes, treatment and prevention Common ailments- cold, cough, and fevers, their causes and treatment **Unit 4:** Food hygiene: Potable water- sources and methods of purification at domestic level Food and Water borne infections: Bacterial infection: Cholera, typhoid fever, dysentery; Viral infection: Hepatitis, Poliomyelitis, Protozoan infection: Amoebiasis, Giardiasis; Parasitic infection: Taeniasis and Ascariasis their transmission, causative agent, sources of infection, symptoms and prevention Brief account of food spoilage: Causes of food spoilage and their preventive measures.

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Skill Enhancement Course Subjects (SEC) for ZOOLOGY

SEC Papers	*Details of Syllabus*
Paper 1: Sericulture ***(60 marks, 2 Credit)***	**Unit 1: Introduction** Sericulture: Definition, history and present status; Silk route Types of silkworms, Distribution and Races , Exotic and indigenous races Mulberry and non-mulberry Sericulture **Unit 2: Biology of Silkworm** Life cycle of *Bombyx mori* Structure of silk gland and secretion of silk **Unit 3: Rearing of Silkworms** Selection of mulberry variety and establishment of mulberry garden Rearing house and rearing appliances Disinfectants: Formalin, bleaching powder, RKO Silkworm rearing technology: Early age and Late age rearing Types of mountages Spinning, harvesting and storage of cocoons **Unit 4: Pests and Diseases** Pests of silkworm: Uzi fly, Dermestid beetles and vertebrates. Pathogenesis of silkworm diseases : Protozoan, viral, fungal and bacterial . Control and prevention of pests and diseases. **Unit 5: Entrepreneurship in Sericulture** Prospects of Sericulture in India: Sericulture industry in different states, employment, potential in mulberry and non-mulberry sericulture.
Paper 2: Research Methods ***(60 marks, 2 Credit)***	**Unit1: Introduction to Aquarium Fish Keeping** The potential scope of Aquarium Fish Industry as a Cottage Industry, Exotic and Endemic species of Aquarium Fishes **Unit 2: Biology of Aquarium Fishes.** Common characters and sexual dimorphism of Fresh water and Marine Aquarium fishes such as Guppy, Molly, Sword tail, Gold fish, Angel fish, Blue morph, Anemone fish and Butterfly fish **Unit 3: Food and feeding of Aquarium fishes** Use of live fish feed organisms. Preparation and composition of formulated fish feeds **Unit 4: Fish Transportation** Live fish transport - Fish handling, packing and forwarding techniques. **Unit 5: Maintenance of Aquarium** General Aquarium maintenance – budget for setting up an Aquarium Fish Farm as a Cottage Industry.

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Syllabus of

Under Graduate Physics

Under

Choice Based Credit System

From July, 2020 session

Netaji Subhas Open University

Structure and Outline of the Course

Semester	Course code	Course title	Credit/ Marks
I	CC1	CC-1 (Lab-I)	6/70
	CC2	CC-2(Lab-II)	6/70
	GE1	*To be selected from available subject*	6/70
	AECC1	English/ Bengali	2/70
II	CC3	Mechanics and General Physics	6/70
	CC4	Mathematical methods in Physics-I	6/70
	GE2	*To be selected from available subject*	6/70
	AECC2	Environmental Sciences	2/70
III	CC5	CC-5: (Lab-III)	6/70
	CC6	CC-6: (Lab-IV)	6/70
	CC7	Mathematical Methods in Physics-II	6/70
	GE3	*To be selected from available subject*	6/70
	SEC1	Electrical Circuits and Network Skills	2/60
IV	CC8	Electricity and Magnetism	6/70
	CC9	Waves and Optics	6/70
	CC10	Mathematical methods in physics-III	6/70
	GE4	*To be selected from available subject*	6/70
	SEC2	Renewable Energy and Energy Harvesting	2/60
V	CC11	CC-11: (Lab-V)	6/70
	CC12	Thermodynamics and Statistical mechanics	6/70
	DSE1	Physics Of Devices and Communication	6/70
	DSE2	DSE-2: (DSE Lab-I)	6/70
VI	CC13	Quantum Physics	6/70
	CC14	Electronics	6/70
	DSE3	Solid State Physics	6/70
	DSE4	Nuclear and Particle Physics	6/70
Total(Credit/Marks)=140/1800			

Semester-I

Course: CC-1(Lab-I) Credit-6 (Marks-70)

Unit 1: Extension of spring and to find out spring constant from vertical Oscillations.
Unit 2: To find out modulus of rigidity from torsional oscillation of a wire.
Unit 3: Determination of Moment of Inertia of a Fly-wheel.
Unit 4: Determination of refractive index of a liquid by travelling microscope.
Unit 5: To find Fourier coefficients of different periodic vibrations by graphical method
Unit 6: To determine the coefficient of Viscosity of water by capillary flow method.
Unit 7: Determination of g using a Bar pendulum/Kater's pendulum.
Unit 8: Determination of thermal conductivity of a bad conductor by Lee's and choltron's method.
Unit 9: To determine the surface tension of a liquid by Jagger's method.
Unit 10: To determine focal lengths of convex & concave lenses by displacement and Combination methods.
Unit 11: To adjust a Spectrometer for parallel rays by Schuster's method and to find out the angle of a prism.
Unit 12: To determine an unknown Low Resistance using Potentiometer.
Unit 13: Write a programme and verify to find out sum and average of given number set (By using C/C++).
Unit 14: Write a programme and verify to find out largest number and its position in a given number set.(By using C/C++).
Unit 15: Write a programme and verify to arrange a number in ascending/descending order for a given number set (By using C/C++).

Course:CC-2(Lab-II) Credit-6 (Marks-70)

Unit 1: To draw the forward bias and reverse bias characteristics of a junction diode and to find the value of r_p in active region.
Unit 2: To draw the Zener Diode–characteristics in forward and reverse bias condition and find the break down voltage and the break down current.
Unit 3: To verify Thevenin, Norton theorem, Maximum Power Transfer Theorem.
Unit 4: To determine the Y of a material by flexure method.
Unit 5: To draw the input-out-put characteristics of a common emitter Transistor.
Unit 6: To determine the band gap energy of a semiconductor by four probe method.
Unit 7: To determine H by Vibrational magnetometer.
Unit 8: To determine the self-inductance of a coil by Anderson's bridge.
Unit 9: To draw e - T of a thermocouple.
Unit 10: To determine the elastic Constants of the material a wire by Searle's method
Unit 11: To study the V-I curve of a solar cell and find the maximum power point and efficiency.
Unit 12: To study the variation of mutual inductance of a given pair of coaxial coils by using a ballistic galvanometer.
Unit 13: To find out temperature co-efficient of the material of a wire by *Carey- Foster bridge*
Unit 14: To find leakage resistance by discharging a capacitor
Unit 15: To study Lissajous Figures

Semester-II

Course: CC-3(Mechanics and General Physics) Credit-6 (Marks-70)

Laws of Motion: Inertial and non-inertial frame, Galilean transformations; Galilean invariance. Dynamics of a system of particles. Concept of Centre of Mass, determination of centre of mass for discrete and continuous bodies having cylindrical and spherical symmetry.
Application of Newton's law for variable mass system. Conveyer belt feeding raw material, Rocket motion in gravity and gravity free space.
Conservative and non-conservative forces, Force as a gradient of Potential Energy, stability and potential energy, conservation of momentum and energy.
Elastic and in-elastic collisions, in laboratory frame and centre of mass frame.
Rotational Dynamics: Angular velocity, Angular momentum, Torque, Conservation of angular momentum, Moment of Inertia, product of inertia, Parallel and perpendicular axes theorem, calculation of Moment of Inertia of discrete and continuous objects (1-D, 2-D and 3-D), Euler's equations; K.E of rotation involving both translation and rotation.
Rotating reference frame and the pseudo forces, non-inertial frames and idea of fictitious forces. Equation of motion with respect to a uniformly rotating frame - Centrifugal and Coriolis forces. Laws of Physics in a laboratory on the surface of the earth.
Gravitation: Gravitational potential and intensity, Gauss's law, applications of Gauss's law, Poisson's equation, Laplace's equation, gravitational self-energy, gravitational field and potential due to spherical bodies. Effect of Coriolis force on a falling body. Foucault pendulum.
Central Force Motion: Motion of a particle under a central force field. Two-body problem and its reduction to one-body problem and its solution. The energy equation and energy diagram. Satellite motion: Kepler's laws and its deduction for elliptic orbit. Geo-synchronousorbits, Weightlessness. Basic idea of Global Positioning System (GPS).
Elasticity: Interrelationships between the various elastic constants for isotropic medium, Torsion of a cylinder and torsional rigidity, Bending of beams and cantilevers, flexural rigidity, geometrical moment of inertia, strain-energy relations.
Viscosity and fluid dynamics: Coefficient and Newton's law. Poiseullie's equation, Stoke's method and terminal velocity. Equation of continuity in differential form, Bernoulli's theorem and its applications, Toricelli's theorem.
Special Theory of Relativity: Discovery of constancy of speed of light from theoretical and experimental consequence, Postulates of Special Theory of Relativity, Lorentz Transformation, Length Contraction, Time Dilation, Examples. Lorentz Invariance; Velocity Addition Theorem, Doppler Effect,
Variation of Mass with Velocity, Energy-Mass Equivalence, Relativistic Energy and Momentum and their Transforms; Newton's Laws of Motion in Relativistically Covariant Form.

CC-4: (Mathematical methods in Physics-I)
Credit-6 (Marks-70)

Calculus:
Recapitulation: Limits, continuity, average and instantaneous quantities, differentiation. Intuitive ideas of continuous, differentiable, functions and plotting of curves. Approximation: Taylor and binomial series (statements only).
Second Order Differential equations: Homogeneous Equations with constant coefficients. Wronskian and general solution. Statement of existence and Uniqueness Theorem for Initial Value Problems. Particular Integral.
Calculus of functions of more than one variable: Partial derivatives, exact and inexact differentials. Integrating factor with simple illustration. Constrained Maximization using Lagrange Multipliers.
Vector Calculus: Recapitulation of vectors: Properties of vectors under rotations. Scalar product and its invariance under rotations. Vector product, Scalar triple product and their interpretation in terms of area and volume respectively. Scalar and Vector fields.
Vector Differentiation: Directional derivatives and normal derivative. Gradient of a scalar field and its geometrical interpretation. Divergence and curl of a vector field. Del and Laplacian operators. Vector identities, Gradient, divergence, curl and Laplacian in spherical and cylindrical coordinates.
Vector Integration: Ordinary Integrals of Vectors. Multiple integrals, Jacobian. Notion of infinitesimal line, surface and volume elements. Line, surface and volume integrals of Vector fields. Flux of a vector field. Gauss' divergence theorem, Green's and Stokes Theorems and their applications (no rigorous proofs)
Orthogonal Curvilinear Coordinates:
Orthogonal Curvilinear Coordinates. Derivation of Gradient, Divergence, Curl and Laplacian in Cartesian, Spherical and Cylindrical Coordinate Systems
Dirac Delta function and its properties:
Definition of Dirac delta function. Representation as limit of a Gaussian function and rectangular function. Properties of Dirac delta function.
Matrices: Addition and Multiplication; Transpose and conjugate transpose of a matrix; Adjoint and Inverse of a Matrix; rank of a matrix; Normal Forms; Characteristics equation of a square matrix and diagonalization; Trace of a Matrix; Inner Product.
Types of matrices – Null Matrices, Singular and non-singular matrices, Symmetric and Skew-symmetric Matrix, Hermitian and Skew-Hermitian Matrix, Orthogonal and unitary matrices and their properties.
Solution of systems of linear homogenous and non-homogeneous equations by matrix method; Cayley - Hamilton theorem.
Eigen-values and Eigenvectors. Theorem. Diagonalization of Matrices. Solutions of Coupled Linear Ordinary Differential Equations, Functions of a Matrix.

C & C^{++} Programming fundamentals:
Introduction to Programming, constants, variables and data types, operators and Expressions, I/O statements, scanf and printf, c in and c out, Manipulators for data formatting, Control statements (decision making and looping statements) (If-statement. If-else Statement. Nested if Structure. Else-if Statement. Ternary Operator. Goto Statement. Switch Statement. Unconditional and Conditional Looping. While Loop. Do-While Loop. FOR Loop. Break and Continue Statements. Nested Loops).

Semester-III

CC-5: (Lab-III) Credit-6 (Marks-70)

Unit 1: To find mutual inductance by Carey-Foster method
Unit 2: To measure the field strength B and its variation with distance by using a search coil.
Unit 3: To study the variation of refractive index(μ) of the material of a prism with wave length and to verify Cauchy's dispersion formula and to find the dispersive power of the material of the prism by spectrometer.
Unit 4: To draw the regulation characteristics of a bridge rectifier (i) without using any filter and (ii) using C filter. Determination of ripple factor in both cases by measuring the ripple voltage with the help of an A.C meter.
Unit 5: To find the optical rotation of a sugar solution by a Polarimeter.
Unit 6: To find wavelength of Na-light by Fresnel's bi-prism.
Unit 7: To draw $\delta-\lambda$, $\delta-1/\lambda^2$graphs and find an unknown wavelength by a prism Spectrometer
Unit 8: To draw: sin $\theta-\lambda$ graph with the help of a diffraction grating and find wavelengths.
Unit 9: To study response curve of a Series LCR circuit and determine its Resonant frequency, (b) Impedance at resonance, (c) Quality factor Q, and (d) Band width.
Unit 10: To find the resistance of a Galvanometer by Half Deflection Method.
Unit 11: Measurement of charge and current sensitivity and CDR of Ballistic Galvanometer
Unit 12: To determine wavelength of sodium light using Newton's Rings.
Unit 13: To study the response curve of a parallel LCR circuit and determine its (a) Anti-resonant frequency and (b) Quality factor Q.
Unit 14: To determine refractive index of the Material of a prism using sodium source.
Unit 15: To determine the Temperature Coefficient of Resistance by Platinum Resistance Thermometer (PRT).

CC-6: (Lab-IV) Credit-6 (Marks-70)

Unit 1: To find the number of lines per centimetre of a transmission grating and to measure the wave length of an unknown spectral line.
Unit 2: To study photo current versus intensity and wave length of light; maximum of photo electrons versus frequency of light.
Unit 3: Determination of slit width by studying the single slit diffraction pattern.
Unit 4: Use of an OP-AMP as adder, Subtractor, inverting and non-inverting amplifier.
Unit 5: To test a Transistor using a Multimeter. To design a switch (NOT gate) using a Transistor and study its performance.
Unit 6: To verify and design AND, OR, NOT and XOR gates using NAND gates.
Unit 7: To design a combinational logic system for a specified Truth Table.
Unit-8: To design Half Adder, Full Adder and 4-bit binary Adder.
Unit 9: To design a Half Subtractor, Full Subtractor, Adder-Subtractor using Full Adder I.C.
Unit 10: To study the diffraction pattern of a crossed grating with the help of a LASER source.
Unit 11: To draw the characteristics of a JFET and hence to determine relevant parameters.
Unit 12: Determination of thickness of a thin film by Fresnel"s bi-prism.
Unit 13: To calibrate a thermocouple to measure temperature in a specified Range using (i) Null Method, (ii) Direct measurement using Op- Amp difference amplifier and to determine Neutral Temperature.
Unit 14: To design Fourier spectrum of (i) Square (ii) triangular and (iii) half sinusoidal wave form by CRO.

CC-7: (Mathematical Methods in Physics-II)
Credit-6 (Marks-70)

Fourier Series: Periodic functions. Orthogonality of sine and cosine functions, Dirichlet Conditions (Statement only). Expansion of periodic functions in a series of sine and cosine functions and determination of Fourier coefficients. Complex representation of Fourier series. Expansion of functions with arbitrary period. Expansion of non-periodic functions over an interval. Even and odd functions and their Fourier expansions. Application. Summing of Infinite Series.

Frobenius Method and Special Functions: Singular Points of Second Order Linear Differential Equations and their importance. Frobenius method and its applications to differential equations. Legendre, Bessel, Hermite and Laguerre. Differential Equations. Properties of Legendre Polynomials: Rodrigues Formula, Generating Function, Orthogonality. Simple recurrence relations. Expansion of function in a series of Legendre Polynomials. Bessel Functions of the First Kind: Generating Function, simple recurrence relations. Zeros of Bessel Functions and Orthogonality.

Some Special Integrals: Beta and Gamma Functions and Relation between them. Expression of Integrals in terms of Gamma Functions. Error Function (Probability Integral).

Theory of Errors: Systematic and Random Errors. Propagation of Errors. Normal Law of Errors. Standard and Probable Error.

Partial Differential Equations: Solutions to partial differential equations, using separation of variables: Laplace's Equation in problems of rectangular, cylindrical and spherical symmetry. Wave equation and its solution for vibrational modes of a stretched string, rectangular membrane.

Advance Mechanics

Constraints, Generalized co-ordinates, Virtual displacement and virtual work done; D'Alembert's principle and derivation of Euler-Lagrange equations; Lagrange's equations for velocity-dependent potential; Application to Lagrange's equation to some simple cases (one-dimensional Simple Harmonic Oscillations and falling body in uniform gravity). Cyclic coordinates Isotropy and Homogeneity of space, Lagrangian formulation of conservation laws of linear momentum, angular momentum and energy.

Hamilton formalism: Variational principles; Hamilton's principle; Derivation of Lagrange's equation from Hamilton's principle.

Hamilton's equation of motions; Hamiltonian; Applications of Hamilton's equation of motion to some simple cases(Hamiltonian for a harmonic oscillator, solution of Hamilton's equation for Simple Harmonic Oscillations; particle in a central force field- conservation of angular momentum and energy).

Semester-IV

CC-8: (Electricity and Magnetism) Credit-6 (Marks-70)

Electric Field and Electric Potential:

Conservative nature of Electrostatic Field, Gauss' Law and its applications with spherical, cylindrical and planar symmetry of charge distribution, Laplace's and Poisson equations, the Uniqueness Theorem. Electrostatic energy of a system of charges. Electrostatic energy of a charged sphere. Conductors in an electrostatic Field. Surface charge and force on a conductor. Capacitance of a system of charged conductors. Parallel-plate capacitor. Capacitance of an isolated conductor. Method of Images and its application to: (1) Plane Infinite Sheet and (2) Sphere.

Dielectric Properties of Matter:

Electric Field in a medium, Dielectric Polarization, Electrical Susceptibility and Dielectric Constant. Displacement vector **D**. Relations between **E**, **P** and **D**. Gauss' Law in dielectrics. Linear dielectrics, boundary conditions at the dielectric surface, energy density in electrostatic field, microscopic theory of dielectric polarizability, Clausius-Mossotti relation, atomic radius from dielectric constant, polar molecules and Langevin-Debye (formula only).

Magnetic Field: Electric current as a source of magnetic field, Biot-Savart's Law and its simple applications: straight wire and circular loop, Current Loop as a Magnetic Dipole and its Dipole Moment (Analogy with Electric Dipole). Ampere's Circuital Law and its application to (1) Solenoid and (2) Toroid.

Properties of **B**: curl and divergence. Vector Potential. Magnetic Force on (1) point charge (2) current carrying wire (3) between current elements. Torque on a current loop in a uniform Magnetic Field.

Magnetic Properties of Matter: Magnetization vector (**M),** Magnetic Intensity(**H),**Magnetic Susceptibility and permeability. Relation between **B, H, M**. Ferromagnetism, B-H curve and hysteresis loss.

Electromagnetic Induction: Faraday's Law, Lenz's Law. Self-Inductance, Mutual Inductance, Energy stored in a Magnetic Field.

Maxwell`s equations and Electromagnetic wave propagation:

Maxwell's equations: Displacement Current. Vector and Scalar Potentials. Gauge Transformations: Lorentz and Coulomb Gauge. Boundary Conditions at Interface between Different Media. Wave Equations. Plane Waves in Dielectric Media. Poynting Theorem and Poynting Vector. Electromagnetic (EM) Energy Density. Physical Concept of Electromagnetic Field Energy Density, Momentum Density and Angular Momentum Density.

Network theorems: Ideal Constant-voltage and Constant-current Sources.

Network Theorems: Thevenin's theorem, Norton's theorem, Superposition theorem, Maximum power theorem, Reciprocity theorem and their applications.

Electrical Circuits: AC Circuits: Kirchhoff's laws for AC circuits. Complex Reactance and Impedance. Series and parallel LCR Circuit: (1) Resonance, (2) Power Dissipation and (3) Quality Factor, and (4) Band Width.

Ballistic Galvanometer: Torque on a current Loop. Ballistic Galvanometer: Current and Charge Sensitivity. Electromagnetic damping. Logarithmic damping, CDR. Conversion of ballistic to dead beat Galvanometer.

CC-9:(Waves and Optics) Credit-6 (Marks-70)

Recapitulation of SHM: Setting up of differential eqn. and to find out general soln. Calculation of energy of SHM.

Damped harmonic motion: Setting up of differential eqn. and to find out general soln. study of the effect of damping factor on motion.

Forced oscillations: Transient and steady state solution, Resonance, band width, sharpness of resonance; power dissipation and Quality Factor. Pendulum with length comparable with the radius of earth. Compound pendulum with corrections, centre of percussion, Kater's Pendulum.

Superposition of Harmonic Oscillations: Superposition Principle. Superposition of two collinear oscillations with equal an unequal frequencies and their uses. Superposition of two perpendicular SHMs, Lissajous figs.

Wave motion:(a) Plane and Spherical Waves. Longitudinal and Transverse Waves. Plane Progressive Waves. Wave Equation. Particle and Wave Velocities. Differential Equation of a wave. Pressure of a Longitudinal Wave. Energy Transport. Intensity of Wave.(b) Water Waves: Ripple.

Velocity of Waves:(a) Velocity of Transverse Vibrations of Stretched Strings.(b) Velocity of Longitudinal Waves in a Fluid in a Pipe. Newton's Formulafor Velocity of Sound. Laplace's Correction.

Superposition of Harmonic Waves:(a) Standing (Stationary) Waves in a String: Fixed and Free Ends. Analytical Treatment. Changes with respect to Position and Time. Energy of Vibrating String. Transfer of Energy. Normal Modes of Stretched Strings. Plucked and Struck Strings. Melde's Experiment.(b) Longitudinal Standing Waves and Normal Modes. Open and Closed Pipes.(c) Superposition of N Harmonic Waves. Phase and Group Velocities.

Wave optics: (a) Electromagnetic nature of light. Definition and properties of wave front. Huygens Principle, Temporal and Spatial coherence.

Interference :(a) Division of amplitude and wave front. Young's double slit experiment. Lloyd's Mirror and Fresnel's Bi-prism. Stokes' treatment. Interference in Thin Films: parallel and wedge shaped films. Fringes of equal inclination (Haidinger Fringes); Fringes of equal thickness (Fizeau Fringes). Newton's Rings: Measurement of wavelength and refractive index.

Interferometers :(a) Michelson Interferometer-(1) Idea of formation of fringes (No theory required),(2) Determination of Wavelength, (3)Wavelength Difference,(4) Refractive Index, and (5) Visibility of Fringes.(b) Fabry-Perot interferometer.

Diffraction and Holography:

(a) Fraunhofer diffraction: Single slit. Circular aperture, Resolving Power of a telescope. Double slit. Multiple slits. Diffraction grating. Resolving power of grating.

(b) Fresnel Diffraction: Fresnel's Assumptions. Fresnel's Half-Period Zones for Plane Wave. Explanation of Rectilinear Propagation of Light. Theory of a Zone Plate: Multiple Foci of a Zone Plate. Fresnel's Integral, Fresnel diffraction pattern of a straight edge, a slit and a wire.

LASER: Characteristics, Spontaneous and stimulated emission, meta-stable states, population inversion. Three level, four level LASERs, optical resonator, Ruby Laser, He-Ni Laser.

Holography: Principle of Holography. Recording and Reconstruction Method. Theory of Holography as Interference between two Plane Waves. Point source holograms.

Polarization of Light: Description of Linear, Circular and Elliptical Polarization. Propagation of E.M. Waves in Anisotropic Media. Fresnel's Formula. Uniaxial and Biaxial Crystals. Light Propagation in Uni-axial Crystal. Double Refraction. Polarization by Double Refraction. Nicol Prism. Ordinary & extraordinary refractive indices. Production & detection of Plane, Circularly and Elliptically Polarized Light. Phase Retardation Plates: Quarter-Wave and Half-Wave Plates. Babinet Compensator and its Uses. Optical Rotation. Biot's Laws for Rotatory Polarization. Fresnel's Theory of optical rotation. Specific rotation. Laurent's half-shade Polarimeter.

Optical Fibres: -Propagation of light in fibre, Numerical Aperture. Step and Graded Indices (Definitions Only). Single and Multiple Mode Fibres (Concept and Definition Only).

CC-10:(Mathematical methods in Physics-III)
Credit-6 (Marks-70)

Complex Analysis: Brief Revision of Complex Numbers and their Graphical Representation. Euler's formula, De Moivre's theorem, Roots of Complex Numbers. Functions of Complex Variables. Analyticity and Cauchy-Riemann Conditions. Examples of analytic functions. Singular functions: poles and branch points, order of singularity, branch cuts. Integration of a function of a complex variable. Cauchy's Inequality. Cauchy's Integral formula. Simply and multiply connected region. Laurent and Taylor's expansion. Residues and Residue Theorem. Application in solving Definite Integrals.

Integrals Transforms: Fourier Transforms: Fourier Integral theorem. Fourier Transform. Examples. Fourier transform of trigonometric, Gaussian, finite wave train & other functions. Representation of Dirac delta function as a Fourier Integral. Fourier transform of derivatives, Inverse Fourier transform, Convolution theorem. Properties of Fourier transforms (translation, change of scale, complex conjugation, etc.). Three dimensional Fourier transforms with examples. Application of Fourier Transforms to differential equations: One dimensional Wave and Diffusion/Heat Flow Equations.

Laplace Transforms: Laplace Transform (LT) of Elementary functions. Properties of LTs: Change of Scale Theorem, Shifting Theorem. LTs of 1st and 2nd order Derivatives and Integrals of Functions, Derivatives and Integrals of LTs. LT of Unit Step function, Dirac Delta function, Periodic Functions. Convolution Theorem. Inverse LT. Application of Laplace Transforms to 2nd order Differential Equations: Damped Harmonic Oscillator, Simple Electrical Circuits, Coupled differential equations of 1^{st}order. Solution of heat flow along infinite bar using Laplace transform.

Tensors: Tensors as multilinear transformations (functionals) on vectors. Examples: Moment of Inertia, dielectric susceptibility. Components of a tensor in basis. Symmetric and antisymmetric tensors. The completely antisymmetric tensor. Non-orthonormal and reciprocal bases. Summation convention. Inner product of vectors and the metric tensor.

Coordinate systems and coordinate basis vectors. Reciprocal coordinate basis. Components of metric in a coordinate basis and association with infinitesimal distance.
Change of basis: relation between coordinate basis vectors. Change of tensor components under change of coordinate system. Example: Inertial coordinates & bases in Minkowski space, Lorentz transformations as coordinate transformations,
Elelctro-magnetic tensor and change in its components under Lorentz transformations.

Semester-V

CC-11:(Lab-V) Credit-6(Marks-70)

Unit 1: To design d.c power supply with a specified output following the steps and to measure its
a) ripple factor
b) study its input and output by CRO
c) draw load and line regulation.
- a) Half wave rectifier
  - i) With L/C type filter
  - ii) With pi filter
- b) Full wave rectifier
  - i) With L/C type filter
  - ii) With pi filter
- c) Use a Zener diode to stabilize the output
- d) Use IC to stabilize the output

Unit 2. To design an amplifier (Transistor/ OPAMP/FET) of a specified out-put and study its input and output signal by CRO.
Unit 3. To design an inverter with specified input and output resistance.
Unit 4. To design a 4-bit ripple counter using IC gates and study its performance.
Unit 5. To design a circuit to check water level of a water tank/reservoir and automate the filling motor.
Unit 6: To design a circuit by using LDR to check pollution level.
Unit 7: To design a fan speed electronic regulator using SCR.
Unit 8: To design a Wein's Bridge oscillator of given frequency.
Unit 9: To design PWM, PPM, PAM and Pulse code modulation using ICs.

CC-12:(Thermodynamics and Statistical mechanics)

Credit-6 **(Marks-70)**

Zeroth and First Law of Thermodynamics: Extensive and intensive Thermodynamic Variables, Thermodynamic Equilibrium, Zeroth Law of Thermodynamics & Concept of Temperature, Concept of Work & Heat, State Functions, First Law of Thermodynamics and its differential form, Internal Energy, First Law & various processes, Applications of First Law: General Relation between C_P and C_V, Work Done during Isothermal and Adiabatic Processes, Compressibility and Expansion Co-efficient.

Second Law of Thermodynamics: Reversible and Irreversible process with examples. Conversion of Work into Heat and Heat into Work. Heat Engines. Carnot's Cycle, Carnot engine & efficiency. Refrigerator & coefficient of performance, 2nd Law of Thermodynamics: Kelvin-Planck and Clausius Statements and their Equivalence.

Carnot's Theorem. Applications of Second Law of Thermodynamics: Thermodynamic Scale of Temperature and its Equivalence to Perfect Gas Scale

Entropy: Concept of Entropy, Clausius Theorem. Clausius Inequality, Second Law of Thermodynamics in terms of Entropy. Entropy of a perfect gas. Principle of Increase of Entropy. Entropy Changes in Reversible and Irreversible processes with examples.

Entropy of the Universe. Entropy Changes in Reversible and Irreversible Processes. Principle of Increase of Entropy. Temperature–Entropy diagrams for Carnot's Cycle. Third Law of Thermodynamics. Unattainability of Absolute Zero.

Thermodynamic Potentials: Extensive and Intensive Thermodynamic Variables. Thermodynamic Potentials: Internal Energy, Enthalpy, Helmholtz Free Energy, Gibb's Free Energy. Their Definitions, Properties and simple applications. First and second order Phase Transitions with examples, Clausius- Clapeyron Equation and Ehrenfest equations.

Maxwell's Thermodynamic Relations: Derivations and applications of Maxwell's Relations, Maxwell's Relations:(1) Clausius-Clapeyron equation, (2) Values of C_P - C_V, (3) TdS Equations, (4) Joule-Kelvin coefficient for Ideal and Vander Waal Gases, (5) Energy equations, (6) Change of Temperature during Adiabatic Process.

Kinetic theory of Gases: Derivation of Maxwell's law of distribution of velocities and its experimental verification, Mean free path (Zeroth Order), Transport Phenomena: Viscosity, Conduction and Diffusion (for vertical case), Law of equipartition of energy (no derivation) and its applications to specific heat of gases; mono-atomic and diatomic gases.

Statistical Mechanics: Phase space, Macro-states and Microstate, Entropy and Thermodynamic probability, Maxwell-Boltzmann law and distribution of velocity.

Bose-Einstein Statistics: B-E distribution law, Thermodynamic functions of a strongly Degenerate Bose Gas, Bose Einstein condensation, properties of liquid He (qualitative description), Radiation as a photon gas and Thermodynamic functions of photon gas. Bose derivation of Planck's law.

Fermi-Dirac Statistics: Fermi-Dirac Distribution Law, Thermodynamic functions of a Completely and strongly Degenerate Fermi Gas, Fermi Energy, Electron gas in a Metal, Specific Heat of Metals, Relativistic Fermi gas, White Dwarf Stars, Chandrasekhar Mass Limit.

Semester-VI

CC-13:(Quantum Physics) Credit-6 (Marks-70)

Foundation: Blackbody radiation, Spectral distribution, Concept of Energy Density, Derivation of Planck's law, Deduction of Wien's distribution law, Rayleigh-Jeans Law, Stefan Boltzmann Law and Wien's displacement law from Planck's law. Planck's quantum hypothesis, Planck's constant and light as a collection of photons.

Quantum theory of Light: Photo-electric effect and Compton scattering. De Broglie wavelength and matter waves; Davisson-Germer experiment. Wave description of particles by wave packets. Group and Phase velocities and relation between them.

Uncertainty Principle and its Consequences. [Estimating minimum energy of a confined particle using uncertainty principle]

Atoms in Electric & Magnetic Fields: Electron angular momentum. Space quantization. Electron Spin and Spin Angular Momentum. Larmor's Theorem. Spin Magnetic Moment. Stern-Gerlach Experiment. Normal and Anomalous Zeeman Effect, Electron Magnetic Moment and Magnetic Energy, Gyromagnetic Ratio and Bohr Magneton.

Many electron atoms: Pauli's Exclusion Principle. Symmetric & Antisymmetric Wave Functions. Periodic table. Fine structure. Spin orbit coupling. Spectral Notations for Atomic States. Total angular momentum. Vector Model. Spin-orbit coupling in atoms- L-S and J-J couplings. Hund's Rule. Term symbols. Spectra of Hydrogen and Alkali Atoms (Na etc.).

X-ray: production, Continuous and characteristic spectra, Moseley's law.

Schrodinger Equation: Time Dependent and Time Independent Schrodinger Equation in One Dimension, Statistical Interpretation of Wave Function, Probability Current Density and Continuity Equation, Normalization of Wave Functions, Wave Function in Momentum Space; Observables and Operators, Linear Momentum, Orbital Angular Momentum, Commutation Relations, Expectation Values.

Applications of Quantum Mechanics: One Dimensional Rectangular Potential Barrier, Tunnelling, Parity Operator and its Eigenvalues; One Dimensional Potential Well, Particle in a Box, Free Particle, Simple Harmonic Oscillator (Energy Eigenvalues only); Quantum Numbers and Constants of Motion; Spin Angular Momentum: the Magnetic Moment of Electron, Stern-Gerlach Experiment, the Total Angular Momentum Vector, Space Quantization; Optical Spectra of Hydrogenic Atoms.

CC-14:(Electronics) Credit-6(Marks-70)

Diodes: Principle and structure of Junction diode, Zener diode, LED, Photodiode, Solar Cell. Half-wave Rectifiers. Centre-tapped and Bridge Full-wave Rectifiers, Calculation of Ripple Factor and Rectification Efficiency, (2) Zener Diode as Voltage Regulation.

Bipolar Junction transistors: Transistor characteristics; CB, CE and CC Configurations. α and β and their relationship. Load Line analysis of Transistors. DC Load line and Q-point. Physical Mechanism of Current flow. Active, Cut-off and Saturation Regions.

Amplifiers: Transistor Biasing and Stabilization Circuits. Fixed Bias and Voltage Divider Bias. Transistor as 2-port Network. h-parameter Equivalent Circuit. Analysis of a single-stage CE amplifier using Hybrid Model. Input and Output Impedance, Current, Voltage and Power Gains. Classification of Class A, B & C Amplifiers.

Coupled Amplifier: RC-coupled amplifier and its frequency response.

Feedback in Amplifiers: Effects of Positive and Negative Feedback on Input Impedance, Output Impedance, Gain, Stability, Distortion and Noise.

Sinusoidal Oscillators: Barkhausen's Criterion for self-sustained oscillations. RC Phase shift oscillator, determination of Frequency and condition of oscillation. Hartley & Colpitts oscillators.

Digital Circuits: Difference between Analog and Digital Circuits. Binary Numbers. Decimal to Binary and Binary to Decimal Conversion. BCD, Octal and Hexadecimal numbers. AND, OR and NOT Gates (realization using Diodes and Transistor). NAND and NOR Gates as Universal Gates. XOR and XNOR Gates and application as Parity Checkers

Boolean algebra: De Morgan's Theorems. Boolean Laws. Simplification of Logic Circuit using Boolean algebra. Fundamental Products. Idea of Minterms and Maxterms. Conversion of a Truth table into Equivalent Logic Circuit by (1) Sum of Products Method and (2) Karnaugh Map.

Data processing circuits: Basic idea of Multiplexers, De-multiplexers, Decoders, Encoders. Circuits: Arithmetic Circuits: Binary Addition. Binary Subtraction using 2's Complement. Half and Full Adders. Half & Full Subtractors, 4-bit binary Adder/Subtractor.

Sequential Circuits: SR, D, and JK Flip-Flops. Clocked (Level and EdgeTriggered) Flip-Flops. Pre-set and Clear operations. Race-around conditions in JK Flip-Flop. M/S JK Flip-Flop.

Timers: (a) IC 555: block diagram and applications: Astable multivibrator and Monostable multivibrator.

A/D and D/A converter: Weighted and R-2R latter DAC, Successive approximation method ADC.

Computer Organization: Basic structure of computer. Input/Output Devices. Data storage (idea of RAM and ROM), Computer memory. Memory organization & addressing. Memory Interfacing. Memory Map.

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Discipline Specific Elective

1. PHYSICS OF DEVICES AND INSTRUMENTS
2. Physics Practical: DSE LAB
3. SOLID STATE PHYSICS
4. NUCLEAR and PARTICLE PHYSICS

Semester-V

DSE-1:(Physics of Devices And Communication)

Credit-6 (Marks-70)

Operational Amplifiers (Black Box approach)**:** Characteristics of an Ideal and Practical Op-Amp. (IC 741) Open-loop and Closed-loop Gain. Frequency Response. CMRR. Slew Rate and concept of Virtual ground.

Applications of Op-Amps: (1) Inverting and non-inverting amplifiers, (2) Adder, (3) Subtractor, (4) Differentiator, (5) Integrator, (6) Log amplifier, (7) Zero crossing detector (8) Wein bridge oscillator.

FET: JFET, MOSFET& UJT, Structure and Characteristics. Small signal equivalent circuits of UJT and JFET. Metal semiconductor Junction. MOSFET– their frequency limits. Enhancement and Depletion Mode MOSFETS and their characteristics, CMOS. Charge coupled devices. Tunnel diode.

Power supply and Filters: Block Diagram of a Power Supply, Qualitative idea of C and L Filters. Line and load regulation, Short circuit protection Active and Passive Filters, Low Pass, High Pass, Band Pass and band Reject Filters.

Multivibrators: Astable and Monostable Multivibrators using transistors. Phase Locked Loop(PLL): Basic Principles, Phase detector(XOR & edge triggered), Voltage Controlled Oscillator (Basics, varactor). Loop Filter– Function, Loop Filter Circuits, transient response, lock and capture. Basic idea of PLL IC (565 or 4046).

Processing of Devices: Basic process flow for IC fabrication, Electronic grade silicon. Crystal plane and orientation. Defects in the lattice. Oxide layer. Oxidation Technique for Si. Metallization technique. Positive and Negative Masks. Optical lithography. Electron lithography. Feature size control and wet anisotropic etching. Lift off Technique. Diffusion and implantation.

1. Electronic communication

(a) Introduction to communication: means and modes. Need for modulation. Block diagram of an electronic communication system. Brief idea of frequency allocation for radio communication system in India. (TRAI). Electromagnetic communication spectrum, band designations and usage. Channels and base-band signals. Concept of Noise, signal-to-noise (S/N) ratio.

2. Analog Modulation: (a) Amplitude Modulation, modulation index and frequency spectrum, power of carrier and side bands, Generation of AM (Emitter Modulation), Amplitude Demodulation (diode detector), Concept of Single side band generation and detection.

Frequency Modulation (FM) and Phase Modulation (PM), modulation index and frequency spectrum, equivalence between FM and PM, Generation of FM using VCO, FM detector (slope detector), Qualitative idea of Super Heterodyne Receiver.

3. Analog Pulse Modulation

(a) Channel capacity, Sampling theorem, Basic Principles- PAM, PWM,
PPM, modulation and detection technique for PAM only, Multiplexing.

Digital Pulse Modulation: Need for digital transmission, Pulse Code Modulation, Digital Carrier Modulation Techniques, Sampling, Quantization and Encoding. Concept of Amplitude Shift Keying (ASK), Frequency Shift Keying (FSK), Phase Shift Keying (PSK), and Binary Phase Shift Keying (BPSK).

Satellite Communication– Introduction, need, Geosynchronous satellite orbits, geostationary satellite advantages of geostationary satellites. Satellite visibility, transponders (C - Band), path loss, ground station, simplified block diagram of earth station. Uplink and downlink.

Mobile Telephony System – Basic concept of mobile communication, frequency bands used in mobile communication, concept of cell sectoring and cell splitting, SIM number, IMEI number, need for data encryption, architecture (block diagram) of mobile communication network, idea of GSM, CDMA, TDMA and FDMA technologies, simplified block diagram of mobile phone handset, 2G, 3G and 4G concepts (qualitative only). GPS navigation system (qualitative idea only)

DSE-2:(DSE Lab) Credit-6 (Marks-70)

1. To design the active Low pass and High pass filters of given specification.
2. To design the active filter (wide band pass and band reject) of given specification.
3. To study the output and transfer characteristics of a JFET.
4. To measure the Dielectric Constant of a dielectric Materials with frequency.
5. To study the output characteristics of a MOSFET.
6. To study the characteristics of a UJT and design a simple Relaxation oscillator.
7. Design and Verification of op-amp as integrator and differentiator
8. To design an Amplitude Modulator using Transistor.
10. To design an Astable- multivibrator of given specifications using transistor.
11. To study envelope detector for demodulation of AM signal.
12. Study of ASK and FSK modulator.
13. Design clocked SR and JK Flip-Flop`s using NAND Gates
14. Design 4-bit asynchronous counter using Flip-Flop ICs
15. Measurement of susceptibility of paramagnetic solution (Quinck`s Tube Method)
16. To determine the Hall coefficient of a semiconductor sample.

Semester-VI

DSE-3:(Solid State Physics) Credit-6 (Marks-70)

Crystal Structure: Solids: Amorphous and Crystalline Materials. Lattice Translation Vectors. Lattice with a Basis – Central and Non-Central Elements. Unit Cell. Miller Indices. Reciprocal Lattice. Types of Lattices. Brillouin Zones. Diffraction of X-rays by Crystals. Bragg's Law. Atomic and Geometrical Factor.

Elementary Lattice Dynamics: Lattice Vibrations and Phonons: Linear Monoatomic and Diatomic Chains. Acoustical and Optical Phonons. Qualitative Description of the Phonon Spectrum in Solids. Dulong and Petit's Law, Einstein and Debye theories of specific heat of solids. T3 law.

Magnetic Properties of Matter: Dia-, Para-, Ferri- and Ferromagnetic Materials. Classical Langevin theory of dia– and Paramagnetic Domains. Quantum Mechanical treatment of Para-magnetism. Curie's law, Weiss's Theory of Ferromagnetism and Ferromagnetic Domains. Discussion of B-H Curve. Hysteresis and Energy Loss.

Dielectric Properties of Materials:
Classical Theory of Electric Polarizability. Normal and Anomalous Dispersion. Cauchy and Sellmeir relations. Langevin-Debye equation. Complex Dielectric Constant. Optical Phenomena. Piezo-electric effect

Elementary band theory: Kronig Penny model. Band Gap. Conductor, Semiconductor (p and n type) and insulator. Conductivity of Semiconductor, mobility, Hall Effect. Measurement of conductivity (04 probe method) & Hall coefficient.

Superconductivity: Experimental Results. Critical Temperature. Critical magnetic field. Meissner effect. Type I and type II Superconductors, London's Equation and Penetration Depth. Isotope effect. Idea of BCS theory (No derivation)

DSE-4:(Nuclear and Particle Physics)

Credit-6 **(Marks-70)**

General Properties of Nuclei: Constituents of nucleus and their Intrinsic properties, quantitative facts about mass, radii, charge density (matter density), binding energy, average binding energy and its variation with mass number, main features of binding energy versus mass number curve, N/A plot, angular momentum, parity, magnetic moment, electric moments, nuclear excites states. Concept of nuclear forces.

Nuclear Models: Liquid drop model approach, semi empirical mass formula and significance of its various terms, condition of nuclear stability, two nucleon separation energies, Evidence for nuclear shell structure, nuclear magic numbers, basic assumption of shell model, concept of mean field, residual interaction, concept of nuclear force.

Radioactivity decay:(a) Alpha decay: basics of α-decay processes, theory of α-emission, Gamow factor, Geiger Nuttall law, α-decay spectroscopy. (b) β-decay: energy kinematics for β-decay, positron emission, electron capture, neutrino hypothesis. (c) Gamma decay: Gamma rays emission & kinematics, internal conversion.

Nuclear Reactions: Types of Reactions, Conservation Laws, kinematics of reactions, Q-value, reaction rate, reaction cross section, Concept of compound and direct Reaction, resonance reaction, Coulomb scattering (Rutherford scattering).

Interaction of Nuclear Radiation with matter: Energy loss due to ionization (Bethe-Block formula), energy loss of electrons, Cerenkov radiation. Gamma ray interaction through matter, photoelectric effect, Compton scattering, pair production, neutron interaction with matter.

Detector for Nuclear Radiations: Gas detectors: estimation of electric field, mobility of particle, for ionization chamber and GM Counter. Basic principle of Scintillation Detectors and construction of photo-multiplier tube (PMT). Semiconductor Detectors (Siand Ge) for charge particle and photon detection (concept of charge carrier and mobility), neutron detector.

Particle Accelerators: Accelerator facility available in India: Linear accelerator, Cyclotron, Synchrotrons.

Particle physics: Particle interactions; basic features, types of particles and its families. Symmetries and Conservation Laws: energy and momentum, angular momentum, parity, baryon number, Lepton number, Isospin, Strangeness and charm, concept of quark model, colour quantum number and gluons.

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Structure & Outline of the GE Syllabus under CBCS

Paper	Details	Credit/Marks
GE1	Mechanics	Credit:6 (Marks-70)
GE2	Thermal Physics	Credit:6 (Marks-70)
GE3	Waves and Optics	Credit:6 (Marks-70)
GE4	Elements of Modern Physics	Credit:6 (Marks-70)

Semester-I

Paper- GE 1: Mechanics **Credit:6 (Marks-70)**

Vectors: Vector algebra. Scalar and vector products. Derivatives of a vector with respect to a parameter.

Ordinary Differential Equations: 1st order homogeneous differential equations. 2^{nd} order homogeneous differential equations with constant coefficients.

Laws of Motion: Frames of reference. Newton's Laws of motion. Dynamics of a system of particles. Centre of Mass.

Momentum and Energy: Conservation of momentum. Work and energy. Conservation of energy. Motion of rockets.

Rotational Motion: Angular velocity and angular momentum. Torque. Conservation of angular momentum.

Gravitation: Newton's Law of Gravitation. Motion of a particle in a central force field (motion is in a plane, angular momentum is conserved, areal velocity is constant). Kepler's Laws (statement only). Satellite in circular orbit and applications. Geosynchronous orbits. Basic idea of global positioning system (GPS). Weightlessness. Physiological effects on astronauts.

Fluids: Surface Tension: Synclastic and anticlastic surface - Excess of pressure -Application to spherical and cylindrical drops and bubbles - variation of surface tension with temperature - Jaegar's method. Viscosity - Rate flow of liquid in a capillary tube - Poiseuille's formula - Determination of coefficient of viscosity of a liquid - Variations of viscosity of liquid with temperature- lubrication.

Elasticity: Hooke's law - Stress-strain diagram - Elastic moduli-Relation between elastic constants - Poisson's Ratio-Expression for Poisson's ratio in terms of elastic constants - Work done in stretching and work done in twisting a wire – Twisting couple on a cylinder - Determination of Rigidity modulus by static torsion – Torsional pendulum-Determination of Rigidity modulus and moment of inertia -

Special Theory of Relativity: Constancy of speed of light. Postulates of Special Theory of Relativity. Length contraction. Time dilation. Relativistic addition of velocities.

Semester-II

Paper- GE 2: Thermal Physics **Credit:6 (Marks-70)**

Laws of Thermodynamics: Thermodynamic Description of system: Zeroth Law of thermodynamics and temperature. First law and internal energy, conversion of heat into work, Various Thermodynamical Processes, Applications of First Law: General Relation between CP and CV, Work Done during Isothermal and Adiabatic Processes, Compressibility and Expansion Coefficient, Reversible and irreversible processes, Second law and Entropy, Carnot's cycle & theorem, Entropy changes in reversible & irreversible processes, Entropy-temperature diagrams, Third law of thermodynamics, Unattainability of absolute zero.

Thermodynamical Potentials: Enthalpy, Gibbs, Helmholtz and Internal Energy functions, Maxwell's relations and applications - Joule-Thompson Effect, Clausius- Clapeyron Equation, Expression for (CP – CV), CP/CV, TdS equations.

Kinetic Theory of Gases: Derivation of Maxwell's law of distribution of velocities and its experimental verification, Mean free path (Zeroth Order), Transport Phenomena: Viscosity, Conduction and Diffusion (for vertical case), Law of equipartition of energy (no derivation) and its applications to specific heat of gases; mono-atomic and diatomic gases.

Theory of Radiation: Blackbody radiation, Spectral distribution, Concept of Energy Density, Derivation of Planck's law, Deduction of Wien's distribution law, Rayleigh- Jeans Law, Stefan Boltzmann Law and Wien's displacement law from Planck's law.

Statistical Mechanics: Phase space, Macrostate and Microstate, Entropy and Thermodynamic probability, Maxwell-Boltzmann law - distribution of velocity –

Quantum statistics - Fermi-Dirac distribution law - electron gas - Bose-Einstein distribution law - photon gas - comparison of three statistics.

Semester-III

Paper- GE 3: Waves and Optics **Credit:6 (Marks-70)**

Superposition of Two Collinear Harmonic oscillations: Linearity & Superposition Principle. (1) Oscillations having equal frequencies and (2) Oscillations having different frequencies (Beats).

Superposition of Two Perpendicular Harmonic Oscillations: Graphical and Analytical Methods. Lissajous Figures with equal an unequal frequency and their uses.

Waves Motion- General: Transverse waves on a string. Travelling and standing waves on a string. Normal Modes of a string. Group velocity, Phase velocity. Plane waves. Spherical waves, Wave intensity.

Sound: Simple harmonic motion - forced vibrations and resonance - Fourier's Theorem - Application to saw tooth wave and square wave - Intensity and loudness of sound - Decibels - Intensity levels - musical notes - musical scale. Acoustics of buildings: Reverberation and time of reverberation - Absorption coefficient - Sabine's formula - measurement of reverberation time - Acoustic aspects of halls and auditoria.

Wave Optics: Electromagnetic nature of light. Definition and Properties of wave front. Huygens Principle.

Interference: Interference: Division of amplitude and division of wavefront. Young's Double Slit experiment. Lloyd's Mirror and Fresnel's Biprism. Phase change on reflection: Stokes' treatment. Interference in Thin Films: parallel and wedge-shaped films. Fringes of equal inclination (Haidinger Fringes); Fringes of equal thickness (Fizeau Fringes). Newton's Rings: measurement of wavelength and refractive index.

Michelson's Interferometer: Idea of form of fringes (no theory needed), Determination of wavelength, Wavelength difference, Refractive index, and Visibility of fringes.

Diffraction: Fraunhofer diffraction- Single slit; Double Slit. Multiple slits and Diffraction grating. Fresnel Diffraction: Half-period zones. Zone plate. Fresnel Diffraction pattern of a straight edge, a slit and a wire using half-period zone analysis.

Polarization: Transverse nature of light waves. Plane polarized light – production and analysis. Circular and elliptical polarization.

Semester-IV

Paper- GE 4: Elements of Modern Physics **Credit:6 (Marks-70)**

Planck's quantum, Planck's constant and light as a collection of photons; Photoelectric effect and Compton scattering. De Broglie wavelength and matter waves; Davisson-Germer experiment.
Problems with Rutherford model- instability of atoms and observation of discrete atomic spectra; Bohr's quantization rule and atomic stability; calculation of energy levels for hydrogen like atoms and their spectra.
Position measurement- gamma ray microscope thought experiment; Wave-particle duality, Heisenberg uncertainty principle- impossibility of a particle following a trajectory; Estimating minimum energy of a confined particle using uncertainty principle; Energy-time uncertainty principle.
Two slit interference experiment with photons, atoms & particles; linear superposition principle as a consequence; Matter waves and wave amplitude; Schrodinger equation for non-relativistic particles; Momentum and Energy operators; stationary states; physical interpretation of wavefunction, probabilities and normalization; Probability and probability current densities in one dimension.
One dimensional infinitely rigid box- energy eigenvalues and eigenfunctions, normalization; Quantum dot as an example; Quantum mechanical scattering and tunnelling in one dimension - across a step potential and across a rectangular potential barrier.

Size and structure of atomic nucleus and its relation with atomic weight; Impossibility of an electron being in nucleus as a consequence of the uncertainty principle. Nature of nuclear force, NZ graph, semi-empirical mass formula and binding energy.

Radioactivity: stability of nucleus; Law of radioactive decay; Mean life and half-life; α- decay; β-decay - energy released, spectrum and Pauli's prediction of neutrino; Y-ray emission.
Fission and fusion - mass deficit, relativity and generation of energy; Fission – nature of fragments and emission of neutrons. Nuclear reactor: slow neutrons interacting with Uranium 235; Fusion and thermonuclear reactions.

Structure & Outline of the SEC Syllabus under CBCS

Paper	Details	Credit/Marks
SEC 1	Electrical Circuits and Network Skills	Credit:02 (Marks-60)
SEC 2	Renewable Energy and Energy Harvesting	Credit:02 (Marks-60)

Semester-III

Paper- SEC 1: ELECTRICAL CIRCUITS AND NETWORK SKILLS **Credit:02 (Marks-60)**

Basic Electricity Principles: Voltage, Current, Resistance, and Power. Ohm's law. Series, parallel, and series-parallel combinations. AC Electricity and DC Electricity. Familiarization with multimeter, voltmeter and ammeter.

Understanding Electrical Circuits: Main electric circuit elements and their combination. Rules to analyse DC sourced electrical circuits. Current and voltage drop across the DC circuit elements. Single-phase and three-phase alternating current sources. Rules to analyse AC sourced electrical circuits. Real, imaginary and complex power
components of AC source. Power factor. Saving energy and money.

Electrical Drawing and Symbols: Drawing symbols. Blueprints. Reading Schematics. Ladder diagrams. Electrical Schematics. Power circuits. Control circuits. Reading of circuit schematics. Tracking the connections of elements and identify current flow and voltage drop.

Generators and Transformers: DC Power sources. AC/DC generators. Inductance, capacitance, and impedance. Operation of transformers.

Electric Motors: Single-phase, three-phase & DC motors. Basic design. Interfacing DC or AC sources to control heaters & motors. Speed & power of ac motor.

Solid-State Devices: Resistors, inductors and capacitors. Diode and rectifiers. Components in Series or in shunt. Response of inductors and capacitors with DC or AC sources

Electrical Protection: Relays. Fuses and disconnect switches. Circuit breakers. Overload devices. Ground-fault protection. Grounding and isolating. Phase reversal. Surge protection. Interfacing DC or AC sources to control elements (relay protection device)

Electrical Wiring: Different types of conductors and cables. Basics of wiring-Star and delta connection. Voltage drop and losses across cables and conductors. Instruments to measure current, voltage, power in DC and AC circuits. Insulation. Solid and stranded cable. Conduit. Cable trays. Splices: wirenuts, crimps, terminal blocks, split bolts, and solder. Preparation of extension board.

Semester-IV

SEC 2: Renewable Energy and Energy Harvesting

Credits: 02 (Marks 60)

Fossil fuels and Alternate Sources of energy: Fossil fuels and nuclear energy, their limitation, need of renewable energy, non-conventional energy sources. An overview of developments in Offshore Wind Energy, Tidal Energy, Wave energy systems, Ocean Thermal Energy Conversion, solar energy, biomass, biochemical conversion, biogas generation, geothermal energy tidal energy, Hydroelectricity.

Solar energy: Solar energy, its importance, storage of solar energy, solar pond, non-convective solar pond, applications of solar pond and solar energy, solar water heater, flat plate collector, solar distillation, solar cooker, solar green houses, solar cell, absorption air conditioning. Need and characteristics of photovoltaic (PV) systems, PV models and equivalent circuits, and sun tracking systems.

Wind Energy harvesting: Fundamentals of Wind energy, Wind Turbines and different electrical machines in wind turbines, Power electronic interfaces, and grid interconnection topologies.

Ocean Energy: Ocean Energy Potential against Wind and Solar, Wave Characteristics and Statistics, Wave Energy Devices.

Tide characteristics and Statistics, Tide Energy Technologies, Ocean Thermal Energy, Osmotic Power, Ocean Bio-mass.

Geothermal Energy: Geothermal Resources, Geothermal Technologies.

Hydro Energy: Hydropower resources, hydropower technologies, environmental impact of hydro power sources.

Piezoelectric Energy harvesting: Introduction, Physics and characteristics of piezoelectric effect, materials and mathematical description of piezoelectricity.

Piezoelectric parameters and modelling piezoelectric generators, Piezoelectric energy harvesting applications, Human power.

Electromagnetic Energy Harvesting: Linear generators, physics mathematical models, recent applications.

Carbon captured technologies, cell, batteries, power consumption. Environmental issues and Renewable sources of energy, sustainability.

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NETAJI SUBHAS OPEN UNIVERSITY

Curriculum Structure of Bachelor Degree Programme (BDP) in Education under CBCS

[w.e.f. the Academic Session 2020-21]

Bachelor Degree Programme (BDP) in Education:

Preamble:

Bachelor Degree Programme in Education (BDP) would provide a wider and more comprehensive understanding of Education as a field of knowledge and would accommodate a wide variety of learning needs of learners. Following the Govt. of India Gazette (Extraordinary, Part III), Vide No. 247 Dated: 23rd June, 2017, and Resolution adopted by NSOU regarding modalities for implementation of CBCS in NSOU, Dated 14/05/2018, the School of Education has designed the present Choice Based Credit System (CBCS) Curriculum for BDP in Education for ODL learners which is supposed to be completed by three years with six semesters or according to the rules of the University. The whole programme is conducted by the University in ODL mode with prior approval from the DEB-UGC Vide its File No. E. 1-6/ 2018 (DEB-1) Dated 9th August, 2018.It is basically theoretical in nature and focuses on fundamental theoretical knowledge, policy and practices around the liberal discipline of Education and thus it is distinct from the Teacher Education (B.Ed.) programme. It encompasses the basic compulsory core courses in educational studies along with a few optional courses to meet the demands of specializations.

Eligibility for Admission:

Any candidate who has completed the Higher Secondary or Senior Secondary (+2) or equivalent examination from any recognized Board/ Council of the country may be eligible to take admission in the programme according to the University Rules. The other rules of Netaji Subhas Open University is also applicable.

Scope of the Programme:

The BDP (BA Hons.) in Education program may primarily be helpful to the candidates who are aspiring for:

1. Higher study in Education or in the concerned areas, viz., MA (Education), M. Phil. Ph.D. etc.;
2. Professional studies in the Teacher Education or in the relevant areas, viz., Elementary Teacher Education (D.El.Ed.), Primary Teacher Education, Pre-Primary Teacher Education or Secondary Teacher Education (B.Ed.) etc.;
3. Appearing TET, CTET and allied competitive examinations to obtain jobs in Teaching at various levels (after fulfilling the minimum eligibility), viz., Primary. Elementary or Secondary, both at the State and National levels;
4. Job Promotion towards Sub-Inspector of Schools or Education Services at Government level (after fulfilling the minimum eligibility);
5. Meeting the growing demands of human resources in Educational Planning and Management at Government, Semi-Government and Private sectors;
6. Grasping wider and more comprehensive understanding of Education as a field of knowledge and serving varied needs of learners as parents, guardians, teachers, social activists, NGO workers, policy framers, administrators or decision makers in the field of Educational practices.
7. This course may be helpful for the learners who are interested in working at the Non-Govt. organizations (NGO).

Curricular Areas:

Sl. No.	Course Component	Nature	No. of Courses	Total Credit	Total Marks
1.	Core Course (CC)	Compulsory	14	84	980
2.	Discipline Specific Elective Course (DSEC)	Optional	04	24	280
3.	Generic Elective Course (GEC)	Optional	04	24	280
4.	Ability Enhancement Course (AEC)	Optional	02	04	140
5.	Skill Enhancement Course (SEC)	Optional	02	04	120
Total			26	140	1800

Semester-wise Distribution of Courses:

Semester	BDEDCC (Compulsory)	DSEC (Any Four)	GEC (Any Four)	AEC (Any Two)	SEC (Any Two)	No. of Courses
I	1.1, 1.2		1.1	1.1		04
II	2.3, 2.4		2.2	2.2		04
III	3.5, 3.6, 3.7		3.3.		3.1	05
IV	4.8, 4.9, 4.10		4.4/ 4.5		4.2	05
V	5.11, 5.12	5.1, 5.2				04
VI	6.13, 6.14	6.3. 6.4/ 6.5				04
Total	14	04	04	02	02	26

Course-wise Curriculum Structure:

Course Component	*Course Code*	*Course Title*	*Credits*	*Marks*
Core Courses (CC)	BDEDCC1.1	Introduction to Educational Studies	6 (SLM+ ^PCP)	50 (W)+20 (A)
	BDEDCC1.2	Philosophical Foundation of Education	6 (SLM+ ^PCP)	50 (W)+20 (A)
	BDEDCC2.3	Sociological Foundation of Education	6 (SLM+ ^PCP)	50 (W)+20 (A)
	BDEDCC2.4	Psychological Foundation of Education	6 (SLM+ ^PCP)	50 (W)+20 (A)
	BDEDCC3.5	Policy Perspective and Development of Indian Education (Pre-Independent)	6 (SLM+ ^PCP))	50 (W)+20 (A)
	BDEDCC3.6	Pedagogical Studies	6 (SLM+ ^PCP)	50 (W)+20 (A)
	BDEDCC3.7	Curriculum Studies	6 (SLM+ ^PCP)	50 (W)+20 (A)
	BDEDCC4.8	Evaluation in Education	6 (SLM+ ^PCP)	50 (W)+20 (A)
	BDEDCC4.9	Educational Technology	6 (SLM+ ^PCP)	50 (W)+20 (A)
	BDEDCC4.10	Guidance and Counseling in Education	6 (SLM+ ^PCP))	50 (W)+20 (A)
	BDEDCC5.11	Policy Perspective and Development of Indian Education (Post-Independent)	6 (SLM+ ^PCP)	50 (W)+20 (A)
	BDEDCC5.12	Value Education	6 (SLM+ ^PCP)	50 (W)+20 (A)
	BDEDCC6.13	Educational Management and Planning	6 (SLM+ ^PCP)	50 (W)+20 (A)
	BDEDCC6.14	Basic Research Methodology & Statistics in Education	6 (SLM+ ^PCP)	50 (W)+20 (A)
Total		*14 Courses*	*14X6 = 84*	*14X70 = 980*
Discipline Specific Elective Course (DSEC): Any four	BDEDDSE5.1	Comparative Education	6 (SLM+ ^PCP)	50 (W)+20 (A)
	BDEDDSE5.2	Special and Inclusive Education	6 (SLM+ ^PCP)	50 (W)+20 (A)
	BDEDDSE6.3	Child Development and Pedagogy	6 (SLM+ ^PCP)	50 (W)+20 (A)
	BDEDDSE6.4	Education and Community Development	6 (SLM+ ^PCP)	50 (W)+20 (A)
	BDEDDSE6.5	Open and Distance Education	6 (SLM+ ^PCP)	50 (W)+20 (A)
Total		*04 Courses*	*4X6 = 24*	*4X70 = 280*
Generic Elective Course (GEC): Any four [For BDP students other than Education]	BDEDGEC1.1	Contemporary India and Education	6 (SLM+ ^PCP)	50 (W)+20 (A)
	BDEDGEC2.2	Special and Inclusive Education	6 (SLM+ ^PCP))	50 (W)+20 (A)
	BDEDGEC3.3	Child Development and Pedagogy	6 (SLM+ ^PCP))	50 (W)+20 (A)
	BDEDGEC4.4	Education and Gender Studies	6 (SLM+ ^PCP)	50 (W)+20 (A)
	BDEDGEC4.5	Open and Distance Education	6 (SLM+ ^PCP))	50 (W)+20 (A)
Total		*04 Courses*	*4X6 = 24*	*4X70 = 280*
Ability Enhancement Course (AEC): Any two	BDEDAEC1.1	FEG/ FBG	2	70
	BDEDAEC.2.2	ENVS	2	70
Total		*02 Courses*	*4*	*140*
Skill Enhancement Course (SEC): Any two	BDEDSEC3.1		2	
	BDEDSEC4.2		2	
Total		*02 Courses*	*4*	*140*
Grand Total		***26 Courses***	***140***	***1800***

*SLM = Self Learning Material; **PCP= Personal Contact Programme; #W Written; ##IA=Assignment
^Counseling Sessions for each of the 6 Credit Courses (Theory) would be 10 % of the total study Hours, i.e., 18 Hours

1. Course Details (Compulsory Courses)

Course Code	*Course Title*	*Credit (SLM+PCP)*	*Marks (W+A)*
BDEDCC1.1	**Introduction to Educational Studies**	6	50 + 20

Objectives	After the completion of the course, the learners are expected to: 1. understand Educational Studies as the academic discipline; 2. explain the relationship between Education and human life; 3. discuss the Educational Studies as an academic discipline; 4. understand aims of education in respect to its factors and types; 5. explain Education as the process and product in the context of its agencies and child-centrism; 6. analyze the aims and objectives of modern Education in the light of Report of the International Education Commission for 21st Century.

Block	Unit	Topic	SLM (Pages)
I	1.1	1.1.1 Educational Studies: Concept, Nature and Scope; 1.1.2 Aspects of Educational Studies; 1.1.3 Education and Society;	30
	1.2	1.2.4 Education as Human Rights; 1.2.5 Education for Human Resource Development; 1.2.6 Education for Sustainable Development;	30
	1.3	1.3.7 Educational Studies in the Domain of Social Sciences; 1.3.8 Education as the Discipline of Study: Liberal Vs. Applied; 1.3.9 Foundations of Education.	30
		Total	*90*
II	2.4	2.4.10 Aims of Education: Individualistic and Socialistic; 2.4.11 Factors of Education: Child/ Learner, Teacher, Curriculum and Educational Environment; 2.4.12 Types of Education: Informal, Formal, Non-formal and Virtual;	30
	2.5	2.5.13 Education as the Process and the Product; 2.5.14 Agencies of Education: Family, Society, Organization and Mass-media; 2.5.15 Characteristics and Significance of Child-Centric Education;	30
	2.6	2.6.16 Education for Knowledge Development; 2.6.17 Education and Culture; 2.6.18 Report of the International Education Commission for 21st Century: Major Suggestions regarding Four Pillars of Education.	30
		Total	*90*

Suggested Reading: SOE (2019). *Self-learning Course Material on* ***Introduction to Educational Studies*** *(BDEDCC1.1).* Netaji Subhas Open University, Kolkata, India.

Course Code	*Course Title*	*Credit (SLM+PCP)*	*Marks (W+A)*
BDEDCC1.2	**Philosophical Foundation of Education**	6	50 +20

Objectives	After the completion of the course, the learners are expected to: 1. understand the concept of Philosophy and its relation with Education; 2. be acquainted with the Indian Schools of Philosophy in terms of nature of Knowledge; 3. be acquainted with the Western Schools of Philosophy in terms of nature of Knowledge; 4. discuss the basic spirit of Values and Social Philosophy enshrined in the Indian Constitution; 5. be acquainted with the educational thoughts of some important Indian, Western and some Radical thinkers; 6. develop an understanding about the Educational philosophy.

Block	Unit	Topic	SLM (Pages)
I	1.1	1.1.1 Philosophy: Concept, Nature and Scope; 1.1.2 Philosophy as the foundation of Educational Studies: Concept, Nature and Scope; 1.1.3 Basic Propositions of Philosophy: Epistemology, Metaphysics and Axiology;	30
	1.2	1.2.4 Basic characteristics of Indian Philosophy: Theism and Atheism; 1.2.5 Epistemological characteristics of Samkhya, Yoga and Naya Schools of Philosophy; 1.2.6 Epistemological characteristics of Jainism, Buddhism and Islamic thoughts;	30
	1.3	1.3.7 Basic characteristics of Western Philosophy: Classical and Modern; 1.3.8Epistemological Characteristics of Idealism, Naturalism and Pragmatism; 1.3.9 Epistemological Characteristics of Humanism.	30
		Total	*90*
II	2.4	2.4.10 Education for inculcation of Values; 2.4.11Values and Social Philosophy enshrined in Indian Constitution; 2.4.12 Major provisions of Education in the Indian Constitution;	30
	2.5	2.5.13Contribution of Indian Educational Thinkers: Rabindranath Tagore; Swami Vivekananada; 2.5.14Contribution of Western Educational Thinkers: Rousseau and John Dewey; 2.5.15 Contributions of Ivan Illich and Paulo Friere as Radical Thinkers in Education;	30
	2.6	2.6.16Education for National Integration; 2.6.17 Education for International Understanding; 2.6.18Education for promotion of Peace and Harmony.	30
		Total	*90*

Suggested Reading: SOE (2019). *Self-learning Course Material on* ***Philosophical Foundation of Education*** *(BDEDCC1.2).* Netaji Subhas Open University, Kolkata, India.

Course Code	*Course Title*	*Credit (SLM+PCP)*	*Marks (W+A)*
BDEDCC2.3	**Sociological Foundation of Education**	6	50 +20

Objectives	After the completion of the course, the learners are expected to: 1. be acquainted with the concept of Sociology and its relation with Education; 2. understand the Sociological knowledge as the foundation of Education; 3. be acquainted with the Social Groups and Socialization process; 4. be acquainted with the educational thoughts of some important Indian and Western Social thinkers; 5. be acquainted with the aspects of Social Change and role of Education; 6. understand some social ethos to address through Educational Sociology;

Block	Unit	Topic	SLM (Pages)
I	1.1	1.1.1 Sociology: Concept, Nature and Scope; 1.1.2 Education and Society; 1.1.3 Sociology of Education;	30
	1.2	1.2.4 Sociology as the foundation of Educational Studies; 1.2.5 Approaches of Sociology: Structuralism Vs. Functionalism; 1.2.6 Sociological Assumptions: Cohesion, Social Inequality, Interdependence, Equilibrium and Role of Education;	30
	1.3	1.3.7 Social Group: Concept and Characteristics and Role of Education; 1.3.8 Types of Social groups: Primary, Secondary and Tertiary; 1.3.9 Socialization Process: Roles of Family and School.	30
		Total	*90*
II	2.4	2.4.10 G. S. Guhurye and Radhakamal Mukherjee as the Indian Social Thinkers; 2.4.11Durkheim and Cooley as the Western Social Thinkers; 2.4.12 Theoretical Paradigms of Sociology: Symbolic Interactionist Perspective, Functionalist Perspective and Conflict Perspective;	30
	2.5	2.5.13 Social change: Concept, Scope and role of Education 2.5.14 Social change in India: Sanskritization, Westernization and Globalization; 2.5.15 Social Communication: Formal and Informal;	30
	2.6	2.6.16 India as a Pluralistic Society; 2.6.17 Social Diversity and Inclusion; 2.6.18 Education and Contemporary Social Issues: Population Explosion, Unemployment, Poverty and Illiteracy.	30
		Total	*90*

Suggested Reading: SOE (2019). *Self-learning Course Material on* ***Sociological Foundation of Education*** *(BDEDCC2.3).* Netaji Subhas Open University, Kolkata, India.

Course Code	*Course Title*	*Credit (SLM+PCP)*	*Marks (W+A)*
BDEDCC2.4	**Psychological Foundation of Education**	6	50 +20

Objectives	After the completion of the course, the learners are expected to: 1. understand the concept of Psychology and its relation with Education; 2. realize the Psychological knowledge as the foundation of Education; 3. be acquainted with the developmental stages, its theories and applications in Education; 4. understand about the Psychology of learning and its impact on Education; 5. be acquainted with the aspects of human abilities and its impact on Education; 6. understand different aspects of Psychology of learning and its relation with Education.

Block	Unit	Topic	SLM (Pages)
I	1.1	1.1.1 Psychology: Concept, Nature and Scope; 1.1.2 Psychology as the Foundation of Education; 1.1.3 Educational Psychology: Concept, Nature and Significance;	30
	1.2	1.2.4 Growth and Development of a Child 1.2.5 Perspectives of Educational Psychology: Biological, Behavioural and Cognitive; 1.2.6 Developmental Stages and its Impact on Education;	30
	1.3	1.3.7 Piaget's Cognitive Development Theory; 1.3.8 Erikson's psycho-Social Development Theory; 1.3.9 Kohlberg's Moral Development Theory.	30
		Total	*90*
II	2.4	2.4.10 Psychology of Personality: Concept, Characteristics, Types and Significance in Human Life; 2.4.11 Basic Theories of Personality Development: Allport and Eysenck; 2.4.12 Personality Measurement (Types only) and its Impact on Education;	30
	2.5	2.5.13 Psychology of Human Abilities: Concept, Characteristics and Basic Types; 2.5.14 Intelligence:Concept, Basic Theories (Spearman, Thorndike and Guilford) and Types and uses of intelligence test; 2.5.15 Creativity: Concept, Characteristics, Significance in Education;	30
	2.6	2.6.16 Psychology of Learning: Concept, Characteristics and Factors of Learning: Attention, Thinking, Memorization, Emotion and Motivation(Basics only) 2.6.17 Behaviouristic Theories of Learning and its Educational implications: Connectionism, Classical and Operant Conditioning: 2.6.18 Cognitive Theories of Learning (Insightful and Information Processing) and its Educational Implications.	30
		Total	*90*

Suggested Reading: SOE (2019). *Self-learning Course Material on* ***Psychological Foundation of Education*** *(BDEDCC2.4).* Netaji Subhas Open University, Kolkata, India.

Course Code	*Course Title*	*Credit (SLM+PCP)*	*Marks (W+A)*
BDEDCC3.5	**Policy Perspective and development of Indian Education (Pre-Independent)**	6	50 + 20

Objectives	After the completion of the course, the learners are expected to: 1. understand the policy perspectives of evolution of Indian Education; 2. be acquainted with educational policy development in early nineteenth century India; 3. be acquainted with important Initiatives, Acts, Reports, Charter, Minutes and Policy adaptations for the development of Indian education during British period; 4. understand the development of Indian education in the context of National Education Movement; 5. be acquainted with the contributions of national leaders for the development of Indian education during the British period;

Block	Unit	Topic	SLM (Pages)
I	1.1	1.1.1 The Indigenous Education System during early 19th Century; 1.1.2 British Government Policy on spreading Education in India; 1.1.3 Sreerampore Trio: Missionary Activities and their contributions in spreading Education in the region;	30
	1.2	1.2.4 Charter Act (1813): Perspective, Policy, Orientalist-Occidentalist Controversy and Bentink's Resolution; 1.2.5 Macaulay Minute: Background and Contribution; 1.2.6 Adam's Report: Backdrop and Significance;	30
	1.3	1.3.7 Wood's Education Dispatch (1854); 1.3.8 Curzon Policy:Perspective, Policies on Primary, Secondary and Higher Education (1904); 1.3.9 Hunter Commission (1982-83): Background and Policy Issues;	30
		Total	*90*
II	2.4	2.4.10 National Education Movement: Cause and Effect; 2.4.11 Impact of Gokhale's Bill on Primary Education (2011); 2.4.12 Calcutta University Commission (1917-19): Perspective and Policy Issues;	30
	2.5	2.5.13 Bengal Renaissance: Perspective and National Education Movement; 2.5.14 Hartog Committee Report (1929); 2.5.15 Surgent Report (1944);	30
	2.6	2.6.16 Contributions of Rammohan Roy, Vidyasagar and Derozio; 2.6.17 Nai Talim and Wardha Scheme on Mahatma Gandhiji's Concept of Basic Education; 2.6.18 Tagore's Thoughts on Humanistic Education and Experiments with Santiniketan-Sriniketan;	30
		Total	*90*

Suggested Reading: SOE (2019). *Self-learning Course Material on* ***Policy Perspective and Development of Indian Education (Pre-Independent)*** *(BDEDCC3.5).* Netaji Subhas Open University, Kolkata, India.

Course Code	*Course Title*	*Credit(SLM+PCP)*	*Marks (W+A)*
BDEDCC3.6	**Pedagogical Studies**	6	50 +20

Objectives	After the completion of the course, the learners are expected to: 1. understand Pedagogical Studies as the academic discipline; 2. comprehend Pedagogy as the art and science of teaching; 3. be acquainted with the pedagogy of teaching-learning process; 4. know the neural basis of sensation, perception and cognition; 5. understand teaching as science; 6. be acquainted with the effective teaching process.

Block	Unit	Topic	SLM (Pages)
I	1.1	1.1.1 Pedagogy: Concept, Nature and Scope; 1.1.2 Bases of Pedagogy: Philosophical, Sociological and Psychological; 1.1.3 Pedagogy Vs. Andragogy;	30
	1.2	1.2.4 Pedagogy as the Art and Science of Teaching; 1.2.5 Pedagogy as the Art of Teaching;: 1.2.6 Pedagogy as the Science of Teaching;	30
	1.3	1.3.7 Teaching: Concept, Principles and Functions; 1.3.8 Teaching as a Process: Pre-active, Interactive, and Post-active; 1.3.9 Pedagogy of Teaching-Learning: 3 R's, Verbal Conditioning and Psychomotor Skills;	30
	Total		*90*
II	2.4	2.4.10 Neural basis of Sensation: Neuron – Structure and Electrical Potentials, Synoptic Transmission,Structure and Functions of Human Brain, Neuro–Endocrinal System; 2.4.11 Perception: Factors influencing perception; 2.4.12 Cognition and Fundamentals of Teaching;.	30
	2.5	2.5.13 Pedagogy and its Applications: Developing Concepts and Principles, Problem Solving ability and Knowledge Construction ability; 2.5.14 Observation of classroom behaviour: Flander's Interaction Analysis System; 2.5.15 Teaching and Instruction, Instructional Design;	30
	2.6	2.6.16 Levels of teaching- Memory, Understanding, and Reflective; 2.6.17 Teaching Methods – Lecture, demonstration, problem solving and programme instruction (Linear and Branching); 2.6.18 Function of a teacher as: Planner, Facilitator, Counsellor and Action Researcher.	30
	Total		*90*

Suggested Reading: SOE (2019). *Self-learning Course Material on* ***Pedagogical Studies*** *(BDEDCC3.6).* Netaji Subhas Open University, Kolkata, India.

Course Code	*Course Title*	*Credit (SLM+PCP)*	*Marks (W+A)*
BDEDCC 3.7	**Curriculum Studies**	6	50 + 20

Objectives	After completion of the course, the learners are expected to: 1. develop an understanding about concept, nature and determinants of curriculum 2. acquainted with the bases, approaches of curriculum and process of curriculum development 3. understand curriculum transaction & evaluation as a continuum, basic consideration and stages for planning of curriculum development 4. comprehend dimensions, theories and models of curriculum development 5. gain an understanding of curriculum evaluation: concept, sources and methods of curriculum evaluation. 6. know the changing trends of curriculum in the 21st century

Block	Unit	Topic	SLM (Pages)
I	1.1	1.1.1: Curriculum: Meaning, nature & scope, 1.1.2: Determinants of curriculum 1.2.3: Curricular & Co-curricular activities	30
	1.2	1.2.4: Bases of curriculum: philosophical, sociological & psychological 1.2.5: Major approaches to curriculum: subject-centered, broad-field approach, humanistic approach 1.2.6: Process of curriculum development: assessment of educational needs, formulation of objectives, selection & organization of content, selection & organization of learning experiences & evaluation.	30
	1.3	1.3.7: Curriculum Transaction & Curriculum evaluation: A continuum 1.3.8: Basic consideration in curriculum planning 1.3.9: Stages for planning of curriculum development (systems approach)	30
		Total	*90*
II	2.4	2.4.10: Dimensions of curriculum development 2.4.11: Theories of curriculum development: Concept & types (Descriptive, Prescriptive, Critical, Personal) 2.4.12: Models of curriculum development: Taba, Tylor, Kilpatrick	30
	2.5	2.5.13: Curriculum evaluation: concept, objectives, micro & macro level 2.5.14**:** Sources of curriculum evaluation (in brief) 2.5.15: Methods of curriculum evaluation (in brief)	30
	2.6	2.6.16: Approaches to curriculum change (Administrative, grass root, demonstration) 2.6.17: Curriculum in the 21st century: NCF 2000 & 2005 2.6.18: Recent trends of Curriculum: Choice-Based Credit System	30
		Total	*90*

Suggested Reading: SOE (2019). *Self-learning Course Material on* **Curriculum Studies** *(*BDEDCC 3.7*).* Netaji Subhas Open University, Kolkata, India.

Course Code	*Course Title*	*Credit(SLM+PCP)*	*Marks (W+A)*
BDEDCC4.8	**Evaluation in Education**	6	50 + 20

Objectives	After the completion of the course, the learners are expected to: 1. develop an understanding of the concepts of Measurement, Assessment and Evaluation in the field of education; 2. be acquainted with different forms of tools and techniques of evaluation; 3. understand characteristics of a good test, problems of the teacher made test and construction of achievement test; 4. understand different forms of evaluation, their objectives and scopes; 5. be acquainted with different types of testing, its purposes and significance; 6. know about the current trends in evaluation.

Block	Unit	Topic	SLM (Pages)
I	1.1	1.1.1 Evaluation: Concepts and significance of Measurement, Assessment and Evaluation; 1.1.2 Measurement Vs. Assessment in Education: Purpose and Scope; 1.1.3 Interrelationship among Assessment, Measurement and Evaluation in Education;	30
	1.2	1.2.4 Tools and Techniques in Educational Assessment; 1.2.5 Teacher made Tests in Educational Evaluation: Essay Type, Short-Answer Type and Objective Type; 1.2.6 Techniques of Educational Evaluation: Viva-Voce, Interview, Group Discussion and Observation;	30
	1.3	1.3.7 Characteristics of a Good Test: Objectivity, Validity, Reliability, Usability and Norms; 1.3.8 Problems of Evaluation through Teacher made Tests; 1.3.9 General Principles of Achievement Test Construction.	30
		Total	*90*
II	2.4	2.4.10 Formative and Summative Evaluation: Characteristics and Significance; 2.4.11 Continuous and Comprehensive Evaluation: Characteristics and Significance; 2.4.12 Peer (Participatory) Evaluation in Education: Concept and Significance;	30
	2.5	2.5.13 Open Book Testing: Concept and Characteristics; 2.5.14 Norm-Referenced Testing: Concept and Characteristics; 2.5.15 Criterion-Referenced Testing: Concept and Characteristics;	30
	2.6	2.6.16 Current Trends in Evaluation: Shifting from Traditional Absolute Scoring System to Normal Scoring System; 2.6.17 Online Assessment and Percentile Ranking; 2.6.18 Grading, Credit based Cumulative Grade Point, Averaging and Transcriptions.	30
		Total	*90*

Suggested Reading: SOE (2019). *Self-learning Course Material on **Evaluation in Education** BDEDCC4.8).* Netaji Subhas Open University, Kolkata, India.

Course Code	*Course Title*	*Credit (SLM+PCP)*	*Marks (W+A))*
BDEDCC4.9	**Educational Technology**	6	50 + 20

Objectives	After the completion of the course, the learners are expected to: 1. understand the concept of educational technology, its basic components and significance; 2. be acquainted with the systems approach, its components and problems of implementation; 3. develop an understanding about educational process and communication technology, basic model and factors affecting classroom communication; 4. be acquainted with different forms of hardware technology, ICT and E-learning; 5. make an understanding about models of teaching and computer assisted learning; 6. understand about the technology adoption and blended learning in education.

Block	Unit	Topic	SLM (Pages)
I	1.1	1.1.1 Concept and Scopes of Technology and Educational Technology; 1.1.2 Technology of Education Vs. Technology in Education; 1.1.3 Basic Components of Educational Technology (Hardware and Software): Concepts and Significance;	30
	1.2	1.2.4 Systems Approach in Education: Concept and Scope; 1.2.5 Components of Systems Approach in Education and their interrelationship; 1.2.6 Problems of implementing Systems Approach in Education	30
	1.3	1.3.7 Educational Process and Communication Technology: Concept and Scope; 1.3.8 Basic Model of Communication Technology for Classroom Interactions; 1.3.9 Factors Affecting Classroom Communication.	30
		Total	*90*
II	2.4	2.4.10 Use of Hardware Technology in Education: Audio, Visual,Audio-visual and Computer; 2.4.11 Overhead Projector, Multi-media and Smart Classroom; 2.4.12 Information and Communication Technology and E-Learning;	30
	2.5	2.5.13 Models of Teaching: Concept, Nature, Families and Scope; 2.5.14 Information Processing Model (AOM and CAM); 2.5.15 Computer Assisted Teaching-Learning: SWAYAM, MOOCS and Swayam Prabha;	30
	2.6	2.6.16 Technology Adoptions in Formal Education; 2.6.17 Technology Adoptions in Non-Formal Education; 2.6.18 Blended Learning: Concept and Scope.	30
		Total	*90*

Suggested Reading: SOE (2019). *Self-learning Course Material on* ***Educational Technology*** *(BDEDCC4.9).* Netaji Subhas Open University, Kolkata, India.

Course Code	*Course Title*	*Credit (SLM+PCP)*	*Marks (W+A)*
BDEDCC4.10	**Guidance and Counseling in Education**	6	50 + 20

Objectives	After the completion of the course, the learners are expected to: 1. understand about the concepts of self, guidance and counseling; 2. make an understanding about different aspects of development and crisis in life; 3. develop an understanding about working self and development of highest potential; 4. be acquainted with Pre-requisites of guidance in terms of tools and techniques of data collection; 5. understand about guidance process, organization and difference with counseling; 6. gain an understanding about teacher as a counselor, steps of counseling and professional counseling.

Block	Unit	Topic	SLM (Pages)
I	1.1	1.1.1 The Self: Psycho-Social View; 1.1.2 Guidance: Concept, Types and Scope; 1.2.3 Counselling: Concept, Types and Scope;	30
	1.2	1.2.4 Development, Maturity, Crisis of Life and Role of Education; 1.2.5 Interpersonal Relationships: Basis, Friendship, Love, Communication, Relationship and social perception; 1.2.6 Gender, Gender Identity and Gender Role Development:	30
	1.3	1.3.7 Working Self: Adjustment with Family, School, Peers and Community; 1.3.8 Development of Life-Skills, Ethics and Values; 1.3.9 Achieving Highest Potential of the Individual.	30
		Total	*90*
II	2.4	2.4.10 Pre-Requisites for Guidance Programme; 2.4.11 Tools of Data Collection: Use of Psychological Tests (Intelligence, Aptitude, Interest); 2.4.12 Techniques of Data Collection: Observation, Interview, Rating Scale, Record Card, Anecdotal Record and Sociometry;	30
	2.5	2.5.13 Counseling Process: Directive, Non-Directive and Eclectic; 2.5.14 Organizing Guidance and Counseling Programmes; 2.5.15 Difference between Guidance and Counseling;	30
	2.6	2.6.16 Teacher as a Counselor; 2.6.17 Steps of Counseling Process; 2.6.18 Professionalism in Guidance and Counselling.	30
		Total	*90*

Suggested Reading: SOE (2019). *Self-learning Course Material on* ***Guidance and Counselling in Education*** *(BDEDCC4.10).* Netaji Subhas Open University, Kolkata, India.

Course Code	*Course Title*	*Credit (SLM+PCP)*	*Marks (W+A)*
BDEDCC5.11	**Policy Perspective and Development of Indian Education (Post-Independent)**	6	50 + 20
Objectives	After the completion of the course, the learners are expected to: 1. acquaint with the significant points of selected educational documents and reports of this period; 2. develop an understanding of significant trends in contemporary education; 3. develop awareness of various organisations and their role in implementation of policies and programmes; 4. focus attention on certain major national and social issues, and role of education in relation to them.		

Block	Unit	Topic	SLM (Pages)
I	1.1	1.1.1 Radhakrishnan Commission (1948-49): The Perspective and Policy related to Higher Education and Rural University; 1.1.2 Mudaliar Commission (1952-53): The Perspective and Policy related to Secondary Education 1.2.3 Kothari Commission (1964-66):The Perspective and Policy related to Primary and Upper Primary Education, and significance;	30
	1.2	1.2.4 National Policy on Education (1968): Perspective, Salient Features and Significance; 1.2.5 National Policy on Education (1986): Perspective, Salient Features and Significance; 1.2.6 Programme of Action (POA,1991): Perspective, Salient Features and Significance;	30
	1.3	1.3.7 The UGC Act (1956): The Perspective and Objectives; 1.3.8 The PWD Act (1995): The Perspective and Objectives; 1.3.9 Vision and Mission of Some Apex Bodies in Education: CABE, NCERT, SCERT, DIET, NCTE and NAAC.	30
		Total	*90*
II	2.4	2.4.10 *Sarva Siksha Abhiyan:* Perspective, Objectives and Impacts; 2.4.11 Report of the National Knowledge Commission (2005): Perspective and Major Policy Recommendations; 2.4.12 Right to Free and Compulsory Education Act (2009): Perspective, Constitutional Amendment and Major Issues;	30
	2.5	2.5.13 National Literacy Mission and Life-Long Learning: Objectives and Significance; 2.5.14 Language Policy in Indian Education: Objectives and Significance; 2.5.15 Human Resource Development: Scopes and Challenges;	30
	2.6	2.6.16 Curriculum Framework (2005): Perspective and Major Policy Recommendations; 2.6.17 Curriculum Framework for Teacher Education (2009): Perspective and Major Policy Recommendations; 2.6.18 National Policy on Education (2016): The Perspective and Major Policy Recommendations.	30
		Total	*90*

Suggested Reading: SOE (2019). *Self-learning Course Material on* ***Policy Perspective and Development of Indian Education (Post-Independent)*** *(BDEDCC 5.11).* Netaji Subhas Open University, Kolkata, India.

Course Code	*Course Title*	*Credit (SLM+PCP)*	*Marks (W+A)*
BDEDCC 5.12	**Value Education**	6	50 + 20

Objectives	After the completion of the course, the learners are expected to: 1. understand the concept, nature and significance of value education in human life; 2. make an understanding about inculcation of values through different scholastic and co-scholastic areas of study; 3. be acquainted with the significance of teacher's role as the facilitator of values, and value based academic activities; 4. understand about the partnership, participation and collaboration for value development; 5. develop an understanding about values and ethics for national and global understanding; 6. be acquainted with the concept of human rights based education system.		
Block	Unit	Topic	SLM (Pages)
I	1.1	1.1.1 Values: Concept, Nature and Importance in life; 1.1.2 Value Education: Concept, Nature and Scope; 1.1.3 Environment to Value inculcation: Roles of the Family and Educational Institutions;	30
	1.2	1.2.4 Value development through different subjects of study; 1.2.5 Value development through co-scholastic activities; 1.2.6 Inculcating Values through continuous and comprehensive activities;	30
	1.3	1.3.7 Teacher as the facilitator of Values; 1.3.8 Whole School Approach to Value Education; 1.3.9 Approaches to Value Development: Mentorship, Value based Learning, Evaluation and Innovation.	30
		Total	*90*
II	2.4	2.4.10 Values and the Institutional Environment; 2.4.11 Collaborative/ Cooperative Classrooms; 2.4.12 Home-School-Community Partnership;	30
	2.5	2.5.13 Value Education Towards National and Global Development; 2.5.14 National Values - Democracy, Socialism, Secularism, Equality, Justice, Liberty, Freedom & Fraternity, National Integration and International Understanding; 2.5.15 Values and Ethics: Personal Values, Family Values, Social Values, Cultural Values, Professional Values and overall Ethics, Duties & Responsibilities;	30
	2.6	2.6.16 Human Rights: Concept, Broad Classification and Scope; 2.6.17 Constitutional Provisions of Rights to: Life, Liberty, Fraternity, Dignity, Equality, Cultural and Educational; 2.6.18 Institutions for Implementing Human Rights: Educational Institutions, Human Rights Commissions and Judiciary.	30
		Total	*90*

Suggested Reading: SOE (2019). *Self-learning Course Material on **Value Education** (*BDEDCC 5.12*).* Netaji Subhas Open University, Kolkata, India.

Course Code	*Course Title*	*Credit (SLM+PCP)*	*Marks (W+A)*
BDEDCC6.13	**Educational Management and Planning**	6	50 +20

Objectives	After the completion of the course, the learners are expected to: 1. make an understanding about the Educational Organizations and their services; 2. understand about the management system of educational organization and its significance; 3. be acquainted with management, administration and managerial behaviours; 4. know about the concepts of supervision and inspection; 5. make an understanding about different aspects of educational planning; 6. understand about Educational Management for Leadership.

Block	Unit	Topic	SLM (Pages)
I	1.1	1.1.1 Educational Organization: Concept, Purpose and Scope; 1.1.2 School Plant: Concept, Purpose and Principles; 1.1.3 Services provided by the School Plant as an Organization;	30
	1.2	1.2.4. Educational Planning: Concept, Nature, Purpose and Significance; 1.2.5. Types of Educational Planning: Institutional, Strategic, Grassroots and Rolling Plan; 1.2.6 Stages of Yearly Academic Planning and Planning for Curriculum Transactions;	30
	1.3	1.3.7 National Educational Priorities for Planning; 1.3.8 Principles of Educational Planning; 1.3.9 Steps of the Planning Process and National Policies and Partner Institutions.	30
	Total		*90*
II	2.4	2.4.10 Organizational Management: Concept. Purpose, Principles, Types and Scope; 2.4.11 Supervision and Inspection: Concepts, Purposes, Functions and Differences; 2.4.12 Effect of Supervision and Inspection on Educational Management;	30
	2.5	2.5.13 Educational Administration: Concept and Purpose, Relationship between Educational Management and Administration 2.5.14 Factors affecting Managerial Behaviors of Teachers: Personal, Social, Cultural, Political and Institutional; 2.5.15 Teacher as a Leader of the Institution;	30
	2.6	2.6.16 Institutional Leadership and Management; 2.6.17 Educational Leadership: Role of Headmaster, Teacher and Managing Committee; 2.6.18 Styles of leadership: Autocratic, Democratic and Laissez Faire.	30
	Total		*90*

Suggested Reading: SOE (2019). *Self-learning Course Material on **Educational Management and Planning** (BDEDCC 6.13).* Netaji Subhas Open University, Kolkata, India.

Course Code	*Course Title*	*Credit (SLM+PCP)*	*Marks (W+A)*
BDEDCC6.14	**Basic Research Methodology and Statistics in Education**	6	50 + 20

Objectives	After the completion of the course, the learners are expected to: 1. be acquainted with the scientific methods of Research in Educational Studies; 2. develop an understanding about sources of knowledge and research problem; 3. be acquainted with research objectives, variables and Hypotheses; 4. make an understanding about Concept, Nature & Scope of Statistics in Education; 5. understand about the tabulation, distribution & graphical representation of data; 6. be acquainted with the measures of central tendency of data distribution;

Block	Unit	Topic	SLM (Pages)
I	1.1	1.1.1 Research in Educational Studies: Concept, Nature, Characteristics, Ethics and Significance; 1.1.2 Scientific Inquiry: New Theory Development or Refinement of Existing Theory; 1.1.3 Major Types of Educational Research: Fundamental, Applied and Action Research;	30
	1.2	1.2.4 Types and Sources of Information and Review of Related Literature, Critical Review of available sources; 1.2.5 Finding out the knowledge gap and setting of Research Worthy Question; 1.2.6 Formulation of the Research Problem;	30
	1.3	1.3.7 Identification of Research Objectives, Research Constructs and Decision regarding Nature of Data – Quantitative and Qualitative; 1.3.8 Quantitative Research Design: Descriptive, Ex-post-Facto and Experimental; 1.3.9 Selection of Variables and Development of Research Hypotheses – Different Types, Qualitative Research: Factors and its Impacts.	30
		Total	*90*
II	2.4	2.4.10 Statistics: Concept, Characteristics and its Significance; 2.4..11 Educational Data: Nature, Characteristics and Scopes; 2.4..12 Statistics for Determining Association, Impact, Effect among the Research Variables;	30
	2.5	2.5.13 Organization of Educational Data: Scores, Series and Frequency Distribution; 2. 5.14 Graphical Representation of Data: Frequency Polygon, Histogram; 2.5. 15 Cumulative Percentage Curve (Ogive);	30
	2.6	2.6.16 Data Distribution: Measures of Central Tendency and its Significance in Education; 2.6.17 Determining Mean of Grouped Data and its respective Uses; 2.6.18 Determining Median and Mode of Grouped Data and respective Uses.	30
		Total	*90*

Suggested Reading: SOE (2019). *Self-learning Course Material on* **Basic Research Methodology and Statistics in Education** *(BDEDCC 6.14).* Netaji Subhas Open University, Kolkata, India.

1. Discipline Specific Elective Courses (Optional: Any Four)

Course Code	*Course Title*	*Credit (SLM+PCP)*	*Marks (W+A)*
BDEDDSE 5.1	**Comparative Education**	6	50 + 20

Objectives	After the completion of the course, the learners are expected to: 1. understand the Comparative Education as an emerging discipline, and its factors; 2. make an understanding about Approaches, methods and problems related to Comparative Education; 3. be acquainted with the significance of Comparative Education discipline in relation to world peace and sustainable development; 4. understand about the contemporary trends in world education; 5. develop a comparative understanding about school education system in India with that of Asian countries; 6. develop a comparative understanding about higher, technical-vocational and distance education in India with that of Western countries.

Block	Unit	Topic	SLM (Pages)
I	1.1	1.1.1 Comparative Education: Concept, Nature and Scope; 1.1.2 Comparative Education as an emerging Academic Discipline; 1.2.3 Factors of Comparative Education: Geographical, Socio-Cultural, Historical, Philosophical, Economic, Linguistic, and Scientific;	30
	1.2	1.2.4 Approaches to Comparative Education: Cross-Broader, Cross-Disciplinary, Factor-Based and Problem-Based; 1.2.5 Methods of Comparative Education: Juxtaposition, Area Studies, Intra-Inter Educational Analyses; 1.2.6 Problems of studying in the Domain of Comparative Education;	30
	1.3	1.3.7 Significance of Comparative Education as a discipline of study; 1.3.8 Comparative Education for establishing World Peace; 1.3.9 Comparative Education for Sustainable Development.	30
		Total	*90*
II	2.4	2.4.10 Contemporary Trends in World Education; 2.4.11 Programmes of UN Bodies: Education for All, Life Skill Education; 2.4.12 World Education in the context of Liberalization, Privatization and Globalization;	30
	2.5	2.5.13 Comparative Study of Pre-Primary Education in India with Japan; 2.5.14 Comparative Study of Basic Education in India with Srilanka; 2.5.15 Comparative Study of Secondary Education in India with Chaina;	30
	2.6	2.6.16 Comparative Study of Higher Education in India with USA; 2.6.17 Comparative Study of Technical and Vocational Education in India with Germany; 2.6.18 Comparative Study of Open and Distance Education in India with UK.	30
		Total	*90*

Suggested Reading: SOE (2019). *Self-learning Course Material on* ***Comparative Education*** *(*BDEDDSE5.1*).* Netaji Subhas Open University, Kolkata, India.

Course Code	*Course Title*	*Credit (SLM+PCP)*	*Marks (W+A)*
BDEDDSE5.2	**Special and Inclusive Education**	6	50 + 20

Objectives	After completion of the course, the learners are expected to: 1. know the background of Special education and its various issues; 2. familiar with the International & National commissions on Special Education, its status in India, laws & legislations pertaining to it; 3. gain an understanding of diversity and disability in the society and instructional models to cope with it; 4. be acquainted with Inclusive Education, its perception and functionality; 5. comprehend the pragmatic areas of inclusive education (teaching-learning-assessment and co-curricular areas); 6. extend an understanding of Inclusive Education and the stakeholders, their relationship and the role of Indian Government in its promotion.

Block	Unit	Topic	SLM (Pages)
I	1.1	1.1.1 : Historical perspective of Special education 1.1.2 : Special Education: concept of exceptionality, disability & diversity 1.1.3: Perception of society towards Individual with disabilities	30
	1.2	1.2.4: International & National commissions & committees on Special Education. 1.2.5 :Status of Special education in India (Outline only) 1.2.6: Special Education: Laws & Legislations	30
	1.3	1.3.7: Diverse children & their needs 1.3.8: Children with disability & their special needs 1.3.9: Instructional models: Developmental, Functional & Inclusion	30
		Total	*90*
II	2.4	2.4.10 : Inclusive Education: Concept, misconception & need 2.4.11: Accessing the general education environment (ecological assessment, person-centered planning & embedded instruction) 2.4.12 : Planning & collaborating for inclusive instruction	30
	2.5	2.5.13: Multi-tiered system of support (MTSS): UDL, Differentiated Instruction, Accommodation, Adaptation, Modification-concepts only 2.5.14: Educational assessment of children with additional needs 2.5.15: Adapted physical education & recreation, music & health	30
	2.6	2.6.16 : Social relationships & supports (Instructional practices, facilitating social membership & relationship) 2.6.17: Leadership for Inclusive Education (Teacher-Parent, Family partnerships, Capacity building) 2.6.18: Role of Indian Govt. in implementation of Inclusive Education.	30
		Total	*90*

Suggested Reading: SOE (2019). *Self-learning Course Material on* ***Special and Inclusive Education*** *(BDEDDSE 5.2).* Netaji Subhas Open University, Kolkata, India.

Course Code	*Course Title*	*Credit (SLM+PCP)*	*Marks (W+A)*
BDEDDSE6.3	**Child Development and Pedagogy**	6	50 + 20
Objectives	After the completion of the course, the learners are expected to: 1. develop an understanding about child development and its significance in life; 2. understand about psycho-social-cultural aspects of child development; 3. make an understanding about roles of intelligence, marginalization and gender issues on child development; 4. be acquainted with the thinking process and learning in the social context; 5. have an understanding about Teaching, its factors and teaching-learning materials; 6. be acquainted with evaluation, scoring and grading.		

Block	Unit	Topic	SLM (Pages)
I	1.1	1.1.1 Child Development: Concept, Nature and its Significance 1.1.2 Principles of Child Development 1.1.3 Socialisation Processes: Child and Social World;	30
	1.2	1.2.4 Constructs and Critical Perspectives of Development: Piaget, Kohlberg and Vigotsky 1.2.5 Child Centered and Progressive Education 1.2.6 Individual Difference among learners: Diversity of Language, Caste, Gender, Community and Religion;	30
	1.3	1.3.7 Intelligence: Multi-Dimensional Constructs of Intelligence Addressing the Talented and Creative Learners in Schools 1.3.8 Addressing Socio-Culturally Marginalized and Specially Challenged Learners in the Classroom 1.3.9 Gender as a social construct; gender roles, gender-bias and educational practices;	30
	Total		*90*
II	2.4	2.4.10 Language, Thought Process of Learners, Learning and Critical Thinking 2.4.11 Learning Process through Children's Strategies, Social Context and Social Activities 2.4.12 Alternative Conception of Learning: Child as a Problem Solver and a Scientific Investigator;	30
	2.5	2.5.13 Teaching: Concept, Nature, Functions, Types and Significance 2.5.14 Factors Contributing to learning and Teaching: Personal (Cognition, Emotion and Motivation) and Environmental 2.5.15 Teaching-Learning Materials: Textbooks, Multi-Media, Multilingual Resources of the Classrooms and Remedial Teaching;	30
	2.6	2.6.16 Assessment, Measurement and Evaluation in Education 2.6.17 Evaluating Learner Achievement: Entry Level Continuous and Comprehensive and Outcome Based Evaluation 2.6.18 Preparing Results: Scoring, Grading, and other Components.	30
	Total		*90*

Suggested Reading: SOE (2019). *Self-learning Course Material on* ***Child Development and Pedagogy*** *(BDEDDSE 6.3).* Netaji Subhas Open University, Kolkata, India.

Course Code	*Course Title*	*Credit (SLM+PCP)*	*Marks (W+A)*
BDEDDSE 6.4	**Education and Community Development**	6	50 + 20

Objectives

After the completion of the course, the learners are expected to:

1. understand the concept of community development and the role of education;
2. make an understanding about the visions and experiments of Tagore and Gandhi on village development through education;
3. be acquainted with the view of Swami Vivekananda on emerging and role of youths;
4. understand about the community development programmes in India and its impacts;
5. develop an understanding about empowerment, human resource development and achievement in terms of national development;
6. promote awareness for community development through mass education, non-formal education and open education.

Block	Unit	Topic	SLM (Pages)
I	1.1	1.1.1 Community Development: Concept, Scope and Significance; 1.1.2 Community Development and Role of Education; 1.1.3 Community Development Approaches;	30
	1.2	1.2.4 Tagore's vision on 'Education for Fullness' (HB Mukherjee); 1.2.5 Sriniketan Experiment by Tagore on Village Reconstruction (*Palli Punarsangathan*); 1.2.6 Gandhiji's Vision on Education and Village Development (*Gram Swaraj*);	30
	1.3	1.3.7 Swami Vivekananda's View on Emerging India and Role of Youth; 1.3.8 Young India: Concept and its Significance in Contemporary Indian Context; 1.3.9. Factors Influencing Youth Involvement for Community Development: Motivation and Efficacy.	30
		Total	*90*
II	2.4	2.4.10 Community Development Programmes (CDPs) in India: Objectives and Salient Features; 2.4.11 Evolution of CDP Policy in Independent India; 2.4.12 Impact of CDP on socio-politico-economic aspects;	30
	2.5	2.5.13 Empowerment: Concept, Significance and role of Education; 2.5.14 Human Resource and National Development: The scope in India; 2.5.15 Achievement of Women, Minorities, SC, ST, OBC and Special Needs People in terms of Education and Empowerment;	30
	2.6	2.6.16 Institution-Community Interactions: Extension Education, NSS, NCC and other Outreach Programmes; 2.6.17 Saakhar Bharat Mission and Swachh Bharat Mission – Objectives, Target, Strategies and Management; 2.6.18 Promoting Awareness for Community Development through Mass Education, Non-formal Education and Open Education.	30
		Total	*90*

Suggested Reading: SOE (2019). *Self-learning Course Material on* ***Education and Community Development*** *(*BDEDDSE 6.4*).* Netaji Subhas Open University, Kolkata, India.

Course Code	*Course Title*	*Credit (SLM+PCP)*	*Marks (W+A)*
BDEDDSE 6.5	**Open and Distance Education**	6	50 + 20

Objectives	After the completion of the course, the learners are expected to: 1. understand the concept, scope and perspectives of Distance Education; 2. make an understanding about the philosophical perspectives of open and distance education and thoughts of some thinkers; 3. be acquainted with the socio-political-academic issues of distance education; 4. gain an understanding in student support services and print & non-print self-learning material development; 5. understand the process of text development and maintenance of its quality; 6. comprehend the scope of using multimedia, MOOCS and blended learning.

Block	Unit	Topic	SLM (Pages)
I	1.1	1.1.1 Open and Distance Education: Concept, Nature and Scope; 1.1.2 Historical Perspective of Open and Distance Education; 1.1.3 Sociological Perspective of Open and Distance Education;	30
	1.2	1.2.4 Philosophical Perspective of Open and Distance Education; 1.2.5 Thoughts of Charles Wedemeyer and Otto Peters; 1.2.6 The New Learner in the New World	30
	1.3	1.3.7 Socio-Political Issues of Open and Distance Education; 1.3.8 Academic Issues of Open and Distance Education; 1.3.9 Macro and Micro Issues related to Open and Distance Education	30
		Total	*90*
II	2.4	2.4.10 Student Support Services: Concept and Scope; 2.4.11 Printed Self-Learning Material and Study Skill of Learners; 2.4.12 Non-Print Instructional Materials and Role of Learners;	30
	2.5	2.5.13 Factors related to Course Design in Open and Distance Education: Theories of Learning and Communication; 2.5.14 Principles of Text Design: Modular Format – Objectives, Blocks, Units and Content; 2.5.15 The Process of Producing Text: Text Development, Editing and Quality Maintenance;	30
	2.6	2.6.16 Factors related to Non-Print Instructional Materials: Uses of Medium, Multi-Media and OER. 2.6.17 Designing Online Courses and MOOCS 2.6.18 Blended Learning: The Teaching-Learning Process for Future.	30
		Total	*90*

Suggested Reading: SOE (2019). *Self-learning Course Material on* ***Open and Distance Education*** *(*BDEDDSE6.5*).* Netaji Subhas Open University, Kolkata, India.

2. Generic Elective Courses (Optional any Four)

[For the Bachelor Degree Students other than Hons. in Educations]

Course Code	*Course Title*	*Credit (SLM+PCP)*	*Marks (W+A)*
BDEDGEC1.1	**Contemporary India and Education**	6	50 + 20

Objectives	After the completion of the course, the learners are expected to: 1. explain constitutional provisions with special reference to RTE Act.; 2. make an understanding about the meaning, aims, objectives and significance of universalization of secondary education; 3. explain the concept, role and scope of higher education and RUSA. 4. be acquainted with modern issues in Indian education like, peace education, sustainable development, inclusive education, open and distance learning etc., 5. understand about unemployment, poverty and population in relation to education; 6. make an understanding about Dalit Education, Tribal Education and Government initiatives to address the contemporary social problems in Indian Perspective.

Block	Unit	Topic	SLM (Pages)
I	1.1	1.1.1 Universalization of Elementary Education: Aims, Objectives and Importance; 1.1.2 Constitutional Provisions with special reference to Right to Free and Compulsory Education Act. 2009; 1.1.3, Roles of DPEP, SSA and SSM;	30
	1.2	1.2.4 Universalization of Secondary Education: Aims, Objectives and Significance; 1.2.5 Role of RMSA in Universalization of Secondary Education; 1.2.6 Problems of Secondary Education in India and its Solution;	30
	1.3	1.3.7 Role of Higher Education in India; 1.3.8 Report of the Knowledge Commission and RUSA; 1.3.9 Problems of Higher Education in India.	30
		Total	*90*
II	2.4	2.4.10 Peace Education: Meaning, aims, and Importance; 2.4.11 Education for Sustainable Development: Meaning, aims and Role of education in Sustainable Development; 2.4.12 Equality and Equity in Education and Role of Education;	30
	2.5	2.5.13 Education and Unemployment; 2.5.14 Poverty in relation to Education; 2.5.15 Education and Population Explosion	30
	2.6	2.6.16 Status of Dalit Education in India; 2.6.17 Importance of Tribal Education in Indian Context; 2.6.18 Government Initiatives towards Implementing Educational Policies.	30
		Total	*90*

Suggested Reading: SOE (2019). *Self-learning Course Material on* ***Contemporary India and Education*** *(*BDEDGEC 1.1*)*. Netaji Subhas Open University, Kolkata, India.

Course Code	*Course Title*	*Credit (SLM+PCP)*	*Marks (W+A)*
BDEDGEC2.2	**Special and Inclusive Education**	6	50 + 20

Objectives	After completion of the course, the learners are expected to: 1. know the background of Special education and its various issues 2. familiar with the International & National commissions on Special Education, its status in India, laws & legislations pertaining to it. 3. gain an understanding of diversity and disability in the society and instructional models to cope with it 4. be acquainted with Inclusive Education, its perception and functionality. 5. comprehend the pragmatic areas of inclusive education teaching-learning-assessment and co-curricular areas. 6. extend an understanding of Inclusive Education and the stakeholders, their interrelationships and the role of Indian Govt. in its upliftment.

Block	Unit	Topic	SLM (Pages)
I	1.1	1.1.1 : Historical perspective of Special education 1.1.2 : Special Education: concept of exceptionality, disability & diversity 1.1.3: Perception of society towards Individual with disabilities	30
	1.2	1.2.4: International & National commissions & committees on Special Education. 1.2.5 :Status of Special education in India (Outline only) 1.2.6: Special Education: Laws & Legislations	30
	1.3	1.3.7: Diverse children & their needs 1.3.8: Children with disability & their special needs 1.3.9: Instructional models: Developmental, Functional & Inclusion	30
		Total	*90*
II	2.4	2.4.10 : Inclusive Education: Concept, misconception & need 2.4.11: Accessing the general education environment (ecological assessment, person-centered planning & embedded instruction) 2.4.12 : Planning & collaborating for inclusive instruction	30
	2.5	2.5.13: Multi-tiered system of support (MTSS): UDL, Differentiated Instruction, Accommodation, Adaptation, Modification-concepts only 2.5.14: Educational assessment of children with additional needs 2.5.15: Adapted physical education & recreation, music & health	30
	2.6	2.6.16 : Social relationships & supports (Instructional practices, facilitating social membership & relationship) 2.6.17: Leadership for Inclusive Education (Teacher-Parent, Family partnerships, Capacity building) 2.6.18: Role of Indian Govt in implementation of Inclusive Education.	30
		Total	*90*

Suggested Reading: SOE (2019). *Self-learning Course Material on* ***Special and Inclusive Education*** *(BDEDGEC 2.2).* Netaji Subhas Open University, Kolkata, India.

Course Code	*Course Title*	*Credit (SLM+PCP)*	*Marks (W+A)*
BDEDGEC 3.3	**Child Development and Pedagogy**	6	50 + 20

Objectives	After the completion of the course, the learners are expected to: 1. develop an understanding about child development and its significance in life; 2. understand about psycho-social-cultural aspects of child development; 3. make an understanding about roles of intelligence, marginalization and gender issues on child development; 4. be acquainted with the thinking process and learning in the social context; 5. have an understanding about Teaching, its factors and teaching-learning materials; 6. be acquainted with evaluation, scoring and grading.

Block	Unit	Topic	SLM (Pages)
I	1.1	1.1.1 Child Development: Concept, Nature and its Significance 1.1.2 Principles of Child Development 1.1.3 Socialisation Processes: Child and Social World;	30
	1.2	1.2.4 Constructs and Critical Perspectives of Development: Piaget, Kohlberg and Vigotsky 1.2.5 Child Centered and Progressive Education 1.2.6 Individual Difference among learners: Diversity of Language, Caste, Gender, Community and Religion;	30
	1.3	1.3.7 Intelligence: Multi-Dimensional Constructs of Intelligence Addressing the Talented and Creative Learners in Schools 1.3.8 Addressing Socio-Culturally Marginalized and Specially Challenged Learners in the Classroom 1.3.9 Gender as a social construct; gender roles, gender-bias and educational practices;	30
	Total		*90*
II	2.4	2.4.10 Language, Thought Process of Learners, Learning and Critical Thinking 2.4.11 Learning Process through Children's Strategies, Social Context and Social Activities 2.4.12 Alternative Conception of Learning: Child as a Problem Solver and a Scientific Investigator;	30
	2.5	2.5.13 Teaching: Concept, Nature, Functions, Types and Significance 2.5.14 Factors Contributing to learning and Teaching: Personal (Cognition, Emotion and Motivation) and Environmental 2.5.15 Teaching-Learning Materials: Textbooks, Multi-Media, Multilingual Resources of the Classrooms and Remedial Teaching;	30
	2.6	2.6.16 Assessment, Measurement and Evaluation in Education 2.6.17 Evaluating Learner Achievement: Entry Level Continuous and Comprehensive and Outcome Based Evaluation 2.6.18 Preparing Results: Scoring, Grading, and other Components.	30
	Total		*90*

Suggested Reading: SOE (2019). *Self-learning Course Material on* ***Child Development and Pedagogy*** *(BDEDGEC 3.3)*. Netaji Subhas Open University, Kolkata, India.

Course Code	*Course Title*	*Credit (SLM+PCP)*	*Marks (W+A)*
BDEDGEC 4.4	**Education and Gender Studies**	6	50 + 20

Objectives	After completion of the course, the learners are expected to: 1. develop an understanding of gender studies, its concept, social construction and multidisciplinary nature. 2. be acquainted with the debates & issues of social construction of gender. 3. reflect upon gender studies through the lens of feminist & masculinity studies. 4. understand gender and development in the light of Women education & empowerment. 5. gain an understanding of women education vis a vis empowerment and other issues. 6. expand an understanding of several parameters of UNESCO on women education, literacy & health; HDI and new approaches of gender studies.

Block	Unit	Topic	SLM (Pages)
I	1.1	1.1.1: Introduction to Gender Studies: Sex – Gender – Biological Determinism – Patriarchy – Feminism – Gender Discrimination – Gender Division of labour – Gender Stereotyping – Gender Sensitivity– Gender Equity – Equality – Gender Mainstreaming - Empowerment (concepts only) Difference between Gender and Women Studies. 1.1.2: Social construction of Gender & Sex: Concept only 1.1.3: Gender studies: A multidisciplinary approach	30
	1.2	1.2.4 : Social Construction of Gender: Autonomy VS Integration debate in Gender Studies, Masculinity and Feminism, Nature Vs Culture 1.2.5 : Gender Based Violence 1.2.6: Gender & Governance	30
	1.3	1.3.7: Feminist & Women studies; Men's And Masculinity Studies (in brief) 1.3.8: Feminist Theories and Practices (Liberal Feminism Radical Feminism, Marxist/ Socialist Feminism, Psychoanalytical Feminism, Men's Feminism)-in brief 1.3.9 : Feminism: Concept and scope, Feminist movement in India .	30
		Total	*90*
II	2.4	2.4.10: Gender & Development with special reference to Women Education: An overview, major constraints of women education 2.4.11: Women Empowerment –An overview & Factors of empowerment: social-psychological-political-economical. 2.4.12: Women & Social reform in the modern India (in brief-few case studies to be studied here).	30
	2.5	2.5.13: Women Education: Gender diversities & disparities in enrolment, curriculum content, dropouts, profession & gender. 2.5.14: Gendered Education: Family, culture, gender, roles, gender identities. 2.5.15: Contribution of Women's role in Education in India (A chronological list) & Vocational education & skill development for women	30
	2.6	2.6.16: Women empowerment, literacy, health & population growth, HDI: UNESCO document (in brief). 2.6.17: Women & the welfare: Social, cultural & family 2.6.18 : New approaches of gender studies in the 21st century.	30
		Total	*90*

Suggested Reading: SOE (2019). *Self-learning Course Material on* ***Education & Gender Studies*** *(*BDEDGEC4.4*).* Netaji Subhas Open University, Kolkata, India.

Course Code	*Course Title*	*Credit (SLM+PCP)*	*Marks (W+A)*
BDEDGEC 4.5	**Open and Distance Education**	6	50 + 20

Objectives	After the completion of the course, the learners are expected to: 1. understand the concept, scope and perspectives of Distance Education; 2. make an understanding about the philosophical perspectives of open and distance education and thoughts of some thinkers; 3. be acquainted with the socio-political-academic issues of distance education; 4. gain an understanding in student support services and print & non-print self-learning material development; 5. understand the process of text development and maintenance of its quality; 6. comprehend the scope of using multimedia, MOOCS and blended learning.

Block	Unit	Topic	SLM (Pages)
I	1.1	1.1.1 Open and Distance Education: Concept, Nature and Scope; 1.1.2 Historical Perspective of Open and Distance Education; 1.1.3 Sociological Perspective of Open and Distance Education;	30
	1.2	1.2.4 Philosophical Perspective of Open and Distance Education; 1.2.5 Thoughts of Charles Wedemeyer and Otto Peters; 1.2.6 The New Learner in the New World	30
	1.3	1.3.7 Socio-Political Issues of Open and Distance Education; 1.3.8 Academic Issues of Open and Distance Education; 1.3.9 Macro and Micro Issues related to Open and Distance Education	30
		Total	*90*
II	2.4	2.4.10 Student Support Services: Concept and Scope; 2.4.11 Printed Self-Learning Material and Study Skill of Learners; 2.4.12 Non-Print Instructional Materials and Role of Learners;	30
	2.5	2.5.13 Factors related to Course Design in Open and Distance Education: Theories of Learning and Communication; 2.5.14 Principles of Text Design: Modular Format – Objectives, Blocks, Units and Content; 2.5.15 The Process of Producing Text: Text Development, Editing and Quality Maintenance;	30
	2.6	2.6.16 Factors related to Non-Print Instructional Materials: Uses of Medium, Multi-Media and OER. 2.6.17 Designing Online Courses and MOOCS 2.6.18 Blended Learning: The Teaching-Learning Process for Future.	30
		Total	*90*

Suggested Reading: SOE (2019). *Self-learning Course Material on* ***Open and Distance Education*** *(*BDEDGEC 4.5*)*. Netaji Subhas Open University, Kolkata, India.

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স্নাতক বাংলা সিলেবাস ২০১৯

(নেতাজি সুভাষ মুক্ত বিশ্ববিদ্যালয়ের স্নাতকবাংলা বিষয়-সমিতির ০৬/০২/২০১৯-এর সভায় অনুমোদিত এবং ১৬/০৭/২০১৯ তারিখের বিষয়-সমিতির সভায় পরিমার্জিত ও প্রত্যয়িত)

সেমেস্টার ১

কোর কোর্সঃ১ বাংলা সাহিত্যের ইতিহাস (প্রাচীন ও মধ্যযুগ)

মডিউলঃ১ সাহিত্যের ইতিহাসের যুগবিভাগ ও প্রাচীন যুগ

এককঃ১ বাংলা সাহিত্যের যুগবিভাগ
এককঃ২ আদিপর্বের গতিপ্রকৃতি ও নিদর্শনসমূহ
এককঃ৩ চর্যাপদ

মডিউলঃ২ আদি-মধ্যযুগ

এককঃ৪ শ্রীকৃষ্ণকীর্তন
এককঃ৫-৬ অনুবাদ সাহিত্যঃ ভাগবত, রামায়ণ, মহাভারত
এককঃ৭-৮ বৈষ্ণব পদাবলীঃ বিদ্যাপতি, চণ্ডীদাস, জ্ঞানদাস, গোবিন্দদাস

মডিউলঃ৩ অন্ত্য-মধ্যযুগ-১

এককঃ৯-১১ চৈতন্য-চরিতসাহিত্যঃ চৈতন্যভাগবত, চৈতন্যচরিতামৃত
এককঃ১২ মঙ্গলকাব্যের উদ্ভব ও বিকাশ,
এককঃ ১৩-১৪ মনসামঙ্গল, ধর্মমঙ্গল,
এককঃ১৫-১৬ চণ্ডীমঙ্গল ও অন্নদামঙ্গল

মডিউলঃ৪ অন্ত্য-মধ্যযুগ-২

এককঃ১৭-১৮ প্রণয়োপাখ্যানঃ শাহ মুহম্মদ সগীর, দৌলত কাজী, আলাওল
এককঃ১৯-২০ শাক্ত পদাবলীঃ রামপ্রসাদ সেন ও কমলাকান্ত ভট্টাচার্য
এককঃ২১-২২ বাউলগান, লালন সাঁই, হাসন রজা, দুদ্দু সা

কোর কোর্সঃ২ বাংলা ভাষার ইতিহাস ও ভাষাতাত্ত্বিক পরিচয়

মডিউলঃ১

এককঃ১-২ ভারতীয় আর্যভাষার বিবর্তন
এককঃ৩-৪ নব্য-ভারতীয় আর্যভাষা ও বাংলা ভাষার উদ্ভব

মডিউলঃ২

এককঃ৫ বাংলা ভাষার বিবর্তন
এককঃ৬-৭ প্রাচীন যুগের বাংলা ভাষা

মডিউলঃ৩

এককঃ৮-৯ মধ্যযুগের বাংলা ভাষা
এককঃ১০-১১ আধুনিক বাংলা ভাষা

মডিউলঃ৪

এককঃ১২ বাংলা উপভাষা

এককঃ১৩-১৫ বাংলা উপভাষার পরিচয়
এককঃ১৬ সাধু ও চলিত ভাষা
এককঃ১৭-১৮ বাংলা শব্দভান্ডার,

এইসিসি ১ (এফ বি জি/ এফ ই জি)

জেনেরিক ইলেক্টিভ ১ (জি ই-১) বাংলার সমাজ ও সাংস্কৃতিক পরিচয়

মডিউলঃ১

এককঃ১-২ বাংলা ও বাঙালি জাতির ভৌগোলিক ও নৃতাত্ত্বিক পরিচয়
এককঃ৩-৪ বাংলার সমাজকাঠামো ও অর্থনৈতিক ভিত্তি

মডিউলঃ২

এককঃ৫-৬ বাংলার রাজনৈতিক ইতিহাস
এককঃ৭-৮ বাংলার ধর্ম [বৌদ্ধ, জৈন এবং চৈতন্য (বৈষ্ণব) প্রভাব, সমন্বয়চেতনা

মডিউলঃ৩

এককঃ৯-১০ চৈতন্যদেব ও বাংলার সংস্কৃতি
এককঃ১১-১২ অষ্টাদশ শতকে বাংলার সংস্কৃতি

মডিউলঃ৪

এককঃ১৩-১৪ উনিশ ও বিশ শতকে বাংলার সংস্কৃতি
এককঃ১৫-১৮ মন্বন্তর, পার্টিশন, উদ্বাস্তু বাঙালি, নকশাল আন্দোলন, ভূমি সংস্কার, বিশ্বায়নের অভিঘাত

সেমেস্টারঃ ২

কোর কোর্সঃ৩ **আধুনিক বাংলা সাহিত্যের ইতিহাস (ঊনবিংশ শতাব্দী)**

মডিউলঃ১ বাংলা গদ্যের উদ্ভব ও বিকাশ

এককঃ১ বাংলা গদ্যরীতির প্রস্তুতি পর্ব
এককঃ২ বাংলা গদ্যের বিকাশে প্রাতিষ্ঠানিক উদ্যোগ
এককঃ৩-৬ বাংলা গদ্য ও প্রবন্ধসাহিত্যের বিকাশ
(রামমোহন রায়, ঈশ্বরচন্দ্র বিদ্যাসাগর, অক্ষয়কুমার দত্ত, ভূদেব মুখোপাধ্যায়, প্যারীচাঁদ মিত্র, কালীপ্রসন্ন সিংহ, বঙ্কিমচন্দ্র চট্টোপাধ্যায়, মীর মশারফ হোসেন, বিবেকানন্দ)
এককঃ৭ বাংলা গদ্যের বিকাশে সাময়িক পত্রের অবদান

মডিউলঃ২ বাংলা কাব্যে আধুনিকতা

এককঃ৮ বাংলা কাব্যে আধুনিকতার সঞ্চারঃ প্রেক্ষাপট ও স্বরূপ
এককঃ৯-১০ ঈশ্বরচন্দ্র গুপ্ত, রঙ্গলাল বন্দ্যোপাধ্যায়, মধুসূদন দত্ত, হেমচন্দ্র বন্দ্যোপাধ্যায়, নবীনচন্দ্র সেন
এককঃ১১-১৩ বিহারীলাল চক্রবর্তী, রবীন্দ্রনাথ ঠাকুর, কামিনী রায়, গিরীন্দ্রমোহিনী দাসী

মডিউলঃ৩ বাংলা নাটক

এককঃ১৪ আধুনিক বাংলা নাটকের উদ্ভব ও বিকাশ

এককঃ১৫-১৬ মধুসূদন দত্ত, দীনবন্ধু মিত্র, অমৃতলাল বসু

এককঃ১৭-১৮ গিরিশচন্দ্র ঘোষ, রবীন্দ্রনাথ ঠাকুর

মডিউলঃ৪ বাংলা উপন্যাস ও ছোটগল্প

এককঃ১৯-২০ বাংলা উপন্যাসের উদ্ভব ও বিকাশ(ভবানীচরণ বন্দ্যোপাধ্যায়, প্যারীচাঁদ মিত্র, কালীপ্রসন্ন সিংহ)

এককঃ২১-২২ (বঙ্কিমচন্দ্র চট্টোপাধ্যায়, তারকনাথ গঙ্গোপাধ্যায়, রমেশচন্দ্র দত্ত,স্বর্ণকুমারী দেবী)

এককঃ২৩ বাংলা ছোটগল্পের উদ্ভব ও রবীন্দ্রনাথ

মডিউলঃ৫ বাংলা সাময়িক পত্র

এককঃ২৪-২৫ বাংলা সাময়িক পত্রের উদ্ভব ও বিকাশ

(সংবাদ প্রভাকর, তত্ত্ববোধিনী পত্রিকা, বিবিধার্থ সংগ্রহ, মাসিক পত্রিকা, সোমপ্রকাশ, বঙ্গদর্শন, ভারতী)

কোর-কোর্সঃ৪ **ভাষাবিজ্ঞান ও বাংলা ভাষা**

মডিউলঃ ১

এককঃ১-৩ ভাষা, ভাষাবংশ, ভাষাতত্ত্ব

এককঃ৪-৫ বাংলা লিপির উদ্ভব ও বিবর্তন

মডিউলঃ২ ধ্বনিতত্ত্ব ও রূপতত্ত্ব

একক৬-৮ বাংলা ধ্বনির পরিচয় ও ধ্বনি-পরিবর্তন

এককঃ৯-১০ শব্দার্থতত্ত্ব

এককঃ১১-১২ বাংলা শব্দের রূপতত্ত্ব (শব্দ ও পদগঠন প্রক্রিয়া)

মডিউলঃ৩ ব্যবহারিক বাংলা ব্যাকরণ

এককঃ১৩-১৬

(বচন, লিঙ্গ, পুরুষ, কারক ও বিভক্তি, বাক্য গঠন)

এককঃ১৭ বাংলা বানান

মডিউলঃ৪ সম্পাদনা ও প্রতিবেদন রচনা

এককঃ১৮-২০ সম্পাদনা

এককঃ২১-২২ সাংবাদিকতা ও প্রতিবেদন

এককঃ২৩ প্রতিবেদন রচনা

এ ই সি সি ২ (ই এন ভি এস)

জেনেরিক ইলেকটিভঃ ২ বাংলা সাহিত্যের ইতিহাস (আধুনিক যুগ)

মডিউলঃ১ গদ্য ও প্রবন্ধ

ইউনিটঃ১-৬ মুদ্রণযন্ত্র ও বাংলা সংবাদপত্রের আদিপর্ব, শ্রীরামপুর মিশন, ফোর্ট উইলিয়াম কলেজ, রামমোহন, বিদ্যাসাগর, অক্ষয়কুমার দত্ত, প্যারীচাঁদ মিত্র, কালীপ্রসন্ন সিংহ, বিবেকানন্দ, বঙ্কিমচন্দ্র, রবীন্দ্রনাথ

মডিউলঃ২ কাব্য-কবিতা

ইউনিটঃ৭-১২ ঈশ্বরচন্দ্র গুপ্ত, রঙ্গলাল বন্দ্যোপাধ্যায়, মধুসূদন দত্ত, নবীনচন্দ্র সেন, বিহারীলাল, রবীন্দ্রনাথ, লালন শাহ, নজরুল, কায়কোবাদ, যতীন্দ্রনাথ সেনগুপ্ত, জীবনানন্দ, সুভাষ মুখোপাধ্যায়, কবিতা সিংহ,

মডিউলঃ৩ নাটক

ইউনিটঃ১৩-১৮

বাংলা নাট্য ও রঙ্গমঞ্চের আদিপর্ব, রামনারায়ণ তর্করত্ন, মধুসূদন দত্ত, দীনবন্ধু মিত্র, গিরিশচন্দ্র ঘোষ, নাট্য নিয়ন্ত্রণ বিল, দ্বিজেন্দ্রলাল রায়, বিজন ভট্টাচার্য, রবীন্দ্রনাথ

মডিউলঃ৪ উপন্যাস ও ছোটগল্প

ইউনিটঃ ১৯-২৪

বাংলা উপন্যাসের উদ্ভব ও বিকাশ, বঙ্কিমচন্দ্র, রবীন্দ্রনাথ, শরৎচন্দ্র, বিভূতিভূষণ, তারাশঙ্কর, মানিক বন্দ্যোপাধ্যায়, অদ্বৈত মল্লবর্মন, সতীনাথ ভাদুড়ী

সেমেস্টারঃ৩

কোর-কোর্সঃ৫ প্রাগাধুনিক বাংলা সাহিত্য

মডিউলঃ১ চর্যাগীতি ও শ্রীকৃষ্ণকীর্তন

একঃ১-৩ চর্যাগীতিঃ (নির্বাচিত ৫টি) ১নং, ৫নং, ৬নং, ২৮নং, ৩৩নং

একঃ৪-৫ বড়ু চন্ডীদাসের শ্রীকৃষ্ণকীর্তনের 'রাধাবিরহ' অংশ

মডিউলঃ২ বৈষ্ণব পদাবলী

একঃ৬-৯ বৈষ্ণব পদাবলী (চন্ডীদাস, বিদ্যাপতি, জ্ঞানদাস, গোবিন্দদাসের ২টি ক'রে নির্বাচিত পদ)

চণ্ডীদাসঃ ১)সই কেবা শুনাইল শ্যাম নাম,

২)স্বরূপ বিহনে রূপের জনম কখনও নাহিক হয়

বিদ্যাপতিঃ ১)এ সখি হামারি দুখের নাহি ওর, ২)তাতল সৈকতে বারিবিন্দুসম

জ্ঞানদাসঃ ১)রূপ লাগি আঁখি ঝুরে, ২)সুখের লাগিয়া এঘর বাঁধিনু

গোবিন্দদাসঃ ১)কণ্টক গাড়ি কমলসম পদতল, ২) নীরদ নয়নে নীরঘন

মডিউলঃ৩ শাক্ত পদাবলী (নির্বাচিত ৬টি গীতি)

একঃ ১০-১৩

(অমরেন্দ্রনাথ রায় সম্পাদিত কলিকাতা বিশ্ববিদ্যালয় প্রকাশিত সংকলন থেকে গৃহিত)

১) কমলাকান্ত ভট্টাচার্য, "কবে যাবে বলো গিরিরাজ গৌরীরে আনিতে"(আগমনী, ১৮নং)

২)কমলাকান্ত ভট্টাচার্য, "শুকনো তরু মুঞ্জরে না ভয় লাগে মা ভাঙ্গে পাছে" (ভক্তের আকুতি, ১৫৮নং)

৩)রামপ্রসাদ সেন, "মন রে কৃষিকাজ জান না"(মনোদীক্ষা, ২৫০নং)

৪) রামপ্রসাদ সেন, "মা গো তারা এ শঙ্করী" (ভক্তের আকুতি, ১৬৩নং)

৫)মধুসূদন দত্ত, "যেয়ো না রজনি আজি লয়ে তারাদলে" (বিজয়া, ৮৮নং)

মডিউলঃ৪ রামায়ণ ও চৈতন্যভাগবত

এককঃ১৪-১৬ কৃত্তিবাস ওঝার রামায়ণ (অরণ্যকাণ্ড)
এককঃ১৭-২০ বৃন্দাবন দাসের চৈতন্যভাগবত
আদিখণ্ড (দ্বিতীয়, তৃতীয় ও চতুর্থ অধ্যায়)

কোর-কোর্সঃ৬ ছন্দ, অলঙ্কার ও ভারতীয় কাব্যতত্ত্ব

মডিউলঃ১ বাংলা ছন্দ

এককঃ১-২ বাংলা ছন্দের পরিভাষা
এককঃ৩-৪ বাংলা ছন্দের রীতিবিভাগ
এককঃ৫-৭ বাংলা কবিতার ছন্দ বিশ্লেষণ

মডিউলঃ২ বাংলা অলংকার

এককঃ৮ অলংকার কী ও তার প্রকারভেদ
এককঃ৯-১০ শব্দালংকার
এককঃ১১-১২ অর্থালংকার
এককঃ১৩-১৪ অলংকার-নির্ণয়

মডিউলঃ৩ ভারতীয় কাব্যতত্ত্বঃ সাধারণ ধারণা

এককঃ১৫-১৮ অলংকারবাদ, ধ্বনিবাদ, রীতিবাদ
এককঃ১৯-২২ রসবাদ, বক্রোক্তিবাদ

কোর-কোর্সঃ৭ বাংলা সাহিত্যের ইতিহাস (বিংশ শতাব্দী)

মডিউলঃ১ কাব্য-কবিতা

এককঃ১-৩ রবীন্দ্রনাথ ঠাকুর, সত্যেন্দ্রনাথ দত্ত, যতীন্দ্রনাথ সেনগুপ্ত, মোহিতলাল মজুমদার
এককঃ৪-৭ কাজী নজরুল ইসলাম, জীবনানন্দ দাশ, সুধীন্দ্রনাথ দত্ত, বিষ্ণু দে, সমর সেন, সুভাষ মুখোপাধ্যায়, সুকান্ত ভট্টাচার্য, বীরেন্দ্র চট্টোপাধ্যায়, সুনীল গঙ্গোপাধ্যায়, শক্তি চট্টোপাধ্যায়, কবিতা সিংহ

মডিউলঃ২ নাটক ও নাট্যকার

এককঃ৮-৯ রবীন্দ্রনাথ ঠাকুর, দ্বিজেন্দ্রলাল রায়,
এককঃ১০-১২ বিজন ভট্টাচার্য, তুলসী লাহিড়ী, মন্মথ রায়, উৎপল দত্ত, বাদল সরকার

মডিউলঃ৩ কথাসাহিত্য

এককঃ১৩-১৪ রবীন্দ্রনাথ ঠাকুর, শরৎচন্দ্র চট্টোপাধায়,
এককঃ১৫-১৮ বিভূতিভূষণ বন্দ্যোপাধ্যায়, তারাশঙ্কর বন্দ্যোপাধ্যায়, মানিক বন্দ্যোপাধ্যায়, সতীনাথ ভাদুড়ি
এককঃ১৯-২০ গল্পকারঃ জগদীশ গুপ্ত, পরশুরাম, প্রেমেন্দ্র মিত্র, সুবোধ ঘোষ, নরেন্দ্রনাথ মিত্র, শরদিন্দু বন্দ্যোপাধ্যায়, সমরেশ বসু, আশাপূর্ণা দেবী,
এককঃ২১ অন্যান্য কথাশিল্পী

মডিউলঃ৪প্রবন্ধ

এককঃ২২-২৩ রবীন্দ্রনাথ ঠাকুর, রামেন্দ্রসুন্দর ত্রিবেদী, প্রমথ চৌধুরী, বুদ্ধদেব বসু, গোপাল হালদার, সৈয়দ মুজতবা আলী

মডিউলঃ৫ সাময়িক পত্র-পত্রিকা

এককঃ২৪-২৫ সবুজপত্র, কল্লোল, কালিকলম, প্রগতি, প্রবাসী, ভারতবর্ষ, শনিবারের চিঠি, পরিচয়, কবিতা, কৃত্তিবাস

এস ই সি-১

জেনেরিক ইলেকটিভঃ৩ ভাষা, ছন্দ ও অলঙ্কার

মডিউলঃ১ ইউনিট;১-৬ বাংলা ভাষার উদ্ভব, বাংলা ভাষার বিবর্তন, বাংলা উপভাষা, বাংলা শব্দ ভাণ্ডার

মডিউলঃ২ ইউনিটঃ৭-১২ **মডিউলঃ৩ ব্যবহারিক বাংলা ব্যাকরণ**

বচন, লিঙ্গ, পুরুষ, কারক ও বিভক্তি, বাক্য গঠন,বাংলা বানান, সাধু ও চলিত ভাষা

মডিউলঃ৩

ইউনিটঃ ১৩-১৪ বাংলা ছন্দের পরিভাষা

ইউনিটঃ১৫-১৬ বাংলা ছন্দের রীতিবিভাগ

ইউনিটঃ১৭-১৮ বাংলা কবিতার ছন্দ বিশ্লেষণ

মডিউলঃ৪

ইউনিটঃ১৯-২০ অলংকার কী ও তার প্রকারভেদ

ইউনিটঃ২১-২২ শব্দালংকার

ইউনিটঃ২৩-২৪অর্থালংকার

সেমেস্টার ৪

কোর-কোর্সঃ ৮ **বাংলা কথাসাহিত্য**

মডিউলঃ১ (যে-কোনো একটি)

এককঃ১-৪ কপালকুণ্ডলাঃ বঙ্কিমচন্দ্র চট্টোপাধ্যায়

এককঃ৫-৮ ঘরে-বাইরেঃ রবীন্দ্রনাথ ঠাকুর

মডিউলঃ২ (যে-কোনো একটি)

এককঃ৯-১২ দেনা-পাওনাঃ শরৎচন্দ্র চট্টোপাধ্যায়

এককঃ১৩-১৬ পদ্মানদীর মাঝিঃ মানিক বন্দ্যোপাধ্যায়

মডিউলঃ৩ রবীন্দ্রনাথ ঠাকুরের ছোটগল্প

এককঃ১৭-২০ রবীন্দ্রনাথের ছোটগল্প

(কাবুলিওয়ালা, নিশীথে, অতিথি, স্ত্রীর পত্র,)

মডিউলঃ৪

এককঃ২১-২৪ বাংলা ছোটগল্প-১ (যে-কোনো তিনটি)

পয়োমুখমঃ জগদীশ গুপ্ত, প্রাগৈতিহাসিকঃ মানিক বন্দোপাধ্যায়, পুঁইমাচাঃ বিভূতিভূষণ বন্দ্যোপাধ্যায়, জলসাঘরঃ তারাশঙ্কর বন্দ্যোপাধ্যায়, ফসিলঃ সুবোধ ঘোষ,

এককঃ২৫-২৮ বাংলা ছোটগল্প-২ (যে-কোনো তিনটি)

নোনাজলঃ মুজতবা আলী, মহানগরঃ প্রেমেন্দ্র মিত্র, হেডমাস্টার:নরেন্দ্রনাথ মিত্র, আদাবঃ সমরেশ বসু, টোপঃ নারায়ণ গঙ্গোপাধ্যায়, দ্রৌপদীঃ মহাশ্বেতা দেবী

কোর-কোর্সঃ৯ প্রবন্ধ, রম্যরচনা ও পত্রসাহিত্য

মডিউলঃ১ (যে-কোনো ২টি)

একঃ১ বিবিধ প্রবন্ধঃ বঙ্কিমচন্দ্র চট্টোপাধ্যায় (গীতিকাব্য)
একঃ২ সভ্যতার সঙ্কটঃ রবীন্দ্রনাথ ঠাকুর
একঃ৩ নিয়মের রাজত্বঃ রামেন্দ্রসুন্দর ত্রিবেদী
একঃ৪ শূদ্র জাগরণঃ স্বামী বিবেকানন্দ
একঃ৫ তরুণের স্বপ্নঃ সুভাষচন্দ্র বসু

মডিউলঃ২ (যে-কোনো ২টি)

একঃ৬ শিক্ষা ও বিজ্ঞানঃ সত্যেন্দ্রনাথ বসু
একঃ৭ যে দেশে বহু ধর্ম বহু ভাষাঃ অন্নদাশঙ্কর রায়
একঃ৮ রবীন্দ্রনাথ ও উত্তরসাধকঃ বুদ্ধদেব বসু
একঃ৯ সংস্কৃতির সামাজিক দূরত্বঃ বিনয় ঘোষ

মডিউলঃ৩ রম্যরচনা

একঃ১০ চড়কঃ কালীপ্রসন্ন সিংহ
একঃ১১-১৩ কমলাকান্তের দপ্তরঃ বঙ্কিমচন্দ্র চট্টোপাধ্যায়
(একা কে গায় ওই, পতঙ্গ, বিড়াল)
একঃ১৪ লাইব্রেরিঃ বিচিত্র প্রবন্ধ-রবীন্দ্রনাথ ঠাকুর
একঃ১৫ বই কেনাঃ সৈয়দ মুজতবা আলী

মডিউলঃ৪ পত্রসাহিত্য

একঃ ১৬-১৭ ছিন্নপত্রঃ রবীন্দ্রনাথ ঠাকুর
পত্রসংখ্যাঃ ১০, ৬৭, ১০৬
একঃ১৮-১৯ রবীন্দ্রনাথের অন্যান্য চিঠিপত্র(নির্বাচিত ৪টি পত্র) ক্ষিতিমোহন সেন,রামানন্দ চট্টোপাধ্যায়, জগদীশচন্দ্র বসু ও প্রশান্তচন্দ্র মহলানবিশকে লিখিত পত্র
একঃ২০-২১ চিত্তরঞ্জন দাশকে লিখিত সুভাষচন্দ্র বসুর পত্র

কোর-কোর্সঃ১০ সাহিত্যের রূপ-রীতি ও আন্দোলন

মডিউলঃ১ কাব্য ও নাটক

একঃ১-৪ মহাকাব্য, গীতিকবিতা, কবিগান, সনেট
একঃ৫-১০ ট্র্যাজেডি, কমেডি, প্রহসন, কাব্যনাট্য, সামাজিক নাটক, ঐতিহাসিক নাটক, পৌরাণিক নাটক, একাঙ্ক নাটক, এবসার্ড নাটক, বেতার নাটক

মডিউলঃ২ উপন্যাস ও ছোটগল্প

একঃ১১-১৫ নকশা, নভেল, রোমান্স, সামাজিক উপন্যাস, রাজনৈতিক উপন্যাস, ঐতিহাসিক উপন্যাস, আঞ্চলিক উপন্যাস, চেতনাপ্রবাহরীতির উপন্যাস,

এককঃ১৬-১৯ ছোটগল্পের প্রকৃতি, ছোটগল্প ও রূপকথা, অনুগল্প

মডিউলঃ৩ প্রবন্ধ ও সমালোচনা

এককঃ২০-২১ বস্তুনিষ্ঠ প্রবন্ধ, ব্যক্তিনিষ্ঠ প্রবন্ধ, লঘু প্রবন্ধ, গবেষণা প্রবন্ধ

মডিউলঃ৪ সাহিত্য আন্দোলন

এককঃ২৪-২৬ পাশ্চাত্য সাহিত্য আন্দোলনঃ ক্ল্যাসিসিজম,রোম্যান্টিসিজম, রিয়ালিজম, সুররিয়ালিজম, সিম্বলিজম, ন্যাচারালিজম, সোস্যালিস্ট রিয়ালিজম ইত্যাদি সাহিত্য আন্দোলনগুলি সম্পর্কে প্রাথমিক ধারণা
এককঃ২৭ কল্লোল যুগ, হাংরি আন্দোলন

জেনেরিক ইলেক্টিভ ৪ (জি ই-৪) আধুনিক বাংলা সাহিত্যঃ নির্বাচিত পাঠ

মডিউলঃ১

ইউনিটঃ১-৬ শ্রীকান্তঃ প্রথম পর্ব, রবীন্দ্রনাথের একটি ছোটগল্প (‘দেনাপাওনা’)

মডিউলঃ২

ইউনিটঃ৭-১২ বঙ্গভূমির প্রতিঃ মধুসূদন দত্ত, ওরা কাজ করেঃ রবীন্দ্রনাথ, বিদ্রোহীঃ নজরুল ইসলাম, আবার আসিব ফিরেঃ জীবনানন্দ দাশ, ফুল ফুটুক না ফুটুকঃ সুভাষ মুখোপাধ্যায়, যেতে পারি কিন্তু কেন যাবঃ শক্তি চট্টোপাধ্যায়

মডিউলঃ৩

ইউনিটঃ১৩-১৮ কালের যাত্রাঃ রবীন্দ্রনাথ ঠাকুর

মডিউলঃ৪

ইউনিটঃ১৯-২১ বর্তমান ভারতঃ বিবেকানন্দ,(নির্বাচিত)

এস ই সি ২

সেমেস্টারঃ৫

কোর কোর্সঃ ১১ বাংলা কাব্য-কবিতা(উনিশ ও বিশ শতক)

মডিউলঃ১

এককঃ১-৩ বীরাঙ্গনা কাব্যঃ মধুসূদন দত্ত
(দুষ্মন্তের প্রতি শকুন্তলা, সোমের প্রতি তারা, লক্ষণের প্রতি শূর্পনখা)

মডিউলঃ২

এককঃ৪-৯ রবীন্দ্রনাথের কবিতাঃ মেঘদূত, জীবনদেবতা, স্বপ্ন, দূর হতে কী শুনিস্, সবলা, অবসন্ন চেতনার গোধূলিবেলায়, তোমার সৃষ্টির পথ,

মডিউলঃ৩

এককঃ১০-১৩ যক্ষের নিবেদনঃ সত্যেন্দ্রনাথ দত্ত; মোহমুদগরঃ মোহিতলাল মজুমদার; বাইশে শ্রাবণঃ যতীন্দ্রনাথ সেনগুপ্ত; বিদ্রোহীঃ নজরুল ইসলাম
এককঃ১৪-১৭ আট বছর আগের একদিনঃ জীবনানন্দ দাশ; শাশ্বতীঃ সুধীন্দ্রনাথ দত্ত; চিল্কায় সকালঃ বুদ্ধদেব বসু; জল দাওঃ বিষ্ণু দে;

মডিউলঃ৪

এককঃ১৮-২১ লাল ইস্তেহারঃ অরুণ মিত্র; মহুয়ার দেশঃ সমর সেন; ফুল ফুটুক না ফুটুকঃ সুভাষ মুখোপাধ্যায়; রাস্তা কারও একার নয়ঃ বীরেন্দ্র চট্টোপাধ্যায়,

কোর কোর্সঃ১২ নাটক ও নাট্যমঞ্চ

মডিউলঃ১

এককঃ১-৫ নীলদর্পণঃ দীনবন্ধু মিত্র

মডিউলঃ২

এককঃ৬-১০ মুক্তধারাঃ রবীন্দ্রনাথ ঠাকুর

মডিউলঃ৩

এককঃ১১-১৪ টিনের তলোয়ারঃ উৎপল দত্ত

মডিউলঃ৪ নাট্যমঞ্চ

এককঃ১৫-১৭ দেশি ও বিদেশি নাট্যমঞ্চ, মঞ্চাভিনয় ও বাংলা নাটক

এককঃ১৮-২০ গণনাট্য ও নবনাট্য আন্দোলনের কাল, বাংলা গ্রুপ থিয়েটার

ডিএস ইঃ১ বাংলা শিশু-কিশোর সাহিত্য

মডিউলঃ১

এককঃ১-২ বাংলা শিশু সাহিত্যের উদ্ভব ও বিকাশ
(উপেন্দ্রকিশোর রায়চৌধুরী, রবীন্দ্রনাথ ঠাকুর, সুকুমার রায়, লীলা মজুমদার)

এককঃ৩-৪ বাংলা কিশোর সাহিত্যের উদ্ভব ও বিকাশ(বিভূতিভূষণ বন্দ্যোপাধ্যায়, প্রেমেন্দ্র মিত্র, নারায়ণ গঙ্গোপাধ্যায়, সুনীল গঙ্গোপাধ্যায়, সৈয়দ মুস্তাফা সিরাজ, শীর্ষেন্দু মুখোপাধ্যায়, সত্যজিৎ রায়)

মডিউলঃ২

এককঃ৫-৬ ছেলেদের রামায়ণঃ উপেন্দ্রকিশোর রায়চৌধুরী

এককঃ৭-৮ ঠাকুরমার ঝুলিঃ দক্ষিণারঞ্জন মিত্র মজুমদার (কিরণমালা, সাত ভাই চম্পা, সুখু আর দুখু)

এককঃ৯-১০ রবীন্দ্রনাথ ঠাকুরের ‘সহজ পাঠ’

এককঃ১১-১২ অন্নদাশঙ্কর রায়ের ছড়া (নির্বাচিত ২টি)
ভারতমাতার উক্তি, কাঁদুনি, গিন্নী বলেন, তবু রঙ্গে ভরা

মডিউলঃ৩

এককঃ১৩-১৪ আবোল তাবোলঃ সুকুমার রায়
(আবোল তাবোল, খিচুড়ি, সৎপাত্র, একুশে আইন, নারদ!নারদ!, গন্ধ বিচার)

এককঃ১৫-১৬ পদীপিসির বর্মী বাক্সঃ লীলা মজুমদার

মডিউলঃ৪

এককঃ১৭-১৮ প্রোফেসর শঙ্কুঃ সত্যজিৎ রায়

এককঃ১৯-২০ সবুজ দ্বীপের রাজাঃ সুনীল গঙ্গোপাধ্যায়

ডি এস ইঃ২ কল্পকাহিনি ও রহস্য-রোমাঞ্চ

মডিউলঃ১

একঃ১ বাংলা সাহিত্যে কল্পকাহিনির উদ্ভব ও বিকাশ
একঃ২ ত্রৈলোক্যনাথ মুখোপাধ্যায়ঃ লুল্লু
একঃ৩ সব ভুতুড়েঃ লীলা মজুমদার

মডিউলঃ২

একঃ৪-৬ শঙ্কু সমগ্রঃ সত্যজিৎ রায়
(নির্বাচিত পাঠঃ(যে-কোনো ৩টি) ব্যোমযাত্রীর ডায়েরি, প্রফেসর শঙ্কু ও ম্যাকাও, মহাকাশের দূত, শঙ্কু ও ফ্রাঙ্কেনস্টাইন)

মডিউলঃ৩

একঃ৭ বাংলা সাহিত্যে রহস্য-রোমাঞ্চ কাহিনির সাধারণ পরিচয়
একঃ৮ বাংলা রহস্য-রোমাঞ্চ কাহিনিকার
একঃ৯-১২ (যে-কোনো একটি)
একঃ৯-১০ পাঁচকড়ি দেঃ হত্যাকারী কে?
একঃ১১-১২ স্বপনকুমার সিরিজ

মডিউলঃ৪

একঃ১৩-১৬
সবুজ দ্বীপের রাজাঃ সুনীল গঙ্গোপাধ্যায়
একঃ১৭-২০ বাংলা রহস্য-রোমাঞ্চ গল্প (যে-কোনো ৩টি)
হেমেন্দ্রকুমার রায়ঃ শনি মঙ্গলের রহস্য
শরদিন্দু বন্দ্যোপাধ্যায়ঃ রক্তের দাগ
সৈয়দ মুস্তাফা সিরাজঃ প্যান্থার রহস্য
হেতমগড়ের গুপ্তধনঃ শীর্ষেন্দু মুখোপাধ্যায়

সেমেস্টারঃ৬

কোর কোর্সঃ১৩ বাংলা লোকসংস্কৃতি ও লোকসাহিত্য

মডিউলঃ১

একঃ১-৩ লোকসংস্কৃতি কাকে বলে? শিষ্ট সংস্কৃতি ও লোক সংস্কৃতি; লোকসাহিত্যের সংজ্ঞা
একঃ৪-৫ বাংলার লোকসাহিত্যের নানা উপকরণ ও তাদের আলোচনা
একঃ৬ বাংলার ব্রতঃ অবনীন্দ্রনাথ ঠাকুর
একঃ৭ লোকগল্পঃ সাত ভাই চম্পা—দক্ষিণারঞ্জন মিত্র মজুমদার

মডিউলঃ২

একঃ৮ বাংলা পালাগান বা গীতিকা
একঃ৯ মৈমনসিংহগীতিকা সংগ্রহ, সম্পাদনা, প্রকাশ
একঃ১০ মৈমনসিংহগীতিকার পালাগুলির পরিচয়
একঃ১১ যে-কোনো একটি পালার পাঠ (মহুয়া অথবা চন্দ্রাবতী)

মডিউলঃ৩ লোকসাহিত্য সংগ্রহ ও আলোচনায় রবীন্দ্রনাথ

এককঃ১২-১৩ রবীন্দ্রনাথের শিলাইদহ ও শাহজাদপুর পর্ব, লোকসাহিত্য সংগ্রহ
একক১৪ রবীন্দ্রনাথ ও বাউলগান
এককঃ১৫-১৬ 'লোকসাহিত্য' নির্বাচিত রচনা
এককঃ১৭ ছেলে ভুলানো ছড়া

মডিউলঃ৪
এককঃ ১৮-২০ বাংলার লোকসাহিত্য পাঠ (নির্বাচিত)
"পয়সা মেকি পয়সা সঙ্গে চলে কিন্তু মানুষ মেকি চলে না" ইত্যাদি—সংগৃহিত লোকগল্প

কোর কোর্সঃ১৪ সংস্কৃত ও ইংরেজি সাহিত্যের ইতিহাস

মডিউলঃ১ সংস্কৃত সাহিত্যের ইতিহাস
এককঃ১-৪ কালিদাস (কাব্য ও নাটক),ভবভূতি
এককঃ৫-৭ বাণভট্ট, শূদ্রক ও জয়দেব

মডিউলঃ২ সংস্কৃত সাহিত্যের প্রেরণা
এককঃ৮-১০ রামায়ণ, মহাভারত, কালিদাস ও জয়দেব

মডিউলঃ৩ ইংরেজি সাহিত্যের ইতিহাসঃ১
এককঃ১১ ইংরেজি সাহিত্যের যুগবিভাগ
এককঃ১২-১৫ ওয়ার্ডসওয়ার্থ, শেলী, কীটস, এলিয়ট, ইয়েটস্

মডিউলঃ৪ ইংরেজি সাহিত্যের ইতিহাসঃ২
এককঃ১৬-১৮ শেক্সপীয়ার, জর্জ বার্নাড'শ, স্যামুয়েল বেকেট
এককঃ১৯-২০ ওয়াল্টার স্কট, চার্লস ডিকেন্স, ভার্জিনিয়া উলফ্

ডিএস ইঃ৩ বাংলাদেশের সাহিত্য

মডিউলঃ১
এককঃ১ বাংলাদেশের সাহিত্যের পটভূমি ও প্রেক্ষাপট
এককঃ২-৫ উপন্যাসঃ সূর্যদীঘল বাড়িঃ আবু ইশহাক

মডিউলঃ২ বাংলাদেশের গল্প(নির্বাচিত ৫টি গল্প)
এককঃ৬ একটি তুলসী গাছের কাহিনীঃ সৈয়দ ওয়ালিউল্লাহ,
এককঃ৭ আত্মজা ও একটি করবী গাছঃ হাসান আজিজুল হক,
এককঃ৮ যুগলবন্দীঃ আখতারুজ্জামান ইলিয়াস
এককঃ৯ খোয়াই নদীর বাঁকবদলঃ সেলিনা হোসেন
এককঃ১০ মহাকালের খাঁড়াঃ কায়েস আহমেদ

মডিউলঃ৩ বাংলাদেশের কবিতা
এককঃ১১-১৩
আহসান হাবিবঃ উৎসবের আগের দিন
হাসান হাফিজুর রহমানঃ এখন যুদ্ধ আমার
শামসুর রাহমানঃ স্বাধীনতা তুমি
আল মাহমুদঃ নোলক
শহীদ কাদরীঃ ব্ল্যাক আউটের পূর্ণিমায়

নির্মলেন্দু গুণঃ মানুষ

মডিউলঃ৪ নাটক ও প্রবন্ধ

এককঃ১৪-১৭ কবরঃ মুনীর চৌধুরি

এককঃ১৮ বাঙালির আত্মপরিচয়ের সূত্রপাতঃ আবু জাফর সামসুদ্দিন

এককঃ১৯ বাংলাদেশের কালচারঃ আবুল মনসুর আহমদ

এককঃ২০ দ্বি-জাতি তত্ত্বের সত্য-মিথ্যাঃ সিরাজুল ইসলাম চৌধুরি

এককঃ২১ স্বরূপের সন্ধানেঃ আনিসুজ্জামান

ডিএস ইঃ৪ অনুবাদ ও বাংলায় অনুবাদ সাহিত্য

মডিউলঃ১ অনুবাদ ও বাংলা সাহিত্য

এককঃ১-২ প্রাচীন কাব্যের বাংলা অনুবাদ

এককঃ৩-৪ মধ্যযুগের কাব্যের বাংলা অনুবাদ

মডিউলঃ২

এককঃ৫ ওমর খৈয়ামের বাংলা অনুবাদ(শক্তি চট্টোপাধ্যায় অনূদিত)

এককঃ৬ কবীরের বাংলা অনুবাদ (ক্ষিতিমোহন সেন অনূদিত)

এককঃ৭ গালিবের বাংলা অনুবাদ (শক্তি চট্টোপাধ্যায় ও আয়ান রশিদ অনূদিত)

মডিউলঃ৩

এককঃ৮-৯ অনুবাদক বিদ্যাসাগর

এককঃ১০-১১ অনুবাদক রবীন্দ্রনাথ

এককঃ১২-১৪ অন্যান্য ভারতীয় ভাষার নির্বাচিত কবিতা (যে-কোনো ২টি)

মডিউলঃ৪

এককঃ১৫-১৭ নির্বাচিত ইংরেজি কবিতা (যে-কোনো ২টি)

এককঃ১৮-২০ (নির্বাচিত একটি পাশ্চাত্য গল্প)

Elective English Choice Based Credit System

Annexure 1

Section B – Proposed NSOU Syllabus for Core Courses EEG

Course No.	Course Title	Semester	Page No.
CC 1	British Poetry and Drama: 14th Century to Early 17th Century	1	2-4
CC 2	European Classical Literature		5-7
CC 3	British Poetry & Drama: 17th and 18th Centuries	2	8-10
CC 4	Indian Classical Literature		11-13
CC 5	Indian Writing in English	3	14-16
CC 6	British Prose Literature: 17th and 18th Centuries		17-19
CC 7	British Romantic Literature		20-22
CC 8	British Literature: 19th Century	4	23-25
CC 9	British Literature: The Early 20th Century		26-28
CC 10	American Literature		29-31
CC 11	Women's Writing	5	32-34
CC 12	Popular Literature		35-37
CC 13	Modern European Drama	6	38-40
CC 14	Postcolonial Literatures		41-43

Section B – Details of Proposed Syllabus for Core Courses

CC No./ Title on UGC CBCS	CC No. on NSOU CBCS	Course Title	Texts	Thematic Module & subsequent Unit-wise Syllabus Details	Internal Choice for UA/ UT	Remarks
4/ British Poetry & Drama: 14th to 17th Centuries	1	British Poetry & Drama: 14th Century to Early 17th Century	1. Chaucer: Prologue to *The Canterbury Tales* - Portrait of the Wife of Bath 2. Thomas Wyatt: Farewell Love; Philip Sidney: Loving in Truth 3. Shakespeare: Sonnets 18 & 73 4. John Donne: The Good Morrow; Andrew Marvell: To His	**Module 1: Pre-history** Unit 1: Anglo-Saxons & the Continental Invaders in Britain Unit 2: Old English Literature: Poetry & Prose Unit 3: Latin Influence on English Language Unit 4: Scandinavian Influence on English Language Unit 5: England from 1066 AD – 1400 AD **Module 2: Middle English Literature** Unit 6: Trends in Middle English	Units 18 or 19 Units 20 or 21 **Sem 1**	Based upon current EEG Papers 1 & 2. New Texts 'To His Coy Mistress', *Dr Faustus.* **Requires 1 Content writer & 1 Editor**

			Coy Mistress; George Herbert: Virtue 5. Christopher Marlowe: *Edward II* or *Doctor Faustus* 6. Shakespeare: *Macbeth* or *As You Like It*	Poetry Unit 7: French Influence on English Language Unit 8: Chaucer – General Prologue to *The Canterbury Tales*, Portrait of the Wife of Bath Unit 9: Middle English Drama **Module 3: The Renaissance** Unit 10: Impact of the Renaissance & Reformation Unit 11: Contemporary Developments in Poetry – Elizabethan, Metaphysical & Cavalier Traditions Unit 12: The Rise of Secular Drama in England **Module 4: Elizabethan and Jacobean Literature - 1** Unit 13: Thomas Wyatt & Philip Sidney Unit 14: Shakespeare's Sonnets		

				Unit 15: Shakespeare's Use of Language Unit 16: Influence of the Authorised Version *Bible* Unit 17: John Donne, Andrew Marvell, George Herbert - Texts **Module 5: Elizabethan and Jacobean Literature - 2** Unit 18: Marlowe – *Edward II* Unit 19: Marlowe – *Doctor Faustus* Unit 20: Shakespeare – *Macbeth* Unit 21: Shakespeare – *As You Like It* Unit 22: Shakespearean Drama – Criticism and Scholarship **Module 6: Shakespeare Beyond Page** Unit 23: The Elizabethan Theatre/ Stage, Court & City **TIMELINES CHART**		

CC No./ Title on UGC CBCS	**CC No. on NSOU CBCS**	**Course Title**	**Texts**	**Thematic Module & subsequent Unit-wise Syllabus Details**	**Internal Choice for UA/ UT**	**Remarks**
2/ European Classical Literature	2	European Classical Literature	1. Homer: *The Iliad*, Bk 1 2. Sophocles: *Oedipus the King* 3. Ovid: Selections from *Metamorphoses*, 'Diana and Actaeon' (Bk 3) 4. Plautus: *Pot of Gold*	**Module 1: Homer and the Greek Epic** Unit 1. Background of Greek History, Culture and Ideas Unit 2. The Primary or the Oral Epic - The Development of a Genre Unit 3. The poet, Homer and the Narrative Significance of the Greek Epics Unit 4. *The Iliad:* An Overview (Structure, Form, Conventions) Unit 5. *The Iliad-* Detailed Analysis of Book 1 **Module 2: Sophocles - *Oedipus the King*** Unit 6. Background of Greek Tragedy	**Sem 1**	**New Paper. Requires 1 Coordinator & 4 content writers (1 for each Module)**

				Unit 7. Aristotle's *Poetics* and Features/ Components of Greek Tragedy Unit 8. The Legend of Oedipus and Dramatic Renderings Unit 9. Sophocles and his treatment of the Legend, Significant Features Unit 10. Scene by scene Analysis of the play Unit 11. Comments on Structure, Plot, Characterisation, Fate **Module 3: Ovid - Selections from *Metamorphoses*, 'Diana and Actaeon' (Bk 3)** Unit 12. Background of Roman History, Literature & Culture Unit 13. Roman Poetry and Ovid's Oeuvre Unit 14. *Metamorphoses* and the Significance of the text Unit 15. Analysis and detailed discussion of 'Diana and Actaeon'.		

				Module 4: Plautus: *Pot of Gold* Unit 16. Roman society and the Beginnings of Roman Comedy Unit 17. Old Latin Comedy: Features Unit 18. Plautus and his Plays Unit 19. *Pot of Gold* analysis of scenes, characters, structure, humour Unit 20. Tracing traditions of this Comedy from Menander to Terence **SEPARATE TIMELINES CHART FOR GREEK & ROMAN SOCIO-CULTURAL HISTORY**		

CC No./ Title on UGC CBCS	CC No. on NSOU CBCS	Course Title	Texts	Thematic Module & subsequent Unit-wise Syllabus Details	Internal Choice for UA/ UT	Remarks
7/ British Poetry & Drama: 17th& 18th centuries	3	British Poetry & Drama: 17th and 18th Centuries	1. John Milton: *Paradise Lost*, Bk I 2. Anne Kingsmill Finch, Countess of Winchilsea: The Introduction; Aphra Behn: Song – Love Armed 3. Alexander Pope: *The Rape of the Lock*, Cantos 1-3 4. James Thomson: Spring; Thomas Gray: Elegy written in the Country	Module 1: **England after Queen Elizabeth** Unit 1: England from 1603 – 1660: Society & Politics Unit 2: Jacobean Drama Unit 3: John Webster – *The Duchess of Malfi* Unit 4: England in the Wake of the Restoration **Module 2: The Restoration** Unit 5: Neo-Classicism – Impact on Literary Thought Unit 6: Emergent Literary Forms **Module 3: Poetry of the Restoration** Unit 7 – British Poetry in the 17th	**Sem 2** Units 3 or 13 Units 14 or 23	Based upon the current EEG 3 & EEG 4 syllabi. New Texts – *Paradise Lost*, Bk 1; *The Duchess of Malfi*, *All for Love* (Act 1 exists). **Requires 1 Coordinator & 2 Content Writers**

			Churchyard 5. John Webster: *The Duchess of Malfi* or John Dryden: *All for Love* 6. William Congreve: *The Way of the World* or Oliver Goldsmith: *She Stoops to Conquer*	century Unit 8: John Milton – *Paradise Lost*, Bk 1 Unit 9: Anne Kingsmill Finch – The Introduction; Aphra Behn – Song: Love Armed **Module 4: Drama of the Restoration** Unit 10: Restoration Drama Unit 11: Puritanism and the English Stage Unit 12: John Dryden – *All for Love* Unit 13: William Congreve – *The Way of the World* **Module 5: The Augustan Age: Background and New Literary Forms** Unit 14: The Augustan Age - Characteristics Unit 15: Features of the Enlightenment Unit 16: Alexander Pope – *The Rape*		

				of the Lock (Cantos 1-3) **Module 6: Transitions within the Long 18th Century** Unit 17: The Evolving Socio-Cultural Scene in Britain Unit 18: The Precursors of Romantic Poetry Unit 19: James Thomson – Spring Unit 20: Thomas Gray -Elegy written in the Country Churchyard Unit 21: Contemporary British Drama and the Stage Unit 22: Oliver Goldsmith – *She Stoops to Conquer* **TIMELINES CHART**		

CC No./ Title on UGC CBCS	CC No. on NSOU CBCS	Course Title	Texts	Thematic Module & subsequent Unit-wise Syllabus Details	Internal Choice for UA/ UT	Remarks
1/ Indian Classical Literature	4	Indian Classical Literature	1. Kalidasa: *Abhijnana Shakuntalam* 2. Vyasa: 'The Dicing' 3. Sudraka: *Mrcchakatika*	**Module 1: Introduction to Indian Classical Literature** Unit 1: The Origins of Classical Indian Drama – Theory and Practice Unit 2: Understanding Indian Aesthetics – *Alamkara* and *Rasa* Unit 3: Characteristics and Forms of Classical Sanskrit Drama Unit 4: Bharata's *Natyashastra* – The Poetics of Ancient Indian Drama Unit 5: Classical Indian Epic Poetry - Themes and Recensions in *The Mahabharata* Unit 6: Co-relating East and West in Classical Aesthetics **Module 2: Kalidasa – *Abhijnana Shakuntalam*** Unit 7: Introduction to Kalidasa's Works, Uniqueness of *Abhijnana*	**Sem 2**	**Requires 1 Coordinator and 3 Content Writers**

				Shakuntalam, and Brief Summary of the Play (incl Sources & Myths) Unit 8: Nature, Society and Codes of Relationships Unit 9: Plot/ Significant Episodes and Characterisation Unit 10: Major Thematic Issues Unit 11: *Abhijnana Shakuntalam* as *Drishyakavya* – Cultural Text Unit 12: Reading Classical Aesthetics in the Text Unit 13: *Abhijnana Shakuntalam* in Subsequent Reception **Module 3:Vyasa – 'The Dicing'** Unit 14: Introducing Vyasa and Brief Outline of the Dimensions of *The Mahabharata* – Locating 'The Dicing' in the larger schema Unit 15: Textual Analysis Unit 16: Kinship, Family and State – Politics and Private Morality Unit 16: Gender Equations and Power Relationships in 'The Dicing'		

				Unit 17: Characterisation Unit 18: The 'Mythical' Krishna Factor/ Divine Machinery and Power Politics Unit 19: 'The Dicing' episode in subsequent reception in Different Media **Module 4: Sudraka – *Mrcchakatika*** Unit 20: Introducing Sudraka and Brief Summary of the Text Unit 21: *Mrcchakatika* as *Prakarana* – Sources, Title, Scope Unit 22: Characterisation & Thematic Issues Unit 23: Society and Gender Equations Unit 24: *Mrcchakatika* in Subsequent Reception **TIMELINES OF INDIAN CLASSICAL LITERATURE**		

CC No./ Title on UGC CBCS	CC No. on NSOU CBCS	Course Title	Texts	Thematic Module & subsequent Unit-wise Syllabus Details	Internal Choice for UA/ UT	Remarks
3/ Indian Writing in English	5	Indian Writing in English	1. R. K. Narayan: *The English Teacher* 2. Anita Desai: *Fire on the Mountain* 3. **H. L. V. Derozio**: The Harp of India; **Toru Dutt**: Our Casuarina Tree; **Kamala Das**: Introduction; **Nissim Ezekiel**: Poet, Lover, Birdwatcher; **Jayanta Mahapatra**: Dawn at Puri; **Temsula Ao**: A Tiger Woman's Prayer 4. Raja Rao: India	**Module 1: Background Studies** Unit 1: Scope of Indian Writing in English Unit 2: The English Language in India – Zones of Contact and Emergence of Literature Unit 3: Colonial Period Unit 4: Post-Colonial Period – In Search of a New Idiom **Module 2: Indian English Poetry** Unit 5: Emergence and Development of Indian English Poetry Unit 6: Henry Derozio: 'The Harp of India'; Toru Dutt: 'Our Casuarina Tree' Unit 7: Nissim Ezekiel: 'Poet, Lover, Birdwatcher'; Jayanta Mahapatra:	**Sem 3**	Only the Jayanta Mahapatra poem is new. All else can be taken as it is from the present EEG 8 SLM. **1 Editor/ Content Writer should suffice**

			– A Fable; Ruskin Bond – 'Escape from Java' (in *Rusty: The Boy from the Hills*, Penguin, 2014) 5. Mahesh Dattani: *Tara* 6. Meenakshi Mukherjee: The Anxiety of Indianness	'Dawn at Puri' Unit 8: Kamala Das: 'An Introduction'; Temsula Ao: 'A Tiger Woman's Prayer **Module 3: Reading Indian English Fiction** Unit 9: Emergence and Development of Indian English Fiction Unit 10: Indian English Novel – Genre, Changing Values and Craft Unit 11: R. K. Narayan – *The English Teacher* Unit 12: Anita Desai – *Fire on the Mountain* **Module 4: Reading Indian English Drama** Unit 13: Emergence and Development of Indian English Drama Unit 14: Indian English Drama – Genre, Changing Values and Craft		

				Unit 15: Mahesh Dattani – *Tara* **Module 5: Reading Short Fiction and Non-Fiction** Unit 16: Emergence and Development of Indian English Short Story Unit 17: Indian English Literary Criticism – Traditions Unit 18: Raja Rao – 'India – A Fable'; Ruskin Bond – 'Rusty' **TIMELINES CHART**		

CC No./ Title on UGC CBCS	CC No. on NSOU CBCS	Course Title	Texts	Thematic Module & subsequent Unit-wise Syllabus Details	Internal Choice for UA/ UT	Remarks
British Literature: 18th Century (8) & British Literature 19th Century (10) both in parts	6	British Prose Literature: 17th and 18th Centuries	1. Francis Bacon: 'Of Studies', 'of Gardens' 2. 'Sermon on the Mount' from *The Bible*, New Testament 3. Extract 'Mr Christian's Dream of Vanity Fair' from John Bunyan's *The Pilgrim's Progress* 4. Richard Steele: 'Recollections of Childhood' 5. Joseph Addison: 'Sir Roger at Church'	**Module 1: Prose Literature of the Early 17th Century** Unit 1: The Development of English Prose since Renaissance Unit 2: Francis Bacon and other Prose Writers of the early 17th Century Unit 3: Bacon - Texts Unit 4: The English *Bible* – The Authorised Version of 1611 Unit 5: 'Sermon on the Mount' from The Bible, New Testament, Gospel of St Matthew – Chapters 5, 6 & 7 **Module 2: Prose Literature of the Later 17th Century** Unit 6: Surveying Divergent Prose	**Sem 3** Units 11 or 12	All texts except *Tristram Shandy* taken from current EEG 3 & 4. Requires 1 Editor and 1 Content Writer

			6. Jonathan Swift: *Gulliver's Travels* – Books 1 & 2 or Daniel Defoe: *Robinson Crusoe* 7. Laurence Sterne: *The Life and Opinions of Tristram Shandy, Gentleman*. Book 1	Forms of the Late 17th Century Unit 7: John Bunyan – Extract from *The Pilgrim's Progress* Unit 8: The Neoclassical Impact on English Prose **Module 3: Prose Literature of the 18th Century** Unit 9: The Predominance of Prose and Reason Unit 10: The Beginnings of Prose Fiction (Daniel Defoe & Jonathan Swift) Unit 11: Daniel Defoe: *Robinson Crusoe* Unit 12: Jonathan Swift: *Gulliver's Travels* – Bks 1 & 2 **Module 4: Non-Fictional Prose Literature** Unit 13: Periodical Essays and Miscellaneous Prose (History, Philosophy)		

				Unit 14: Text of Joseph Addison's 'Sir Roger at Church' Unit 15: Text of Richard Steele's 'Recollections of Childhood' Unit 16: The Prose Writings of Samuel Johnson **Module 5: Trends in the 18th Century Novel** Unit 17: The Novelists of the 18th century Unit 18: Lawrence Sterne – *The Life and Opinions of Tristam Shandy*, Gentleman. Book 1 **TIMELINES CHART**		

CC No./ Title on UGC CBCS	CC No. on NSOU CBCS	Course Title	Texts	Thematic Module & subsequent Unit-wise Syllabus Details	Internal Choice for UA/ UT	Remarks
British Romantic Literature/ 9	7	British Romantic Literature	1. William Blake: 'Introduction' to *The Songs of Innocence*, 'The Lamb'; 'The Tyger' OR Chimney Sweeper Poems 2. William Wordsworth: 'Tintern Abbey' or 'Immortality Ode', 'Michael' 3. S. T. Coleridge: 'Christabel Part 1'; 'Dejection: An Ode' 4. Odes - P. B. Shelley: 'To the West Wind' or 'To a Skylark';	**Module 1: The Romantic Period** Unit 1: The European Scene – Implications on English Culture and Society Unit 2: Romanticism/ Romantic Revival in English Literature Unit 3: Romantic Poetry Unit 4: Romantic Prose **Module 2: The Early Romantic Poets** Unit 5: William Blake – The Mystic Poet; 'Introduction to *The Songs of Innocence* Unit 6: 'The Lamb', 'The Tyger' Unit 7: Chimney Sweeper Poems Unit 8: William Wordsworth – Poet	**Sem 3** Units 6 or 7 Units 9 or 10 Units 15 or 16 Units 18 or 19	New texts include Blake's 'Introduction', Wordsworth's 'Immortality Ode' & 'Michael', Coleridge's 'Dejection Ode', Shelley's 'To a Skylark', Keats' 'To Autumn' & Mary Shelley's *Frankenstein*. All others from existing BDP EEG Paper 5 SLM. **Requires 2**

			John Keats: 'To a Nightingale' or 'To Autumn' 5. Charles Lamb: 'Dream Children: A Reverie'; William Hazlitt: 'On Going a Journey' 6. Mary Shelley: *Frankenstein*	and Theorist; 'Michael' Unit 9: Tintern Abbey Unit 10: Immortality Ode Unit 11: S. T. Coleridge – His Poetry and Thoughts on Poetry Unit 12: 'Christabel' Part 1 Unit 13: 'Dejection – An Ode' **Module 3: The Second Generation Romantic Poets** Unit 14: P. B. Shelley – Poetry and Prose Unit 15: 'To the West Wind' Unit 16: 'To a Skylark' Unit 17: John Keats – The Romantic 'Classicist' Unit 18 - 'To A Nightingale' Unit 19: 'To Autumn' **Module 4: Romantic Prose** Unit 20: Charles Lamb – 'Dream		**Content Writers and 1 Editor**

				Children: A Reverie’ Unit 21: William Hazlitt – ‘On Going a Journey’ Unit 22: Mary Shelley – *Frankenstein* **TIMELINES CHART**		

CC No./ Title on UGC CBCS	CC No. on NSOU CBCS	Course Title	Texts	Thematic Module & subsequent Unit-wise Syllabus Details	Internal Choice for UA/ UT	Remarks
British Literature: 19th Century/ 10	8	British Literature: 19th Century	1. Jane Austen: *Pride and Prejudice* or Charlotte Bronte: *Jane Eyre* 2. Charles Dickens: *David Copperfield* or Thomas Hardy: *Far from the Madding Crowd* 3. Alfred, Lord Tennyson: 'Ulysses', 'Break, Break, Break' 4. Matthew Arnold: 'Dover Beach', 'To Marguerite:	**Module 1: England in the 19th Century** Unit 1: Society, Culture and Politics in Victorian England Unit 2: The Industrial Revolution and New Knowledge Unit 3: 'The Never Setting Sun' – Britain and her Colonies Unit 4: Victorian Poetry Unit 5: Victorian Prose Unit 6: Women Writers of the Victorian Period **Module 2: Victorian Poetry** Unit 7: The Poetry of Alfred, Lord Tennyson; Texts – Ulysses; Break, Break, Break	**Sem 4** Units 16 or 18 Units 20 or 22	No new texts except 1 poem each by Elizabeth Barret and Emily Bronte. All taken from EEG 5 & EEG 6. **Requires 1 Editor, preferably either of the two who coordinated current EEG 6**

			Continued' 5. Robert Browning: 'My Last Duchess', 'Porphyria's Lover' 6. Elizabeth Barret Browning: 'I Thought Once …', 'The Cry of the Children' 7. Emily Bronte: 'No Coward Soul is Mine', 'Hope'	Unit 8: Matthew Arnold – The Philosopher Poet; Texts - Dover Beach; To Marguerite: Continued Unit 9: The Brownings – New Poetic Perceptions Unit 10: My Last Duchess; Porphyria's Lover Unit 11: I Thought Once …; The Cry of the Children Unit 12 – No Coward Soul is Mine, Hope **Module 3: The 19th Century English Novel** Unit 13: Jane Austen: *Pride and Prejudice* Unit 14: Charlotte Bronte – *Jane Eyre* Unit 15: Charles Dickens – *David Copperfield* Unit 16: Thomas Hardy – Late Victorian and Early Modern Unit 17: *Far From the Madding*		

				Crowd Unit 18: Non Fictional Prose – An Overview **TIMELINES CHART**		

CC No./ Title on UGC CBCS	CC No. on NSOU CBCS	Course Title	Texts	Thematic Module & subsequent Unit-wise Syllabus Details	Internal Choice for UA/ UT	Remarks
British Literature: The early 20th Century/ 12	9	British Literature: The Early 20th Century	1. D. H. Lawrence: *Sons and Lovers* or Joseph Conrad: *Lord Jim* 2. W. B. Yeats: 'The Second Coming', 'Sailing to Byzantium' 3. T. S. Eliot: 'The Love Song of J. Alfred Prufrock', 'Marina' 4. Rupert Brooke: 'The Soldier'; Wilfred Owen: 'Strange Meeting' 5. Katherine Mansfield: 'The	**Module 1: Understanding the Modern Age** Unit 1 – The Background of the Age Unit 2: Appraising the Industrial Revolution at Home and Abroad Unit 3: The Legacy of Darwin and Freud Unit 4: The Edwardians Unit 5: The *Avant-garde* and its Manifestations Unit 6: The Moderns, Modernity and Modernism Unit 7: Literature and the city: London **Module 2: The Literary Setting in the Modern Age**	**Sem 4** Units 18 or 19	Based on current EEG 7 syllabus. New texts include Lord Jim, 'Sailing to Byzantium', 'Marina'. 'The Fly', and 'Araby' can be taken from SEG 2. **Requires 1 Editor & 1 Content Writer**

			Fly'; James Joyce: 'Araby' 6. G. B. Shaw: *Pygmalion*	Unit 8: The Georgian Background Unit 9 - The First World War: Reasons and Impact on Life and Culture Unit 10: Literature of the First World War Unit 11: The Inter-War Years Unit 12 – The Second World War: Reasons and impact on Life and Culture Unit13: Literature of the Second World War Unit 14: Beyond Modernism - Gender, Myth, Psychology **Module 3: Literature in the Modern Age** Unit 15 –W. B. Yeats' Poems Unit 16 –T. S. Eliot's Poems Unit 17 – Rupert Brooke & Wilfred Owen Poems Unit 18: D. H. Lawrence - *Sons and*		

				Lovers Unit 19 – Joseph Conrad – *Lord Jim* Unit 20: Katherine Mansfield: 'The Fly'; James Joyce: 'Araby' Unit 21: G. B. Shaw - *Pygmalion* **TIMELINES CHART**		

CC No./ Title on UGC CBCS	CC No. on NSOU CBCS	Course Title	Texts	Thematic Module & subsequent Unit-wise Syllabus Details	Internal Choice for UA/ UT	Remarks
American Literature / 5	10	American Literature	1. Abraham Lincoln: The Gettysburg Address (1863) 2. Ernest Hemmingway: *The Old Man and the Sea* or Toni Morrison: *Beloved* 3. Anne Bradstreet: 'The Prologue'; Walt Whitman: 'O Captain, My Captain' 4. Sylvia Plath: 'Lady Lazarus'; Sherman Alexie: 'Crow	**Module 1: The Makings of America – Society, Culture & Literature** Unit 1: Puritanism Unit 2: The Concept of America Unit 3: The Frontier Movement Unit 4: The American Dream Unit 5: Slavery and the Abolitionist Movement Unit 6: American Multiculturalism **Module 2: Early Representative Non-Fictional Prose** Unit 7: J. Hector St. John de Crevecoeur – *Letters from an American Farmer* (Specifically 3, 9, 10, 12)	**Sem 4** Units 17 or 18 Units 23 or 24	New Course **Requires 1 Coordinator and 6 content writers**

			Testament' 5. Allen Ginsberg: 'September on Jessore Road', Langston Hughes: 'Let America be America Again' 6. Edgar Allan Poe: 'The Purloined Letter'; Charlotte Perkins Gilman: 'The Yellow Wallpaper' 7. Tennessee Williams: *The Glass Menagerie* or Arthur Miller: *View from the Bridge*	Unit 8: Henry David Thoreau and Ralph Waldo Emerson Unit 9: Abraham Lincoln – *The Gettysburg Address* **Module 3: American Poetry** Unit 10: A Brief History of Poetry Unit 11: Anne Bradstreet – 'The Prologue' Unit 12: Walt Whitman – 'O Captain, My Captain' Unit 13: Langston Hughes – 'Let America be America Again'; Allen Ginsberg – 'September on Jessore Road' Unit 14: Sylvia Plath – 'Lady Lazarus' Unit 15: Sherman Alexie – 'Crow Testament' **Module 4: The American Novel** Unit 16: A Survey of Major Trends Unit 17: Ernest Hemmingway – *The*		

				Old Man and the Sea Unit 18: Toni Morrison – *Beloved* **Module 5: The Short Story** Unit 19: The Development of the Short Story in American Literature Unit 20: Edgar Allan Poe: 'The Purloined Letter' Unit 21: Charlotte Perkins Gilman – 'The Yellow Wallpaper' **Module 6: American Drama** Unit 22: A Concise History of American Drama Unit 23: Tennessee Williams – *The Glass Menagerie* Unit 24: Arthur Miller – *View from the Bridge* **TIMELINES CHART**		

CC No./ Title on UGC CBCS	CC No. on NSOU CBCS	Course Title	Texts	Thematic Module & subsequent Unit-wise Syllabus Details	Internal Choice for UA/ UT	Remarks
Women's Writing/ 11	11	Women's Writing	1. Mary Wollstonecraft: *A Vindication of the Rights of Woman*, Chapters 1 & 2 or Rassundari Debi: Excerpts from *Amar Jiban*, trans. Enakshi Chatterjee 2. Rokeya Sakhawat Hossain: *Sultana's Dream* or Alice Walker: *The Color Purple* 3. Emily Dickinson: 'I cannot live with you', Judith	**Module 1: Western Women Writers and their Contribution** Unit 1: A Brief History of Women's Literature in English Unit 2: Aphra Behn – *Oroonoko* and other Works Unit 3: Mary Wollstonecraft- *A Vindication of the Rights of Woman*, Chapters 1 & 2 Unit 4: Body, Identity and Representation: Simone de Beauvoir, Hélène Cixous, Judith Butler Unit 5: History of American Women Writers- Black women Novelists Unit 6 - Alice Walker: *The Color Purple*	**Sem 5** Units 3 or 11 Units 6 or 12 Units 7 or 16	All new content. Focus has been on non-British writers. **Requires 1 Coordinator & 7 Content Writers**

			Wright: 'Woman to Child'; Gabriela Mistral: 'Ecstasy', Kishwar Naheed: 'The Grass is Really Like Me', Nandini Sahu: *Sita*, Canto XXV 4. Kusum Kumar: *Suno Shefali* ('Listen Shefali' trans. B. T. Seetha in Tutun Mukherjee ed. *Staging Resistance: Plays by Women in Translation*, New Delhi, OUP, 2005.) or Winsome Pinnock: *Tituba* 5. Nadine Gordimer: 'Is There Nowhere	Unit 7: Women and Drama in Britain- Influence of the Black- Winsome Pinnock: *Tituba* Unit 8: Poetry – European and American Female poets – E.B. Browning, Sylvia Plath Unit 9: Emily Dickinson – 'I cannot live with you'; Judith Wright – 'Woman to Child'; Maya Angelou – 'Still I Rise' **Module 2: Writers of the Indian Subcontinent** Unit 10: History of Indian women of Letters Unit 11: Rassundari Devi – Excerpts from *Amar Jiban* (trans. Enakshi Chatterjee) Unit 12: Rokeya Sakhawat Hossain: *Sultana's Dream* Unit 13: Female poets- Major themes and Influences Unit 14: Kishwar Naheed: 'The Grass is Really Like Me'; Nandini Sahu:		

			Else Where We Can Meet' (in *The Soft Voice of the Serpent*, Penguin, 1962); 'Jump' (in *Jump: And Other Stories*, 1991, Bloomsbury Pub. India, 2003) 6. Doris Lessing: *The Grass is Singing*	*Sita*, Canto XXV Unit 15: Contribution of Women to Dramatic Literature Unit 16: Kusum Kumar – *Suno Shefali* ('Listen Shefali' trans. B. T. Seetha) **Module 3: Women writers in Africa and Latin America** Unit 17: Themes and Styles of writing in women's fiction Unit 18: Nadine Gordimer: 'Is There Nowhere Else Where We Can Meet' /'Jump' Unit 19: Doris Lessing – *The Grass is Singing* Unit 20: Poetry in Africa and Latin America by women - Gabriela Mistral – 'Ecstasy'		

CC No./ Title on UGC CBCS	CC No. on NSOU CBCS	Course Title	Texts	Thematic Module & subsequent Unit-wise Syllabus Details	Internal Choice for UA/ UT	Remarks
Popular Literature/ 6	12	Popular Literature	1. Arthur Conan Doyle – *The Sign of Four* 2. J. K. Rowling: *Harry Potter and the Philosopher's Stone* (London, Bloomsbury, 1997) 3. Durgabai Vyam & Subhash Vyam: *Bhimayana: Experiences of Untouchability* (Navayana, 2011) 4. Chetan Bhagat: *2 States: The Story of My*	**Module 1: Understanding Popular Literature** Unit 1: The Rise of Popular Literature – History and Rationale Unit 2: Crime Fiction and Thrillers – Arthur Conan Doyle and Agatha Christie Unit 3: Science Fiction – H.G. Wells, Jules Verne and Isaac Asimov Unit 4: Humourists of the 20th century Unit 5: Diverse Strands - Graphic Novel, Comics and Manga, Campus Novels, Chik and Cric etc Unit 6: Pulp Fiction and Flash Fiction Unit 7: South Asian Popular Literature – History and Politics	**Sem 5**	New Course 1 Coordinator & 7 Content Writers

			Marriage (Rupa, 2014)	Unit 8: Science Fiction in Bangla Unit 9: Crime Fiction in Indian languages Unit 10: 21st Century Indian Bestsellers **Module 2: Texts of Popular Literature** Unit 11: Arthur Conan Doyle - Unit 12: J. K. Rowling: *Harry Potter and the Philosopher's Stone* Unit 13: Durgabai Vyam & Subhash Vyam: *Bhimayana: Experiences of Untouchability* Unit 14: Chetan Bhagat – *2 States: The Story of My Marriage* **Module 3: Critical Thoughts on Popular Literature** Unit 15: Popular Literature and Colonialism – F Scott Fitzgerald, Rudyard Kipling and Henry Rider Haggard		

				Unit 16: Indian Science Fiction and the Postcolonial Identity Formation Unit 17: Contemporary Popular Fiction and Partitioned Identities – Khushwant Singh, Bapsi Sidhwa, Kamila Shamsie Unit 18: Youth Culture and Popular Fiction Unit 19: Globalisation and Popular Fiction Unit 20: Popular Fiction and Media		

CC No./ Title on UGC CBCS	CC No. on NSOU CBCS	Course Title	Texts	Thematic Module & subsequent Unit-wise Syllabus Details	Internal Choice for UA/ UT	Remarks
Modern European Drama/ 13	13	Modern European Drama	1. Henrik Ibsen: *An Enemy of the People* 2. Bertolt Brecht: *Mother Courage and Her Children* 3. Eugene Ionesco: *Rhinoceros*	**Module 1: Development of theatre in Europe** Unit 1: Contexts of Modern European Drama till World War 2 Unit 2: Contexts of Modern European Drama – Post World War 2 Unit 3: Nationalism in European Drama Unit 4: Women's Rights Movements and Drama in Europe Unit 5: Late Twentieth Century European Drama **Module 2: Theater in Germany** Unit 6 - Background of German Theatre: Contextualising Bertolt Brecht Unit 7: Introduction to Epic Theater	Sem 6	New Course **1 Coordinator & 7 Content Writers**

				Unit 8: Bertolt Brecht- *Mother Courage and Her Children* **Module 3: Theatre in France and Italy** Unit 9: Humour and Farce in French Drama Unit 10: Theatre of Cruelty- Antonin Artaud Unit 11: Theatre of the Black- Aimé Césaire Unit 12: The French *Avant-garde*- Eugene Ionesco and others Unit 13: Eugene Ionesco - *Rhinoceros* Unit 14: Italian drama- Pirandello **Module 4: Theatre in Scandinavia** Unit 15: Birth of Realism and Henrik Ibsen Unit 16: Henrik Ibsen- *An Enemy of the People*		

				Unit 17: August Strindberg – Plays and Ideas **Module 5: Theatre in Eastern Europe** Unit 18: Russian Agitprop Theatre Unit 19: The Theatre Practice of Konstantin Stanislavski Unit 20: Polish Theatre and Jerzy Grotowsky **TIMELINES CHART**		

CC No./ Title on UGC CBCS	CC No. on NSOU CBCS	Course Title	Texts	Thematic Module & subsequent Unit-wise Syllabus Details	Internal Choice for UA/ UT	Remarks
Postcolonial Literatures/ 14	14	Postcolonial Literatures	1. Franz Fanon: 'The Trials and Tribulations of National Consciousness' in *The Wretched of the Earth*, tr. Richard Philcox (Grove Press, 2005, pp 97-144) OR Gabriel Garcia Marquez: 'The Nobel Acceptance Speech' in *Gabriel Garcia Marquez: New Readings*, ed. Bernard	**Module 1: Postcolonialism as Theory** Unit 1: Origin, History and Development Unit 2: Key thinkers Unit 3: Orientalism and Occidentalism Unit 4: Hybrid and the Third space Unit 5: Postcolonial Literature: Expanse and Major features Unit 6: Postcolonialism in the Neocolonial Times **Module 2: Non-Fictional Prose** Unit 7: Introduction to Postcolonial Non-Fictional Prose Unit 8: Franz Fanon – "The Trials and	**Sem 6** Units 8 or 9 Units 17 or 18 Units 23 or 24	New Course **Requires 1 Coordinator & 7 Content Writers**

			McQuirk &Richard Cardwell (Cambridge, CUP, 1987) 2. Chinua Achebe: *Things Fall Apart*, or Salman Rushdie: *Midnight's Children* 3. Pablo Neruda: 'Tonight I Can Write', Kaiser Haq: 'Bangladesh '71', Anne Ranasinghe: 'July 1983', Mamang Dai: 'Remembrance' 4. Margaret Atwood: 'The Entities' from the collection *Moral Disorder*; Mahasweta	Tribulations of National Consciousness" Unit 9: Gabriel Garcia Marquez – 'The Nobel Acceptance Speech' Unit 10: Prose Writings of the Subaltern Collective – Select Glimpses **Module 3: Poetry** Unit 11: Development of Postcolonial Poetry Unit 12: Pablo Neruda – 'Tonight I Can Write' Unit 13: Kaiser Haq – 'Bangladesh '71' Unit 14: Anne Ranasinghe – 'July 1983' Unit 15: Mamang Dai – 'Remembrance' **Module 4: Prose Fiction** Unit 16: Introduction to Postcolonial Prose Fiction		

			Devi: 'Draupadi', tr. Gayatri Chakravorty Spivak (Calcutta, Seagull, 2002) 5. Ama Ata Aidoo: *Dilemma of a Ghost* OR Badal Sircar *Sukhapathya Bharater Itihas* (Indian History Made Easy, tr. Subhendu Sarkar, New Delhi, OUP, 2010.)	Unit 17: Chinua Achebe – *Things Fall Apart* Unit 18: Salman Rushdie – *Midnight's Children* Unit 19: Margaret Atwood: 'The Entities' Unit 20: Mahasweta Devi – 'Draupadi', tr. Gayatri Chakravorty Spivak **Module 5: Drama** Unit 21: Development of Postcolonial drama in the African Continent Unit 22: Anticolonial Struggle and Postcolonial Drama in Bengal Unit 23: Ama Ata Aidoo – *Dilemma of a Ghost* Unit 24: Badal Sircar: *Sukhapathya Bharater Itihas* (Indian History Made Easy)		

Elective English (EEG) CBCS

Annexure 2

Proposed Syllabus for DSE (Discipline Specific Electives)

[4 Papers to be opted out of 5]

Paper No.	Paper Title	Page No.
1	Modern Indian Writing in Translation into English	2-3
2	Literary Criticism	4-6
3	Partition Literature	7-9
4	British Literature: Post World War II	10-12
5	Autobiography	13-15

Section D

Proposed Syllabus Details for Discipline Specific Electives (4 out of 5)

DSE No. & Title on UGC CBCS	DSE No. on NSOU CBCS	Course Title	Texts/ Components	Thematic Module & subsequent Unit-wise Syllabus Details	Internal Choice for UA/ UT	Remarks
Paper 1/ Modern Indian Writing in English Translation	**Paper 1**	**Modern Indian Writing in Translation into English**	**Poetry:** 1. Rabindranath Tagore: 'When my play was with Thee' 2. Amrita Pritam: 'I say unto Waris Shah' 3. Thangjam Ibopishak Singh: 'Dali, Hussain, or Odour of Dream, Colour of Wind' **Short Story**:	**Module 1: The Category of Indian Literature** Unit 1: What Constitutes Indian Literature? Unit 2: The Aesthetics of Translation in Indian Literature Unit 3: Bhasha Literatures and English Translations – Politics of Readership Unit 4: Linguistic Regions and Languages, Literature & Culture Unit 5: The Major Literary Genres in Modern Indian		

			1. Ismat Chugtai: 'The Quilt' 2. Fakir Mohan Senapati: 'Rebati' 3. Ved Rahi: 'Bal Kak and Nono' (tr. Shivanath in *Contemporary Indian Short Stories*, Series IV, Ed. Shantinath K. Desai, New Delhi, Sahitya Akademi, 2016) **Novel**: Suryakant Tripathi 'Nirala': *Billesur Bakariha* (tr. Harish Narang) OR Thakazhi Sivasankara Pillai: *Chemmen* (tr.	Literature **Module 2: Poetry** Unit 6: Major Trends in Modern Indian Poetry in Regional Languages Unit 7: Rabindranath Tagore Unit 8: Amrita Pritam Unit 9: Thangjam Ibopishak Singh **Module 3: Short Story** Unit 10: The Modern Short Story in Indian Languages Unit 11: Fakir Mohan Senapati Unit 12: Ismat Chugtai Unit 13: Ved Rahi **Module 4: Novel** Unit 14: The Bhasha Novel		

			Anita Nair) **Drama** Habib Tanvir: *Charandas Chor* (tr. Anjum Katyal, Calcutta, Seagull, 2004) or Datta Bhagat: *Aavart* (The Whirlpool, tr. Georg Nagies, Vimal Thorat & Eleanor Zelliot, in G. P. Deshpande ed. *Modern Indian Drama: An Anthology*, New Delhi, Sahitya Akademi, 2000).	in Post-Independence India Unit 15: *Chemmeen* Unit 16: *Billesur Bakariha* **Module 5: Drama** Unit 17: The Evolution from Classical to Modern Indian Drama Unit 18: Major Theatrical Forms in 20th Century India Unit 19: Habib Tanveer Unit 20: Datta Bhagat		

DSE No. & Title on UGC CBCS	DSE No. on NSOU CBCS	Course Title	Texts/ Components	Thematic Module & subsequent Unit-wise Syllabus Details	Internal Choice for UA/ UT	Remarks
Paper 6/ Literary Criticsm	**2**	**Literary Criticism**	1. Philip Sidney: Extract from 'Apologie for Poetry'. *English Critical Texts*, eds. D. J. Enright & Ernst De Chickera, pp 3-6 - "Since the authors of … Poesy therefore is an art of imitation". 2. John Dryden: Extract from 'An Essay of Dramatic Poesy'. *English Critical Texts*, eds. D. J. Enright & Ernst De Chickera, pp 88 – 91, ll 1496-1589 - "To begin with … love Shakespeare". 3. Samuel Johnson:	**Module 1: The Rationale** Unit 1: Why Literary Criticism – Evolutionary Rationale Unit 2: Classical Literary Criticism Unit 3: Literary Criticism – Renaissance to 18th Century Unit 4: Literary Criticism in the 19th and 20th		Only the 6th text – Eliot/Brooks will be new. All others are from existing BDP EEG SLM, and a chronological development of English literary criticism has been chosen.

			Extract from *Prefaces to Shakespeare* – 'Shakespeare's World'; Shakespeare's Wordplay' in *The New Oxford Book of English Prose*, ed. John Gross, pp 221-22 4. William Wordsworth: Preface to *The Lyrical Ballads* (1802) 5. Thomas Carlyle: 'The Hero as Poet' from *On Heroes, Hero Worship, and the Heroic in History*. 6. T.S. Eliot: 'The Metaphysical Poets' OR Cleanth Brooks: 'The Language of	Centuries Unit 5: From Literary Criticism to Literary Theory **Module 2: Contexts and Texts 1** Unit 6: The Elizabethan Literary Scene – Trends and Controversies Unit 7: Philip Sidney – Extract from 'Apologie for Poetry' – Text and Discussion Unit 8: Literary Controversies of the Restoration Period Unit 9: John		

				Paradox' in *The Well Wrought Urn: Studies in the Structure of Poetry* (1947)	Dryden – Extract from 'An Essay of Dramatic Poesy' Unit 10: The Evolving Literary Scene in the Augustan Age Unit 11: Samuel Johnson – Extract from *Prefaces to Shakespeare* **Module 3: Contexts and Texts 2** Unit 12: Literary Ethos of the Romantic Age Unit 13: William Wordsworth – Preface Unit 14: Literary Criticism after		

				Wordsworth Unit 15 – Literary Criticism of the Victorian Period Unit 16: Thomas Carlyle – 'The Hero as Poet' **Module 4: Contexts and Texts 3** Unit 17: The Move to Depersonalise – Text as Priority Unit 18: T. S. Eliot – 'The Metaphysical Poets' Unit 19: Cleanth Brooks – 'The Language of Paradox'		

				Unit 20: William Empson and Ambiguity		

DSE No. & Title on UGC CBCS	DSE No. on NSOU CBCS	Course Title	Texts/ Components	Thematic Module & subsequent Unit-wise Syllabus Details	Internal Choice for UA/ UT	Remarks
Paper 10/ Partition Literature	**3**	**Partition Literature**	**1. Partition Memoirs:** **Urvashi Butalia** – 'Memory' (Chapter 8 of *The Other Side of Silence: Voices from the Partition of India*, New Delhi, Penguin, 1998, pp 347-371) **Alok Bhalla**– 'Partition, Exile and Memories of a Lost Home: In Conversation with Intizar Husain' (in *Partition Dialogues: Memories of a Lost Home*, New Delhi, OUP, 2006, pp 77-	**Module 1: Making and Unmaking of Nations** Unit 1: Historical Understanding of the Partition of 1947 (Mushirul Hasan, Gyanendra Pandey, Yasmin Khan, Vazira Fazila-Yacoobali Zamindar) Unit 2: The Liberation of Bangladesh – New Meanings		

			108) **Nitish Sengupta** - Bengal Divided: The Unmaking of a Nation 1907-1971, Chapter 11 – 'The West Bengal Story' 2. **Poetry**: **Faiz Ahmed Faiz:** 'The Dawn of Freedom (August 1947) in *100 Poems by Faiz Ahmed Faiz*, tr., with an Introduction and Notes by V.G Kiernan. New Delhi, OUP; **Gulzar:** 'Toba Tek Singh' in *Translating Partition*, ed. Tarun Saint et al., New Delhi, Katha, 2001; **Sankha Ghosh**: 'Rehabilitation' in Rakshanda Jalil et	for India Unit 3: Migrancy and Displacement – A 'Long Partition' 1 Unit 4: Partition-Independence in Literature & Film – A 'Long Partition' 2 Unit 5: The Diasporic South-Asian – A 'Long Partition' 3 Unit 6: Memory and Amnesia – Micro Histories of Documentation **Module 2: Partition Memoirs**		

			al., *Looking Back: The 1947 Partition of India 70 Years On*, New Delhi, Orient Blackswan, 2017. 3. **Short Stories**: **PratibhaBasu**: 'The Marooned' (tr. Subhasree Tagore in *The Other Voice*, eds. Tapati Gupta & Anil Acharya, Kolkata, Anustup); **Amar Jaleel**: 'A Train to Karachi' (in Amar Jaleel's *Love, Longing and Death: Mystic Stories*, New Delhi, BibliophileSouthAsia, 2008); **Selina Hossain**: 'Looking Back' (in *Bengal Partition Stories: An Unclosed Chapter*, ed. Bashabi Fraser,	Unit 7: Urvashi Butalia Unit 8: Alok Bhalla Unit 9: Nitish Sengupta **Module 3: Poetry** Unit 10: Faiz Ahmed Faiz - 'The Dawn of Freedom (August 1947) Unit 11: Gulzar – 'Toba Tek Singh' Unit 12: Sankha Ghosh – 'Rehabilitation' **Module 4: Short Stories** Unit 13:		

			London, Anthem Press, 2008) 4. **Novel**: **Chaman Nahal:** *Azadi* OR **Amitav Ghosh**: *The Shadow Lines*	Pratibha Basu – 'The Marooned' Unit 14: Amar Jaleel – 'A Train to Karachi' Unit 15: Selina Hossain: 'Looking Back' **Module 5: Novel** Unit 16: Partition Novels in Regional Languages Across Borders Unit 17: Partition Novels in English in the Subcontinent Unit 18: Chaman Nahal - *Azadi* Unit 19: Amitav		

				Ghosh – *The Shadow Lines* Unit 20: New Directions in Partition Fiction		

DSE No. & Title on UGC CBCS	DSE No. on NSOU CBCS	Course Title	Texts/ Components	Thematic Module & subsequent Unit-wise Syllabus Details	Internal Choice for UA/ UT	Remarks
Paper 3/ British Literature: Post World War II	**4**	**British Literature: Post World War II**	**1. Poetry** Phillip Larkin: 'Church Going', 'The Whitsun Weddings' Thom Gunn: 'Cat Island', 'Tamer and Hawk' Ted Hughes: 'Hawk Roosting', 'Crow's Fall' Seamus Heaney: 'Digging', 'Casualty' Carol Ann Duffy: 'Text', 'Elvis's Twin Sister' **2. Novel**	**Module 1: The Global Scene** Unit 1: Europe after the Second World War Unit 2: The Setting Sun of the British Empire Unit 3: New Orientations in Asia Unit 4: The Postmodern Culture Unit 5: The Cultural Context		

			George Orwell: *1984* OR William Golding: *Lord of the Flies* **3. Short Story** Alan Sillitoe: 'The Fishing-boat Picture' (in *The Penguin Book of Modern British Short Stories*, ed. Malcolm Bradbury, London, Viking, 1987, pp 135-149); Emma Tennant: 'Philomela'(Same Collection, pp 407-413) **4. Drama** David Edgar: *Destiny* OR Edward Bond: *Lear*	of Contemporary Literature **Module 2: Literary Trends in Britain** Unit 6: English Poetry from 1945 – 2000 Unit 7: English Fictional Prose from 1945 – 2000 Unit 8: English Drama from 1945 – 2000 Unit 9: Intertextuality and Experimentation in Literature **Module 3: Poetry**		

				Unit 10: Phillip Larkin Unit 11: Thom Gunn Unit 12: Ted Hughes Unit 13: Seamus Heaney Unit 14: Carol Ann Duffy **Module 4: Novel** Unit 15: George Orwell – *1984* Unit 16: William Golding – *Lord of the Flies* **Module 5: Short Story** Unit 17: Alan Sillitoe: 'The Fishing-boat		

				Picture’ Unit 18: Emma Tennant: ‘Philomela’ **Module 6: Drama** Unit 19: *Destiny* Unit 20: *Lear*		

DSE No. & Title on UGC CBCS	DSE No. on NSOU CBCS	Course Title	Texts/ Components	Thematic Module & subsequent Unit-wise Syllabus Details	Internal Choice for UA/ UT	Remarks
Paper 13/ Autobiography	**5**	**Autobiography**	1. Jean Jacques Rousseau: *Confessions*, Part 1, Bk 1, pp 5-43 (trans. Angela Scholar) 2. M. K. Gandhi: *My Experiments with Truth*, Part 1, Chapters II – IX, pp 5-26 (Ahmedabad, Navjivan	**Module 1: Autobiography as Genre** Unit 1: History and Evolution Unit 2: Autobiography, Biography and Memoirs Unit 3: Signal Autobiographies across the World **Module 2: Jean Jacques**		

			Trust) 3. Charles Chaplin: *My Autobiography*, Chapters 1 & 2, Penguin, 2003. 4. Sunil Gavaskar - *Sunny Days: Sunil Gavaskar's Own Story*, Chapters 1 & 2, Rupa Pub. India, 1976	**Rousseau** Unit 4: Text General Discussion Unit 5: Contemporary France and Rousseau Unit 6: Confession as Autobiography Unit 7: Rousseau's Early Life Unit 8: The Impact of Early Experience on Later ideas **Module 3: M. K. Gandhi** Unit 9: Text General		

				Discussion Unit 10: The Writing of *My Experiments with Truth* Unit 11: The Blend of Fact and Fiction Unit 12: Childhood Memories – Private and Public Domains Unit 13: Gandhi's Experiments and Atonements **Module 4: Charles Chaplin** Unit 14: Text General Discussion Unit 15: The Early Life of Charles		

				Chaplin Unit 16: Victorian London Unit 17: Music and Theatre Unit 18: From Charles to Charlie – Chaplin and Cinema Unit 19: Memories to Films Unit 20: Assessing Chaplin in World Cinema **Module 5: Sunil Manohar Gavaskar** Unit 21: Text & General Discussion Unit 22: Sports		

				Autobiography, Cricket and India Unit 23: Of Life beyond Cricket Unit 24: Motivational Elements		

Elective English (EEG)-CBCS

Annexure 3

Proposed Syllabus for GE (Generic Electives)

[4 Papers to be opted out of 5]

Paper No.	Paper Title	Page No.
1	Reading, Writing, and Comprehension Skills	2-4
2	Media and Mass Communication Skills	5-7
3	Text and Performance	8-10
4	Language and Linguistics	11-13
5	Gender and Human Rights	-

Section C

Proposed Syllabus Details for Generic Electives (GE) – 4 out of 5 to be opted

GE No. & Title on UGC CBCS	GE No. on NSOU CBCS	Course Title	Texts/ Components	Thematic Module & subsequent Unit-wise Syllabus Details	Internal Choice for UA/ UT	Remarks
Paper 1/ Academic Writing and Composition	**1**	**Reading, Writing, and Comprehension Skills**		**Module 1: Introduction to Reading and Writing Processes** Unit 1: Basics of Grammar and Punctuation Unit 2: Classification of Words and Sentence Construction Unit 3: Basic Level Translation from L1 to L2 Unit 4: Reading Comprehension of Passages Unit 5: Official Letter	**Sem 1**	**Extremely necessary since our learners come from heterogeneous backgrounds**

				Writing, Email, Memo Unit 6: Precis Writing Unit 7: Creative Writing, Paragraphs and Essays **Module 2: Academic Writing** Unit 8: Academic Writing for the Humanities Unit 9: Academic Writing for the Social Sciences Unit 10: Co-relating Reading with Writing in Different Genres Unit 11: Identifying Main Ideas & Supporting Evidence in a Text Unit 12: Linking Ideas and Writing Definitions **Module 3: Argument Structuring** Unit 13: Approaching Texts –		

				Inference and Analysis Unit 14: Writing Short Description from Visual Information Unit 15: Writing Introductions and Conclusions to Long Compositions Unit 16: Identifying Key Areas for Discussion in Texts Unit 17: Writing a Project Proposal **Module 4: Citing Resources** Unit 18: Incorporating References in a Text Unit 19: The Necessity of Citing Resources Unit 20: Basic Citation Stylesheets in Humanities		

GE No. & Title on UGC CBCS	GE No. on NSOU CBCS	Course Title	Texts/ Components	Thematic Module & subsequent Unit-wise Syllabus Details	Internal Choice for UA/ UT	Remarks
Paper 2/ Media and Communication Skills	**2**	**Media and Mass Communication Skills**	1. *Aristotle's Model of Communication* 2. *Western Model of Communication* 3. *Theories of the Press*	**Module 1: Introduction to Mass Communication** Unit 1: From English Studies to Media and Mass Comm. Unit 2: Meaning and Functions of Mass communication Unit 3: Origins of Mass communication Unit 4: Mass Communication	**Sem 2**	**Since this area is an obvious choice in the present time, hence this GE is opted**

				and Culture. Unit 5: Forms of Mass Comm. **Module 2: Advertising** Unit 6: Evolutionary History of Indian Advertising Unit 7: Types of Advertising Unit 8: Media Buying and selling Unit 9: Testing Advertising Effectiveness Unit 10: Case Studies in Advertising Unit 11: Ethics in Advertising - ASCI		

				Module 3: Media Writing Unit 12:Writing News Reports Unit 13: Writing News Features, Editorials, Interviews Unit 14: Storyboard for Television and Radio Unit 15: Writing for the Web **Module 4: Introduction to Cyber Media and Social Media** Unit 16:Internet and Journalism Unit 17: Types of Social Media		

				Unit 18: Finding and Evaluating Online information Unit 19: Foundations of New Media Unit 20: Cyber Laws		

GE No. & Title on UGC CBCS	GE No. on NSOU CBCS	Course Title	Texts/ Components	Thematic Module & subsequent Unit-wise Syllabus Details	Internal Choice for UA/ UT	Remarks
Paper 3/ Text and Performance	**3**	**Text and Performance**		**Module 1: Text** Unit 1: Text – Origins, Definitions, Classification, Evolution Unit 2: Text as "Scalpel" – Jerzy Grotowski's Model Unit 3: Text in Semiotics Unit 4: Sexual/ Textual Politics – Reading Toril Moi Unit 5: Text and Performance **Module 2: Performance** Unit 6: Performance – Definition, Scopes, and Nature	**Sem 3**	**This GE will be helpful in approaching a host of play texts in the syllabus**

				Unit 7: Performance and ritual Unit 8: Performance and Gender Unit 9: The Transformative Power of Performance Unit 10: Politics and Performance **Module 3: Performance and Theatre** Unit 11: Historical Periods and Development of Theatre Forms Unit 12: Overview of Western and Indian Theatre Unit 13: Types of Theatre – Semiotics of Performative Spaces Unit 14: Folk Traditions in Theatre Unit 15: The Actor as Agent in Theatre		

				Module 4: Theories of Performance Unit 16: Classical European Theatre Unit 17: Classical Indian Theatre Unit 18: Theorists of the 19th Century – Konstantin Stanislavski, Bertolt Brecht Unit 19: Theorists of the 20th Century – (Europe) Victor Turner, Eugenio Barba, (America) Erving Goffman, Marvin Calson Unit 20: From Classical *Rasas* to 'Theatre of Roots' – Text and Performance in Indian Theatre **Module 5: Illustrating Text to Performance** Unit 21: *A Doll's House* directed by Patrick Garland		

				Unit 22: *Pygmalion* as *My Fair Lady* directed by George Cukor		

GE No. & Title on UGC CBCS	GE No. on NSOU CBCS	Course Title	Texts/ Components	Thematic Module & subsequent Unit-wise Syllabus Details	Internal Choice for UA/ UT	Remarks
Paper 4/ Language and Linguistics	**4**	**Language and Linguistics**	Akmajian, H. et al. 1996. *Linguistics -- An Introduction to Language and Communication*. New Delhi, Prentice-Hall of India. Board of Editors. 2015. *Linguistics: An Introduction*, Hyderabad: Orient Blackswan. Palmer, F.R. 1983. *Grammar*. Harmondsworth, Penguin Book. Yule, George. *The Study of Language*. 2016. Cambridge, CUP.	**Module 1: Basics of Linguistics** Unit 1: Definition, Scope, Levels and Branches of Linguistics Unit 2: Language- Definition and Features Unit 3: Spoken and Written English Unit 4: Second	**Sem 4**	**Language & Linguistics an inevitable component of literature syllabi**

				Language Acquisition **Module 2: Language Varieties** Unit 5: Dialect and Non-Standard Varieties Unit 6: Standard English, Style & Register Unit 7: Style and Register - Types and Features of Language Unit 8: Pidgin and Creole		

				Unit 9: Indian English **Module 3: Morphology** Unit 10: Definition and Scope Unit 11: Types of Morphemes Unit 12: Morphological Processes Unit 13: Morphological Description and Analysis		

				Module 4: Syntax Unit 14: Definition and scope Unit 15: Structural Grammar- Background, IC Analysis/PS rules Unit 16: Transformation Generative Grammar **Module 5: Phonetics**		

				Unit 17: What is Phonetics, Organs of Speech, Phonemes Unit 18: English Consonants and Vowels Unit 19: Syllable Division and Stress Unit 20: Intonation		

GE No. & Title on UGC CBCS	GE No. on NSOU CBCS	Course Title	Texts/ Components	Thematic Module & subsequent Unit-wise Syllabus Details	Internal Choice for UA/ UT	Remarks
Paper 6/ Gender and Human Rights	5	Gender and Human Rights	Syllabus Awaited			An important component in the era of interdisciplinary studies. However, syllabus is awaited from UGC

New PGELT Syllabı

Semester: 1 Introduction to ELT — Total credits 20

CC1: Methods and Concepts in ELT-1 (LSRW)

Module 1

Unit -1- General Introduction of Methodology
Unit -2 Language Features
Unit -3 Aspects of Language Skills
Unit- 4 Teaching of Skills

Module 2

Unit -5 Listening Skills 1
Unit -6 Listening Skills 2
Unit -7 Speaking Skills 1
Unit- 8 Speaking Skills 2

Module 3

Unit -9 Reading Skills 1
Unit -10 Reading Skills 2
Unit -11 Writing Skills 1
Unit -12 Writing Skills 2

Module 4

Unit -13 Activities for Listening Skills
Unit -14 Activities for Speaking Skills
Unit-15 Activities for Reading Skills
Unit-16 Activities for Writing Skills

CC2: Methods and Concepts in ELT-2 (Grammar, Vocabulary, Literature)

Module 1

Unit -1 Grammar
Unit -2 Communicative / Functional Grammar
Unit -3 Grammar Exercises – Types and Uses
Unit-4 Grammar Games and Activities

Module 2

Unit – 5 Vocabulary and its importance
Unit -6 Qualities of a word
Unit -7 Teaching Vocabulary
Unit -8 Vocabulary Exercises

Module 3

Unit -9 Importance of Literature
Unit -10 Teaching Prose
Unit-11 Teaching Short Stories
Unit -12 Teaching Poetry

New PGELT Syllabus 2019

Module 4

Unit -13 Teaching Skits and Plays
Unit -14 Teaching Novels
Unit 15 –Teaching non-fictional Prose (Essay)
Unit 16 – Revision on Literary forms and Extension

CC3: Phonetics and Phonology in English

Module 1

Unit – 1 Nature of Spoken English
Unit - 2 Place of Phonetics in Communication
Unit - 3 Variations in Pronunciation
Unit- 4 Features of RP

Module 2

Unit – 5 Speech Production
Unit - 6 English Vowel sounds
Unit - 7 English Consonant Sounds
Unit - 8 IPA and Transcription

Module 3

Unit - 9 Syllable Structure and Word Stress
Unit – 10 Disyllabic and Polysyllabic Words
Unit - 11 Vociods and Contoids
Unit - 12 Stress and Meanings

Module 4

Unit – 13 Sentence Stress
Unit – 14 Supra-segmental Features
Unit - 15 Rhythm in English
Unit - 16 Strategies for overcoming speech problems

Elective 1 English as Language of Empowerment, Opportunities and Survival

Module 1

Unit - 1 History of English in India (1600 – 1947)
Unit - 2 Status of English
Unit - 3 Distinctions between SL and FL
Unit - 4 Spread of English – Post Independence to present day

Module 2

Unit – 5 Opportunities in Using English in India (Travel, Tourism and Trade)
Unit – 6 Opportunities in Using English in India (Education, Employment and Social Mobility)

8-05-19 8/5/19 8/5/19 8/5 9.5.19

New PGELT Syllabus 2019

Unit - 7 Varieties of English with emphasis on Indian Varieties (Speaking + Writing)

Unit - 8 Place of English in Education

Module 3

Unit - 9 English Loan words in Indian Languages (Bangla)

Unit - 10 Code Mixing and Code Switching

Unit - 11 English in Mass Media (Radio, Television, Newspaper)

Unit - 12 English for Official and Professional Purposes

Module 4

Unit - 13 Practical Work

Unit - 14 Practical Work

Unit -15 Case Study

Unit -16 Case Study

Elective 2 Application of Theories of ELT

Module 1

Unit – 1 Concept of Applied Linguistics

Unit – 2 Evolution of Applied Linguistics

Unit – 3 Factors affecting Applied Linguistics 1 (Psychology)

Unit – 4 Factors affecting Applied Linguistics 2 (Education, Sociology)

Module 2

Unit – 5 Usages of Applied Linguistics

Unit – 6 Inter- language and Errors of Interference

Unit – 7 Indentifying and Remedying errors in Speech

Unit – 8 Indentifying and remedying errors in Writing

Module 3

Unit – 9 Concepts of Language Selection

Unit – 10 Concepts of Language Gradation

Unit – 11 Syllabus Construction

Unit – 12 Developing Teaching Materials

Module 4

Unit – 13 Learner Strengths and Weaknesses

Unit – 14 Helping special learners

Unit – 15 Remedial Materials

8-05-19 8/5/19 8/5/19 8/5/19 8.5.19

New PGELT Syllabus 2019

Unit – 16 Evaluation Strategies

Value Added Course 1: Critical Pedagogy- Peer teaching – self-observation Report

Module 1

Unit – 1 Evolution of Pedagogical Strategies

Unit – 2 Indigenous innovations

Unit – 3 Tagore's Sahaj Path and Sukumar Ray's Abol Tabol

Unit – 4 Mahendra Gupta's (Ramakrishna – Kathamrita and Gandhi's (Jiban Sikhsan)

Module 2

Unit – 5 Pedagogic Innovations in English

Unit – 6 West Bengal Experiment (Learning English)

Unit – 7 Loyola College and SNDT Experiment

Unit – 8 Gujrat Experiment (TELE) and Bangalore Project

Module 3

Unit – 9 Principles of Micro Teaching and Peer- teaching

Unit – 10 Teacher Training Strategies

Unit – 11 Observation as a learning strategy

Unit – 12 Observation protocol

Module 4

Unit – 13 Planning for peer- teaching lessons

Unit – 14 Developing observation protocol for peer teaching

Unit – 15 Discussing peer teaching lessons

Unit – 16 Values of constructive feedback

8-05-19 8/5/19 8/5/19 8.5.19 8.5.19

New PGELT Syllabus 2019

Semester: 2 Introduction to Linguistics Total credits 20

CC 4: Principles of Language and Linguistics as Science

Module 1

Unit - 1 What is Language

Unit - 2 Origin and Development of Language

Unit – 3 Language Design Features

Unit – 4 Language Variety – Dialects, Sociolects, Idiolects (spoken and written)

Module 2

Unit -5 Linguistics: An Introduction

Unit - 6 Branches of Linguistics

Unit - 7 Learning Strategies and Styles

Unit - 8 Linguistics and ELT

Module 3

Unit- 9 Psycholinguistics

Unit- 10 Sociolinguistics

Unit - 11 Linguistics in pedagogy

Unit – 12 Computational Linguistics

Module 4

Unit - 13 Linguistic Analysis of a Text -1

Unit - 14 Linguistic Analysis of a Text -2

Unit - 15 Linguistic Analysis of a Text- 3

Unit - 16 Linguistic Analysis of a Text - 4

CC 5: Developing Speaking Skills – Oral Communication and Vocabulary Studies

Module 1

Unit - 1 Revision of Phonetics

Unit - 2 Stress and Intonation

Unit - 3 Developing Speaking skills

Unit – 4 Remedying speech problems

Module 2

Unit - 5 Language Functions as Situations

Unit - 6 Language Functions as Meaning

Unit - 7 Language Functions as Form

Unit – 8 Language as Discourse

Module 3

New PGELT Syllabus 2019

Unit - 9 Presentation Skills – Short speeches (JAM)

Unit - 10 Presentation Skills – longer discourse

Unit - 11 Teaching Speaking Skills -1

Unit - 12 Teaching Speaking Skills- 2

Module 4

Unit - 13 Collocations, idioms, phrases 1

Unit - 14 Collocations, idioms, phrases 2

Unit - 15 Teaching Vocabulary – Form and Meaning

Unit – 16 Teaching Vocabulary - Word Building Exercises

CC 6: Morphology in English

Module 1

Unit - 1 Introduction to Morphology

Unit - 2 Morphemes and Allomorphs

Unit – 3 Types of Morphemes

Unit – 4 Combination of morphemes to form words

Module 2

Unit – 5 Affixation – Prefixes and Suffixes (Theoretical)

Unit - 6 Affixation – Prefixes and Suffixes (Practical)

Unit – 7 Semantic Processes

Unit - 8 Phonological Processes

Module 3

Unit – 9 Linguistic Processes (Alliteration, Gemination, Assonance ...)

Unit - 10 Morphophonemic Transcription

Unit – 11 Features of Bangla Morphology

Unit - 12 Comparison between English and Bangla Morphology

Module 4

Unit – 13 Morphological Analysis 1

Unit - 14 Morphological Analysis 2

Unit - 15 Morpho phonological Analysis 1

Unit - 16 Morpho phonological Analysis 2

CC 7: Syntax in English

Module 1

Unit - 1 What is a sentence – parts of a sentence

Unit - 2 Clauses vs Utterance

New PGELT Syllabus 2019

Unit – 3 Types of sentences – simple/ compound/ complex

Unit - 4 Types of sentences – statements/ questions/ negatives/ commands

Module 2

Unit - 5 Types of clauses – noun/ adjectives/ adverbs/

Unit - 6 Main clause and subordinate clause

Unit - 7 Relative Clauses - Restricted and Non restricted

Unit – 8 Ambiguity in sentences, IC Analysis

Module 3

Unit - 9 Nature of Sentence- Deep Structure, Surface Structure 1

Unit - 10 Nature of Sentence- Deep Structure, Surface Structure 2

Unit - 11 Transformation of sentences 1

Unit - 12 Transformation of sentences 2

Module 4

Unit - 11 Tree Diagrams – Parsing 1

Unit - 12 Tree Diagrams – Parsing 2

Unit - 13 Tree Diagrams – Parsing 3

Unit - 14 Practical Tasks

Elective 3: Figural Language and Stylistics

Module 1

Unit – 1 Introduction to Style and Stylistics

Unit – 2 Different Genres of Literature

Unit – 3 Features of Narrativity

Unit – 4 Features of Drama and Poetry

Module 2

Unit – 5 Point of view ; Focaliazation, Topicalization, Thematization (Homodigetic & Heterodigetic)

Unit – 6 Foregrounding

Unit – 7 Connotations and Denotations

Unit – 8 Meter and Rhythm

Module 3

Unit – 9 Sound Patterning - Alliteration and Assonance affecting meaning

Unit – 10 Lexical Parallism and Repetition (refrain and chorus)

Unit – 11 Mimetic representations (onomatopoeia, pantomime)

Unit – 12 Scansion

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Module 4

Unit – 13 Figures of Speech (Metaphor, Imagery and Symbolism: contextual and archetypal)

Unit – 14 Figures of Speech (Apostrophe, personification, metonymy, Synecdoche)

Unit – 15 Stylistic Analysis of texts 1

Unit – 16 Stylistic Analysis of texts 2 (perception of higher language)

Elective 4: Applied Grammar: Teaching Linguistics in Schools

Module 1

Unit - 1 Grammar and Communication 1

Unit - 2 Grammar and Communication 2

Unit - 3 Grammatical Analysis of Language Function 1

Unit - 4 Grammatical Analysis of Language Functions 2

Module 2

Unit - 5 Grammatical Analysis of Language Functions 3

Unit - 6 Block/ Situations – Grading

Unit - 7 Pedagogic principles of Grading 1

Unit - 8 Pedagogic principles of Grading 2

Module 3

Unit - 9 Language Variety and Awareness – Consciousness Raising

Unit - 10 Tolerance, Use of Taboo words

Unit - 11 Discourse Analysis

Unit - 12 Textual Analysis

Module 4

Unit - 13 Practical Tasks

Unit - 14 Practical Tasks

Unit – 15 Practical Tasks

Unit – 16 Practical Tasks

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School of Humanities

New PGELT Syllabus 2019

Semester: 3 Applied Linguistics and ELT — Total credits 20

CC 8: Language Acquisition and Learning (SLA and CLA)

Module 1

Unit -1 Language Acquisition: Introductory Notes
Unit – 2 Theories of Language Acquisition
Unit – 3 Limitation Theory
Unit – 4 Reinforcement theory

Module 2

Unit – 5 The Active Construction of a grammar theory
Unit – 6 Aspect of Acquisition
Unit – 7 Phonetic and Phonological Acquisition
Unit – 8 Morphological and Syntactic Acquisition

Module 3

Unit – 9 Stages of Language Acquisition of children language
Unit – 10 Babbling stage
Unit – 11 Holophrastic Stage
Unit – 12 Semantic Acquisition

Module 4

Unit – 13 The Process of CL Acquisition
Unit – 14 Identification of distinct stages of development of SL
Unit – 15 Theoretical explorations of CL acquisition
Unit – 16 General factors related SL acquisition

CC 9: Developing Reading Skills

Module 1

Unit – 1 Introduction: Reading as a Skill
Unit - 3 Cultural Influence in Reading
Unit - 4 Problems in Reading

Module 2

Unit – 5 The Schema Theory
Unit - 6 Impact of Schema on Reading
Unit – 7 Application of Schema Theory
Unit – 8 Applications of Schema Theory to the teaching of ESL Reading

Module 3

Unit – 9 Reader Response theories and implication

8-05-19 8/5/19 8/5/19 8/5/19 8.5.19

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Unit – 10 Facilitating Reading Comprehension in the classroom

Unit -11 Developing attitudinal changes towards Reading

Unit – 12 Reading digital texts

Module 4

Unit – 13 Reading development in SL

Unit – 14 Current developments in SL Reading research

Unit – 15 Interactive approaches to SL Reading

Unit – 16 Reading non-linguistic texts (graphs, charts, images etc.)

CC 10: Developing Writing Skills

Module 1

Unit -1 Introduction to Writing

Unit – 2 Writing as a skill

Unit -3 Importance of good writing skills

Unit – 4 Writing Skills in English

Module 2

Unit – 5 Factors influencing Writing – Grammar, Vocabulary, Punctuation

Unit - 6 Different Stages of Writing

Unit – 7 Framing Writing Tasks: types with examples

Unit – 8 Errors in writing skills

Module 3

Unit – 9 Essay and Report writing

Unit – 10 Secretarial Writing

Unit – 11 Creative Writing

Unit – 12 Exercises to improve writing skills

Module 4

Unit – 13 Testing and Error Correction in Writing

Unit – 14 Examples of Communicative Test

Unit – 15 Grading Criteria for Writing Skills

Unit – 16 Assignment Writing

Elective 5 Comparative Study of Speaking and Writing

Module 1

Unit – 1 Introduction to Speaking Skills

Unit – 2 Factors Influencing Fluency

Unit - 3 Stress, intonation and rhythm

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Unit - 4 Voice quality and public address

Module 2

Unit - 1 Introduction to Writing

Unit – 2 Factors influencing writing

Unit -3 Coherence and cohesion

Unit – 4 Writing longer pieces of text

Module 3

Unit – 1 Speaking and Writing – salient features

Unit – 2 Discourse features of Speaking

Unit – 3 Discourse features of Writing

Unit – 4 Problems affecting fluency

Module 4

Unit – 1 Comparing spoken and written texts

Unit – 2 Newspaper reports – radio broadcasts

Unit – 3 Preparing to give a talk (making notes and delivering)

Unit – 4 Presentation techniques – spoken and written

Elective 6: Semantics and Pragmatics

Module 1

Unit -1 Introduction: Principles of Pragmatics

Unit – 2 Pragmatics: Brief History

Unit – 3 Contrastive Pragmatics

Unit – 4 Semiotics

Module 2

Unit -5 Speech Act Theory

Unit -6 Felicity Conditions

Unit -7 Conversational Implications

Unit -8 Conversational Maxims

Module 3

Unit – 9 Relevance

Unit -10 Politeness

Unit -11 Reference

Unit - 12 Deixis

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Module 4

Unit – 13 Semantics: Introduction

Unit -14 Elements and Sources of Meaning

Unit – 15 Meaning Relations and Generative Semantics

Unit -16 Meaning and TG Grammar

Value Added 2: Research Methodology

Module 1

Unit – 1 Introduction, what is research, need for research

Unit – 2 Research types

Unit – 3 Research in ELT

Unit - 4 Preparatory Stages of Research

Module 2

Unit – 5 Review of Literature

Unit – 6 Data/ Information for research

Unit – 7 Primary and Secondary Data

Unit – 8 Collection of Data/ Information

Module 3

Unit – 9 Questionnaire Design

Unit – 10 Field Methods

Unit - 11 Analysis of Data

Unit – 12 Use of Statistical Measure

Module 4

Unit – 13 Documentation

Unit – 14 Writing Research Projects/ Thesis

Unit – 15 Preparation of research paper

Unit -16 Presentation of research proposal

New PGELT Syllabus 2019

Semester: 4 Academic & Extra Academic Usages of English Language

Total credits 24

CC 11: Course Design – 1 (LSRW)

Module 1

Unit - 1 Introduction to Course Design

Unit – 2 Factors of Learner Identity and Needs

Unit – 3 Framing Objectives and Listing Contents

Unit – 4 Organizing contents – simple to complex

Module 2

Unit – 5 Introduction to Curriculum and Syllabus

Unit – 6 Parts of a Syllabus

Unit – 7 Types of Syllabuses – Structural, Situational, Grammatical, Lexical

Unit – 8 Types of Syllabuses – Notional Functional and Communicative

Module 3

Unit – 9 Teaching Materials – Course book and its parts

Unit – 10 Factors affecting a Course book

Unit – 11 Exercises and their types

Unit – 12 Supplementing a Course book

Module 4

Unit – 13 Using a Course book in a classroom

Unit – 14 Structure of a lesson plan

Unit – 15 Lesson Plans for Reading and Writing

Unit – 16 Lesson Plans for Listening and Speaking

CC 12: Course Design – 2 (Teaching Grammar, Vocabulary and Literature)

Module 1

Unit – 1 Scope and Concept of a Curriculum

Unit – 2 Parts of a Curriculum

Unit – 3 Pedagogic Principles governing the curriculum

Unit – 4 Curriculum renewal

Module 2

Unit – 5 Curriculum and Course Design

Unit – 6 Contents for teaching Grammar

Unit – 7 Contents for teaching Vocabulary

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Unit – 8 Contents for teaching Literature

Module 3

Unit – 9 Lesson Plan for teaching Grammar

Unit – 10 Lesson Plan for teaching Vocabulary

Unit – 11 Lesson Plan for Communicative activities

Unit – 12 Lesson Plan for teaching Literature

Module 4

Unit – 13 Supplementary Exercises for Teaching Grammar

Unit – 14 Supplementary Exercises for Teaching Vocabulary

Unit – 15 Supplementary Exercises for reference skills and communicative activities

Unit – 16 Materials for supplementary and extensive reading

CC 13: ICT for Communicative English, ESP

Module 1

Unit - 1 Introduction to ICT

Unit – 2 Evolution of Computers for Language Teaching

Unit – 3 Language Features amenable to ICT

Unit – 4 Cloze exercises

Module 2

Unit – 5 Teaching Grammar and Vocabulary using computers

Unit – 6 Strategies for Reading comprehension using computers

Unit – 7 Teaching Basics of writing using computers

Unit – 8 Evolution of CALL and its types

Module 3

Unit – 9 Presentation skills with computers

Unit – 10 Flipped Classrooms

Unit – 11 Artificial Intelligence and Natural Language Processing

Unit – 12 Translations and Computers

Module 4

Unit – 13 Using computers for creating and editing a document

Unit – 14 Developing exercises for practising Grammar and Vocabulary

Unit – 15 Developing exercises for Reading Comprehension

Unit – 16 Developing exercises for writing (Text salad and jumbled paragraph)

CC 14: Testing and Evaluation

Module 1

8-05-19 8/5/19 8/5/19 8.5.19

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Unit - 1 Introduction to Evaluation
Unit – 2 Introduction to Testing
Unit – 3 Scope of Evaluation
Unit – 4 Types of Tests

Module 2

Unit – 5 Planning a Test
Unit – 6 Preparing a Test
Unit – 7 Test Administration
Unit – 8 Developing a Scoring Key

Module 3

Unit – 9 Types of Test Items
Unit – 10 Validity and Reliability
Unit – 11 Teacher made tests
Unit – 12 Self and Peer evaluation

Module 4

Unit – 13 Evaluation as feedback process
Unit – 14 Washback effect
Unit – 15 Constructing test items
Unit - 16 Developing a comprehensive test

Elective 7: Project and ELT

Module 1

Unit – 1 Introduction to Project work
Unit – 2 Choosing and analysing a topic
Unit – 3 Finding resources
Unit – 4 Planning for project

Module 2

Unit – 5 Process of Sample selection
Unit – 6 Developing tools for Data collection
Unit - 7 Techniques of Data collection
Unit – 8 Analysis and Interpretation of Data

Module 3

Unit – 9 Field Methods
Unit – 10 Organizing and presenting Data
Unit – 11 Drafting a report

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Unit – 12 Editing and finalizing the report (submission formalities)

Module 4

Unit – 13 Design of a project report

Unit – 14 Using figures, charts, maps etc.

Unit – 15 Style manual

Unit – 16 Plagiarism and its consequences

Elective 8: Syllabus Design – Practical

Module 1

Unit – 1 Introduction to Syllabus Design

Unit – 2 Assessing Learner Needs

Unit – 3 Drafting Objectives

Unit – 4 Developing Content

Module 2

Unit – 5 Choosing Strategies for Teaching

Unit – 6 Evaluation Strategies

Unit – 7 Learner placement and Feedback

Unit – 8 Revising the course based on feedback

Module 3

Unit – 9 Developing the course in English for general proficiency

Unit - 10 Developing the course in English for nurses

Unit – 11 Developing the course in English for telephone operators

Unit – 12 Developing the course in English for tourist guides

Module 4

Unit – 13 Developing the course in English for journalists

Unit – 14 Developing the course in English for medical representatives

Unit – 15 Developing the course in English for office assistants (receptionists)

Unit – 16 Developing the course in English for hospitality management

Netaji Subhas Open University

Bachelor's Degree Programme (BDP) in Botany Honours (HBT)

UG Syllabi as per UGC-CBCS

❖ Core Course: CC-1: (Credit-6 / Marks-70; TEE-70; ASSGN-0)

Practical (Phycology and Microbiology (15+10); Mycology and Phytopathology (20); Archegoniate (25))

- **Unit-1:** Microscopy and Micrometry.
- **Unit-2:** Bacterial Sample Preparation and Gram Staining (Curd).
- **Unit-3:** Preparation and identification: ***Nostoc***, ***Oedogonium*** and ***Ectocarpus***.
- **Unit-4:** Study of ***Vaucheria*** and ***Polysiphonia***.
- **Unit-5:** Preparation and identification: ***Rhizopus*** and ***Ascobolus***.
- **Unit-6:** Study of reproductive stages of ***Penicillium***, ***Puccinia*** and ***Agaricus*** and study of morphological types of Lichens.
- **Unit-7:** Sterilization and inoculation techniques. Preparation Culture Media (slants and stabs).
- **Unit-8:** Study of some diseased plant specimens: **Late blight of potato**, **Stem rust of wheat**, **Brown spot of rice**.
- **Unit-9:** Work out and identification of ***Marchantia***.
- **Unit-10:** Study of permanent slides of vegetative and reproductive stages of ***Riccia, Anthoceros*** and ***Funaria***.
- **Unit-11**: Work out and identification of ***Lycopodium*** and ***Pteris***.
- **Unit-12**: Identification of ***Selaginella, Equisetum*** and ***Calamites***.
- **Unit-13:** External Morphological study, description and identification of ***Cycas*** and ***Pinus***; vertical section of ovule of ***Gnetum***.
- **Unit-14:** Description of T.S of stem of ***Lyginopteris*** and ***Vertebraria***. Description of leaf of ***Glossopteris***.

❖ Core Course: CC-2:(Credit-6 / Marks-70; TEE-50; ASSGN-20)

Phycology (35) and Microbiology (35)

Block 1: Phycology

- **Unit-1: Introduction**: Definition and status of algae; history of Phycology; habit, habitats and ecology; general characteristics, pigments, chloroplast and flagella ultra structure; range of thallus structures in algae; concept of endosymbiosis (SET theory) and origin of algal chloroplast.
- **Unit-2:** Modern criteria of algal classification; classification systems by Fritsch (1935, 1945), Bold and Wynne (1985) and Lee (2008).Algal biotechnology and its application of algae: in bioremediation, agriculture (bio-fertilizers and other aspects), biotechnology (Microalgal food, Bio-diesel and Bio-ethanol production). Phycocolloids, Diatomaceous earth, Industrial applications.
- **Unit-3:** Modes of reproduction and life cycle patterns in algae.
- **Unit-4: Cyanophyta**: General characteristics, cells ultra-structure; heterocyst-structure and function. Cyanobacterial genetic recombination. Prochloron and its evolutionary status.
- **Unit-5: Chlorophyta**: General characteristics, life cycle of ***Chlamydomonas, Volvox*** and ***Oedogonium***.
- **Unit-6: Charophyta**: Characteristic features; life cycle of ***Coleochaete*** and ***Chara***; evolutionary significance of charophytes in origin of land plants.
- **Unit-7: Xanthophyta**: General characteristic; life cycle of ***Vaucheria***.
- **Unit-8: Bacillariophyta**: General characteristic; cell structure; auxospore formation; economic importance of

Diatoms including Diatomaceous earth.

- **Unit-9: Phaeophyta**: General characteristics; life cycle of ***Ectocarpus*** and ***Fucus***.
- **Unit-10: Rhodophyta**: General characteristics; life cycle patterns, sexual reproduction and post fertilization events; life cycle of ***Polysiphonia***.

Block-II: Microbiology

- **Unit-11: Virus-I:** Introduction, discovery, general characteristics, structures, symmetry of capsids, replication and multiplication (general account); nutritional types of nucleic acids in viruses (Baltimore classification).
- **Unit-12: Virus-II:** Bacteriophages – structure, life cycle and lysogenic cycle, plant viruses – structure and transmissions of TMV, viroids and prions.
- **Unit-13: Cellular organization of Bacteria-I:** basic differences between prokaryotic and eukaryotic cell, shape and size, cell membrane, cell wall – gram positive and gram negative, flagella, pili and fimbriae capsule and slime, S-layer.
- **Unit-14: Cellular organization of Bacteria-II:** Bacteria genome, Nucleoid and Plasmid, Ribosome, Endospore, Inclusion bodies.
- **Unit-15: Bacterial Systematics:** Eubacteria and Arachaebacteria – brief account of five kingdom and three domain classification, difference between Archaea and Bacteria.
- **Unit-16: Bacterial growth and Reproduction**– binary fission and population growth, phase of bacterial growth, generation time, growth conditions – temperature, oxygen, water activity, pressure and pH .
- **Unit-17: Genetic Recombination in Bacteria-I:** conjugation, F and Hfr donor, role of plasmid.
- **Unit-18: Genetic Recombination in Bacteria-II:** transformation and transduction, historical account of transformation, competence, uptake of DNA and expression, induced transformation, transduction – generalized and specialized.
- **Unit-19: Microbial Ecology:** Importance and scope of microbiology, aquatic habitat, bio-geochemical cycles, plant-microbe Interaction – tumerogenesis and nitrogen fixation, microbial infection of man.
- **Unit-20: Applied Microbiology:** Role of microbes in pharmaceutical industry, food industry and research.

❖ Core Course: CC-3:(Credit-6 / Marks-70; TEE-50; ASSGN-20)

Mycology (35) and Phytopathology (35)

Block-I: Mycology

- **Unit-1: Introduction of true Fungi**: General characteristics. affinities with plants and animals, thallus organization, structure and composition of cell wall, nutrition, reproduction, homothallic and heterothallic nature,
- **Unit-2: Classification of fungi** (Ainsworth, 1973) up to sub-division with diagnostic characters and examples, economic importance of fungi.
- **Unit-3: Chytridiomycota and Zygomycota**: General characteristics, habitat, economic importance, thallus organization, reproduction, life cycle (based on word diagram).
- **Unit-4: Ascomycota:** general characters, habitat, economic importance, thallus organization, reproduction, types of fruit bodies.
- **Unit-5: Classification and life cycle of Ascomycota**.
- **Unit-6: Basidiomycota:** general characters, economic importance, thallus organization, reproduction, types of fruit bodies, classification and life cycle.
- **Unit-7: Cultivation technique of mushroom** (in brief).
- **Unit-8: Deuteromycota:** general characters, economic importance, thallus organization, reproduction, heterokaryosis and parasexuality, classification.
- **Unit-9: Myxomycota:** present status, habitat, classification, vegetative body, fructification.
- **Unit-10: Oomycota:** present status, habitat, thallus organization, life cycle with reference to ***Phytophthora***.

- **Unit-11:** Life cycle of ***Rhizopus*** and ***Penicillium***.
- **Unit-12:** Life cycle of ***Agaricus*** *and* ***Helminthosporium***.
- **Unit-13: Lichen:** habitat, types, vegetative and reproductive structures, specialized structures, economic and ecological importance.
- **Unit-14: Mycorrhiza**: types and their characteristics, economic importance.

Block-II: Phytopathology

- **Unit-15:** Some relevant terms and their definitions.
- **Unit-16:** General symptoms of plant diseases.
- **Unit-17:** Spread of disease and physiological effects of pathogen.
- **Unit-18:** Chemical and external features of infection.
- **Unit-19:** Defence mechanism of plants.
- **Unit-20:** Control of plant diseases.
- **Unit-21:** Some common plant diseases.
- **Unit-22:** Diagnoses of some diseases affecting Indian crops.

❖ Core Course: CC-4:(Credit-6 / Marks-70; TEE-50; ASSGN-20)

Archegoniate (Bryophyte + Pteridophyte + Gymnosperm) (20+30+20)

- **Unit-1:** Bryophyta: Introduction, general characteristics.
- **Unit-2:** Modern classification of Bryophytes (Crandal-Stotler and Stotler2009) up to class.
- **Unit-3**: General features, life cycle of ***Riccia*** and ***Marchantia*** (developmental stages not included).
- **Unit-4:** General features, life cycle of ***Porella*** and ***Anthoceros*** (developmental stages not included).
- **Unit-5:** General features, life cycle of ***Funaria*** (developmental stages not included).
- **Unit-6:** Ecological and economic importance of Bryophytes with special reference to ***Sphagnum***.
- **Unit-7:** Pteridophytes: general characteristics of Pteridophytes.
- **Unit-8:** Classification of Pteridophytes up to class (Sporne, 1975).
- **Unit-9:** General features, life cycle of ***Psilotum*** and ***Lycopodium*** (developmental stages not included).
- **Unit-10:** General features, life cycle of ***Selaginella*** and ***Equisetum*** (developmental stages not included).
- **Unit-11:** General features, life cycle of ***Pteris*** (developmental stages not included).
- **Unit–12**: General characters of ***Cooksonia***.
- **Unit-13:** General characters of ***Rhynia*** and ***Lepidodendron***.
- **Unit–14:** Telome concept and its significance.
- **Unit-15:** Steler evolution.
- **Unit-16:** Apogamy. Apospory, Heterospory and Seed habit.
- **Unit-17:** Origin and evolution of Pteridophytes.
- **Unit-18:** Economic importance of Pteridophytes.
- **Unit-19:** General features, life cycle of ***Cycas*** *and* ***Pinus*** (developmental stages not included).
- **Unit-20:** General features, life cycle of ***Gnetum*** (developmental stages not included).
- **Unit-21:** Ecological and Economic importance of Gymnosperms.

❖ Core Course: CC-5:(Credit-6 / Marks-70; TEE-70; ASSGN-0)

Practical (Anatomy, Economic Botany (20); Morphology, Plant Systematics (30); Plant Ecology and Phytogeography (20))

Block-I: Anatomy

- **Unit-1:** Identification of anatomical structures with reasons (from permanent slide). Parenchyma and Collenchyma.
- **Unit-2:** Identification of anatomical structures with reasons (from permanent slide): Sclerenchyma.
- **Unit-3:** Identification of anatomical structures with reasons (from permanent slide): Sclereids and Trachieds.
- **Unit-4:** Identification of anatomical structures with reasons (from permanent slide): Trachea and Sieve Tube.
- **Unit-5:** Identification of anatomical structures with reasons (from permanent slide): Different types of vascular bundles.
- **Unit-6:** Identification of anatomical structures with reasons (from permanent slide): Different types of stomata.
- **Unit-7:** Identification of anatomical structures with reasons (from permanent slide): Trichomes and Lenticel.
- **Unit-8:** Study of secondary growth (permanent slides should be prepared by the students): ***Boerhavia*** and ***Bignonia*** stem.
- **Unit-9:** Study of secondary growth (permanent slides should be prepared by the students): ***Dracaena*** stem and ***Tinospora*** root.
- **Unit-10:** Ecological anatomy- Study of anatomical features of ***Hydrilla*** stem, ***Nymphaea*** petiole (hydrophytes), ***Nerium*** leaf (xeromorph) and ***Vanda*** root (epiphytes).

Block-II: Economic Botany

- **Unit-11:** Beverages: Tea (plant specimen, tea leaves).
- **Unit-12:** Essential oil-yielding plants: Habit sketch of ***Rosa***, ***Vetiveria*** (specimens/ photographs).
- **Unit-13:** Essential oil-yielding plants: Habit sketch of ***Santalum*** and ***Eucalyptus*** (specimen/photographs).
- **Unit-14:** Rubber: specimen, photograph/model of tapping, samples of rubber products.
- **Unit-15:** Drug-yielding plants: Specimens of ***Digitalis***, ***Papaver*** and ***Cannabis***.

Block-III: Morphology

- **Unit-16:** Study of cohesion and adhesion of stamen and carpel.
- **Unit-17:** Types of inflorescence, placentation.

Block-IV: Plant Systematics

- **Unit-18:** Taxonomic study of angiospermic plants : ***Brassica* sp**, ***Sida* sp**, ***Cassia* sp**, ***Coccinia cordifolia***.
- **Unit-19:** Taxonomic study of angiospermic plants: ***Solanum* sp**, ***Leonurus sibiricus***, ***Leucus* sp**, ***Oldenlandia* sp**, ***Ixora* sp**.

Block-V: Plant Ecology and Phytogeography

- **Unit-20:** Study of Community structure by quadrat method.
- **Unit-21:** Preparation and submission of ten herbarium specimens of different taxa.
- **Unit-22:** Determination of pH of various soil and water samples (pH meter, Universal indicator/Lovibond comparator and pH paper).

❖ Core Course: CC-6:(Credit-6 / Marks-70; TEE-70; ASSGN-0)

Practical (Biomolecules and Plant Metabolism (10+15); Plant Physiology (35); Reproductive Biology of Angiosperms (10))

Block-I: Biomolecules and Plant Metabolism

- **Unit-1:** Detection of organic acids: Citric and Tartaric.
- **Unit-2:** Detection of organic acids: Oxalic and Malic.
- **Unit-3:** Detection of titrable acidity from plant sample.
- **Unit-4:** Detection of Carbohydrate from plant samples.
- **Unit-5:** Detection of protein from plant samples.
- **Unit-6:** Detection of Ca, Mg from plant sample.
- **Unit-7:** Detection of Fe, and S from plant sample.
- **Unit-8:** Estimation of dissolved oxygen content from water samples.
- **Unit-9:** Estimation of catalase activity from plant materials by colorimetric method and amino nitrogen by titrimetric method.
- **Unit-10:** To compare the rate of respiration in different parts of a plant.

Block-II: Plant Physiology

- **Unit-11:** Preparation of solutions (% and Molar).
- **Unit-12:** Demonstration of osmotic pressure by plasmolytic method using ***Rhoeo*** leaf.
- **Unit-13:** Determination of osmotic pressure by gravimetric method using ***Rhoeo***/potato tuber.
- **Unit-14:** Determination of rate of transpiration per unit area by weighing method.
- **Unit-15:** Imbibition of water by dry seeds (starchy, proteinaceous and fatty seeds).
- **Unit-16:** Determination of (%) seed viability by TTC (Triphenyl Tetrazolium Chloride) test.
- **Unit-17:** Effect of CO_2 on photosynthesis using bicarbonate solutions.
- **Unit-18:** Determination of rate of aerobic respiration using germinating seeds.
- **Unit-19:** Comparison of the rate of transpiration (in upper and lower surface of leaf).
- **Unit-20:** Determination of Q_{10} for imbibition of water using dry gram seeds.

Block-III: Reproductive Biology

- **Unit-21:** Pollen grains: Fresh preparation and permanent slides showing ornamentation and apertures.
- **Unit-22:** Study of pollinia from permanent slides.

❖ Core Course: CC-7:(Credit-6 / Marks-70; TEE-50; ASSGN-20)

Anatomy (35); Economic Botany (35)

Block- I: Plant Anatomy

- **Unit-1:** Plant cell wall.
- **Unit-2:** Tissues types and functions.
- **Unit-3:** Structures of root apex and shoot apex.
- **Unit-4:** Mechanical tissues and their principles of distribution.
- **Unit-5:** Types of stomata.
- **Unit-6:** Stelar types and evolution.
- **Unit-7:** Nodal anatomy.
- **Unit-8:** Cambium-primary and secondary structures, nature and functions.
- **Unit-9:** Secondary growth of stem.
- **Unit-10:** Secondary growth of root.
- **Unit–11:** Anomalous secondary growth (stem of ***Bignonia***, ***Boerhaavia***)
- **Unit-12:** Anomalous secondary growth (stem of ***Dracaena*** and root of ***Tinospora***).
- **Unit-13:** Anatomical adaptation of Xerophytes and Hydrophytes.

Block-II: Economic Botany

- **Unit-14:** Concept of Centres of Origin, their importance with reference to Vavilov's work.
- **Unit-15:** Economic plants – classification and uses.
- **Unit-16:** Scientific name, family, parts used and uses of Maize, Mung, Ginger, Sugar cane, Mustard.
- **Unit-17:** Scientific name, family, parts used and uses of Lemon grass, Coconut, Sal, Teak, Cotton.
- **Unit-18:** Cultivation of Paddy, Wheat and Jute.
- **Unit-19:** Cultivation of Tea and Coffee and their processing.
- **Unit-20:** Pharmacognosy- definition, objectives and importance.
- **Unit-21:** Scientific name, family, active principles and uses of the following medicinal plants: Ipecac, Kalmegh, Neem and Vasaka.

❖ Core Course: CC-8:(Credit-6/Marks-70; TEE-50, ASSGN-20)

Morphology (20); Plant Systematics (50)

Block- I: Morphology

- **Unit-1:** Inflorescence – different types with examples.
- **Unit-2:** Flowers – types, aestivation, cohesion and adhesion of stamens.
- **Unit-3:** Placentation, different types of ovules.
- **Unit-4:** Fruits – types with examples.
- **Unit-5:** Seed – types with examples.

Block-II: Plant Systematics

- **Unit-6:** Taxonomy, Systematics, Classification, Identification and Nomenclature – terms and definitions only.
- **Unit-7:** Types of Classifications– Artificial, Natural and Phylogenetic, definitions and examples.
- **Unit-8:** Nomenclature – elementary knowledge of ICN (ICBN) including important rules.
- **Unit-9:** Effective and Valid publications.
- **Unit-10:** Rules of priority Author citation, Ranks and Names.
- **Unit-11:** Broad features of the systems of classifications of Linnaeus (artificial).
- **Unit-12:** Broad features of the systems of classifications of Bentham and Hooker (natural).
- **Unit-13:** Broad features of the systems of classifications of Cronquist (phylogenetic).
- **Unit-14:** Broad features of the systems of classifications of APG Classifications.
- **Unit-15:** Herbaria and Botanical gardens – importance and functions, five each important herbaria in India and World.
- **Unit-16:** Collection of specimens, preparation of herbarium sheets, their preservation and maintenance of Herbarium; Virtual Herbarium; E-Flora.
- **Unit-17:** Diagnostic features and systematic position (according to Bentham and Hooker, and Cronquist's systems) of the following families: Magnoliaceae, Nymphaeaceae, Malvaceae, Cucurbitaceae, Brassicaceae (Cruciferae), Fabaceae (Leguminosae), Euphorbiaceae, Apiaceae (Umbelliferae).
- **Unit-18:** Diagnostic features and systematic position (according to Bentham and Hooker, and Cronqist's systems) of the following families:Solanaceae, Lamiaceae (Labiatae), Scrophulariaceae, Rubiaceae, and Asteraceae (Compositae).
- **Unit-19:** Diagnostic features and systematic position (according to Bentham and Hooker, and Cronqist's systems) of the following families: Alismataceae, Arecaceae (Palmae), Poaceae (Gramineae).
- **Unit-20:** Alpha taxonomy and Omega taxonomy. Taxonomic evidences from palynology, cytology, phytochemistry and molecular data..
- **Unit-21:** Character and character states, OTU, Phenograms, Numerical Taxonomy, Cladistics and Cladogram.

❖ Core Course: CC-9:(Credit-6/Marks-70; TEE-50, ASSGN-20)

Plant Physiology (45); Reproductive Biology of Angiosperms (25)

Block-I: Plant physiology

- **Unit-1**: Cell Physiology: Introduction, cell membrane, water potential and its component imbibition, diffusion, osmosis, plasmolysis, osmotic relation of a plant cell.
- **Unit-2**: Water relation in plants: Introduction, molecular structure and physical properties of water, types of water in the soil, availability and usefulness of water to the plants, absorption of water by the land plants, factors affecting absorption of water.
- **Unit-3**: Ascent of sap: introduction, different theories, experiments on conduction of water.
- **Unit-4**: Transpiration: definition, types and sites of transpiration, mechanism of stomatal transpiration, factors affecting transpiration, anti-transpirations, guttation.
- **Unit-5**: Mineral nutrition of plants: Introduction, essential and non-essential elements, criteria of essentiality of elements, general and specific rolls of macro- and microelements in plants, deficiency symptoms.
- **Unit-6:** Translocation of solutes: definition, translocation of organic materials, direction and mechanism of phloem transport, translocation of inorganic materials.
- **Unit-7:** Growth Physiology: definition of growth and development, sites of plant growth, phases of growth, factors affecting growth, measurement of growth.
- **Unit-8:** Plant growth: Concept of plant growth regulators and phytohormones. Natural, synthetic and postulated hormones, physiological roles of Auxins, Gibberelins, Cytokinins, Ethylene and Abscisic acid. Biosynthesis and bioassay of Auxins and Gibberelins.
- **Unit-9:** Photosynthesis: Light reaction, concept of photosystem I and II, reaction centre, antenna molecule; electron transport and mechanism of ATP synthesis, Calvin cycle, photosynthetic efficiency, HSK and CAM pathway, bacterial photosynthesis, law of limiting factors.
- **Unit-10:** Respiration: types of Respiration, Glycolysis, Krebs cycle, ETS and Oxidative Phosphorylation, Pentose Phosphate Pathway, R.Q.
- **Unit-11:** Photorespiration: definition, mechanism, differences between Respiration and Photorespiration, significance.
- **Unit-12:** Nitrogen fixation: sources of nitrogen, biological nitrogen fixation, mechanism, nodulins, basic concept of *nif* and *nod* genes.
- **Unit-13:** Plant movements: different types of movements, movements of curvature, tropic movements, nastic movements, nutation, turgour movements.
- **Unit-14:** Physiology of flowering: Photoperiodism, critical day length, SDP, LDP, DNP, SLDP, and LSDP, site of perception of photoperiodic stimulus, vernalization and devernalization, role of phytochrome in flowing.
- **Unit-15:** Seed physiology: definition of propagules, germination and dormancy of seeds, morphological and biochemical changes during seed germination, types, causes of methods of breaking seed dormancy.

Block-II: Reproductive Biology of Angiosperms

- **Unit-16:** Introduction: History (contributions of J. Heslop-Harrison , P.Maheshwari, B.M. Johri) and scope.
- **Unit-17:** Pollination– definition, types, contrivances, agents, advantages and disadvantages.
- **Unit-18:** Development of male and female gametophytes.
- **Unit-19:** Fertilization, types with examples.
- **Unit-20:** Development of endosperms (three types); apomixis, apospory and apogamic, polyembryony.
- **Unit-21: Self Incompatibility:** Basic concept (interspecific; intraspecific, heteromorphic); Cybrids; In-vitro fertilization.

❖ Core Course: CC-10: (Credit-6/Marks-70; TEE-50, ASSGN-20)

Biomolecules (25) and Plant Metabolism (45)

Block-I: Biomolecules

- **Unit-1: Carbohydrates:** Nomenclature and classification; Monosaccharides, Disaccharides; Oligosaccharides and Polysaccharides.
- **Unit-2:** Lipids: Definition and major classes of storage and structural lipids; fatty acid structure and function; essential fatty acids.
- **Unit-3:** Trycylglycerols structure, function and properties; phosphoglycerides.
- **Unit-4:** Proteins: structure of amino acids; levels of protein structure-primary, secondary, tertiary and quaternary.
- **Unit-5:** Protein denaturation and biological roles of proteins.
- **Unit-6:** Nucleic acids: structure of nitrogenous bases; structure and functions of nucleotides; types of nucleic acids.
- **Unit-7:** Structure of A, B and Z-types of DNA; Types of RNA, structure of t-RNA.
- **Unit-8:** Bioenergetics: loss of thermodynamics, concept of free energy, endergonic and exergonic reactions, coupled reaction, redox reaction.
- **Unit-9:** ATP; structure and its role as an energy currency molecule.

Block-II: Plant Metabolism

- **Unit-10:** Concept of metabolism.
- **Unit-11:** Water, pH, buffer solutions.
- **Unit-12:** Amino acids and primary structure of proteins.
- **Unit-13:** General structure of amino acids, structure of twenty common amino acids.
- **Unit-14:** Proteins – different structure levels of proteins, denaturation and biological roles of proteins.
- **Unit-15:** Enzymes – properties, enzyme inhibition, allosteric enzyme.
- **Unit-16:** Structure of enzyme: holoenzyme, apoenzyme, cofactors, coenzyme and prosthetic groups.
- **Unit-17:** Classification of enzymes, according to IUB active site of enzyme, specification, mechanism of action (activation energy, lock and key hypothesis, induced – fit and acid- base theory).
- **Unit-18:** Michaelis – Menton equation, different types of enzyme inhibition and their effect on Vmax and Km, factors affecting enzyme activity.
- **Unit-19:** Plant pigments: Introduction, plastidial and non-plastidial pigments.
- **Unit-20:** Absorption of light energyby plant pigments, chemistry of chlorophylls and carotenoids.

❖ Core Course: CC-11: (Credit-6/Marks-70; TEE-70; ASSGN-0)

Practical (Cell Biology (25); Plant Biotechnology (10); Genetics and Molecular Biology (20+15))

Block-I: Cell Biology

- **Unit-1: Study of mitotic chromosome: Metaphase chromosome preparation** (Pre-treatment, Fixation, Staining.
- **Unit-2:** Temporary squash preparation of ***Allium cepa*** root tips.
- **Unit-3:** Temporary squash preparation of ***Aloe*** root tips**.**
- **Unit-4:** Determination of mitotic index and frequency of different mitotic stages in prefixed root tips of ***Allium cepa***.
- **Unit-5:** Identification of different mitotic stages from permanent slides.
- **Unit-6:** Temporary smear preparation from ***Allium*** flower buds for study of meiotic chromosome.
- **Unit-7:** Temporary smear preparation from ***Rhoeo*** flower buds for study of meiotic chromosome.
- **Unit-8:** Identification of different meiotic stages from permanent slides.

Block-II: Plant Biotechnology

- **Unit-9:** Study of anther, embryo and endosperm culture.
- **Unit-10:** Micropropagation, somatic embryogenesis and artificial seeds through photographs.
- **Unit-11:** Study of steps of genetic engineering for production of Bt cotton through photographs.
- **Unit-12:** Study of steps of genetic engineering for production of Golden rice through photographs.
- **Unit-13:** Study of steps of genetic engineering for production of Flavr Savr tomato through photographs.

Block-III: Genetics and Molecular Biology

- **Unit-14:** Determination of mean, standard deviation and standard error from samples. (leaflet size etc.)
- **Unit-15:** Determination of Goodness of fit in normal and modified monohybrid ratios.
- **Unit-16:** Determination of Goodness of fit in normal and modified dihybrid ratios.
- **Unit-17:** Study of structures of prokaryotic RNA polymerase through photographs.
- **Unit-18:** Study of structures of eukaryotic RNA polymerase II through photographs.
- **Unit-19:** Photographs establishing nucleic acid as genetic material (Messelson and Stahl's, Avery et al, Griffith's, Hershey and Chase's , Fraenkel and Conrat's experiments).
- **Unit-20:** Preparation of MS medium.

❖ Core Course: CC-12: (Credit-6/Marks-70; TEE-50, ASSGN-20)

Genetics (35) and Molecular Biology (35)

Block- I: Genetics

- **Unit-1: Mendelian Genetics and its extensions.** Mendel's Laws and Chromosome Theory of Inheritance; Gene Interactions; Complete Dominance,Incomplete Dominance and Codominance.
- **Unit-2:** Multiple Alleles; Lethal Alleles; Allelic Complementation Test and Complementary Gene Action.
- **Unit-3:** Epistasis – different types; Modifier and Suppressor Genes; Pleiotropy; Penetrance and Expressivity.
- **Unit-4:** Environment and Gene Expression; Polygenic Inheritance.
- **Unit-5: Linkage, Crossing-over and Chromosome mapping:** Linkage types; Synteny; Linkage Groups and Linkage Maps; Crossing-over and its cytological proof (in Maize); Recombination Frequency; Three-point test cross; Interference and Coincidence; numerical based on Gene-mapping; Sex-chromosomes and Sex-linkage.
- **Unit-6: Extra-Nuclear Inheritance:** Maternal, Paternal and Bi-parental inheritance; Chloroplast mutation – variegation in ***Mirabilis jalapa***; Mitochondrial mutation in yeast; Maternal Effects–shell-coiling in snail; Infective heredity – kappa particles in ***Paramoecium***.
- **Unit-7: Eukaryotic Chromosome – structure and organization:** Chromosome Number, Morphology, Nomenclature and Organization; Chromosome Banding, Chromosome Painting.
- **Unit-8: In-situ Hybridization**– FISH; Polytene chromosomes; Euchromatin, Heterochromatin – Constitutive and Facultative.
- **Unit-9: Variation in Chromosome Number and Structure:** Polyploidy and Aneuploidy; Deletion, Duplication, Inversion and Translocation; Position Effect.
- **Unit-10: Gene Mutation:** Types and molecular basis of mutations; Mutagens; Detection of mutations – CIB method; DNA RepairPathways.
- **Unit-11: Modern Concept of Gene and Genetic Code:** One gene- One Polypeptide hypothesis; Central Dogma; Properties of genetic code and its decipherence.
- **Unit-12: Population and Evolutionary Genetics:** Allele and Genotype frequencies; Hardy–Weinberg Law.
- **Unit-13:** Role of Natural Selection, Migration, Mutation and Genetic Drift; Genetic variation and Speciation.

Block- II: Molecular Biology

- **Unit-14: DNA – Genetic Material and Structure:** DNA as genetic material – proof, types of DNA and genetic material; Denaturation, Renaturation and Cot Curves; Nucleosome Model.
- **Unit-15: DNA Replication:** General principles – bi-directional, semi-conservative and semi-discontinuous; RNA priming; models of DNA replication; enzymes involved in DNA replication.
- **Unit-16: Gene Expression and its Regulation:** Transcription and its regulation in Prokaryotes and Eukaryotes; Eukaryotic RNA – split genes and splicing Mechanism; mRNA processing; RNA editing and mRNA transport. Translation – initiation, elongation and termination of polypeptides; inhibitors of protein synthesis; Post-translational modification of proteins.
- **Unit-17: Transposable Elements and Plasmids:** Transposable elements in Prokaryotes and Eukaryotes, their classification and properties.
- **Unit-18: Plasmids** – structure and properties; plasmid pBR 322 – salient features.
- **Unit-19: Restriction Endonuclease and Recombinant DNA Technology:** Restriction enzymes – nomenclature, types and functions with examples.
- **Unit-20:** Gene Cloning – basic steps; Cloning Vectors – properties and types; shuttle vector and expression vector; Reporter Genes; Cloned Genesand Recombinant Proteins; Ethical and legal considerations.
- **Unit-21: Genomic Library and RFLP:** Construction of Genomic, Chromosome and cDNA libraries; screening of DNA library; Genomics, Genome Sequences and their Annotation; Single Nucleotide Polymorphisms and Haplotypes.
- **Unit-22:** Future directions in Genomics; RFLPs and their uses.

❖ Core Course: CC-13: (Credit-6/Marks-70; TEE-50, ASSGN-20)

Plant Ecology (50) and Phytogeography (20)

Block I: Plant Ecology

- **Unit-1:** Plant Ecology- definition, branches, relevance to human civilization.
- **Unit-2:** Ecosystem- concept and types of ecosystem, components –biotic and abiotic, energy flow.
- **Unit-3:** Nutrients cycling (carbon, nitrogen, phosphorous), biotic interrelationship.
- **Unit-4:** Plant communities- definition, habitat and niche, ecotone and edge effects.
- **Unit-5:** Community dynamics and plant succession types: primary and secondary successions.
- **Unit-6:** Ecological factors: soil-origin, formation, composition, soil profile; water-state of water in the environment, precipitation types.
- **Unit-7:** Light and temperature variation, optimal limiting factors.
- **Unit-8:** Atmosphere and plant responses-I: Hydrophytes – Fresh water environments, Classification of hydrophytes and xerophytes.
- **Unit-9:** Morphological, anatomical and physiological adaptations of Hydrophytes.
- **Unit-10:** Atmosphere and plant responses-II: Psammophytes, Lithophytes, Psychrophytes, Succulents and their morphological adaptations.
- **Unit-11:** Atmosphere and plant responses-III: Halophytes and their distributions, mangrove vegetation, ecological adaptations.
- **Unit-12:** Environmental pollution: air pollution, water pollution and their impact on plants.
- **Unit-13:** Global environmental issues: greenhouse gases, global warming, ozone depletion, acid rain and EL-Nino.

Block II: Phytogeography

- **Unit-14:** Phytogeographical zones of India**,**
- **Unit-15:** Endemism: definition, types, causes of endemism, endemic flora of India.
- **Unit-16:** Flora of Eastern Himalaya.
- **Unit-17:** Flora of western Himalaya.
- **Unit-18:** Flora of Sundarbans.
- **Unit-19:** Definition of Biodiversity, Biodiversity hotspots; rare and threatened plants of India; red data book.

- **Unit-20:** Plant conservation: Significance of conservation, ex-situ and in-situ conservation; biosphere reserve; sanctuary; national park.

❖ Core Course: CC-14: (Credit-6/Marks-70; TEE-50, ASSGN-20)

Cell Biology (35); Plant Biotechnology (35)

Block-I: Cell Biology

- **Unit-1:** Microscopy**:** Light, Phase contrast, Flurosence and Electron microscopy; Confocal microscopy.
- **Unit-2:** Eukaryotic Cell**:** Organization and functional structures and chemical components.
- **Unit-3:** Nuclear organization**:** ultrastructure of nuclear envelope, structure and functions of Nucleus.
- **Unit-4:** Structure and functions of Ribosome and Lysozomes.
- **Unit-5:** Structures and functions of Mitochondria.
- **Unit-6:** Structures and functions of chloroplasts.
- **Unit-7:** Endomembrane system**,** general idea; endoplasmic reticulum: structure and function.
- **Unit-8:** Golgi apparatus: organization and function.
- **Unit-9:** Mitosis and Meiosis: Detail accounts of phases and events; Their significance.
- **Unit-10:** Cell cycle and its control.

Block-II: Plant Biotechnology

- **Unit-11:** Historical perspectives; composition of nutrients.
- **Unit-12:** Inorganic, organic elements and plant growth regulators (role).
- **Unit-13:** Sterilization; cellular totipotency.
- **Unit-14**: Organogenesis, embryogenesis (somatic and zygotic), micropropagation.
- **Unit-15**: Embryo culture and its application
- **Unit-16:** Protoplast culture and its application.
- **Unit-17:** Cryopreservation and germplasm conservation.
- **Unit-18:** Tissue culture in conservation of endangered plants.
- **Unit-19:** Genetic Engineering and transgenic plants.
- **Unit-20:** Electroporation, particle gun technologies, microinjection.
- **Unit-21:** Application of biotechnology in agriculture, horticulture and forestry.

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Discipline Specific Elective (DSE)

❖ DSE-1: (Credit-6/Marks-70; TEE-50, ASSGN-20)

Stress Biology

- **Unit-1: Defining plant stress:** Acclimation and adaptation.
- **Unit-2: Environmental factors:** Water stress; Salinity stress, High light stress; Temperature stress; Hypersensitive reaction; Pathogenesis– related (PR) proteins; Systemic acquired resistance; Mediation of insect and disease resistance by jasmonates.
- **Unit-3: Stress sensing mechanisms in plants:** Calcium modulation, Phospholipid signaling.
- **Unit-4: Developmental and physiological mechanisms that protect plants against environmental stress:** Adaptation in plants; Changes in root: shoot ratio; Aerenchyma development; Osmotic adjustment; Compatible solute production.

❖ DSE-2: (Credit-6/Marks-70; TEE-70; ASSGN-0)

Practical (Stress Biology (35); Natural Resource Management (20); Plant Breeding (15))

Block-I: Stress Biology

- **Unit-1:** Quantitative estimation of peroxidase activity in the seedlings in the absence and presence of salt stress.
- **Unit-2:** Superoxide activity in seedlings in the absence and presence of salt stress.
- **Unit-3:** Quantitative estimation and zymographic analysis of catalase.
- **Unit-4.** Quantitative estimation and zymographic analysis of glutathione reductase.

Block-II: Natural Resource Management

- **Unit-5:** Estimation of solid waste generated by a domestic system (biodegradable and non biodegradable) and its impact on land degradation.
- **Unit-6:** Collection of data on forest cover of specific area.
- **Unit-7:** Measurement of dominance of woody species by DBH (diameter at breast height) method.

Block-III: Plant Breeding

- **Unit-8:** Calculation of mean, standard deviation and standard error
- **Unit-9:** Calculation of correlation coefficient values and finding out the probability
- **Unit-10:** Calculation of 'F' value and finding out the probability value for the F value.

❖ DSE-3: (Credit-6/Marks-70; TEE-50, ASSGN-20)

Plant Breeding

- **Unit 1: Plant Breeding:** Introduction and objectives. Breeding systems: modes of reproduction in crop plants. Important achievements and undesirable consequences of plant breeding.
- **Unit 2: Methods of crop improvement**: Introduction: Centres of origin and domestication of crop plants, plant genetic resources; Acclimatization; Selection methods: For self pollinated, cross pollinated and vegetatively propagated plants; Hybridization: For self, cross and vegetatively propagated plants – Procedure, advantages and limitations.
- **Unit 3: Quantitative inheritance**: Concept, mechanism, examples of inheritance of Kernel colour in wheat, Skin colour in human beings. Monogenic vs polygenic Inheritance.
- **Unit 4: Inbreeding depression and heterosis**: History, genetic basis of inbreeding depression and heterosis; Applications.
- **Unit 5: Crop improvement and breeding**: Role of mutations; Polyploidy; Distant hybridization and role of biotechnology in crop improvement.

❖ **DSE-4: (Credit-6/Marks-70; TEE-50, ASSGN-20)**

Natural Resource Management

- **Unit-1: Natural resources**: Definition and types.
- **Unit-2: Sustainable utilization**: Concept, approaches (economic, ecological and socio-cultural).
- **Unit-3: Land**: Utilization (agricultural, pastoral, horticultural, silvicultural); Soil degradation and management.
- **Unit-4: Water**: Fresh water (rivers, lakes, groundwater, aquifers, watershed); Marine; Estuarine; Wetlands; Threats and management strategies.
- **Unit-5: Biological Resources**: Biodiversity-definition and types; Significance; Threats; Management strategies; Bioprospecting; IPR; CBD; National Biodiversity Action Plan.
- **Unit-6: Forests**: Definition, Cover and its significance (with special reference to India); Major and minor forest products; Depletion; Management.
- **Unit-7: National and international efforts in resource management and conservation.**

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Generic Elective (GE)

❖ **GE-1: (Credit-6/Marks-70; TEE-50, ASSGN-20)**

Biodiversity (Microbes (10), Algae (15), Fungi (20) and Archegoniate (25))

- **Unit-1: Microbes**: Viruses – Discovery, general structure, Economic importance; Bacteria – Discovery, General characteristics and cell structure; Economic importance.
- **Unit-2: Algae**: General characteristics; Range of thallus organization; Morphology and life-cycles of the following: ***Nostoc*, *Oedogonium*, *Polysiphonia***. Economic importance of algae.
- **Unit-3: Fungi**: Introduction-General characteristics, range of thallus organization, life cycle of ***Penicillium*, *Agaricus*** (Basidiomycota); Mycorrhiza: ectomycorrhiza and endomycorrhiza and their significance.
- **Unit-4: Introduction to Archegoniate**: Unifying features of archegoniates.
- **Unit-5: Bryophytes:** General characteristics, Range of thallus organization. Ecology and economic importance of bryophytes with special mention of ***Sphagnum***.
- **Unit-6: Pteridophytes:** General characteristics, Early land plants (***Cooksonia*** and ***Rhynia***). Ecological and economical importance of Pteridophytes.
- **Unit-7: Gymnosperms**: General characteristics; morphology of ***Cycas*** and ***Pinus*** (Developmental details not to be included). Ecological and economical importance.

❖ **GE-2: (Credit-6/Marks-70; TEE-50, ASSGN-20)**

Plant Ecology and Taxonomy (30+40)

- **Unit-1:** Introduction to ecology.
- **Unit-2: Ecological factors:** Brief knowledge about soil, water, light and temperature. Adaptations of hydrophytes and xerophytes.
- **Unit-3: Plant communities:** Characters; Ecotone and edge effect; Succession; Processes and types
- **Unit 4: Ecosystem:** Structure; energy flow trophic organisation; Food chains and food webs, Ecological pyramids production and productivity; Biogeochemical cycling; Cycling of carbon, nitrogen and Phosphorous.

- **Unit-5: Phytogeography:** Principle biogeographical zones; Endemism.
- **Unit-6: Introduction to plant taxonomy:** Identification, Classification, Nomenclature.
- **Unit-7: Identification**: Functions of Herbarium, important herbaria and botanical gardens of the world and India; Documentation: Flora, Keys: single access and multi-access.
- **Unit-8: Taxonomic evidences** from palynology and cytology.
- **Unit-9: Taxonomic hierarchy**: Ranks, categories and taxonomic groups
- **Unit-10: Botanical nomenclature:** Principles and rules (ICN); ranks and names; binominal system, typification, author citation, valid publication, rejection of names, principle of priority and its limitations.
- **Unit-11: Types of classification-** artificial, natural and phylogenetic. Bentham and Hooker (up to series)

❖ **GE-3: (Credit-6/Marks-70; TEE-50, ASSGN-20)**

Plant Anatomy and Embryology (35+35)

- **Unit 1: Meristematic and permanent tissues:** Root and shoot apical meristems; Simple and complex tissues.
- **Unit 2: Organs:** Structure of dicot and monocot root stem and leaf.
- **Unit 3: Secondary Growth:** Vascular cambium – structure and function, seasonal activity. Secondary growth in root andstem, Wood (heartwood and sapwood).
- **Unit 4: Adaptive and protective systems:** Epidermis, cuticle, stomata; General account of adaptations in xerophytes and hydrophytes.
- **Unit 5: Structural organization of flower:** Structure of anther and pollen; Structure and types of ovules; Types of embryo sacs,organization and ultrastructure of mature embryo sac.
- **Unit 6: Pollination and fertilization:** Pollination mechanisms and adaptations; Double fertilization; Seed-structure appendages and dispersal mechanisms.
- **Unit 7: Embryo and endosperm :**Endosperm types, structure and functions; Dicot and monocot embryo; Embryo endosperm relationship.
- **Unit 8: Apomixis and Polyembryony:** Definition, types and Practical applications.

❖ **GE-4: (Credit-6/Marks-70; TEE-50, ASSGN-20)**

Economic Botany and Plant Biotechnology (35+35)

- **Unit-1: Origin of Cultivated Plants:** Concept of centres of origin, their importance with reference to Vavilov's work.
- **Unit-2: Cereals**: Wheat- Origin, morphology, uses.
- **Unit 3: Legumes:** General account with special reference to Gram and soybean.
- **Unit-4: Spices**: General account with special reference to clove and black pepper (Botanical name, family,part used, morphology and uses).
- **Unit-5: Beverages**: Tea (morphology, processing, uses).
- **Unit-6: Oils and Fats**: General description with special reference to groundnut.
- **Unit-7: Fibre Yielding Plants**: General description with special reference to Cotton (Botanical name, family, part used, morphology and uses)
- **Unit-8: Introduction to biotechnology**
- **Unit-9: Plant tissue culture**: Micropropagation ; haploid production through androgenesis and gynogenesis; brief account of embryo and endosperm culture with their applications
- **Unit-10: Recombinant DNA Techniques**: Blotting techniques: Northern, Southern and Western Blotting, DNA Fingerprinting; Molecular DNA markers i.e. RAPD, RFLP, SNPs; DNA sequencing, PCR and Reverse Transcriptase-PCR.

Skill Enhancement Course (SEC)

❖ SEC-1: (Credit-2/Marks-60; TEE-60; ASSGN-0)

Medicinal Botany

- **Unit 1: History, Scope and Importance of Medicinal Plants**. Indigenous Medicinal Sciences; Definition and Scope-Ayurveda: History, origin, panchamahabhutas, saptadhatu and tridosha concepts, Rasayana, plants used in ayurvedic treatments, Siddha: Origin of Siddha medicinal systems, Basis of Siddha system, plants used in Siddha medicine. Unani: History, concept:Umoor-e-tabiya, tumors treatments/therapy, polyherbal formulations.
- **Unit 2: Conservation of endangered and endemic medicinal plants**. Definition: endemic and endangered medicinal plants, Red list criteria; In situ conservation: Biosphere reserves, sacred groves, National Parks; Ex situ conservation: Botanic Gardens, Ethnomedicinal plant Gardens. Propagation of Medicinal Plants: Objectives of the nursery, its classification,important components of a nursery, sowing, pricking, use of green house for nurseryproduction, propagation through cuttings, layering, grafting and budding.
- **Unit 3: Ethnobotany and Folk medicines**. Definition; Ethnobotany in India: Methods to study ethnobotany; Applications of Ethnobotany: National interacts, Palaeo-ethnobotany. Folk medicines of ethnobotany, ethnomedicine, ethnoecology, ethnic communities of India. Application of natural products to certain diseases- Jaundice, cardiac, infertility, diabetics, Blood pressure and skin diseases.

❖ SEC-2: (Credit-2/Marks-60; TEE-60; ASSGN-0)

Plant Diversity and Human Welfare

- **Unit 1: Plant diversity and its scope**- Genetic diversity, Species diversity, Plant diversity at the ecosystem level, Agro-biodiversity and cultivated plant taxa, wild taxa. Values and uses of Biodiversity: Ethical and aesthetic values, Precautionary principle, Methodologies for valuation, Uses of plants, Uses of microbes.
- **Unit 2: Loss of Biodiversity:** Loss of genetic diversity, Loss of species diversity, Loss of ecosystem diversity, Loss of agro-biodiversity, Projected scenario for biodiversity loss, Management of Plant Biodiversity: Organizations associated with biodiversity management-Methodology for execution-IUCN, UNEP, UNESCO, WWF, NBPGR; Biodiversity legislation and conservations, Biodiversity information management and communication.
- **Unit 3: Conservation of Biodiversity**: Conservation of genetic diversity, species diversity and ecosystem diversity, In situ and ex situ conservation, Social approaches to conservation, Biodiversity awareness programmes, Sustainable development.
- **Unit 4: Role of plants in relation to Human Welfare**; a) Importance of forestry, their utilization and commercial aspects b) Avenue trees, c) Ornamental plants of India. d)Alcoholic beverages through ages. Fruits and nuts: Important fruit crops their commercial importance.Wood and its uses.

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Syllabus under Choice Based Credit System
Subject: Chemistry, B.Sc.(Hons.)
Detailed Scheme under Choice Based Credit System

Academic Year	Semesters	CORE COURSE (CC) (Total: 14 papers) 6 credit or 70 marks per paper	Ability Enhancement Compulsory Courses [AECC] (Total: 2 papers) 2 credit or 70 marks per paper	Generic Elective Courses [GE] (Total: 4 papers) 6 credit or 70 marks per paper	Skill Enhancement Courses [SEC] (Total: 2 papers) 2 credit or 60 marks per paper	Discipline Specific Elective [DSE] (Total: 4 papers) 6 credit or 70 marks per paper
First year	Semester-I	CC1: Practical (Practical Paper–I) CC2: Practical (Practical Paper-II)	AECC-1	GE 1		
	Semester-II	CC3: Theory (Inorganic Chemistry –I) CC4: Theory (Organic Chemistry-I)	AECC-2	GE 2		
Second year	Semester-III	CC5: Practical (Practical Paper–III) CC6: Practical (Practical Paper–IV) CC7: Theory (Inorganic Chemistry -II)		GE 3	SEC-1	
	Semester-IV	CC8: Theory (Organic Chemistry-II) CC9: Theory (Physical Chemistry-I) CC10: Theory (Physical Chemistry-II)		GE 4	SEC-2	
Third year	Semester-V	CC11: Practical (Practical Paper–V) CC12: Theory (Inorganic Chemistry-III)				DSE1: Theory (Polymer Chemistry) DSE2: Practical (Practical Paper–VI)
	Semester-VI	CC13: Theory (Organic Chemistry-III) CC14: Theory (Physical Chemistry-III)				DSE3: Theory (Analytical Chemistry and Green Chemistry) DSE4 : Theory (Inorganic Materials of Industrial Importance And Green Chemistry)

Detailed Syllabus (ECH)

Semester-I

Core Course-1 (Practical) Credit-6, Full Marks-70

Course Code: CC 1, Course Title: Practical Paper-I

Block –I (Inorganic Chemistry)

Unit-1: Estimation of ions

i. Method of preparation of standard solutions of titrants
ii. Estimation of carbonate and hydroxide present together in a mixture
iii. Estimation of carbonate and bicarbonate present together in a mixture
iv. Estimation of Fe(II) using $K_2Cr_2O_7$ solution
v. Estimation of Fe(III) using $K_2Cr_2O_7$ and $KMnO_4$ solution
vi. Estimation of Ca^{2+} using $KMnO_4$ solution
vii. Estimation of Cu^{2+} iodometrically
viii. Estimation of Cr^{3+} using $K_2Cr_2O_7$ solution

Block –I (Organic Chemistry)

Unit-2: Separation:

Based upon solubility, by using common laboratory reagents like water (cold, hot), dil. HCl, dil. NaOH, dil. $NaHCO_3$, etc., of components of a binary solid mixture; purification of any one of the separated components by crystallization and determination of its melting point. The composition of the mixture may be of the following types: Benzoic acid/*p*-Toluidine; *p*-Nitrobenzoic acid/*p*-Aminobenzoic acid; *p*-Nitrotolune/*p*-Anisidine; etc.

Unit-3: Determination of boiling point:

Determination of boiling point of common organic liquid compounds e.g., ethanol, cyclohexane, chloroform, ethyl methyl ketone, cyclohexanone, acetylacetone, anisole etc. [Boiling point of the chosen organic compounds should preferably be less than 160 ^oC]

Unit-4: Identification of a Pure Organic Compound by chemical test(s):

Solid compounds: oxalic acid, tartaric acid, citric acid, succinic acid, resorcinol, benzoic acid and salicylic acid.

Liquid Compounds: formic acid, acetic acid, methyl alcohol, ethyl alcohol, acetone, aniline, benzaldehyde, chloroform and nitrobenzene.

Unit-5: Organic Preparations:

Preparation, purification (only by recrystallization or sublimation), Melting point check and percentage yield calculation of organic compounds using the following reactions:

i. Nitration of aromatic compounds
ii. Condensation reactions
iii. Hydrolysis of amides/imides/esters
iv. Acetylation of phenols/aromatic amines
v. Benzoylation of phenols/aromatic amines
vi. Diazo coupling reactions of aromatic amines
vii. Bromination of anilides using green approach (Bromate-Bromide method)
viii. Green 'multi-component-coupling' reaction
ix. Selective reduction of *m*-dinitrobenzene to *m*-nitroaniline

Semester-I

Core Course-2 (Practical) **Credit-6, Full Marks-70**

Course Code: CC 2, Course Title: Practical Paper-II

Block –I (Inorganic Chemistry)

Unit-1: Estimation of ions

i. Estimation of Fe(II) and Fe(III) in a given mixture using $K_2Cr_2O_7$ solution
ii. Estimation of Fe(III) and Cu(II) in a given mixture using $K_2Cr_2O_7$ solution
iii. Estimation of Cr(VI) and Mn(II) in a given mixture using $K_2Cr_2O_7$ solution
iv. Estimation of Fe(III) and Cr(VI) in a given mixture using $K_2Cr_2O_7$ solution
v. Estimation of Fe(II) and Mn(II) in a given mixture using $KMnO_4$ solution
vi. Estimation of Fe(III) and Ca(II) in a given mixture using $KMnO_4$ solution

Unit-2: Complexometric Titration

i. Estimation of Hardness of water
ii. Estimation of Ca(II) and Mg(II) in a mixture
iii. Estimation of Zn(II) and Mg(II) in a mixture

Unit-3: Inorganic Preparation

i. Mohr's salt
ii. Potassium tris(oxalato)chromate(III) trihydrate
iii. Tetraamminecarbonatocobalt(III) nitrate
iv. Potassiumbis(oxalato)cuprate(II) dihydrate
v. Tris(ethylenediamine)nickel(II) chloride

Block –II (Organic Chemistry)

Unit-4: Qualitative Analysis of Single Solid Organic Compounds

i. Detection of special elements (N, S, Cl, Br) by Lassaigne's test
ii. Solubility and classification (solvents: H_2O, 5% HCl, 5% NaOH and 5% $NaHCO_3$)
iii. Detection of the following functional groups by systematic chemical tests:
iv. Aromatic primary amino (Ar-NH_2), aromatic nitro (Ar-NO_2), amido (-$CONH_2$, including imide), phenolic hydroxyl (Ph-OH), carboxylic acid (-COOH), carbonyl (-CHO and >C=O);
v. Melting point of the given compound
vi. Preparation, purification and melting point determination of a crystalline derivative of the given compound
vii. Identification of the compound through literature survey.
viii. Each student, during laboratory session, is required to carry out qualitative chemical tests for all the special elements and the functional groups with relevant derivatisation in known and unknown (at least six) organic compounds

Unit-5: Quantitative Analysis of Organic Compounds

i. Estimation of glycine by Sörensen's formol method
ii. Estimation of glucose by titration using Fehling's solution
iii. Estimation of Vitamin-C (reduced)
iv. Estimation of aromatic amine (aniline) by bromination (Bromate-Bromide) method
v. Estimation of phenol by bromination (Bromate-Bromide) method
vi. Estimation of acetic acid in commercial vinegar
vii. Estimation of urea (hypobromite method)
viii. Estimation of saponification value of oil/fat/ester

Semester-II

Core Course-3 (Theory) Credit-6, Full Marks-70

Course Code: CC 3, Course Title: Inorganic Chemistry-I

Unit-1: Extra nuclear Structure of atom

Bohr's model and atomic spectrum of hydrogen, Limitations of Bohr's model and Sommerfeld's modifications, wave mechanics: de Broglie's equation, Heisenberg's uncertainty principle and its significance, Schrödinger's wave equation (without application and solution detail), Significance of ψ and ψ^2, Quantum numbers and their significance. Radial and angular wave functions for hydrogen atom (qualitative idea), radial and angular probability distribution curves, shapes of s, p, d and f orbitals (qualitative idea). Pauli's exclusion principle, Aufbau principle and limitations, Hund's rules and multiplicity. Exchange energy, Electronic configurations of atoms.

Unit-2: Radioactivity and nuclear chemistry

Atomic nucleus; nuclear stability, n/p ratio and different modes of decay, mass defect, packing fraction and nuclear binding energy. Nuclear forces: Meson exchange theory, elementary idea of nuclear shell model and magic numbers. Fission, fusion and spallation reactions, artificial radioactivity, super heavy elements and their IUPAC nomenclature. Moderators, slow and fast neutrons, Applications of radio-isotopes in: determination of structures, establishment of reaction mechanisms and radio-carbon dating, hazards of radiation and safety measures.

Unit-3: Chemical periodicity

Modern IUPAC periodic table and classification of elements in the table; Effective nuclear charge and its calculation using Slater's rules; Atomic radii, Ionic radii and Pauling's method for determining univalent ionic radii, covalent radii, lanthanide contraction; Electronegativity (Pauling's, Mulliken's, Allred-Rochow's and Sanderson's scales) and its applications, Ionization energy, Electron affinity and factors influencing these properties, group ectronegativities. Group trends and periodic trends of these properties with reference to s, p and d-block elements. Secondary periodicity, Relativistic Effect, Inert pair effect.

Unit-4: Chemistry of s and p-block elements

Diagonal relationship (Li-Mg; B-Si) and anomalous behavior of first member of each group, Allotropy and catenation (examples of C, P and S compounds). Study of the following compounds with emphasis on preparation, properties, structure and bonding: Berylium hydrides and halides; diborane; borazine; boron nitride, boric acid, borax, fluorocarbons (with environmental effect); oxides and oxyacids of nitrogen, phosphorous, sulphur and chlorine; Peroxo acids of sulphur; tetrasulphur trtranitride; interhalogens, pseudohalogens, polyhalides, fluorides and oxides of xenon. Noble gas clathrates; basic properties of iodine. Synthesis, structural aspects and applications of silicones and phosphazines; Structural properties of various silicates.

Unit-5: Redox Reactions and precipitation reactions

Qualitative idea about complimentary, noncomplimentary, disproportionation and comproportionation reactions, standard redox potentials with sign conventions, Electrochemical series and its application to explore the feasibility of reactions and equilibrium constants, Nernst equation; effect of pH, complexation and precipitation on redox potentials, formal potential;

Basis of redox titration and redox indicators, Redox potential diagrams (Latimer and Frost) of common elements and their applications. Solubility product principle, common ion effect and their applications to the precipitation and separation of common metallic ions as hydroxides, sulphides, carbonates, sulphates and halides.

Unit-6: Acid-Base Concepts and Solvents

Arrhenius concept, Solvent system concept (in H_2O, liq. NH_3, liq. SO_2 and liq. HF), Bronsted-Lowry concept, Lux-Flood concept, Lewis concept, Drago-Wayland equation, Solvent levelling and differentiating effects, Relative strength of different acids and bases, Pauling's rules, Hammett acidity function and super acids, HSAB principle and its applications, Acid-base equilibria in aqueous solution, pH, Buffer, Acid-base neutralization curves and choice of indicators. Gas phase acidity.

Semester-II

Core Course-4 (Theory) **Credit-6, Full Marks-70**

Course Code: CC 4, Course Title: Organic Chemistry-I

Unit-1: Bonding and Physical Properties

a. Valence Bond Theory: Concept of hybridisation, shapes of molecules, resonance (including hyperconjugation); calculation of formal charges and double bond equivalent (DBE); orbital pictures of bonding (SP^3, SP^2, SP: C-C, C-N & C-O systems and *s*-cis and *s*-trans geometry for suitable cases).

b. Electronic displacements: inductive effect, field effect, mesomeric effect, resonance energy; bond polarization and bond polarizability; electromeric effect; steric effect, steric inhibition of resonance.

c. MO theory: qualitative idea about molecular orbitals, bonding and antibonding interactions, idea about σ, σ*, π, π *, n – MOs; basic idea about Frontier MOs (FMO); concept of HOMO, LUMO and SOMO; interpretation of chemical reactivity in terms of FMO interactions; sketch and energy levels of π MOs of i) acyclic p orbital system (C=C, conjugated diene, triene, allyl and pentadienyl systems) ii) cyclic p orbital system (neutral systems: [4],[6]-annulenes; charged systems: 3-,4-,5-membered ring systems); Hückel's rules for aromaticity up to [10]-annulene (including mononuclear heterocyclic compounds up to 6-membered ring); concept of antiaromaticity and homoaromaticity; non-aromatic molecules; Frost diagram; elementary idea about α and β; measurement of delocalization energies in terms of β for buta-1,3-diene, cyclobutadiene, hexa-1,3,5-triene and benzene.

d. Physical properties: influence of hybridization on bond properties: bond dissociation energy (BDE) and bond energy; bond distances, bond angles; concept of bond angle strain (Baeyer's strain theory); melting point/boiling point and solubility of common organic compounds in terms of covalent & non-covalent intermolecular forces; polarity of molecules and dipole moments; relative stabilities of isomeric hydrocarbons in terms of heat of hydrogenation, heat of combustion and heat of formation.

Unit-2: General Treatment of Reaction Mechanism I

a. Mechanistic classification: ionic, radical and pericyclic (definition and example); reaction type: addition, elimination and substitution reactions (definition and example); nature of bond cleavage and bond formation: homolytic and heterolytic bond fission, homogenic and heterogenic bond formation; curly arrow rules in representation of mechanistic steps; reagent type: electrophiles and nucleophiles (elementary idea).

b. Reactive intermediates: carbocations (carbenium and carbonium ions), carbanions, carbon radicals, carbenes: generation and stability, structure using orbital picture and electrophilic/nucleophilic behavior of reactive intermediates (elementary idea).

Unit-3: Stereochemistry-I

a. Bonding geometries of carbon compounds and representation of molecules: Tetrahedral nature of carbon and concept of asymmetry; Fischer, sawhorse, flying-

wedge and Newman projection formulae and their inter translations.
Concept of chirality and symmetry elements and point groups (Cv, Cnh, Cnv, Cn, Dh, Dnh, Dnd, Dn, Sn (Cs, Ci); molecular chirality and centre of chirality; asymmetric and dissymmetric molecules; enantiomers and diastereomers; concept of epimers; concept of stereogenicity, chirotopicity and pseudoasymmetry; chiral centres and number of stereoisomerism: systems involving 1/2/3-chiral centre(s) (AA, AB, ABA and ABC types).

c. Relative and absolute configuration: D/L and R/S descriptors; erythro/threo and meso nomenclature of compounds; syn/anti nomenclatures for aldols; E/Z descriptors for C=C, conjugated diene, triene, C=N and N=N systems; combination of R/S- and
E/Z- isomerisms: Optical activity of chiral compounds: optical rotation, specific rotation and molar rotation; racemic compounds, racemisation (through cationic, anionic, radical intermediates and through reversible formation of stable achiral intermediates); resolution of acids, bases and alcohols via diastereomeric salt formation; optical purity and enantiomeric excess; invertomerism of chiral trialkylamines.

Unit-4: Stereochemistry – II

a. Chirality arising out of stereoaxis: stereoisomerism of substituted cumulenes with even and odd number of double bonds; chiral axis in` allenes, spiro compounds, alkylidene cycloalkanes and biphenyls; related configurational descriptors (Ra/Sa and P/M); atropisomerism; racemisation of chiral biphenyls.

b. Concept of prostereoisomerism: prostereogenic centre; concept of (pro)n-chirality: topicity of ligands and faces (elementary idea); pro-R/pro-S, pro-E/pro-Z and Re/Si descriptors; pro-r and pro-s descriptors of ligands on propseudo asymmetric centre.

c. Conformation: conformational nomenclature: eclipsed, staggered, gauche, syn and anti; dihedral angle, torsion angle; Klyne-Prelog terminology; P/M descriptors; energy barrier of rotation, concept of torsional and steric strains; relative stability of conformers on the basis of steric effect, dipole-dipole interaction and H-bonding; butane gauche interaction; conformational analysis of ethane, propane, n-butane.

d. 2-methylbutane and 2,3-dimethylbutane; haloalkane, 1,2-dihaloalkanes and 1,2-diols (up to four carbons); 1,2-halohydrin; conformation of conjugated systems (s-cis and s-trans).

Unit-5: General Treatment of Reaction Mechanism – II

a. Reaction thermodynamics: free energy and equilibrium, enthalpy and entropy factor, calculation of enthalpy change via BDE, intermolecular & intramolecular reactions.

b. Concept of organic acids and bases: effect of structure, substituent and solvent on acidity and basicity; proton sponge; gas-phase acidity and basicity; comparison between nucleophlicity and basicity; HSAB principle; application of thermodynamic principles in acid-base equilibria.

c. Tautomerism: prototropy (keto-enol, nitro - aci-nitro, nitroso-oximino, diazo-amino and enamine-imine systems); valence tautomerism and ring-chain tautomerism; composition of the equilibrium in different systems (simple carbonyl;

1,2- and 1,3-dicarbonyl systems, phenols and related systems), factors affecting keto-enol tautomerism; application of thermodynamic principles in tautomeric equilibria.

d. Reaction kinetics: rate constant and free energy of activation; concept of order and molecularity; free energy profiles for one-step, two-step and three-step reactions; catalyzed reactions: electrophilic and nucleophilic catalysis; kinetic control and thermodynamic control of reactions; isotope effect: primary and secondary kinetic isotopic effect (k_H /k_D); principle of microscopic reversibility; Hammond's postulate.

Unit-6: Nitrogen Compounds:

a. Amines: Aliphatic & Aromatic: preparation, separation (Hinsberg's method) and identification of primary, secondary and tertiary amines; reaction (with mechanism): Eschweiler–Clarke methylation, diazo coupling reaction, Mannich reaction; formation and reactions of phenylenediamines, diazomethane and diazoacetic ester.

b. Nitro compounds (aliphatic and aromatic): preparation and reaction (with mechanism): reduction under different conditions; Nef carbonyl synthesis, Henry reaction and conjugate addition of nitroalkane anion.

c. Alkylnitrile and isonitrile: preparation and reaction (with mechanism): Thorpe nitrile condensation, von Richter reaction.

d. Diazonium salts and their related compounds: reactions (with mechanism) involving replacement of diazo group; reactions: Gomberg, Meerwein, Japp-Klingermann.

Semester-III

Core Course-5 (Practical) Credit-6, Full Marks-70

Course Code: CC 5, Course Title: Practical Paper-III

Unit-1: Kinetic Study of physical parameters

i. Determination of heat of neutralization of a strong acid by a strong base.
ii. Determination of heat of solution of oxalic acid from solubility measurement.
iii. Study of kinetics of acid-catalyzed hydrolysis of methyl acetate.
iv. Study of kinetics of decomposition of H_2O_2.
v. Determination of partition coefficient for the distribution of I_2 between water and CCl_4.
vi. Determination of solubility of sparingly soluble salt in water, in electrolyte with common ions and in neutral electrolyte (using common indicator).
vii. Determination of K_{eq} for KI + I_2= KI_3, using partition coefficient between water and CCl_4.
viii. Determination of K_{eq} for acetic acid, using partition coefficient between water and 1-Butanol.
ix. Determination of K_{sp} for AgCl by potentiometric titration of $AgNO_3$ solution against standard KCl solution.

Unit-2: Study of physical parameter

i. Study of viscosity of unknown liquid (glycerol, sugar) with respect to water.
ii. Determination of pH of unknown solution (buffer), by color matching method.
iii. Conductometric titration of an acid (mixture of strong and weak acid) against strong base.
iv. Study of saponification reaction conductometrically.
v. Potentiometric titration of Mohr's salt solution against standard $K_2Cr_2O_7$-solution.
vi. Study of phenol-water phase diagram.
vii. pH-metric titration of acid (mono-and di-basic) against strong base.

Semester-III

Core Course-6 (Practical) Credit-6, Full Marks-70

Course Code: CC 6, Course Title: Practical Paper-IV

Block –I (Inorganic Chemistry)

Unit-1: Quantitative analysis

i. Estimation of available chlorine in bleaching powder using iodometry
ii. Estimation of available oxygen in pyrolusite using permanganometry
iii. Estimation of Cu in brass using iodometry
iv. Estimation of Fe in cement using permanganometry
v. Estimation of chloride gravimetrically
vi. Estimation of Ni(II) using DMG gravimetrically

Unit-2: Experiment

i. Paper chromatographic separation of Ni(II) and Co(II)
ii. Measurement of $10D_q$ by spectrophotometric method
iii. Preparation of $Mn(acac)_3$ and determination of its λ_{max} colorimetrically

Unit-3: Qualitative semimicro analysis

Qualitative semimicro analysis of mixtures containing four radicals (excluding oxide and carbonate). Emphasis should be given to the understanding of the chemistry of different reactions and to assign the most probable composition.

Basic Radicals: K^+, NH_4^+, Mg^{2+}, Ca^{2+}, Ba^{2+}, Sr^{2+}, Al^{3}+, Cr^{3}+, Mn^{2+}, Fe^{3}+/ Fe^{2+}, Co^{2+}, Ni^{2+}, Cu^{2+}, Zn^{2+}, Pb^{2+}, Cd^{2+}, Bi^{3}+, Sn^{2+} / Sn^{4+}, As^{3+}/As^{5+}, Sb^{3+}/ Sb^{5+}

Acid Radicals: Cl^-, Br^-, I^-, S^{2-}, SO_4^{2-}, $S_2O_3^{2-}$, SCN^-, NO_3^-, NO_2^-, BO_3^{3-}, PO_4^{3-}, AsO_4^{3-} and H_3BO_3

Insoluble Materials: Cr_2O_3, Fe_2O_3, Al_2O_3, SnO_2, $PbSO_4$, $BaSO_4$, $SrSO_4$

Block –II (Organic Chemistry)

Unit-4: Chromatographic Separations

i. TLC separation of a mixture containing 2/3 amino acids
ii. Column chromatographic separation of mixture of dyes
iii. Paper chromatographic separation of a mixture containing 2/3 sugars

Unit-5: Spectroscopic Analysis of Organic Compounds

i. Assignment of labelled peaks in the ^{1}H NMR spectra of the known organic compounds explaining the relative δ-values and splitting pattern.
ii. Assignment of labelled peaks in the IR spectrum of the same compound explaining the relative frequencies of the absorptions (C-H, O-H, N-H, C-O, C-N, C-X, C=C, C=O, N=O, C≡C, C≡N stretching frequencies; characteristic bending vibrations are included).
iii. The students must record full spectral analysis of at least 15 (fifteen) compounds from the following list:
i) 4-Nitroaniline, ii) 2-Bromo-4'-methylacetophenone, iii) Vanillin, iv) 2-Methoxyacetophenone, v) 4-Aminobenzoic acid, vi) Pent-1-yn-3-ol, vii) 2-Hydroxyacetophenone, viii) 1,3-Dinitrobenzene, ix) Benzylacetate, x) 2-Hydroxy-3-nitrobenzaldehyde xi) 3-Ethoxy-4-hydroxybenzaldehyde, xii) 4-Nitrobenzaldehyde, xiii) Ethyl 4-aminobenzoate, xiv) 2-Methoxybenzaldehyde, xv) 2-Hydroxybenzaldehyde, xvi) Ethyl-3-aminobenzoate , xvii) 2,3-Dimethylbenzonitrile, xviii) 3-Aminobenzoic acid, xix) Methyl 3-hydroxybenzoate

Semester-III

Core Course-7 (Theory) Credit-6, Full Marks-70

Course Code: CC 5, Course Title: Inorganic Chemistry-II

Unit-1: Chemical Bonding – I

Ionic Bond: Lattice energy, Born-Lande equation with derivation and importance of Kapustinskii expression for lattice energy, Born-Haber cycle and its applications, Polarising power and polarisability of ions, Fajan's rules and its applications, radius ratio rules – its applications and limitations, salvation energy and solubility energetics of dissolution process; Packing in crystals, voids in crystal lattice, packing efficiency, Structure of ionic solids: rock salt, zinc blende, wurtzite, fluorite, antifluorite, perovskite and layer lattice. Qualitative idea about stoichiometric and non-stoichiometric crystal defects.

Unit-2: Chemical Bonding – II

Covalent Bond: Lewis structures, formal charge; Qualitative idea of V.B.Theory, directional properties of covalent bond, Concept of Equivalent and nonequivalent Hybridization and shapes of simple molecules and ions (examples from main groups), Stereochemically non-rigid molecules – Berry's pseudorotation, Resonance and Dipole moments of inorganic molecules and ions, VSEPR theory and Bent's rule and their applications; M.O. Theory (elementary pictorial approach), concept of bond order, MO diagram of homo-nuclear diatomics (1st and 2nd period elements), hetero-nuclear diatomics (HF, CO, NO, NO^+ and CN^-) and triatomics (H_2O and BeH_2). Electron sea model and elementary idea about band theory, classification of inorganic solids and their conduction properties according to band theory; Hydrogen bonding: classifications, its effect on the properties of compounds and its importance in biological systems, vander Waal's forces.

Unit-3: Coordination Chemistry - I

Idea about double salts and complex salts, Werner's theory, EAN rule, classification of ligands and their binding modes, IUPAC nomenclature of coordination compounds (up to two metal centers), overall and stepwise stability constants, chelates, innermetallic complexes, Stereochemistry and isomerism (constitutional and stereo) of complexes with coordination no. 4 and 6.

Unit-4: Coordination Chemistry – II

Structure and bonding of coordination compounds on the basis of V.B. Theory and its limitations. Elementary idea about CFT, splitting of d^n configuration in ML_4 to ML_6 and ML_8 systems, factors affecting , measurement of o, spectrochemical series of ligands, CFSE in weak and strong fields, OSSE, High spin and low spin complexes, spin isomerism, tetragonal distortion, Jahn Teller theorem and applications, achievements and limitations of CFT, nephalauxetic effect, stabilization of unusually high and low oxidation states of 3d series elements, MOT (elementary idea), σ and π bonding in octahedral complexes (a pictorial approach). Colour and electronic spectra of complexes: selection rules for electronic transitions, d-d transition, charge transfer transition (qualitative idea), L-S coupling and R-S ground state term for atomic no. up to 30, qualitative ORGEL diagram for 3d1 – 3d9 ions with appropriate symbols for the energy levels.

Unit-5: Reaction Kinetics and Mechanism

Introduction to inorganic reaction mechanisms, substitution reactions in square planar complexes; *trans*-effect - theories and applications; lability and inertness in octahedral complexes towards substitution reactions. Elementary concept of *cis*-effect.

Semester-IV

Core Course-8 (Theory) Credit-6, Full Marks-70

Course Code: CC 8, Course Title: Organic Chemistry-II

Unit-1: Substitution and Elimination Reactions

Free-radical substitution reaction: halogentaion of alkanes, mechanism (with evidence) and stereochemical features; reactivity-selectivity principle in the light of Hammond's postulate. Nucleophilic substitution reactions: substitution at SP3 centre: mechanisms (with evidence), relative rates & stereochemical features: SN1, SN2, SN2', SN1' (allylic rearrangement) and SNi; effects of solvent, substrate structure, leaving group and nucleophiles (including ambident nucleophiles, cyanide & nitrite); substitutions involving NGP; role of crown ethers and phase transfer catalysts; [systems: alkyl halides, allyl halides, benzyl halides, alcohols, ethers, epoxides].

Elimination reactions: E1, E2, E1cB and Ei (pyrolytic syn eliminations); formation of alkenes and alkynes; mechanisms (with evidence), reactivity, regioselectivity (Saytzeff/Hofmann) and stereoselectivity; comparison between substitution and elimination; importance of Bredt's rule relating to the formation of C=C.

Unit-2: Aromatic Substitution

Electrophilic aromatic substitution: mechanisms and evidences in favour of it; orientation and reactivity; reactions: nitration, nitrosation, sulfonation, halogenation, Friedel-Crafts reaction; one-carbon electrophiles (reactions: chloromethylation, Gatterman-Koch, Gatterman, Houben-Hoesch, Vilsmeier-Haack, Reimer-Tiemann, Kolbe-Schmidt); Ipso substitution.

Nucleophilic aromatic substitution: addition-elimination mechanism and evidences in favor of it; SN1 mechanism; cine substitution (benzyne mechanism), structure of benzyne.

Unit-3: Carbonyl and Related Compounds

Addition to C=O: structure, reactivity and preparation of carbonyl compounds; mechanism (with evidence), reactivity, equilibrium and kinetic control; Burgi-Dunitz trajectory in nucleophilic additions; formation of hydrates, cyano hydrins and bisulphite adduct; nucleophilic addition-elimination reactions with alcohols, thiols and nitrogen- based nucleophiles; reactions: benzoin condensation, Cannizzaro and Tischenko reactions, reactions with ylides: Wittig and Corey-Chaykovsky reaction; Rupe rearrangement, oxidations and reductions: Clemmensen, Wolff-Kishner, LiAlH4, NaBH4, MPV, Oppenauer, Bouveault-Blanc, acyloin condensation; oxidation of alcohols with PDC and PCC; periodic acid and lead tetraacetate oxidation of 1,2-diols.

Exploitation of acidity of α-H of C=O: formation of enols and enolates; kinetic and thermodynamic enolates; reactions (mechanism with evidence): halogenation of carbonyl compounds under acidic and basic conditions, Hell-Volhard-Zelinsky (H. V. Z.) reaction, nitrosation, SeO2 (Riley) oxidation; condensations (mechanism with evidence): Aldol, Tollens', Knoevenagel, Claisen-Schmidt, Claisen ester including Dieckmann, Stobbe; Mannich reaction, Perkin reaction, Favorskii rearrangement; alkylation of active methylene compounds; preparation and synthetic applications of diethyl malonate and ethyl acetoacetate; specific enol equivalents (lithium enolates, enamines, aza-enolates and silyl enol ethers) in connection with alkylation, acylation and aldol type reaction.

Elementary ideas of Green Chemistry: Twelve (12) principles of green chemistry; planning of green synthesis; common organic reactions and their counterparts: reactions: Aldol, Friedel-Crafts, Michael, Knoevenagel, Cannizzaro, benzoin condensation and Dieckmann condensation.

Nucleophilic addition to α,β-unsaturated carbonyl system: general principle and mechanism (with evidence); direct and conjugate addition, addition of enolates (Michael reaction), Stetter reaction, Robinson annulation.

Substitution at Sp2 carbon (C=O system): mechanism (with evidence): BAC2, AAC2, AAC1, AAL1 (in connection to acid and ester); acid derivatives: amides, anhydrides & acyl halides (formation and hydrolysis including comparison).

Unit-4: Organometallics

Grignard reagent; Organolithiums; Gilman cuprates: preparation and reactions (mechanism with evidence); addition of Grignard and organolithium to carbonyl compounds; substitution on -COX; directed ortho metalation of arenes using organolithiums, conjugate addition by Gilman cuprates; Corey-House synthesis; abnormal behavior of Grignard reagents; comparison of reactivity among Grignard, organolithiums and organocopper reagents; Reformatsky reaction; Blaise reaction; concept of umpolung and base-nucleophile dichotomy in case of organometallic reagents.

Unit-5: Chemistry of alkanes and alkenes

Addition to C=C: mechanism (with evidence wherever applicable), reactivity, regioselectivity (Markownikoff and anti-Markownikoff additions) and stereoselectivity; reactions: hydrogenation, halogenations, iodolactonisation, hydrohalogenation, hydration, oxymercuration-demercuration, hydroboration-oxidation, epoxidation, syn and anti-hydroxylation, ozonolysis, addition of singlet and triplet carbenes; electrophilic addition to diene (conjugated dienes and allene); radical addition: HBr addition; mechanism of allylic and benzylic bromination in competition with brominations across C=C; use of NBS; Birch reduction of benzenoid aromatics; interconversion of E - and Z - alkenes; contra-thermodynamic isomerization of internal alkenes.

Addition to C≡C (in comparison to C=C): mechanism, reactivity, regioselectivity (Markownikoff and anti-Markownikoff addition) and stereoselectivity; reactions: hydrogenation, halogenations, hydrohalogenation, hydration, oxymercuration- demercuration, hydroboration-oxidation, dissolving metal reduction of alkynes (Birch); reactions of terminal alkynes by exploring its acidity; interconversion of terminal and non- terminal alkynes.

Unit-6: Rearrangements:

Mechanism with evidence and stereochemical features for the following:

Rearrangement to electron-deficient carbon: Wagner-Meerwein rearrangement, Pinacol rearrangement, dienone-phenol; Wolff rearrangement in Arndt-Eistert synthesis, benzil-benzilic acid rearrangement, Demjanov rearrangement, Tiffeneau–Demjanov rearrangement.

Rearrangement to electron-deficient nitrogen: rearrangements: Hofmann, Curtius, Lossen, Schmidt and Beckmann.

Rearrangement to electron-deficient oxygen: Baeyer-Villiger oxidation, cumene hydroperoxide-phenol rearrangement and Dakin reaction.

Aromatic rearrangements: Migration from oxygen to ring carbon: Fries rearrangement and Claisen rearrangement.

Migration from nitrogen to ring carbon: Hofmann-Martius rearrangement, Fischer-Hepp rearrangement, N-azo to C-azo rearrangement, Bamberger rearrangement, Orton rearrangement and benzidine rearrangement.

Rearrangement reactions by green approach: Fries rearrangement, Claisen rearrangement, Beckmann rearrangement, Baeyer-Villiger oxidation.

Semester-IV

Core course-9 (Theory) **Credit-6, Full Marks-70**

Course Code: CC 9, Course Title: Physical Chemistry-I

Unit-1: Kinetic Theory and Gaseous state

Kinetic Theory of gases: Concept of pressure and temperature; Collision of gas molecules; Collision diameter; Collision number and mean free path; Frequency of binary collisions (similar and different molecules). Maxwell's distribution of speed and energy: Nature of distribution of velocities, Maxwell's distribution of speeds in one, two and three dimensions; Kinetic energy distribution in one, two and three dimensions, calculations of average, root mean square and most probable values in each case; Calculation of number of molecules having energy $\geq \varepsilon$, Principle of equipartition of energy and its application to calculate the classical limit of molar heat capacity of gases. Real gas and virial equation: Deviation of gases from ideal behavior; compressibility factor; Boyle temperature; Andrew's and Amagat's plots; van der Waals equation and its features; its derivation and application in explaining real gas behaviour, other equations of state (Berthelot, Dietrici); Existence of critical state, Critical constants in terms of van der Waals constants; Law of corresponding states; virial equation of state; van der Waals equation expressed in virial form and significance of second virial coefficient; Intermolecular forces (Debye, Keesom and London interactions; Lennard - Jones potential – elementary idea).

Unit-2: Chemical Thermodynamics - I

First law of Thermodynamics: Intensive and extensive variables; state and path functions; isolated, closed and open systems; zeroth law of thermodynamics; Concept of heat, work, internal energy and statement of first law; enthalpy, H; relation between heat capacities, calculations of q, w, U and H for reversible, irreversible and free expansion of gases (ideal and van der Waals) under isothermal and adiabatic conditions; Joule's experiment and its consequence. Thermochemistry: Standard states; Heats of reaction; enthalpy of formation of molecules and ions and enthalpy of combustion and its applications; Laws of thermochemistry; bond energy, bond dissociation energy and resonance energy from thermochemical data, Kirchhoff's equations and effect of pressure on enthalpy of reactions.

Unit-3: Chemical Thermodynamics – II

Second Law: Need for a Second law; statement of the second law of thermodynamics; Concept of heat reservoirs and heat engines; Carnot cycle; Physical concept of Entropy; Carnot engine and refrigerator; Kelvin –Planck and Clausius statements and equivalence of the two statements with entropic formulation; Carnot's theorem; Values of dq/T and Clausius inequality; Entropy change of systems and surroundings for various processes and transformations; Entropy and unavailable work; Auxiliary state functions (G and A) and their variation with T, P and V. Criteria for spontaneity and equilibrium. Thermodynamic relations: Maxwell's relations; Gibbs-Helmholtz equation, Joule-Thomson experiment and its consequences; inversion temperature; Joule- Thomson coefficient for a van der Waals gas; General heat capacity relations.

Unit-4: Chemical kinetics

Rate law, order and molecularity: Introduction of rate law, Extent of reaction; rate constants, order; Forms of rates of First, second and nth order reactions; Pseudo first order reactions (example using acid catalyzed hydrolysis of methyl acetate); Determination of order of a

reaction by half -life and differential method; Opposing reactions, consecutive reactions and parallel reactions (with explanation of kinetic and thermodynamic control of products; all steps first order). Role of Temperature and theories of reaction rate: Temperature dependence of rate constant; Arrhenius equation, energy of activation; Rate-determining step and steady-state approximation –explanation with suitable examples; Collision theory; Lindemann theory of unimolecular reaction; outline of Transition State theory (classical treatment). Homogeneous catalysis: Homogeneous catalysis with reference to acid-base catalysis; Primary kinetic salt effect; Enzyme catalysis; Michaelis-Menten equation, Lineweaver-Burk plot, turn-over number.

Unit-5: Transport processes

Viscosity: General features of fluid flow (streamline flow and turbulent flow); Newton's equation, viscosity coefficient; Poiseuille's equation; Principle of determination of viscosity coefficient of liquids by falling sphere method; Temperature variation of viscosity of liquids and comparison with that of gases. Conductance and transport number: Ion conductance; Conductance and measurement of conductance, cell constant, specific conductance and molar conductance; Variation of specific and equivalent conductance with dilution for strong and weak electrolytes; Kohlrausch's law of independent migration of ions; Equivalent and molar conductance at infinite dilution and their determination for strong and weak electrolytes; Debye –Huckel theory of Ion atmosphere (qualitative)-asymmetric effect, relaxation effect and electrophoretic effect; Ostwald's dilution law; Ionic mobility; Application of conductance measurement (determination of solubility product and ionic product of water); Conductometric titrations. Transport number, Principles of Hittorf's and Moving-boundary method.

Semester-IV

Core Course-10 (Theory) Credit-6, Full Marks-70

Course Code: CC 10, Course Title: Physical Chemistry-II

Unit-1: Applications of Thermodynamics –I

Partial properties and chemical potential: Chemical potential and activity, partial molar quantities, relation between chemical potential and Gibb's free energy and other thermodynamic state functions; variation of chemical potential (μ) with temperature and pressure; Gibbs-Duhem equation; fugacity and fugacity coefficient; Variation of thermodynamic functions for systems with variable composition; Equations of states for these systems, Change in G, S H and V during mixing for binary solutions. Chemical Equilibrium: Thermodynamic conditions for equilibrium, degree of advancement; Van't Hoff's reaction isotherm (deduction from chemical potential); Variation of free energy with degree of advancement; Equilibrium constant and standard Gibbs free energy change; Definitions of KP, KC and KX; Van't Hoff's reaction isobar and isochore from different standard states; Shifting of equilibrium due to change in external parameters e.g. temperature and pressure; variation of equilibrium constant with addition to inert gas; Le Chatelier's principle. Nernst's distribution law; Application-(finding out K_{eq} using Nernst distribution law for $KI+I_2 = KI_3$ and dimerization of benzene. Chemical potential and other properties of ideal substances-pure and mixtures: Pure ideal gas: Its chemical potential and other thermodynamic functions and their changes during a change of thermodynamic parameters of mixing; Chemical potential of an ideal gas in an ideal gas mixture; Concept of standard states and choice of standard states of ideal gases. Condensed Phase: Chemical potential of pure solid and pure liquids, Ideal solution–Definition, Raoult's law; Mixing properties of ideal solutions, chemical potential of a component in an ideal solution; Choice of standard states of solids and liquids.

Unit-2: Application of Thermodynamics – II

Colligative properties: Vapour pressure of solution; Ideal solutions, ideally diluted solutions and colligative properties; Raoult's law; Thermodynamic derivation using chemical potential to derive relations between the four colligative properties [(i) relative lowering of vapour pressure, (ii) elevation of boiling point, (iii) Depression of freezing point, (iv) Osmotic pressure] and amount of solute. Applications in calculating molar masses of normal, dissociated and associated solutes in solution; Abnormal colligative properties. Phase rule: Definitions of phase, component and degrees of freedom; Phase rule and its derivations; Definition of phase diagram; Phase diagram for water, CO_2, Sulphur. First order phase transition and Clapeyron equation; Clausius-Clapeyron equation – derivation and use; Liquid vapour equilibrium for two component systems; Phenol-water system. Three component systems, water-chloroform-acetic acid system, triangular plots. Binary solutions: Ideal solution at fixed temperature and pressure; Principle of fractional distillation; Duhem-Margules equation; Henry's law; Konowaloff's rule; Positive and negative deviations from ideal behavior; Azeotropic solution; Liquid-liquid phase diagram using phenol-water system; Solid-liquid phase diagram; Eutectic mixture.

Unit-3: Foundation of Quantum Mechanics

Beginning of Quantum Mechanics: Wave-particle duality, light as particles: photoelectric and compton effects; electrons as waves and the de Broglie hypothesis; Uncertainty relations (without proof). Wave function: Schrodinger time-independent equation; nature of the equation, acceptability conditions imposed on the wave functions and probability interpretations of wave

function. Concept of Operators: Elementary concepts of operators, eigen functions and eigenvalues; Linear operators; Commutation of operators, commutator and uncertainty relation; Expectation value; Hermitian operator; Postulates of Quantum Mechanics. Particle in a box: Setting up of Schrodinger equation for one-dimensional box and its solution; Comparison with free particle eigen functions and eigenvalues. Properties of particle in a box wave functions (normalization, orthogonality, probability distribution); Expectation values of x, x2, px and px2 and their significance in relation to the uncertainty principle; Extension of the problem to two and three dimensions and the concept of degenerate energy levels.

Unit-4: Electrical Properties of molecules

Ionic equilibria: Chemical potential of an ion in solution; Activity and activity coefficients of ions in solution; Debye-Huckel limiting law-brief qualitative description of the postulates involved, qualitative idea of the model, the equation (without derivation) for ion-ion atmosphere interaction potential. Estimation of activity coefficient for electrolytes using Debye-Huckel limiting law; Derivation of mean ionic activity coefficient from the expression of ion-atmosphere interaction potential; Applications of the equation and its limitations. Electromotive Force: Quantitative aspects of Faraday's laws of electrolysis, rules of oxidation/reduction of ions based on half-cell potentials, applications of electrolysis in metallurgy and industry; Chemical cells, reversible and irreversible cells with examples; Electromotive force of a cell and its measurement, Nernst equation; Standard electrode (reduction) potential and its application to different kinds of half cells. Application of EMF measurements in determining (i) free energy, enthalpy and entropy of a cell reaction, (ii) equilibrium constants, and (iii) pH values, using hydrogen, quinone-hydroquinone, glass electrodes. Concentration cells with and without transference, liquid junction potential; Determination of activity coefficients and transference numbers; Qualitative discussion of potentiometric titrations (acid-base, redox, precipitation). Dipole moment and polarizability: Polarizability of atoms and molecules, dielectric constant and polarization, molar polarization for polar and non-polar molecules; Clausius-Mosotti equation and Debye equation (both without derivation) and their application; Determination of dipole moments.

Semester-V

Core Course-11 (Practical) **Credit-6, Full Marks-70**

Course Code: CC 11, Course Title: Practical Paper-V

Block-I (Physical Chemistry)

Unit-1: Determination of physical parameter

i. Determination of surface tension of a liquid using Stalagmometer.
ii. Determination of CMC from surface tension measurements.
iii. Verification of Beer and Lambert's Law for $KMnO_4$ and $K_2Cr_2O_7$ solution.
iv. Study of kinetics of $K_2S_2O_8$ + KI reaction, spectrophotometrically.
v. Determination of pH of unknown buffer, spectrophotometrically.
vi. Spectrophotometric determination of CMC.

Block-I (Polymer Chemistry)

Unit-2: Polymer Synthesis

i. Free radical solution polymerization of styrene (St) / Methyl Methacrylate (MMA) / Methyl Acrylate (MA) / Acrylic acid (AA).
ii. Polymerization using benzoyl peroxide (BPO) / 2,2'-azo-bis-isobutylonitrile (AIBN)
iii. Preparation of nylon 66/6
iv. Redox polymerization of acrylamide
v. Precipitation polymerization of acrylonitrile
vi. Preparation of urea-formaldehyde resin
vii. Preparations of novalac resin/ resold resin.

Unit-3: Polymer characterization

i. Determination of molecular weight by viscometry:
   a. Polyacrylamide-aq.$NaNO_2$ solution
   b. Poly vinyl proplylidine (PVP) in water
ii. Determination of the viscosity-average molecular weight of poly(vinyl alcohol) (PVOH) and the fraction of "head-to-head" monomer linkages in the polymer.
iii. Determination of molecular weight by end group analysis: Polyethylene glycol (PEG) (OH group).
iv. Testing of mechanical properties of polymers.
v. Determination of hydroxyl number of a polymer using colorimetric method.

Unit-4: Polymer analysis

i. Estimation of the amount of HCHO in the given solution by sodium sulphite method
ii. Instrumental Techniques
iii. IR studies of polymers
iv. Preparation of polyacrylamide and its electrophoresis

Semester-V

Core Course-12 (Theory) Credit-6, Full Marks-70

Course Code: CC 12, Course Title: Inorganic Chemistry-III

Unit-1: Chemistry of d- and f-block elements

d-block elements: Characteristic properties, Comparison among the elements of 3d series with reference to electronic configuration, oxidation states and E^0 values; General comparison between 3d, 4d and 5d series elements in term of electronic configuration, oxidation states, atomization energy, magnetic properties and coordination chemistry.

f-block elements: Comparison between d and f-block elements; Electronic configuration, oxidation states, variation of magnetic properties (Ln^{3+}), atomic and ionic radii of lanthanides; consequences of lanthanide contraction, separation of lanthanides by ion exchange and solvent extraction methods; comparison between lanthanides and actinides.

Unit-2: Molecular symmetry and Point group

Symmetry as a universal theme, concept of symmetry elements and operations (with examples); symmetry properties of atomic orbitals (s, p and d); concept of point groups, identification of molecular point groups in some simple molecules and ions; applications of symmetry for polarity and chirality.

Unit-3: Magnetochemistry

Classification of magnetic substances, Origin of para magnetic moments, temperature dependence of para magnetism – Curie and Curie-Weiss law, TIP, magnetic susceptibility and its measurement (Gouy method), diamagnetic correction, effective magnetic moment, spin only moment for 3d metals, Orbital contribution to magnetic moment, spin-orbit coupling, quenching of orbital contribution, Sub-normal magnetic moments and antiferromagnetic interactions (elementary idea with examples).

Unit-4: Bio-inorganic Chemistry

Essential elements of life, Role of metal ions in living systems- a brief review, Elementary idea about proteins, enzymes and ionophores; Structure of ATP, Na^+ ion pump and transport of Na^+ and K^+ across cell membrane; active site structures and bio-functions of hemoglobin, myoglobin, carboxy peptidase A, carbonic anhydrase B, cytochrome c, ferredoxins and chlorophyll; biological nitrogen fixation; toxic metals (Pb, Cd and Hg) and their effects, Wilson disease, chelation therapy; platinum and gold complexes as drugs (examples only).

Unit-5: Organometallic Chemistry and Catalysis:

Definition, Classification of organometallic compounds, hapticity of ligands, nomenclature, 16-electron & 18-electron rule and its applications; preparation and structure of mono- and bi-nuclear carbonyls of 3d series, synergic effect of CO and use of IR data to explain extent of back bonding; General methods of preparation of metal-carbon σ-bonded complexes, Zeise's salt, Metal-carbon multiple bonding; Preparation, structures, properties and reactions of ferrocene; elementary idea about oxidative addition, reductive elimination, insertion reactions; Study of the following catalytic processes: alkene hydrogenation (Wilkinson's catalyst), hydroformylation, Wacker process, Synthetic gasoline (Fischer Tropsch reaction) and Olefin polymerization reaction (Ziegler-Natta catalyst)

Semester-VI

Core Course-13 (Theory) **Credit-6, Full Marks-70**

Course Code: CC 13, Course Title: Organic Chemistry-III

Unit-1: The Logic of Organic Synthesis

Retrosynthetic analysis: disconnections; synthons, donor and acceptor synthons; natural reactivity and umpolung; latent polarity in bifunctional compounds: consonant and dissonant polarity; illogical electrophiles and nucleophiles; synthetic equivalents; functional group interconversion and addition (FGI and FGA); C-C disconnections and synthesis: one-group and two-group (1,2- to 1,5-dioxygenated compounds), reconnection (1,6-dicarbonyl); protection-deprotection strategy (alcohol, amine, carbonyl, acid).

1. Strategy of ring synthesis: thermodynamic and kinetic factors; synthesis of large rings, application of high dilution technique.
2. Asymmetric synthesis: stereoselective and stereospecific reactions; diastereoselectivity and enantioselectivity (only definition); enantioselectivity: kinetically controlled MPV reduction; diastereoselectivity: addition of nucleophiles to C=O adjacent to a stereogenic centre: Felkin-Anh and Zimmermann-Traxler models.

Unit-2: Carbocycles and Heterocycles:

1. Polynuclear hydrocarbons and their derivatives: synthetic methods include Haworth, Bardhan-Sengupta, Bogert-Cook and other useful syntheses (with mechanistic details); fixation of double bonds and Fries rule; reactions (with mechanism) of naphthalene, anthracene, phenanthrene and their derivatives.
2. Heterocyclic compounds: 5- and 6-membered rings with one heteroatom; reactivity, orientation and important reactions (with mechanism) of furan, pyrrole, thiophene and pyridine; synthesis (including retrosynthetic approach and mechanistic details): pyrrole: Knorr synthesis, Paal-Knorr synthesis, Hantzsch; furan: Paal-Knorr synthesis, Feist- Benary synthesis and its variation; thiophenes: Paal-Knorr synthesis, Hinsberg synthesis; pyridine: Hantzsch synthesis; benzo-fused 5- and 6-membered rings with one heteroatom: reactivity, orientation and important reactions (with mechanistic details) of indole, quinoline and isoquinoline; synthesis (including retrosynthetic approach and mechanistic details): indole: Fischer, Madelung and Reissert; quinoline: Skraup, Doebner- Miller, Friedlander; isoquinoline: Bischler-Napieralski synthesis.

Unit-3: Cyclic Stereochemistry:

Alicyclic compounds: concept of I-strain; conformational analysis: cyclohexane, mono and disubstituted cyclohexane; symmetry properties and optical activity; topomerisation; ring-size and ease of cyclisation; conformation & reactivity in cyclohexane system: consideration of steric and stereoelectronic requirements; elimination (E2, E1), nucleophilic substitution (S_N1, S_N2, S_Ni, NGP), merged substitution-elimination; rearrangements; oxidation of cyclohexanol, esterification, saponification, lactonisation, epoxidation, pyrolytic *syn* elimination and fragmentation reactions

Unit-4: Organic Spectroscopy:

1. UV Spectroscopy: introduction; types of electronic transitions, end absorption; transition dipole moment and allowed/forbidden transitions; chromophores and auxochromes; Bathochromic and Hypsochromic shifts; intensity of absorptions (Hyper-/Hypochromic effects); application of Woodward's Rules for calculation of λ_{max} for the following systems: conjugated diene, α,β-unsaturated aldehydes and ketones (alicyclic, homoannular and heteroannular); extended conjugated systems (dienes, aldehydes and ketones); relative positions of λ_{max} considering conjugative effect, steric effect, solvent effect, effect of pH; effective chromophore concentration: keto-enol systems; benzenoid transitions.
2. IR Spectroscopy: introduction; modes of molecular vibrations (fundamental and non- fundamental); IR active molecules; application of Hooke's law, force constant; fingerprint region and its significance; effect of deuteration; overtone bands; vibrational coupling in IR; characteristic and diagnostic stretching frequencies of C-H, N-H, O-H, C-O, C-N, C-X, C=C (including skeletal vibrations of aromatic compounds), C=O, C=N, N=O, C≡C, C≡N; characteristic/diagnostic bending vibrations are included; factors affecting stretching frequencies: effect of conjugation, electronic effects, mass effect, bond multiplicity, ring- size, solvent effect, H-bonding on IR absorptions; application in functional group analysis.
3. NMR Spectroscopy: introduction; nuclear spin; NMR active molecules; basic principles of Proton Magnetic Resonance; equivalent and non-equivalent protons; chemical shift and factors influencing it; ring current effect; significance of the terms: up-/downfield,
4. Shielded and deshielded protons; spin coupling and coupling constant (1^{st} order spectra); relative intensities of first-order multiplets: Pascal's triangle; chemical and magnetic equivalence in NMR ; elementary idea about non-first-order splitting; anisotropic effects in alkene, alkyne, aldehydes and aromatics; NMR peak area, integration; relative peak positions with coupling patterns of common organic compounds (both aliphatic and benzenoid-aromatic); rapid proton exchange; interpretation of NMR spectra of simple compounds.
5. Applications of IR, UV and NMR spectroscopy for identification of simple organic molecules.

Unit-5: Pericyclic Reactions:

Mechanism, stereochemistry, regioselectivity in case of

i. Electrocyclic reactions: FMO approach involving 4π- and 6π-electrons (thermal and photochemical) and corresponding cycloreversion reactions.
ii. Cycloaddition reactions: FMO approach, Diels-Alder reaction, photochemical [2+2] cycloadditions.
iii. Sigmatropic reactions: FMO approach, sigmatropic shifts and their order; [1,3]- and [1,5]- H shifts and [3,3]-shifts with reference to Claisen and Cope rearrangements.

Unit-6: Carbohydrates:

1. Monosaccharides: Aldoses up to 6 carbons; structure of D-glucose & D-fructose (configuration & conformation); ring structure of monosaccharides (furanose and pyranose forms): Haworth representations and non-planar conformations; anomeric effect (including stereoelectronic explanation); mutarotation; epimerization;

reactions (mechanisms in relevant cases): Fischer glycosidation, osazone formation, bromine-water oxidation, HNO_3 oxidation, selective oxidation of terminal $-CH_2OH$ of aldoses, reduction to alditols, Lobry de Bruyn-van Ekenstein rearrangement; stepping–up (Kiliani-Fischer method) and stepping–down (Ruff's & Wohl's methods) of aldoses; end-group-interchange of aldoses; acetonide (isopropylidene) and benzylidene protections; ring-size determination; Fischer's proof of configuration of (+)-glucose.

2. Disaccharides: Glycosidic linkages, concept of glycosidic bond formation by glycosyl donor-acceptor; structure of sucrose, inversion of cane sugar.
3. Polysaccharides: starch (structure and its use as an indicator in titrimetric analysis).

Unit-7: Bimolecules:

1. Amino acids: synthesis with mechanistic details: Strecker, Gabriel, acetamido malonic ester, azlactone, Bücherer hydantoin synthesis, synthesis involving diketopiperazine; isoelectric point, zwitterions; electrophoresis, reaction (with mechanism): ninhydrin reaction, Dakin-West reaction; resolution of racemic amino acids.
2. Peptides: peptide linkage and its geometry; syntheses (with mechanistic details) of peptides using N-protection & C-protection, solid-phase (Merrifield) synthesis; peptide sequence: C-terminal and N-terminal unit determination (Edman, Sanger & 'dansyl' methods); partial hydrolysis; specific cleavage of peptides: use of CNBr.
3. Nucleic acids: pyrimidine and purine bases (only structure & nomenclature); nucleosides and nucleotides corresponding to DNA and RNA; mechanism for acid catalyzed hydrolysis of nucleosides (both pyrimidine and purine types); comparison of alkaline hydrolysis of DNA and RNA; elementary idea of double helical structure of DNA (Watson-Crick model); complimentary base–pairing in DNA.

Semester-VI

Core Course-14 (Theory) Credit-6, Full Marks-70

Course Code: CC 14, Course Title: Physical Chemistry-III

Unit-1: Quantum Chemistry

Angular momentum: Commutation rules, quantization of square of total angular momentum and z-component; Rigid rotator model of rotation of diatomic molecule; Schrödinger equation, transformation to spherical polar coordinates; Separation of variables. Qualitative treatment of hydrogen atom and hydrogen-like ions: Setting up of Schrödinger equation in spherical polar coordinates, radial part, quantization of energy (only final energy expression); Average and most probable distances of electron from nucleus; Setting up of Schrödinger equation for many-electron atoms (He, Li). LCAO and HF-SCF: Covalent bonding, valence bond and molecular orbital approaches, LCAO-MO treatment of H_2^+; Bonding and antibonding orbitals; Qualitative extension to H_2; Comparison of LCAO-MO and VB treatments of H_2 and their limitations; Hartree-Fock method development, SCF and configuration interaction (only basics).

Unit-2: Surface phenomenon

Surface tension and energy: Surface tension, surface energy, excess pressure, capillary rise and surface tension; Work of cohesion and adhesion, spreading of liquid over other surface; Vapour pressure over curved surface; Temperature dependence of surface tension. Adsorption: Physical and chemical adsorption; Freundlich and Langmuir adsorption isotherms; multilayer adsorption and BET isotherm (no derivation required); Gibbs adsorption isotherm and surface excess; Heterogenous catalysis (single reactant); Zero order and fractional order reactions. Colloids: Lyophobic and lyophilic sols, Origin of charge and stability of lyophobic colloids, coagulation and Schultz-Hardy rule, Zeta potential and Stern
double layer (qualitative idea), Tyndall effect; Electrokinetic phenomena (qualitative idea only); Determination of Avogadro number by Perrin's method; Stability of colloids and zeta potential; Micelle formation.

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Unit-3: Molecular Spectroscopy

Interaction of electromagnetic radiation with molecules and various types of spectra; Born-Oppenheimer approximation Rotation spectroscopy: Selection rules, intensities of spectral lines, determination of bond lengths of diatomic and linear triatomic molecules, isotopic substitution. Vibrational spectroscopy: Classical equation of vibration, computation of force
constant, amplitude of diatomic molecular vibrations, anharmonicity, Morse potential, dissociation energies, fundamental frequencies, overtones, hot bands, degrees of freedom for polyatomic molecules, modes of vibration, concept of group frequencies; Diatomic vibrating rotator, P, Q, R branches.\ Raman spectroscopy: Qualitative treatment of Rotational Raman effect; Vibrational Raman spectra, Stokes and anti-Stokes lines. Nuclear Magnetic Resonance (NMR) spectroscopy: Principles of NMR spectroscopy, Larmor precession, chemical shift and low resolution spectra. Electron Spin Resonance (ESR) spectroscopy: Its principle, ESR of simple radicals.

Unit-4: Photochemistry

Lambert-Beer's law: Characteristics of electromagnetic radiation, Lambert- Beer's law and its limitations, physical significance of absorption coefficients; Laws of photochemistry, Stark-Einstein law of photochemical equivalence quantum yield, actinometry, examples of low and high quantum yields. Photochemical Processes: Potential energy curves (diatomic molecules),

Frank- Condon principle and vibrational structure of electronic spectra; Bond dissociation and principle of determination of dissociation energy (ground state); Decay of excited states by radiative and non-radiative paths; Pre-dissociation; Fluorescence and phosphorescence, Jablonskii diagram. Rate of Photochemical processes: Photochemical equilibrium and the differential rate of photochemical reactions, Photostationary state; HI decomposition, H_2-Br_2 reaction, dimerisation of anthracene; photosensitised reactions, quenching; Role of photochemical reactions in biochemical processes, photostationary states, chemiluminescence

Semester-V

Discipline Specific Elective course-1 (Theory)

Credit-6, Full Marks-70

Course Code: DSE 1, Course Title: Polymer Chemistry

Unit-1: Introduction and history of polymeric materials

Different schemes of classification of polymers, Polymer nomenclature, Molecular forces and chemical bonding in polymers, Texture of Polymers.

Unit-2: Functionality and its importance

Criteria for synthetic polymer formation, classification of polymerization processes, relationships between functionality, extent of reaction and degree of polymerization. Bi-functional systems, Poly-functional systems.

Unit-3: Kinetics of Polymerization

Mechanism and kinetics of step growth, radical chain growth, ionic chain (both cationic and anionic) and coordination polymerizations.

Unit-4: Crystallization and crystallinity

Determination of crystalline melting point and degree of crystallinity, Morphology of crystalline polymers, Factors affecting crystalline melting point.

Unit-5: Nature and structure of polymers

Structure Property relationships.

Unit-6: Determination of molecular weight of polymers

(Mn, Mw, etc) by end group analysis, viscometry, light scattering and osmotic pressure methods. Molecular weight distribution and its significance. Polydispersity index.

Unit-7: Glass transition temperature (T_g) and determination of T_g

Free volume theory, WLF equation, Factors affecting glass transition temperature (T_g).

Unit-8: Polymer Solution

Criteria for polymer solubility, Solubility parameter, Thermodynamics of polymer solutions, entropy, enthalpy, and free energy change of mixing of polymers solutions, Lower and Upper critical solution temperatures.

Unit-9: Properties of Polymer

(Physical, thermal, Flow & Mechanical Properties) Brief introduction to preparation, structure, properties and application of the following polymers: polyolefins, polystyrene and styrene copolymers, poly(vinyl chloride) and related polymers, poly(vinyl acetate) and related polymers, acrylic polymers, fluoro polymers, Polyamides and related polymers. Phenol formaldehyde resins (Bakelite, Novalac), polyurethanes, silicone polymers, polydienes, Polycarbonates, Conducting Polymers, [polyacetylene, polyaniline, poly(*p*-phenylene sulphide polypyrrole, polythiophene)].

Unit-10: Composite materials

Introduction, limitations of conventional engineering materials, role of matrix in composites, classification, matrix materials, reinforcements, metal-matrix composites, polymer-matrix composites, fibre-reinforced composites, environmental effects on composites, applications of composites.

Unit-11: Speciality polymers:

Conducting polymers - Introduction, conduction mechanism, polyacetylene, polyparaphenylene and polypyrole, applications of conducting polymers, Ion-exchange resins and their applications. Ceramic & Refractory: Introduction, classification, properties, raw materials, manufacturing and applications.

Semester-V

Discipline Specific Elective course-2 (Practical)

Credit-6, Full Marks-70

Course Code: DSE 2, Course Title: Practical Paper-VI

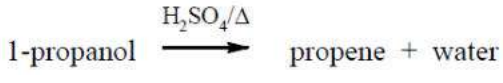
Block-I (Green chemistry)

Unit-1: Safer starting materials

Preparation and characterization of nanoparticles of gold using tea leaves.

Unit-2: Avoiding waste

Principle of atom economy.

1. Use of molecular model kit to stimulate the reaction to investigate how the atom economy can illustrate Green Chemistry.
2. Preparation of propene by two methods can be studied
   a. Triethylamine ion + OH- → propene + trimethylpropene + water
   b. 

Other types of reactions, like addition, elimination, substitution and rearrangement should also be studied for the calculation of atom economy.

Unit-3: Use of enzymes as catalysts

Benzoin condensation using Thiamine Hydrochloride as a catalyst instead of cyanide.

Unit-4: Alternative Green solvents

Extraction of D-limonene from orange peel using liquid CO_2 prepared form dry ice. Mechanochemical solvent free synthesis of azomethines

Unit-5: Alternative sources of energy

1. Solvent free, microwave assisted one pot synthesis of phthalocyanine complex of copper (II).
2. Photoreduction of benzophenone to benzopinacol in the presence of sunlight.

Block-II (Analytical & Industrial chemistry)

Unit-6: Separation Techniques - Chromatography

Separation and identification of the monosaccharides present in the given mixture (glucose & fructose) by paper chromatography. Reporting the RF values.

Unit-7: Solvent Extractions

i. To separate a mixture of Ni^{2+} & Fe^{2+} by complexation with DMG and extracting the Ni^{2+}-DMG complex in chloroform, and determine its concentration by spectrophotometry.

ii. Analysis of soil:
   a. Determination of pH of soil.
   b. Total soluble salt
   c. Estimation of calcium, magnesium, phosphate, nitrate

iii. Ion exchange:
   a. Determination of exchange capacity of cation exchange resins and anion exchange resins.

Unit-8: Experiment

i. Determination of chemical oxygen demand (COD)
ii. Determination of Biological oxygen demand (BOD)

Unit-10: List of Practicals

i. Determination of free acidity in ammonium sulphate fertilizer.
ii. Estimation of Calcium in Calcium ammonium nitrate fertilizer.
iii. Estimation of phosphoric acid in superphosphate fertilizer.
iv. Determination of composition of dolomite (by complexometric titration)
v. Analysis of (Cu, Ni); (Cu, Zn) in alloy or synthetic samples.
vi. Analysis of Cement.

Semester-VI

Discipline Specific Elective course-3 (Theory)

Credit-6, Full Marks-70

Course Code: DSE 3, Course Title: Analytical Chemistry and Green Chemistry

Block-I (Analytical Chemistry)

Unit-1: Qualitative and quantitative aspects of analysis

Sampling, evaluation of analytical data, errors, accuracy and precision, methods of their expression, normal law of distribution of errors, statistical test of data; F, Q and t test, rejection of data, and confidence intervals

Unit-2: Optical methods of analysis

i. Origin of spectra, interaction of radiation with matter, fundamental laws of spectroscopy and selection rules, validity of Beer-Lambert's law. ii. UV-Visible Spectrometry: Basic principles of instrumentation (choice of source, monochromator and detector) for single and double beam instrument;

ii. Basic principles of quantitative analysis: estimation of metal ions from aqueous solution, geometrical isomers, keto-enol tautomers. Determination of composition of metal complexes using Job's method of continuous variation and mole ratio method.

iii. Infrared Spectrometry: Basic principles of instrumentation (choice of source, monochromator & detector) for single and double beam instrument; sampling techniques. Structural illustration through interpretation of data, Effect and importance of isotope substitution.

iv. Flame Atomic Absorption and Emission Spectrometry: Basic principles of instrumentation (choice of source, monochromator, and detector, choice of flame and Burner designs. Techniques of atomization and sample introduction; Method of background correction, sources of chemical interferences and their method of removal. Techniques for the quantitative estimation of trace level of metal ions from water samples.

Unit-3: Thermal methods of analysis

Theory of thermogravimetry (TG), instrumentation. Composition determination of Ca and Mg from their mixture.

Unit-4: Electroanalytical methods

Classification of electroanalytical methods, basic principle of pH metric, potentiometric and conductometric titrations. Techniques used for the determination of equivalence points. Techniques used for the determination of pK_a values.

Unit-5: Separation techniques

i. Solvent extraction: Classification, principle and efficiency of the technique. Mechanism of extraction: extraction by solvation and chelation.

ii. Technique of extraction: batch, continuous and counter current extractions.

iii. Qualitative and quantitative aspects of solvent extraction: extraction of metal ions from aqueous solution, extraction of organic species from the aqueous and nonaqueous media.

iv. Chromatography: Classification, principle and efficiency of the technique. Mechanism of separation: adsorption, partition & ion exchange.

v. Development of chromatograms: frontal, elution and displacement methods.

vi. Qualitative and quantitative aspects of chromatographic methods of analysis: IC, GLC, GPC, TLC and HPLC.

Block-II (Green Chemistry)

Unit-6: Introduction to Green Chemistry:

What is Green Chemistry? Need for Green Chemistry. Goals of Green Chemistry. Limitations/ Obstacles in the pursuit of the goals of Green Chemistry

Unit-7: Principles of Green Chemistry and Designing a Chemical synthesis:

Twelve principles of Green Chemistry with their explanations and examples and special emphasis on the following:

Designing a Green Synthesis using these principles; Prevention of Waste/ byproducts; maximum incorporation of the materials used in the process into the final products, Atom Economy, calculation of atom economy of the rearrangement, addition, substitution and elimination reactions. Prevention/ minimization of hazardous/ toxic products reducing toxicity. risk = (function) hazard × exposure; waste or pollution prevention hierarchy.

Green solvents– supercritical fluids, water as a solvent for organic reactions, ionic liquids, fluorous biphasic solvent, PEG, solventless processes, immobilized solvents and how to compare greenness of solvents. Energy requirements for reactions – alternative sources of energy: use of microwaves and ultrasonic energy. Selection of starting materials; avoidance of unnecessary derivatization-careful use of blocking/protecting groups. Use of catalytic reagents (wherever possible) in preference to stoichiometric reagents; catalysis and green chemistry, comparison of heterogeneous and homogeneous catalysis, biocatalysis, symmetric
catalysis and photocatalysis.

Semester-VI

Discipline Specific Elective course-4 (Theory)

Credit-6, Full Marks-70

Course Code: DSE 4, Course Title: Inorganic Materials of Industrial Importance and Green Chemistry

Block-I (Industrial Chemistry)

Unit-1: Silicate Industries

i. Glass: Glassy state and its properties, classification (silicate and non-silicate glasses). Manufacture and processing of glass. Composition and properties of the following types of glasses: Soda lime glass, lead glass, armoured glass, safety glass, borosilicate glass, fluorosilicate, coloured glass, photosensitive glass.

ii. Ceramics: Important clays and feldspar, ceramic, their types and manufacture. High technology ceramics and their applications, superconducting and semiconducting oxides, fullerenes carbon nanotubes and carbon fiber.

iii. Cements: Classification of cement, ingredients and their role, Manufacture of cement and the setting process, quick setting cements.

Unit-2: Fertilizers

Different types of fertilizers. Manufacture of the following fertilizers: Urea, ammonium nitrate, calcium ammonium nitrate, ammonium phosphates; polyphosphate, superphosphate, compound and mixed fertilizers, potassium chloride, potassium sulphate.

Unit-3: Surface Coatings

Objectives of coatings surfaces, preliminary treatment of surface, classification of surface coatings. Paints and pigments-formulation, composition and related properties. Pigments, toners and laker pigments, Fillers, Thinners, Enamels, emulsifying agents. Special paints (Heat retardant, Fire retardant, Eco-friendly paint, Plastic paint), Water and Oil paints, additives, Metallic coatings (electrolytic and electroless),

Unit-4: Batteries

Primary and secondary batteries, battery components and their role, Characteristics of Battery. Working of following batteries: Pb acid, Li-Battery, Solid state electrolyte battery. Fuel cells, Solar cell and polymer cell.

Unit-5: Alloys

Classification of alloys, ferrous and non-ferrous alloys, Specific properties of elements in alloys. Manufacture of Steel (removal of silicon decarbonization, demanganization, desulphurization dephosphorisation). Composition and properties of different types of steels.

Unit-6: Catalysis

General principles and properties of catalysts, homogenous catalysis (catalytic steps and examples) and heterogenous catalysis (catalytic steps and examples) and their industrial applications, Deactivation or regeneration of catalysts. Phase transfer catalysts, application of zeolites as catalysts.

Unit-7: Chemical explosives

Origin of explosive properties in organic compounds, preparation and explosive properties of lead azide, PETN, cyclonite (RDX). Introduction to rocket propellants.

Block-II (Green Chemistry)

Unit-8: Examples of Green Synthesis/ Reactions and some real world cases:
Green Synthesis of the following compounds: adipic acid, catechol, disodium iminodiacetate (alternative to Strecker synthesis)

Unit-9: Microwave assisted reactions in water:
Hofmann Elimination, methyl benzoate to benzoic acid, oxidation of toluene and alcohols; microwave assisted reactions in organic solvents Diels-Alder reaction and Decarboxylation reaction

Unit-10: Ultrasound assisted reactions:
sonochemical Simmons-Smith Reaction (Ultrasonic alternative to Iodine) Surfactants for carbon dioxide – replacing smog producing and ozone depleting solvents with CO_2 for precision cleaning and dry cleaning of garments. Designing of Environmentally safe marine antifoulant.

Unit-11: Right fit pigment:
synthetic azopigments to replace toxic organic and inorganic pigments. An efficient, green synthesis of a compostable and widely applicable plastic (poly lactic acid) made from corn.

Unit-12: Healthier Fats and oil by Green Chemistry:
Enzymatic Inter esterification for production of no Trans-Fats and Oils

Unit-13: Development of Fully Recyclable Carpet:
Cradle to Cradle Carpeting

Unit-14: Future Trends in Green Chemistry:
Oxidation reagents and catalysts; Biomimetic, multifunctional reagents; Combinatorial green chemistry; Proliferation of solventless reactions; co crystal controlled solid state synthesis (C_2S_3); Green chemistry in sustainable development.

Syllabus for Generic Elective Courses [GE] & Skill Enhancement Courses [SEC] papers under Choice Based Credit System
Subject: Chemistry, Course: BDP

Options for Generic Elective (GE) Papers with Chemistry topics (Credit: 06 or 70 marks per paper)

1. **Generic Elective Courses-2** (Theory): Basic Inorganic Chemistry (Atomic Structure, Bonding, Chemistry of s- and p-block elements, Chemistry of d-block elements)
2. **Generic Elective Courses-3** (Theory) : Basic Organic Chemistry (General Organic Chemistry & Aliphatic Hydrocarbons, Organic Chemistry-I, Functional group, Organic Chemistry-II)
3. **Generic Elective Courses-4** (Theory) : Basic Physical Chemistry (Chemical Energetics, Equilibrium, States of matter and Chemical Kinetics, Solutions)

Options selected for Skill Enhancement Courses (SEC) for BDP Chemistry students (Credit: 02 or 60 marks per paper)

1. **Skill Enhancement Courses -1 (Theory)** **:** Intellectual Property Rights
2. **Skill Enhancement Courses -2 (Theory)** **:** Pharmaceutical Chemistry

Detailed Syllabus (GE Chemistry)

Semester-II

Generic Elective Courses-2 (Theory) Course Code: GE 2

Credit-6, Full Marks-70

Course Title: Basic Inorganic Chemistry (Atomic Structure, Bonding, Chemistry of s- and p-block elements, Chemistry of d-block elements)

Atomic Structure:

Review of: Bohr's theory and its limitations, dual behavior of matter and radiation, de-Broglie's relation, Heisenberg Uncertainty principle. Hydrogen atom spectra. Significance of quantum numbers, orbital angular momentum and quantum numbers m_l and m_s. Shapes of *s*, *p* and *d* atomic orbitals, nodal planes. Discovery of spin, spin quantum number (*s*) and magnetic spin quantum number(m_s).

Rules for filling electrons in various orbitals, Electronic configurations of the atoms. Stability of half-filled and completely filled orbitals, concept of exchange energy. Relative energies of atomic orbitals, Anomalous electronic configurations.

Chemical Bonding and Molecular Structure:

Ionic Bonding: General characteristics of ionic bonding. Energy considerations in ionic bonding, lattice energy and solvation energy and their importance in the context of stability and solubility of ionic compounds. Statement of Born-Landé equation for calculation of lattice energy, Born-Haber cycle and its applications, polarizing power and polarizability. Fajan's rules, ionic character in covalent compounds, bond moment, dipole moment and percentage ionic character.

Covalent bonding: VB Approach: Shapes of some inorganic molecules and ions on the basis of VSEPR and hybridization with suitable examples of linear, trigonal planar, square planar, tetrahedral, and octahedral arrangements. Concept of resonance and resonating structures in various inorganic and organic compounds.

MO Approach: Rules for the LCAO method, bonding and antibonding MOs and their characteristics for *s*-*s*, *s*-*p* and *p*-*p* combinations of atomic orbitals, nonbonding combination of orbitals, MO treatment of homonuclear diatomic molecules of and heteronuclear diatomic molecules such as CO, NO and NO^+. Comparison of VB and MO approaches.

***s*- and *p*-Block Elements:**

Periodicity in *s*- and *p*-block elements with respect to electronic configuration, atomic and ionic size, ionization enthalpy, electronegativity (Pauling, Mulliken, and Alfred-Rochow scales). Allotropy in C, S, and P.

Oxidation states with reference to elements in unusual and rare oxidation states like carbides and nitrides), inert pair effect, diagonal relationship and anomalous behaviour of first member of each group.

Compounds of *s*- and *p*-Block Elements:

Hydrides and their classification (ionic, covalent and interstitial), structure and properties with respect to stability of hydrides of p- block elements.

Structure, bonding and their important properties like oxidation/reduction, acidic/basic nature of the following compounds and their applications in industrial, organic and environmental chemistry.

Hydrides of nitrogen (NH_3, N_2H_4, N_3H, NH_2OH) Oxoacids of P, S and Cl.

Halides and oxohalides: PCl_3, PCl_5, $SOCl_2$ and SO_2Cl_2

Transition Elements (3d series)

General group trends with special reference to electronic configuration, variable valency, colour, magnetic and catalytic properties, ability to form complexes and stability of various oxidation states for Mn, Fe and Cu.

Coordination Chemistry

Valence Bond Theory (VBT): Inner and outer orbital complexes of Cr, Fe, Co, Ni and Cu (coordination numbers 4 and 6). Structural and stereoisomerism in complexes with coordination numbers 4 and 6. IUPAC system of nomenclature.

Semester-III

Generic Elective Courses-3 (Theory) Course Code: GE 3

Credit-6, Full Marks-70

Course Title: Basic Organic Chemistry (General Organic Chemistry & Aliphatic Hydrocarbons, Organic Chemistry-I, Functional group, Organic Chemistry-II)

Fundamentals of Organic Chemistry:

Physical Effects, Electronic Displacements: Inductive Effect, Electromeric Effect, Resonance and Hyperconjugation. Cleavage of Bonds: Homolysis and Heterolysis.

Structure, shape and reactivity of organic molecules: Nucleophiles and electrophiles. Reactive Intermediates: Carbocations, Carbanions and free radicals.

Strength of organic acids and bases: Comparative study with emphasis on factors affecting pK values. Aromaticity: Benzenoids and Hückel's rule.

Stereochemistry:

Conformations with respect to ethane, butane and cyclohexane. Interconversion of Wedge Formula, Newmann, Sawhorse and Fischer representations. Concept of chirality (upto two carbon atoms). Configuration: Geometrical and Optical isomerism; Enantiomerism, Diastereomerism and Meso compounds). Threo and erythro; D and L; *cis - trans* nomenclature; CIP Rules: R/ S (for upto 2 chiral carbon atoms) and E / Z Nomenclature (for upto two C=C systems).

Aliphatic Hydrocarbons:

Functional group approach for the following reactions (preparations & reactions) to be studied in context to their structure.

Alkanes: (Upto 5 Carbons). *Preparation:* Catalytic hydrogenation, Wurtz reaction, Kolbe's synthesis, from Grignard reagent. *Reactions:* Free radical Substitution: Halogenation.

Alkenes: (Upto 5 Carbons) *Preparation:* Elimination reactions: Dehydration of alkenes and dehydrohalogenation of alkyl halides (Saytzeff's rule); cis alkenes (Partial catalytic hydrogenation) and trans alkenes (Birch reduction). *Reactions:* cis-addition (alk. $KMnO_4$) and trans-addition (bromine), Addition of HX (Markownikoff's and anti-Markownikoff's addition), Hydration, Ozonolysis, oxymecuration-demercuration, Hydroboration-oxidation.

Alkynes: (Upto 5 Carbons) *Preparation:* Acetylene from CaC_2 and conversion into higher alkynes; by dehalogenation of tetra halides and dehydrohalogenation of vicinal-dihalides. *Reactions:* formation of metal acetylides, addition of bromine and alkaline $KMnO_4$, ozonolysis and oxidation with hot alk. $KMnO_4$.

Aromatic hydrocarbons:

Preparation (Case benzene): from phenol, by decarboxylation, from acetylene, from benzene sulphonic acid.

Reactions: (Case benzene): Electrophilic substitution: nitration, halogenation and sulphonation. Friedel-Craft's reaction (alkylation and acylation) (upto 4 carbons on benzene). Side chain oxidation of alkyl benzenes (upto 4 carbons on benzene).

Alkyl and Aryl Halides:

Alkyl Halides (Upto 5 Carbons) *Preparation:* from alkenes *and* alcohols.

Reactions: hydrolysis, nitrite & nitro formation, nitrile & isonitrile formation. Williamson's ether synthesis

Aryl Halides *Preparation:* (Chloro, bromo and iodo-benzene case): from phenol, Sandmeyer & Gattermann reactions. *Reactions (Chlorobenzene):* Aromatic nucleophilic substitution (replacement by –OH group) and effect of nitro substituent. Benzyne Mechanism: KNH_2/NH_3 (or $NaNH_2/NH_3$).

Reactivity and Relative strength of C-Halogen bond in alkyl, allyl, benzyl, vinyl and aryl halides.

Alcohols, Phenols and Ethers (Upto 5 Carbons)

Alcohols: *Preparation:* Preparation of 1^o, 2^o and 3^o alcohols: using Grignard reagent, Ester hydrolysis, Reduction of aldehydes, ketones, carboxylic acid and esters.

Reactions: With sodium, HX (Lucas test), esterification, oxidation (with PCC, alk. $KMnO_4$, acidic dichromate, conc. HNO_3). Oppeneauer oxidation *Diols:* oxidation of diols. Pinacol-Pinacolone rearrangement.

Phenols: (Phenol case) *Preparation:* Cumene hydroperoxide method, from diazonium salts. *Reactions:* Electrophilic substitution: Nitration, halogenation and sulphonation. Reimer-Tiemann Reaction, Gattermann-Koch Reaction, Houben–Hoesch Condensation, Schotten – Baumann Reaction.

Ethers (aliphatic and aromatic): *Preparation & Reactions:* Cleavage of ethers with HI.

Aldehydes and ketones (aliphatic and aromatic): (Formaldehye, acetaldehyde, acetone and benzaldehyde)

Preparation: from acid chlorides and from nitriles. *Reactions* – Reaction with HCN, ROH, $NaHSO_3$, NH_2-G derivatives. Iodoform test. Aldol Condensation, Cannizzaro's reaction, Wittig reaction, Benzoin condensation. Clemensen reduction and Wolff Kishner reduction. Meerwein-Pondorff Verley reduction.

Carboxylic acid derivatives (aliphatic and aromatic):

Preparation: Acidic and Alkaline hydrolysis of esters,Acid chlorides, Anhydrides, Esters. Amide derivative from acids and their interconversion. *Reactions:* Comparative study of nucleophilicity of acyl derivatives. Hell – Vohlard - ZelinskyReaction, Reformatsky Reaction, Perkin condensation.

Amines and Diazonium Salts

Amines (Aliphatic and Aromatic): (Upto 5 carbons)

Preparation: from alkyl halides, Gabriel's Phthalimide synthesis, Hofmann Bromamide reaction.

Reactions: Hofmann vs. Saytzeff elimination, Carbylamine test, Hinsberg test, with HNO_2, Schotten – Baumann Reaction. Electrophilic substitution (case aniline): nitration, bromination, sulphonation.

Diazonium salts: *Preparation:* from aromatic amines. *Reactions:* conversion to benzene, phenol, dyes.

Carbohydrates: Classification, and General Properties, Glucose and Fructose (open chain and cyclic structure), Determination of configuration of monosaccharides, absolute configuration of Glucose, Mutarotation, ascending and descending in monosaccharides. Structure of disacharrides (sucrose, maltose, lactose) and polysacharride (starch) excluding their structure elucidation.

Semester-IV

Generic Elective Courses-4 (Theory) Course Code: GE 4

Credit-6, Full Marks-70

Course Title: Basic Physical Chemistry (Chemical Energetic, Equilibrium, States of matter and Chemical Kinetics, Solutions)

Chemical Energetic:

Brief review of thermodynamics and the Laws of Thermodynamics.

Important principles and definitions of thermochemistry. Concept of standard state and standard enthalpies of formations, integral and differential enthalpies of solution and dilution. Calculation of bond energy, bond dissociation energy and resonance energy from thermochemical data. Variation of enthalpy of a reaction with temperature – Kirchhoff's equation.

Statement of Third Law of thermodynamics and calculation of absolute entropies of substances.

Chemical Equilibrium:

Free energy change in a chemical reaction. Thermodynamic derivation of the law of chemical equilibrium. Distinction between ΔG and ΔG^{O}, Le Chatelier's principle. Relationships between K_p, K_C and K_X for reactions involving ideal gases.

Ionic Equilibria:

Strong, moderate and weak electrolytes, degree of ionization, factors affecting degree of ionization, ionization constant and ionic product of water. Ionization of weak acids and bases, pH scale, common ion effect. Salt hydrolysis-calculation of hydrolysis constant, degree of hydrolysis and pH for different salts. Buffer solutions. Solubility and solubility product of sparingly soluble salts – applications of solubility product principle.

Kinetic Theory of Gases:

Postulates of Kinetic Theory of Gases and derivation of the kinetic gas equation.

Deviation of real gases from ideal behaviour, compressibility factor, causes of deviation. van der Waals equation of state for real gases. Boyle temperature (derivation not required). Critical phenomena, critical constants.

Maxwell Boltzmann distribution laws of molecular velocities and molecular energies (graphic representation – derivation not required) and their importance.

Temperature dependence of these distributions. Most probable, average and root mean square velocities (no derivation). Collision cross section, collision number, collision frequency, collision diameter and mean free path of molecules. Viscosity of gases and effect of temperature and pressure on coefficient of viscosity (qualitative treatment only).

Liquids:

Surface tension and its determination using stalagmometer. Viscosity of a liquid and determination of coefficient of viscosity using Ostwald viscometer. Effect of temperature on surface tension and coefficient of viscosity of a liquid (qualitative treatment only)

Solids:

Forms of solids. Symmetry elements, unit cells, crystal systems, Bravais lattice types and identification of lattice planes. Laws of Crystallography - Law of constancy of interfacial angles, Law of rational indices. Miller indices. X–Ray diffraction by crystals, Bragg's law. Structures of NaCl, KCl and CsCl (qualitative treatment only). Defects in crystals.

Solutions

Thermodynamics of ideal solutions: Ideal solutions and Raoult's law, deviations from Raoult's law – non-ideal solutions. Vapour pressure-composition and temperature- composition curves of ideal and non-ideal solutions. Partial miscibility of liquids: Critical solution temperature; Principle of steam distillation. Nernst distribution law and its applications, solvent extraction.

Chemical Kinetics

The concept of reaction rates. Effect of temperature, pressure, catalyst and other factors on reaction rates. Order and molecularity of a reaction. Derivation of integrated rate equations for zero, first and second order reactions (both for equal and unequal concentrations of reactants). Half–life of a reaction. General methods for determination of order of a reaction. Concept of activation energy and its calculation from Arrhenius equation.

Theories of Reaction Rates: Collision theory and Activated Complex theory of bimolecular reactions. Comparison of the two theories (qualitative treatment only).

Semester-III

Skill Enhancement Courses -1 (Theory) Course Code: SEC 1

Credit-2, Full Marks-60

Course Title: Intellectual Property Rights (IPR)

Theory:

In this era of liberalization and globalization, the perception about science and its practices has undergone dramatic change. The importance of protecting the scientific discoveries, with commercial potential or the intellectual property rights is being discussed at all levels – statutory, administrative, and judicial. With India ratifying the WTO agreement, it has become obligatory on its part to follow a minimum acceptable standard for protection and enforcement of intellectual property rights. The purpose of this course is to apprise the students about the multifaceted dimensions of this issue.

Introduction to Intellectual Property:

Historical Perspective, Different Types of IP, Importance of protecting IP.

Copyrights

Introduction, How to obtain, Differences from Patents.

Trade Marks

Introduction, How to obtain, Different types of marks – Collective marks, certification marks, service marks, Trade names, etc.
Differences from Designs.

Patents

Historical Perspective, Basic and associated right, WIPO, PCT system, Traditional Knowledge, Patents and Healthcare – balancing promoting innovation with public health, Software patents and their importance for India.

Geographical Indications

Definition, rules for registration, prevention of illegal exploitation, importance to India.

Industrial Designs

Definition, How to obtain, features, International design registration.

Layout design of integrated circuits

Circuit Boards, Integrated Chips, Importance for electronic industry.

Trade Secrets

Introduction and Historical Perspectives, Scope of Protection, Risks involved and legal aspects of Trade Secret Protection.

Different International agreements

(a) Word Trade Organization (WTO):

(i) General Agreement on Tariffs & Trade (GATT), Trade

Related Intellectual Property Rights (TRIPS) agreement

(ii) General Agreement on Trade related Services (GATS)

(iii) Madrid Protocol

(iv) Berne Convention

(v) Budapest Treaty

(b) Paris Convention

WIPO and **TRIPS, IPR** and Plant Breeders Rights, IPR and Biodiversity

IP Infringement issue and enforcement – Role of Judiciary, Role of law enforcement agencies – Police, Customs etc. Economic Value of Intellectual Property – Intangible assets and their valuation, Intellectual Property in the Indian Context – Various laws in India Licensing and technology transfer.

Reference Books:

- N.K. Acharya: *Textbook on intellectual property rights*, Asia Law House (2001).
- Manjula Guru &*M.B.* Rao, *Understanding Trips: Managing Knowledge in Developing Countries*, Sage Publications (2003).
- P. Ganguli, Intellectual Property Rights: *Unleashing the Knowledge Economy,* Tata McGraw-Hill (2001).

Semester-IV

Skill Enhancement Courses -2 (Theory) Course Code: SEC 2

Credit-2, Full Marks-60

Course Title: Pharmaceutical Chemistry

Theory:

Drugs & Pharmaceuticals:

Drug discovery, design and development; Basic Retrosynthetic approach. Preparation of Aspirin and magnesium bisilicate (Antacid). Synthesis of the representative drugs of the following classes: analgesics agents, antipyretic agents, anti- inflammatory agents (Aspirin, paracetamol, lbuprofen); antibiotics (Chloramphenicol); antibacterial and antifungal agents (Sulphonamides; Sulphanethoxazol, Sulphacetamide, Trimethoprim); antiviral agents (Acyclovir), Central Nervous System agents (Phenobarbital, Diazepam),Cardiovascular (Glyceryl trinitrate), antilaprosy (Dapsone), HIV-AIDS related drugs (AZT- Zidovudine).

Fermentation:

Aerobic and anaerobic fermentation. Production of (i) Ethyl alcohol and citric acid, (ii) Antibiotics; Penicillin, Cephalosporin, Chloromycetin and Streptomycin, (iii) Lysine, Glutamic acid, Vitamin B2, Vitamin B12 and Vitamin C.

Reference Books:

- G.L. Patrick: Introduction to *Medicinal Chemistry, Oxford University* Press, UK.
- Hakishan, V.K. Kapoor: *Medicinal and Pharmaceutical Chemistry,* Vallabh Prakashan, Pitampura, New Delhi.
- William O. Foye, Thomas L., Lemke, David A. William: *Principles of Medicinal Chemistry*, B.I. Waverly Pvt. Ltd. New Delhi.
- Arthur Raphael Miller, Micheal H.Davis; *Intellectual Property: Patents, Trademarks and Copyright in a Nutshell,* West Group Publishers (2000).
- Jayashree Watal, *Intellectual property rights in the WTO and developing countries,*
- Oxford University Press, Oxford.

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NETAJI SUBASH OPEN UNIVERSITY
SCHEME AND SYLLABUS UNDER CHOICE BASED CREDIT SYSTEM
B.Sc. with MATHEMATICS Honours

(To be implemented from 2020 session)

M-UGC Maths. Honors course, AM-UGC Appl Maths Honors course

Semester	Course code	Course title	UGC Course Code	Credit/ Marks
I	CC1	Algebra	M-C2	6/70
	CC2	Analytical Geometry	M-DSE1.3	6/70
	GE1	Statistical Techniques	AM-GE4.2	6/70
	AECC1	English		2/60
II	CC3	Calculus	M-C1	6/70
	CC4	Real Analysis	M-C3	6/70
	GE2	Dynamical Systems	AM-GE3.3	6/70
	AECC2	Environmental Studies		2/60
III	CC5	Numerical Methods	M-C8	6/70
	CC6 Practical	Computer Programming & Numerical Methods Lab	AM-C12	6/70
	CC7	Differential Equations	M-C4	6/70
	GE3	Applications of Algebra	M-GE4.1	6/70
	SEC1	Logic and Sets	M-SEC1.1	2/60
IV	CC8	Theory of Real Functions and Functions of Several Variables	M-C5	6/70
	CC9	Riemann Integration and Series of Functions	M-C9	6/70
	CC10	Group Theory	M-C6	6/70
	GE4	Modelling and Simulation	AM-GE4.3	6/70
	SEC2	Graph Theory	M-SEC2.1	2/60
V	CC11	Multivariate Calculus and PDE	M-C11+M-C7	6/70
	CC12	Ring Theory and Linear Algebra	AM-C10	6/70
	DSE1	Number Theory	M-DSE1.2	6/70
	DSE2	Probability and Statistics	M-DSE2.3	6/70
VI	CC13	Mechanics	AM-C11	6/70
	CC14	Metric Spaces and Complex Analysis	M-C13	6/70
	DSE3	Linear Programming	M-DSE3.3	6/70
	DSE4	Integral Transform	AM-C14	6/70

Semesters	CORE COURSE (14) (CC)	Ability Enhancement Compulsory Courses AEC (2)	Generic Elective Courses GE(4)	Skill Enhancement Courses SEC (2)	Discipline Specific Elective DSE (4)
I	**CC 1:** Algebra **CC 2:** Analytical Geometry	**English**	**GE 1:** Statistical Techniques		
II	**CC 3:** Calculus **CC 4:** Real Analysis	**Environmental Studies**	**GE 2:** Dynamical Systems		
III	**CC 5:** Numerical Methods **CC 6:** Computer Programming & Numerical Methods Lab (Practical) **CC 7:** Differential Equations		**GE 3:** Applications of Algebra	**SEC-I:** Logic and Sets	
IV	**CC 8:** Theory of Real Functions and Functions of Several Variables **CC 9:** Riemann Integration and Series of Functions **CC 10:** Group Theory		**GE 4:** Modelling and Simulation	**SEC-II :** Graph Theory	
V	**CC 11:** Multivariate Calculus & PDE **CC 12:** Ring Theory & Linear Algebra				**DSE 1:** Number Theory **DSE 2:** Probability & Statistics
VI	**CC 13:** Mechanics **CC 14:** Metric Spaces and Complex Analysis				**DSE 3:** Linear Programming **DSE 4 :** Integral Transform

Core Courses (1 to 14)

CC 1: Algebra

Credit:6 (Marks-70)

Polar representation of complex numbers, n^{th} roots of unity, De Moivre's theorem for rational indices and its applications. Exponential, logarithmic, trigonometric and hyperbolic functions of complex number.

General properties of equations, Descartes's rule of signs, relation between roots and coefficients, transformation of equations, cubic and biquadratic equations.

The inequality involving AM>GM>HM, Cauchy-Schwartz inequality.

Inverse of a matrix, Rank of a matrix,

Systems of linear equations, row reduction and echelon forms, vector equations, the matrix equation Ax=b, solution sets of linear systems, applications of linear systems, linear independence. characteristic equation of a matrix, Eigen value of a matrix, Eigen vectors, Cayley-Hamilton theorem.

Equivalence relations, Functions, Composition of functions, Invertible functions, One to one correspondence and cardinality of a set, Well-ordering property of positive integers, Division algorithm, Divisibility and Euclidean algorithm, Congruence relation between integers, Principles of Mathematical Induction, statement of Fundamental Theorem of Arithmetic.

Books Recommended

Titu Andreescu and Dorin Andrica, Complex Numbers from A to Z, Birkhauser, 2006.

Edgar G. Goodaire and Michael M. Parmenter, Discrete Mathematics with Graph Theory, 3rd Ed., Pearson Education (Singapore) P. Ltd., Indian Reprint, 2005.

David C. Lay, Linear Algebra and its Applications, 3rd Ed., Pearson Education Asia, Indian Reprint, 2007.

K.B. Dutta, Matrix and linear algebra, 2004

CC 2: Analytical Geometry

Credit:6 (Marks-70)

Techniques for sketching parabola, ellipse and hyperbola. Reflection properties of parabola, ellipse and hyperbola. rotation of axes, General Equation of second degree, classification of conics (including pair of straight lines) using the discriminant. Polar Equations of Conics, Tangent and Normal, Conjugate Diameters

Equation of planes, straight lines, Spheres, Cone, Cylinder, central conicoids, paraboloid, tangent and normals, planes section of conicoids, generating lines, classification of quadrics.

Vector Triple product, vector equation and application to geometry

Books Recommended

Loney, Co-ordinate Geometry, Reem Publication Pvt. Ltd.

R. J. T. Bell, An Elementary Treatise on Co-ordinate Geometry, Macmillan & Co. Ltd., 1963.

N. Dutta & R. N. Jana, Analytical Geometry and Vector Algebra, Shreedhar Prakashani, Kolkata

CC 3: Calculus — Credit:6 (Marks-70)

Hyperbolic functions, higher order derivatives, Leibniz rule and its applications to problems of Type $e^{ax+b}sinx$, $e^{ax+b}cosx$, $(ax+b)^n sinx$, $(ax+b)^n cosx$, curvature, concavity and inflection points, asymptotes, Envelopes, curve tracing in Cartesian coordinates, tracing in polar coordinates of standard curves, L'Hospital's rule, applications in business, economics and life sciences.

Reduction formulae, derivations and illustrations of reduction formulae of the type $\int \sin^n x\,dx$, $\int \cos^n x\,dx$, $\int \tan^n x\,dx$, $\int \sec^n x\,dx$, $\int (\log x)^n\,dx$, $\int sin^n x \sin^m x\,dx$, parametric equations, arc length, arc length of parametric curves, area and volume of surface of revolution.

Introduction to vector functions, operations with vector-valued functions, limits and continuity of vector functions, differentiation and integration of vector functions, tangent and normal components of acceleration.

Books Recommended

G.B. Thomas and R.L. Finney, Calculus, 9th Ed., Pearson Education, Delhi, 2005.

M.J. Strauss, G.L. Bradley and K. J. Smith, Calculus, 3rd Ed., Dorling Kindersley (India) P. Ltd. (Pearson Education), Delhi, 2007.

H. Anton, I. Bivens and S. Davis, Calculus, 7th Ed., John Wiley and Sons (Asia) P. Ltd., Singapore, 2002.

R. Courant and F. John, Introduction to Calculus and Analysis (Volumes I & II), Springer- Verlag, New York, Inc., 1989.

CC 4: Real Analysis — Credit:6 (Marks-70)

Algebraic and Order Properties of *R,* -neighborhood of a point in *R,* Idea of countable sets, uncountable sets and uncountability of *R.* Bounded above sets, Bounded below sets, Bounded Sets, Unbounded sets, Suprema and Infima, The Completeness Property of *R,* The Archimedean Property, Density of Rational (and Irrational) numbers in *R,* Intervals. Limit points of a set, isolated points, Illustrations of Bolzano-Weierstrass theorem for sets.

Sequences, Bounded sequence, Convergent sequence, Limit of a sequence. Limit Theorems, Monotone Sequences, Monotone Convergence Theorem. Subsequences, Divergence Criteria, Monotone Subsequence Theorem (statement only), Bolzano Weierstrass Theorem for Sequences. Cauchy sequence, Cauchy's Convergence Criterion.

Infinite series, convergence and divergence of infinite series, Cauchy Criterion, Tests for convergence: Comparison test, Limit Comparison test, Ratio Test, Cauchy's n^{th} root test, Integral test, Alternating series, Leibniz test, Absolute and Conditional convergence, Power series, radius of convergence,

Books Recommended

R.G. Bartle and D. R. Sherbert, Introduction to Real Analysis, 3rd Ed., John Wiley and Sons (Asia) Pvt. Ltd., Singapore, 2002.

Gerald G. Bilodeau , Paul R. Thie, G.E. Keough, An Introduction to Analysis, 2nd Ed., Jones & Bartlett, 2010.

Brian S. Thomson, Andrew. M. Bruckner and Judith B. Bruckner, Elementary Real Analysis, Prentice Hall, 2001.

S.K. Berberian, a First Course in Real Analysis, Springer Verlag, New York, 1994.

CC 5: Numerical Methods — Credit:6 (Marks-70)

(Use of Scientific Calculator is allowed)

Algorithms, Convergence, Errors: Relative, Absolute, Round off, Truncation.

Transcendental and Polynomial equations: Bisection method, Secant method. Regular-falsi method, Newton-raphson method, Rate of convergence of these methods.

System of linear algebraic equations: Gaussian elimination and Gauss-Jordan methods. Gauss-Jacobi, Gauss-Siedel and SOR iterative methods and their convergence analysis.

Interpolation: Lagrange's and Newton's methods (forward difference, backward difference and central difference interpolation), error bounds, finite difference operators.

Numerical differentiation.

Numerical Integration: Newton cotes formula, trapezoidal rule, Simpson's rule, Weddle's rule.

Computer Language: Concept of programming languages, Machine language, Assembly language, High-level language, Interpreter, Compiler, Source and Object programs.

Number Systems: Binary, decimal, octal and hexadecimal number systems and their conversions.

Books Recommended

Brian Bradie, A Friendly Introduction to Numerical Analysis, Pearson Education, India, 2007.

M.K. Jain, S.R.K. Iyengar and R.K. Jain, Numerical Methods for Scientific and Engineering, 2012.

Computation, 6th Ed., New age International Publisher, India, 2007.

C.F. Gerald and P.O. Wheatley, Applied Numerical Analysis, Pearson Education, India, 2008.

CC 6: Computer Programming & Numerical Methods Lab

Practical Paper **Credit:6 (Marks-70)**

Programming Language in C or any other language: Character set, Keywords, Basic data types, Numeric constants and variables operators, Expressions, Assignment statements, I/0 – statements.

Control Statements: Decision making and Looping statements , break continue and goto statements, Example of simple programs. Subscripted variables: Concept of array variables in programming language, Rules for one dimensional subscripted variable , Simple programs.

List of Practicals (using any software)

(i) Calculate the sum 1/1 + 1/2 + 1/3 + 1/4 + ----------+ 1/ N.
(ii) To find the absolute value of an integer.
(iii) Enter 100 integers into an array and sort them in an ascending order.
(iv) Bisection Method.
(v) Newton Raphson Method.
(vi) Secant Method.
(vii) Method of False Position.
(viii) LU decomposition Method.
(ix) Gauss-Jacobi Method.
(x) SOR Method or Gauss-Siedel Method.
(xi) Lagrange Interpolation or Newton Interpolation.
(xii) Simpson's rule, Weddle's rule(or Trapezoidal rule)

Books Recommended

Atkinson, K. E., An Introduction to Numerical Analysis, John Wiley and Sons, 1978.

Yashavant Kanetkar, Let Us C , BPB Publications, 2016.

CC 7: Differential equations

Credit:6 (Marks-70)

Differential equations and mathematical models. General, particular, explicit, implicit and singular solutions of a differential equation. Clairaut's equations, Exact differential equations and integrating factors, separable equations and equations reducible to this form, linear equation and Bernoulli equations, special integrating factors and transformations

Lipschitz condition and Picard's Theorem (Statement only). General solution of homogeneous equation of second order, principle of super position for homogeneous equation, Wronskian: its properties and applications, Linear homogeneous and non-homogeneous equations of higher order with constant coefficients, Euler's equation, method of undetermined coefficients, method of variation of parameters

Systems of linear differential equations, types of linear systems, differential operators, an operator method for linear systems with constant coefficients,

Basic Theory of linear systems in normal form, homogeneous linear systems with constant coefficients: Two Equations in two unknown functions.

Eigen-value problems, Equilibrium points, Interpretation of the phase plane
Power series solution of a differential equation about an ordinary point, solution bout a regular singular point.

Rectilinear Motion and Simple Harmonic Motion. Damped and Forced Oscillation,

Books Recommended

C.H. Edwards and D.E. Penny, Differential Equations and Boundary Value problems Computing and Modeling, Pearson Education India, 2005.

S.L. Ross, Differential Equations, 3rd Ed., John Wiley and Sons, India, 2004.

Martha L Abell, James P Braselton, Differential Equations with MATHEMATICA, 3rd Ed., Elsevier Academic Press, 2004.

Murray, D., Introductory Course in Differential Equations, Longmans Green and Co, 1897.

CC 8: Theory of Real Functions and Function of Several Variables

Credit:6 (Marks-70)

Limits of functions (approach), sequential criterion for limits, divergence criteria. Limit theorems, one sided limits. Infinite limits and limits at infinity. Continuous functions, sequential criterion for continuity and discontinuity. Algebra of continuous functions. Continuous functions

on an interval, intermediate value theorem, location of roots theorem, preservation of intervals theorem. Uniform continuity, non-uniform continuity criteria, uniform continuity theorem.

Differentiability of a function at a point and in an interval, Caratheodory's theorem, algebra of differentiable functions. Relative extrema, interior extremum theorem. Rolle's theorem, Mean value theorem, intermediate value property of derivatives, Darboux's theorem. Applications of mean value theorem to inequalities and approximation of polynomials, Taylor's theorem to inequalities.

Cauchy's mean value theorem. Taylor's theorem with Lagrange's form of remainder, Taylor's theorem with Cauchy's form of remainder, application of Taylor's theorem to convex functions, relative extrema. Taylor's series and Maclaurin's series expansions of exponential and trigonometric functions, $\ln(1 + x)$, $1/(ax+b)$ and $(1 +x)^n$.

Functions of several variables, limit and continuity of functions of two variables Partial differentiation, total differentiability and differentiability, sufficient condition for differentiability. Chain rule for one and two independent parameters

Books Recommended

R. Bartle and D.R. Sherbert, Introduction to Real Analysis, John Wiley and Sons, 2003.

K.A. Ross, Elementary Analysis: The Theory of Calculus, Springer, 2004.

A, Mattuck, Introduction to Analysis, Prentice Hall, 1999.

S.R. Ghorpade and B.V. Limaye, a Course in Calculus and Real Analysis, Springer, 2006.

Tom M. Apostol, Mathematical Analysis, Narosa Publishing House, 2002.

CC 9: Riemann Integration and Series of Functions

Credit:6 (Marks-70)

Riemann integration; inequalities of upper and lower sums; Riemann conditions of integrability.

Riemann sum and definition of Riemann integral through Riemann sums; equivalence of two definitions; Riemann integrability of monotone and continuous functions, Properties of the Riemann integral; definition and integrability of piecewise continuous and monotone functions. Intermediate Value theorem for Integrals; Fundamental theorems of Calculus.

Improper integrals; Convergence of Beta and Gamma functions.

Pointwise and uniform convergence of sequence of functions. Theorems on continuity, derivability and integrability of the limit function of a sequence of functions. Series of functions; Theorems on the continuity and derivability of the sum function of a series of functions; Cauchy criterion for uniform convergence and Weierstrass M-Test.

Limit superior and Limit inferior. Cauchy Hadamard Theorem, Differentiation and integration of power series; Abel's Theorem; Weierstrass Approximation Theorem.

Books Recommended

K.A. Ross, Elementary Analysis, The Theory of Calculus, Undergraduate Texts in Mathematics, Springer (SIE), Indian reprint, 2004.

R.G. Bartle and D.R. Sherbert, Introduction to Real Analysis, 3rd Ed., John Wiley and Sons (Asia) Pvt. Ltd., Singapore, 2002.

Charles G. Denlinger, Elements of Real Analysis, Jones & Bartlett (Student Edition), 2011.

S. Goldberg, Calculus and Mathematical analysis.

CC 10: Group Theory — Credit:6 (Marks-70)

Symmetries of a square, Dihedral groups, definition and examples of groups including permutation groups and quaternion groups (illustration through matrices), elementary properties of groups.

Subgroups and examples of subgroups, centralizer, normalizer, center of a group, product of two subgroups.

Properties of cyclic groups, classification of subgroups of cyclic groups. Cycle notation for permutations, properties of permutations, even and odd permutations, alternating group, properties of cosets, Lagrange's theorem and consequences including Fermat's Little theorem.

External direct product of a finite number of groups, normal subgroups, factor groups, Cauchy's theorem for finite abelian groups.

Group homomorphisms, properties of homomorphisms, Cayley's theorem, properties of isomorphisms, First, Second and Third isomorphism theorems.

Books Recommended

John B. Fraleigh, A First Course in Abstract Algebra, 7th Ed., Pearson, 2002.

M. Artin, Abstract Algebra, 2nd Ed., Pearson, 2011.

Joseph A. Gallian, Contemporary Abstract Algebra, 4th Ed., 1999.

Joseph J. Rotman, An Introduction to the Theory of Groups, 4th Ed., 1995.

I.N. Herstein, Topics in Algebra, Wiley Eastern Limited, India, 1975.

CC 11: Multivariate Calculus and PDE Credit:6 (Marks-70)

Directional derivatives, the gradient, maximal and normal property of the gradient, tangent planes, Extrema of functions of two variables, method of Lagrange multipliers, constrained optimization problems, Definition of vector field, divergence and curl

Double integration over rectangular region, double integration over non-rectangular region, Double integrals in polar co-ordinates, Triple integrals, Triple integral over a parallelepiped and solid regions. Volume by triple integrals, cylindrical and spherical co-ordinates.

Change of variables in double integrals and triple integrals. Line integrals, Applications of line integrals: Mass and Work. Fundamental theorem for line integrals, conservative vector fields, independence of path.

Green's theorem, surface integrals, integrals over parametrically defined surfaces. Stoke's theorem, The Divergence theorem.

Partial differential equations of the first order, Lagrange's solution, nonlinear first order partial differential equations, Charpit's general method of solution, some special types of equations which can be solved easily by methods other than the general method.

Classification of second order linear equations as parabolic, hyperbolic or elliptic and their reduction to canonical forms.

Method of separation of variables.

Books Recommended

G.B. Thomas and R.L. Finney, Calculus, 9th Ed., Pearson Education, Delhi, 2005.

M.J. Strauss, G.L. Bradley and K. J. Smith, Calculus, 3rd Ed., Dorling Kindersley (India) Pvt. Ltd. (Pearson Education), Delhi, 2007.

E. Marsden, A.J. Tromba and A. Weinstein, Basic Multivariable Calculus, Springer (SIE), Indian reprint, 2005.

CC 12: Ring Theory and Linear Algebra Credit:6 (Marks-70)

Definition and examples of rings, properties of rings, subrings, integral domains and fields, characteristic of a ring. Ideal, ideal generated by a subset of a ring, factor rings, operations on ideals, prime and maximal ideals.

Ring homomorphisms, properties of ring homomorphisms, Isomorphism theorems I, II and III, field of quotients. Introduction to polynomial ring.

Vector spaces, subspaces, algebra of subspaces, dimension of sub-spaces, quotient spaces, linear combination of vectors, linear span, linear independence, basis and dimension, dimension of subspaces.

Linear transformations, null space, range, rank and nullity of a linear transformation, matrix representation of a linear transformation, algebra of linear transformations. Isomorphisms, Isomorphism theorems, invertibility and isomorphisms, change of coordinate matrix.

Dual spaces, dual basis, double dual, transpose of a linear transformation and its matrix in the dual basis, annihilators. Eigen spaces of a linear operator. Diagonalizability, invariant subspaces.

Books Recommended

John B. Fraleigh, A First Course in Abstract Algebra, 7th Ed., Pearson, 2002.

M. Artin, Abstract Algebra, 2nd Ed., Pearson, 2011.

Joseph A. Gallian, Contemporary Abstract Algebra, 4th Ed., 1999.

Joseph J. Rotman, An Introduction to the Theory of Groups, 4th Ed., 1995.

I.N. Herstein, Topics in Algebra, Wiley Eastern Limited, India, 1975.

CC 13: Mechanics — Credit:6 (Marks-70)

Co-planar forces, Astatic equilibrium, friction, Equilibrium of a particle on a rough curve, virtual work, forces in three dimensions, general conditions of equilibrium, centre of gravity for different bodies, stable and unstable equilibrium.

Radial and cross-radial,Tangential and Normal components of acceleration, Equation of motion referred to a set of rotating axes.

Central forces, modeling of ballistics and planetary motion, Inverse Square Law, Kepler's laws on Planetary Motion.

Motion of a projectile in a resisting medium(including vertical directionx, stability of nearly circular orbits, slightly disturbed orbits, varying mass. Motion of artificial satellites, constrained motion of a particle on smooth curve.

Degree of freedom, Moments and products of inertia. Momental ellipsoid, principal axes, D'Alembert's principle. Motion about a fixed axes. Compound pendulum. Motion of a rigid body in two dimensions under finite and impulsive forces, Conservation of momentum and energy.

Books Recommended

I.H. Shames and G. Krishna Mohan Rao, Engineering Mechanics: Statics and Dynamics, 2006. Dorling Kindersley (India) Pvt. Ltd. (Pearson Education), Delhi, 2009.

R.C. Hibbeler and Ashok Gupta, Engineering Mechanics: Statics and Dynamics, 11th Ed., Dorling Kindersley (India) Pvt. Ltd. (Pearson Education), Delhi, 2010.

Chorlton, F., Textbook of Dynamics CBS Publishers & Distributors, 2005.

Loney, S. L., An Elementary Treatise on the Dynamics of particle and of Rigid Bodies, 2017.

Loney, S. L., Elements of Statics and Dynamics I and II, 2004.

CC 14: Metric Spaces and Complex Analysis Credit:6 (Marks-70)

Definition and examples of metric spaces. Open ball. Open set. Closed set as complement of open set. Interior point and interior of a set. Limit point and closure of a set. Boundary point and boundary of a set. Properties of interior, closure and boundary. Bounded set and diameter of a set. Distance between two sets. Subspace of a metric space

Convergent sequence. Cauchy sequence. Every convergent sequence is Cauchy and bounded, but the converse is not true. Completeness. Cantor's intersection theorem. R is a complete metric space. Q is not complete.

Continuous mappings, sequential criterion of continuity. Uniform continuity.

Compactness, Sequential compactness, Heine-Borel theorem in R. Finite intersection property, continuous functions on compact sets.

Concept of connectedness and some examples of connected metric space, connected subsets of R, C.

Stereographic projection. Regions in the complex plane. Limits, limits involving the point at infinity. Continuity of functions of complex variable.

Derivatives, differentiation formulas, Cauchy-Riemann equations, sufficient conditions for differentiability. Analytic functions, exponential function, logarithmic function, trigonometric functions, hyperbolic functions. M¨obius transformation.

Power series : Cauchy-Hadamard theorem. Determination of radius of convergence. Uniform and absolute convergence of power series. Analytic functions represented by power series. Uniqueness of power series.

Books Recommended

S. Kumaresan, Topology of Metric Spaces, 2nd Ed., Narosa Publishing House, 2011.

G.F. Simmons, Introduction to Topology and Modern Analysis, McGraw-Hill, 2004.

James Ward Brown and Ruel V.Churchill, Complex variables and Applications, McGraw Hill, 2013.

E.T.Copson, Introduction to the theory of functions of a complex variable, Clarendon press Oxford,1935

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Discipline Specific Electives(1 to 4)

DSE 1: Number Theory — Credit:6 (Marks-70)

Linear Diophantine equation, prime counting function, statement of prime number theorem, Goldbach conjecture, linear congruences, complete set of residues, Chinese Remainder theorem, Fermat's Little theorem, Wilson's theorem.
Number theoretic functions, sum and number of divisors, totally multiplicative functions, definition and properties of the Dirichlet product, the Mobius Inversion formula, the greatest integer function, Euler's phi-function, Euler's theorem, reduced set of residues, some properties of Euler's phi-function.
Order of an integer modulo n, primitive roots for primes, composite numbers having primitive roots, Euler's criterion, the Legendre symbol and its properties, quadratic reciprocity, quadratic congruences with composite moduli. Public key encryption, RSA encryption and decryption, the equation $x^2 + y^2 = z^2$, Fermat's Last theorem.

Books Recommended

David M. Burton, Elementary Number Theory, 6th Ed., Tata McGraw-Hill, Indian reprint, 2007.

Neville Robinns, Beginning Number Theory, 2nd Ed., Narosa Publishing House Pvt. Ltd., Delhi, 2007

DSE 2: Probability and Statistics — Credit:6 (Marks-70)

Sample space, probability axioms, real random variables (discrete and continuous), cumulative distribution function, probability mass/density functions, mathematical expectation, moments, moment generating function, characteristic function, discrete distributions: uniform, binomial, Poisson, geometric, negative binomial, continuous distributions: uniform, normal, exponential.

Joint cumulative distribution function and its properties, joint probability density functions, marginal and conditional distributions, expectation of function of two random variables, conditional expectations, independent random variables, bivariate normal distribution, correlation coefficient, joint moment generating function (jmgf) and calculation of covariance (from jmgf), linear regression for two variables.

Chebyshev's inequality, statement and interpretation of (weak) law of large numbers and strong law of large numbers, Central Limit theorem for independent and identically distributed random variables with finite variance, Markov Chains, Chapman-Kolmogorov equations, classification of states

Random samples, Sampling distributions, Estimation of parameters, Testing of hypothesis.

Books Recommended

Robert V. Hogg, Joseph W. McKean and Allen T. Craig, Introduction to Mathematical Statistics, Pearson Education, Asia, 2007.

Irwin Miller and Marylees Miller and John E. Freund, Mathematical Statistics with Applications, 7th Ed., Pearson Education, Asia, 2006.

Sheldon Ross, Introduction to Probability Models, 9th Ed., Academic Press, Indian Reprint, 2007

DSE 3: Linear Programming — Credit:6 (Marks-70)

Introduction to linear programming problem, graphical solution, convex sets, Theory of simplex method, optimality and unboundedness, the simplex algorithm, simplex method in tableau format, introduction to artificial variables, two-phase method, Big-M method and their comparison.

Duality, formulation of the dual problem, primal-dual relationships, economic interpretation of the dual.

Transportation problem and its mathematical formulation, northwest-corner method least cost method and Vogel approximation method for determination of starting basic solution, algorithm for solving transportation problem, assignment problem and its mathematical formulation, Hungarian method for solving assignment problem, Travelling Salesman Problem.

Game theory: formulation of two person zero sum games, solving two person zero sum games, games with mixed strategies, graphical solution procedure, linear programming solution of games.

Books Recommended

Mokhtar S. Bazaraa, John J. Jarvis and Hanif D. Sherali, Linear Programming and Network Flows, 2nd Ed., John Wiley and Sons, India, 2004.

F.S. Hillier and G.J. Lieberman, Introduction to Operations Research, 9th Ed., Tata McGraw Hill, Singapore, 2009.

Hamdy A. Taha, Operations Research, An Introduction, 8th Ed., Prentice-Hall India, 2006.

G. Hadley, Linear Programming, Narosa Publishing House, New Delhi, 2002.

DSE 4: Integral Transform — Credit:6 (Marks-70)

Laplace Transform: Laplace of some standard functions, Existence conditions for the Laplace Transform, Shifting theorems, Laplace transform of derivatives and integrals, Inverse Laplace transform and their properties, Convolution theorem, Initial and final value theorem, Laplace

transform of periodic functions, error functions, Heaviside unit step function and Dirac delta function, Applications of Laplace transform to solve ODEs and PDEs.
Finite Laplace Transform: Definition and properties, Shifting and scaling theorem.

Fourier series: Trigonometric Fourier series and its convergence. Fourier series of even and odd functions, Gibbs phenomenon, Fourier half-range series, Parseval`s identity, Complex form of Fourier series.

Fourier Transforms: Fourier integrals, Fourier sine and cosine integrals, Complex form of Fourier integral representation, Fourier transform, Fourier transform of derivatives and integrals, Fourier sine and cosine transforms and their properties, Convolution theorem, Application of Fourier transforms to Boundary Value Problems.

Books Recommended

I.N. Sneddon– The use of Integral Transforms, McGraw-Hill. Singapore 1972.

R.R. Goldberg, Fourier transforms, Cambridge University Press, Cam bridge, 1961.

D. Brain- Integral Transformation and their applications. Springer-Verlag, New York, 2002.

R. Brace wall- The Fourier transform and its applications, McGraw-Hill, New York, 1999.

General Electives Courses (GE)(1 to 4)

GE 1: Statistical Techniques — Credit/Marks: 6/70

Chapter 1. Probability

Unit 1: Basic concepts, Classical definition of probability with its limitations, Axiomatic definition of probability, idea of random variables (with examples).
Unit 2: Empirical and theoretical distribution with their properties, probability mass function and probability density function, mathematical expectation, conditional expectation. Variance and Co-variance.
Unit 3: Moments and moment generating function mgf), properties of mgf, mgf of some distributions.
Unit 4: Markov chain, Chebyshev's inequality and its uses, Characteristic function and its properties.

Chapter 2. Theoretical Distribution

Unit 1. Various discrete distributions e.g., Uniform distribution of the discrete type, Binomial, Negative Binomial, Poisson and Geometric distributions.
Unit 2. Various continuous distributions, e.g., Uniform distribution of the continuous type, Exponential, Erlangian, Gamma, Beta, Normal and Log-normal distributions.
Unit 3. Sampling distributions, e.g., Chi-square, t distribution, and F distribution and also their uses.
Unit 4. The idea of bivariate distribution, Bivariate normal distribution and its marginal and conditional distributions, Weak Law of Large Numbers (WLLN), Central Limit Theorem (CLT).

Chapter 3. Survey Methodology

Unit 1. Sample Survey and Complete Enumeration, their advantages and disadvantages, sampling and non-sampling errors.
Unit 2: Different types of sampling, simple random sampling with replacement (SRSWR), simple random sampling without replacement (SRSWOR), idea of sampling errors in SRSWR and SRSWOR.

Unit 3. The method of drawing random samples, random numbers – their uses and properties, different tests for random numbers.
Unit 4. Random number generation using inverse transformation technique with reference to some standard distributions, e.g., Cauchy, exponential, gamma, etc.

Chapter 4. Estimation Theory

Unit 1. Statistic and Parameter, properties of good estimator- unbiasedness, consistency, sufficiency and efficiency, with examples. The concept of completeness of a distribution. Basu's Theorem and its application.
Unit 2. Minimum variance unbiased estimator, Cramer-Rao Inequality and its uses.
Unit 3: The method of generating minimum variance unbiased estimator (MVUE), Rao-Blackwellisation. Examples with some standard distributions.
Unit 4. Method of Maximum Likelihood, Method of Moments.

Chapter 5. Testing Statistical Hypothesis

Unit 1. Population and sample, Type 1 and Type 2 error, power of a test, level of significance of a test, uniformly most powerful (UMP) test.
Unit 2. Confidence co-efficient and confidence interval, point estimation and interval estimation, Confidence intervals for mean, variance and proportions.
Unit 3. Large sample theory of testing for mean, proportions. Chi-square test for goodness of fit.
Unit 4. Tests based on Chi-square, t and F – distributions.

Chapter 6. Correlation and Regression

Unit 1. Association between two random variables, the idea of correlation co-efficient and its properties.
Unit 2. Mathematical relationship between random variables, regression equation, curve fitting by the method of least squares.
Unit 3. Regression equations considering the cases of two variables as well as three variables separately.
Unit 4. Partial and Multiple Correlation (for three variables only)

Books Recommended 1. V.K Rohtagi and A.K. Saleh, An Introduction to Probability and Statistics, 2nd Ed., John Wiley & Sons, 2005.

2. A.M. Goon, M.K. Gupta and T.S. Dasgupta, Fundamentals of Statistics (Vol. I), 7th Ed., The World Press Pvt. Ltd., 2000.

3. R.V. Hogg and A.T. Craig, Introduction to Mathematical Statistics, Macmillan Publishing Co. Inc., 1978.

4. Neil A. Weiss, Introductory Statistics, 7th Ed., Pearson Education, 2007.

5. A.M. Goon, M.K. Gupta and T.S. Dasgupta, An Outline of Statistical Theory (Vol. II), 2nd Ed., The World Press Pvt. Ltd., 2000.

GE 2: Dynamical Systems — Credit/Marks: 6/70

Definition: Dynamical System, Continuous dynamical System, Discrete dynamic system, Autonomous and non-autonomous dynamic system.

Linear Continuous Dynamical Systems: First order equations, existence, uniqueness theorem, Single species growth equation, logistic growth, Single species model with harvesting, Planar linear systems, equilibrium points, stability, Classification of equilibrium points, phase space, n-dimensional linear systems, stable, unstable and center subspaces.

Nonlinear autonomous Systems: Motion of pendulum, local and global stability, Liapunov method, periodic solution, Bendixson's criterion, Poincare Bendixson theorem, Gradient and Hamiltonian systems, limit cycle, attractors, index theory, Hyperbolic and non-hyperbolic equilibrium points, center manifolds.

Local Bifurcation of equilibrium points: Fixed points, saddle node, pitchfork, trans-critical bifurcation, Hopf bifurcation, co-dimension.

Discrete systems: Logistic maps, equilibrium points and their local stability, cycles, period doubling, chaos, necessary conditions for chaos, Liapunov exponents, routes to chaos, tent map, Logistic map, horse shoe map. Deterministic chaos: Duffing's oscillator, Lorenz System.

Books Recommended 1. M.W. Hirsch, S. Smale, R.L. Devaney, Differential Equations, Dynamical Systems and an Introduction to Chaos, Academic Press, 2008.

2. S.H. Strogatz, Nonlinear Dynamics and Chaos, Westview Press, 2008.

3. M. Lakshmanan, S. Rajseeker, Nonlinear Dynamics, Springer, 2003.

4. L. Perko, Differential Equations and Dynamical Systems, Springer,1996.

5. J.H. Hubbard, B.H. West, Differential equations: A Dynamical Systems Approach, Springer Verlag, 1995.

6. D. Kaplan, L. Gloss, Understanding Nonlinear Dynamics, Springer, 1995.

7. S. Wiggins, Introduction to Applied Nonlinear Dynamical Systems and Chaos, Springer Verlag, 1990.

GE 3: Applications of Algebra — Credit/Marks: 6/70

Chapter 1: Balanced incomplete block designs (BIBD): definitions and results, incidence matrix of a BIBD, construction of BIBD from difference sets.

Chapter 2: Coding Theory: introduction to error correcting codes, linear cods, generator and parity check matrices, minimum distance, Hamming Codes, decoding and cyclic codes.

Chapter 3: Symmetry groups and color patterns: review of permutation groups, groups of symmetry and action of a group on a set; colouring and colouring patterns, Polya theorem and pattern inventory, generating functions for non-isomorphic graphs.

Chapter 4: Special types of matrices: idempotent, nilpotent, involution, and projection tri diagonal matrices, circulant matrices, Vandermonde matrices, Hadamard matrices, permutation and doubly stochastic matrices, Frobenius- König theorem, Birkhoff theorem. Positive Semi-definite matrices: positive semi-definite matrices, square root of a positive semi-definite matrix, a pair of positive semi-definite matrices, and their simultaneous diagonalization. Symmetric matrices and quadratic forms: diagonalization of symmetric matrices, quadratic forms, constrained optimization, singular value decomposition, and applications to image processing and statistics.

Chapter 5: Applications of linear transformations: Fibonacci numbers, incidence models, and differential equations. Least squares methods: Approximate solutions of system of linear equations, approximate inverse of an m×n matrix, solving a matrix equation using its normal equation, finding functions that approximate data. Linear algorithms: LDU factorization, the row reduction algorithm and its inverse, backward and forward substitution, approximate inverse and projection algorithms.

Books Recommended 1. I. N. Herstein and D. J. Winter, Primer on Linear Algebra, Macmillan Publishing Company, New York, 1990.

2. S. R. Nagpaul and S. K. Jain, Topics in Applied Abstract Algebra, Thomson Brooks and Cole, Belmont, 2005.

3. Richard E. Klima, Neil Sigmon, Ernest Stitzinger, Applications of Abstract Algebra with Maple, CRC Press LLC, Boca Raton, 2000.

4. David C. Lay, Linear Algebra and its Applications. 3rd Ed., Pearson Education Asia, Indian Reprint, 2007.

5. Fuzhen Zhang, Matrix theory, Springer-Verlag New York, Inc., New York, 1999.

GE 4: Modeling and Simulation Credit/Marks: 6/70

What is Mathematical Modeling? History of Mathematical Modeling, latest development in Mathematical Modeling, Merits and Demerits of Mathematical Modeling.

Introduction to difference equations, Non-linear Difference equations, Steady state solution and linear stability analysis. Introduction to Discrete Models, Linear Models, Growth models, Decay models, Newton's Law of Cooling, Bank Account Problem and mortgage problem, Drug Delivery Problem, Harrod Model of Economic growth, War Model, Lake pollution model, Alcohol in the bloodstream model, Arm Race models, Linear Prey-Predator models, Density dependent growth models with harvesting, Numerical solution of the models and its graphical representation using EXCEL.

Introduction to Continuous Models, Carbon Dating, Drug Distribution in the Body, Growth and decay of current in a L-R Circuit, Horizontal Oscillations, Vertical Oscillations, Damped Force Oscillation, Dynamics of Rowing, Combat Models, Mathematical Model of Influenza Infection (within host), Epidemic Models (SI, SIR, SIRS, SIC), Spreading of rumour model, Steady State solutions, Linearization and Local Stability Analysis, logistic and gomperzian growth, prey predator model, Competition models, Numerical solution of the models and its graphical representation using EXCEL.

Fluid flow through a porous medium, heat flow through a small thin rod (one dimensional), Wave equation, Vibrating string, Traffic flow, Theory of Car-following, Crime Model, Linear stability Analysis: one and two species models with diffusion, Conditions for diffusive instability with examples.

Books Recommended

1. B. Albright, Mathematical Modeling with Excel, Jones and Bartlett Publishers, 2010.

2. F.R. Marotto, Introduction to Mathematical Modeling using Discrete Dynamical Systems, Thomson Brooks/Cole, 2006.

3. J.N. Kapur, Mathematical Modeling, New Age International, 2005.

4. B. Barnes and G. R. Fulford, Mathematical Modelling with Case Studies, CRC Press, Taylor and Francis Group, 2009.

5. L. Edsberg, Introduction to Computation and Modeling for Differential Equations, John Wiley and Sons.

Skill Enhancement Courses (1 to 2)

SEC 1: Logic and Sets

Credit/Marks: 2/60

Chapter 1: Introduction, propositions, truth table, negation, conjunction and disjunction. Implications, biconditional propositions, converse, contra positive and inverse propositions and precedence of logical operators.

Chapter 2: Propositional equivalence: Logical equivalences. Predicates and quantifiers: Introduction, Quantifiers, Binding variables and Negations.

Chapter 3: Sets, subsets, Set operations and the laws of set theory and Venn diagrams. Examples of finite and infinite sets. Finite sets and counting principle. Empty set, properties of empty set. Standard set operations. Classes of sets. Power set of a set.

Chapter 4: Difference and Symmetric difference of two sets. Set identities, Generalized union and intersections.

Chapter 5: Relation: Product set, Composition of relations, Types of relations, Partitions, Equivalence Relations with example of congruence modulo relation, Partial ordering relations, n-ary relations.

Books Recommended

1. R.P. Grimaldi, Discrete Mathematics and Combinatorial Mathematics, Pearson Education, 1998.

2. P.R. Halmos, Naive Set Theory, Springer, 1974.

3. E. Kamke, Theory of Sets, Dover Publishers, 1950.

SEC 2: Graph Theory

Credit/Marks: 2/60

Definition, examples and basic properties of graphs, pseudo graphs, complete graphs, bi-partite graphs, isomorphism of graphs, paths and circuits, Eulerian circuits, Hamiltonian cycles, the adjacency matrix, weighted graph, travelling salesman's problem, shortest path, Dijkstra's algorithm, Floyd-Warshall algorithm.

Books Recommended 1. B.A. Davey and H.A. Priestley, Introduction to Lattices and Order, Cambridge University Press, Cambridge, 1990.

2. Edgar G. Goodaire and Michael M. Parmenter, Discrete Mathematics with Graph Theory, 2nd Edition, Pearson Education (Singapore) P. Ltd., Indian Reprint 2003.

3. Rudolf Lidl and Gunter Pilz, Applied Abstract Algebra, 2nd Ed., Undergraduate Texts in Mathematics, Springer (SIE), Indian reprint, 2004.

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NETAJI SUBHAS OPEN UNIVERSITY

Bachelor Degree Programme (BDP)
Geography Honours Course Syllabus
(Under CBCS System: To be Implemented from 2020 Session)

COURSE STRUCTURE:

Course Credit Structure:

Semester	Course	Code (Core Paper)	Credit	Marks
I	Cartographic Techniques Lab & Thematic Mapping and Surveying Lab	CC 1 (Practical)	6	70
	Geotectonics and Geomorphology Lab & Climatology Lab	CC 2 (Practical)	6	70
	AECC 1 (FEG/FBG)		2	70
	General Elective - 1		6	70
		Total Credit	***20***	
II	Geotectonics and Geomorphology	CC 3	6	70
	Human Geography	CC 4	6	70
	AECC 2 (ENVS)		2	70
	General Elective - 2		6	70
		Total Credit	***20***	
III	Statistical Methods in Geography Lab & Human Geography Lab	CC 5 (Practical)	6	70
	Remote Sensing, GIS Lab & Research Methodology and Field work Lab	CC 6 (Practical)	6	70
	Climatology	CC 7	6	70
	SEC -1		2	60
	General Elective 3		6	70
		Total Credit	***26***	
IV	Environment Geography	CC 8	6	70
	Hydrology and Oceanography	CC 9	6	70
	Economic Geography	CC 10	6	70
	SEC - 2		2	60
	General Elective 4		6	70
		Total Credit	***26***	
V	Disaster Management Lab & Environment Geography Lab	CC 11 (Practical)	6	70
	Regional Planning and Development	CC 12	6	70
	DSE-1		6	70
	DSE-2		6	70
		Total Credit	***24***	
VI	Evolution of Geographical Thought	CC 13	6	70
	Geography of India	CC 14	6	70
	DSE-3		6	70
	DSE-4		6	70
		Total Credit	***24***	
		Total Credit	***140***	***1800***

DETAILED SYLLABUS:

Geography Core Course Syllabus

Semester	Course	Code (Core Paper)	Total Credit/ Marks
I	Cartographic Techniques Lab & Thematic Mapping and Surveying Lab	CC 1 (Practical)	6/ 70
	Geotectonics and Geomorphology Lab & Climatology Lab	CC 2 (Practical)	6/ 70
II	Geotectonics and Geomorphology	CC 3	6/ 70
	Human Geography	CC 4	6/ 70
III	Statistical Methods in Geography Lab & Human Geography Lab	CC 5 (Practical)	6/ 70
	Remote Sensing, GIS Lab & Research Methodology and Field work Lab	CC 6 (Practical)	6/ 70
	Climatology	CC7	6/ 70
IV	Environment Geography	CC 8	6/ 70
	Hydrology and Oceanography	CC 9	6/ 70
	Economic Geography	CC 10	6/ 70
V	Disaster Management Lab & Environment Geography Lab	CC 11 (Practical)	6/ 70
	Regional Planning and Development	CC 12	6/ 70
VI	Evolution of Geographical Thought	CC 13	6/ 70
	Geography of India	CC 14	6/ 70

SYLLABUS OF GEOGRAPHY CORE COUSE:

Core Paper	*Details of Syllabus*
CC 1: Cartographic Techniques Lab & Thematic Mapping and Surveying Lab ***Practical Paper***	***Unit-1: Cartographic Techniques Lab*** 1. Scales & their construction: Linear, Diagonal & Vernier 2. Projections & their construction: Polar Zenithal Stereographic, Simple conic with one standard parallel, Bonne's, Cylindrical Equal Area and Mercator's. 3. Diagrammatic representation of data: Line & Bar 4. Representation of point data: Isopleths. 5. Representation of area data: Dots & Choropleth 6. Preparation of Thematic maps: Proportional Squares, Proportional Pie diagrams, Dots and Spheres ***Unit-2: Thematic Mapping and Surveying Lab*** 1. Traverse survey using Prismatic Compass 2. Levelling & Contouring using Dumpy Level and Prismatic Compass Viva-voce based on laboratory notebook (5 Marks)
CC 2: Geotectonics and Geomorphology Lab & Climatology Lab ***Practical Paper***	***Unit-1: Geotectonics and Geomorphology Lab:*** Extraction and interpretation of geomorphic information from Survey of India 1:50k 1. Topographical maps of plateau region: Delineation of drainage basin from Survey of India topographical map. Construction and interpretation of relief profiles (superimposed, projected and composite), 2. Relative relief map, Slope map (Wentworth) 3. Correlation between physical and cultural features from Survey of India topographical maps using transect chart 4. Construction of hypsometric curve from Survey of India 1:50k topographical maps of plateau region 5. Megascopic identification of *(a) mineral samples:* Bauxite, calcite, chalcopyrite, feldspar, galena, gypsum, hematite, magnetite, mica, quartz, talc, tourmaline; and *(b) rock samples:* Granite, basalt, dolerite, laterite, limestone, shale, sandstone, conglomerate, slate, phyllite, schist, gneiss, quartzite, marble 6. Measurement of dip and strike using Clinometer 7. Preparation and interpretation of simple Geological Maps (Horizontal, Uniclinal and Simple Anticlinal & Synclinal Fold Structure) ***Unit-2: Climatology Lab*** 1 Measurement of weather elements using analogue instruments: Mean daily temperature, Air pressure 2. Interpretation of a Daily Weather Map of India (any two): Pre-Monsoon, Monsoon and Post-Monsoon 3. Construction and interpretation of Climograph (G. Taylor) 4. Construction and interpretation of Wind Rose 5. Construction and interpretation of Climatic Chart 6. Construction and interpretation of Ombrothermic Chart Viva-voce based on laboratory notebook (5 Marks)

CC 3: Geotectonics & Geomorphology	***Unit-1: Geotectonics*** 1. Earth's tectonic and structural evolution with reference to geological time scale 2. Earth's interior with special reference to seismology. Isostasy: Models of Airy and Pratt 3. Plate Tectonics: Processes at constructive, conservative, destructive margins and hotspots; resulting landforms 4. Folds and Faults—origin and types ***Unit-2: Geomorphology*** 1.Degradational processes: Weathering, mass wasting and resultant landforms 2. Processes of entrainment, transportation and deposition by different geomorphic agents. Role of humans in landform development. 3. Development of river network and landforms on uniclinal and folded structures 4. Landforms on igneous rocks with special reference to Granite and Basalt 5. Karst landforms: Surface and sub-surface 6. Glacial and fluvio-glacial processes and landforms; fluvio-glacial landforms 7. Aeolian and fluvio-aeolian processes and landforms; fluvio-aeolian processes 8. Models on landscape evolution: Views of Davis, Penck, King and Hack
CC 4: Human Geography	***Unit-1: Nature and Principles*** 1. Nature and scope and recent trends. Elements of Human Geography 2. Approaches to the study of Human Geography; Resource, Locational, Landscape, Environmental 3. Evolution of humans. Concept of race and ethnicity 4. Space, society and cultural regions (language and religion) ***Unit-2: Society, Demography and Ekistics*** 1.Evolution of human societies: Hunting and food gathering, pastoral nomadism, subsistence farming, industrial and urban societies 2. Human adaptation to environment: Eskimo, Masai, Jarwa, Gaddi, Santhals. 3. Population growth and distribution, population composition; demographic transition model 4. Population–Resource regions (Ackerman) 5. Human population and environment with special reference to development–environment conflict 6. Social morphology and rural house types in India 7. Types and patterns of rural settlements 8. Types and patterns of urban settlements
CC 5: Statistical Methods in Geography Lab & Human Geography Lab ***Practical Paper***	***Unit-1: Statistical Methods: Basics*** 1. Discrete and continuous data, population and samples, scales of measurement (nominal, ordinal, interval and ratio), sources of data, Collection of data and formation of statistical tables 2. Theoretical distribution: frequency, cumulative frequency, normal, Sampling: Need, types, and significance and methods of random sampling 3. Central tendency: Mean, median, mode, partition values 4. Measures of dispersion: Mean Deviation, Standard Deviation, Coefficient of Variation 5. Association and correlation: Rank correlation, Product moment correlation 6. Linear Regression 7. Time Series Analysis (Moving Average) ***Statistical Methods in Geography Lab:*** List of Practical 1. Construction of data matrix with each row representing an aerial unit (districts / blocks / mouzas / towns) and columns representing relevant attributes.

	2. Based on the above, a frequency table would be computed and interpreted 3. Measures of Central Tendency 4. Measures of Dispersion. 5. Histograms and Frequency Curve would be prepared on the dataset. 6. Based on of the sample set and using two relevant attributes, a scatter diagram and regression line would be plotted 7. Drawing of Time Series Graph & Trend Line by Moving Average Method ***Unit-2: Human Geography*** 1.Spatial variation in continent- or country-level religious composition by divided proportional circles 2. Measuring decadal growth rate of population 3. Types of Age-Sex pyramids: Graphical representation and analysis 4. Nearest neighbour analysis from Survey of India 1:50k topographical maps 5. Choropleth mapping based on population data 6. Variation in occupational structure by Proportional Divided Circles 7. Time Series Analysis of industrial production (India and West Bengal) 8. Transport network analysis by Shortest Path Method Viva-voce based on laboratory notebook (5 Marks)
CC 6: Remote Sensing, GIS Lab & Research Methodology and Field work Lab ***Practical Paper***	***Unit-1: Remote Sensing & GIS*** 1. Principles of Remote Sensing (RS): Types of RS satellites and sensors 2. Sensor resolutions and their applications 3. Preparation of False Colour Composites from IRS LISS-3 & Landsat TM data. 4. Principles of image interpretation. Preparation of inventories of landuse land cover (LULC) features from satellite images. 5.GIS data structures: types (spatial and non-spatial), raster and vector 6. Principles of GNSS positioning and waypoint collection 7. Transferring of waypoints to GIS. 8. Area and length calculations from GNSS data. ***Remote Sensing, GIS: List of Practical*** A Project File, comprising one exercise each is to be submitted (Use any available software for the Project Report) 1. Georeferencing of maps and images 2. Image classification, post-classification analysis and class editing 3. Digitisation of features. Data attachment, overlay and preparation of thematic map 4. Collection and Plotting of Waypoint by GPS ***Unit-2:* Research Methodology: List of Practical** 1.Each student will prepare an individual report based on primary data collected from field survey and secondary data collected from different sources for either a rural area (mouza) or an urban area (municipal ward) based on cadastral or municipal maps to study specific problems. 2. The duration of the field work shall not exceed 10 days 3. The report should be hand written in English on A4 size paper in candidate's own words within 5,000 to 8,000 words excluding figures, tables, photographs, maps, references and appendices 4. A copy of the bound report, duly signed by the concerned teacher, should be submitted Viva-voce based on laboratory notebook (5 Marks)

CC 7 Climatology	***Unit-1: Elements of Atmosphere*** 1. Nature, composition and layering of the atmosphere, 2. Insolation: controlling factors. Heat budget of the atmosphere. 3. Temperature: Horizontal and Vertical distribution. Inversion of Temperature 4. Greenhouse effect and importance of Ozone layer. ***Unit-2: Atmospheric Phenomena and Climatic Classification*** 1. Condensation: Process and forms. Mechanism of Precipitation: Bergeron-Findeisen theory, Collision and Coalescence Theory. Forms of precipitation. 2. Air mass: Origin and characteristics. 3. Fronts: Warm and Cold; frontogenesis and frontolysis. 4. Weather: stability and instability. 5. Circulation in the atmosphere: Planetary winds, Jet Stream 6. Tropical and Mid-latitude Cyclones 7. Monsoon Circulation and Mechanism with reference to India 8. Climatic classification after Köppen and Thornthwaite
CC 8: Environment Geography	***Unit-1*** 1. Geographers' approach to environmental studies 2. Perception of environment in different stages of civilization 3. Concept of holistic environment and system approach 4. Ecosystem: Concept, structure and functions 5. Wetland ecosystem with special reference to East Kolkata Wetlands 6. Environmental pollution and degradation: Land, water and air 7. Space–time hierarchy of environmental problems: Local, regional and global ***Unit-2*** 8. Urban environmental issues with special reference to waste management Rural environmental issues: Special reference to sanitation and public health 9. Environmental policies – Club of Rome, Earth Summits (special reference to Stockholm, Rio, Johannesburg) 10. Global initiatives for environmental management (special reference to Montreal, Kyoto, Paris) 11. Environmental Impact Assessment and Environmental Management Planning 12. Overview of principal environment-related regulations of India. Review of their achievements 13. Principles of wasteland management with special reference to West Bengal 14. Principles of forest management with special reference to West Bengal
CC 9: Hydrology & Oceanography	***Unit-1: Hydrology*** 1. Systems approach in hydrology. Global hydrological cycle: Its physical and biological role 2. Run off: controlling factors. Run off cycle 3. Infiltration and evapotranspiration. 4. Drainage basin as a hydrological unit. 5. Principles of water harvesting and watershed management 4. Groundwater: Occurrence and storage. Factors controlling recharge, discharge and movement. ***Unit-2: Oceanography*** 1. Major relief features of the ocean floor: characteristics and origin according to plate tectonics. 2. Water mass: Physical and chemical properties of ocean water, T–S diagram 3. Ocean temperature and salinity: Distribution and determinants. 4. Air-Sea interactions, ocean circulation, wave and tide. 5. Coral Reefs: Formation, classification and threats. 6. Marine resources: Classification and sustainable utilisation 7. Sea Level Change: Types and causes

CC 10: Economic Geography	***Unit-1: Introduction*** 1. Meaning and approaches to Economic Geography, new Economic Geography 2. Concepts in Economic Geography: Goods and services, production, exchange and consumption 3. Concept of economic man 4. Economic distance and transport costs ***Unit-2: Economic Activity*** 1. Concept and classification of economic activities 2. Factors affecting location of economic activity with special reference to agriculture (Von Thunen), and industry (Weber). 3. Primary activities: Subsistence and commercial agriculture, forestry, fishing and mining 4. Secondary activities: Manufacturing (cotton textile, iron and steel), concept of manufacturing regions, special economic zones and technology parks 5. Tertiary activities: transport, trade and services 6. Agricultural systems: Case studies of tea plantation in India and mixed farming in Europe 7. Transnational sea-routes, railways and highways with reference to India 8. International agreements and trade blocs: GATT and OPEC
CC11: Disaster Management Lab & Environment Geography Lab ***Practical Paper***	***Unit-1: Disaster Management Lab*** An individual Project Report based on any one case study among the following disasters incorporating a preparedness plan in the vicinity of the candidate's institution or residence: 1. Thunderstorm 2. Landslide 3. Flood 4. Coastal / riverbank erosion 5. Fire 6. Industrial accident 7. Structural collapse ***Unit-2: Environment Geography Lab*** 1. Preparation of questionnaire for perception survey on environmental problems 2. Preparation of check-list for Environmental Impact Assessment of an urban / industrial project 3. Quality assessment of soil using field kit: pH and NPK 4. Determination of soil type by ternary diagram textural plotting 5. Time series analysis of biogeography data 6. Interpretation of air quality using CPCB / WBPCB data Viva-voce based on laboratory notebook (5 Marks)
CC12: Regional Planning and Development	***Unit-1: Regional Planning*** 1. Concept of regions: Types of regions and their delineation. 2. Types of planning, principles and objectives of regional planning, multi- level planning in India 3. Tools and techniques of regional planning 4. Metropolitan concept: metropolitan areas, and urban agglomerations ***Unit-2: Regional Development*** 1. Development: Meaning, growth versus development 2. Concept and strategies of regional development with reference to India 3. Theories and models for regional development: Growth pole model of Perroux; growth centre model in Indian context 4. Theories and models for regional development: Cumulative causation (Myrdal) and core periphery (Hirschman, Rostow and Friedman)

	5. Changing concept of development, concept of underdevelopment; efficiency-equity debate 6. Indicators of development: Economic, social and environmental. Human development. 7. Regional development in India, regional inequality, disparity and diversity 8. Need and measures for balanced development in India
CC 13: Evolution of Geographical Thought	***Unit-1: Nature of Pre Modern Geography*** 1. Development of Geography and contributions of Greek, Chinese, and Indian geographers. 2. Impact of 'Dark Age' on Geography 3. Transition from Cosmography to Scientific Geography (Contributions of Bernard Varenius and Immanuel Kant) 4. Dualism and Dichotomies (General vs. Particular, Physical vs. Human, Regional vs. Systematic, Determinism vs. Possibilism, Ideographic vs. Nomeothetic) 5. Man-Environment Relationship, Ecological Approach 6. Cultural Landscape, Cultural Diffusion ***Unit-2: Foundations of Modern Geography & Recent Trends*** 1. Evolution of Geographical thoughts in Germany, France, Britain and United States of America. 2. Contributions of Humboldt and Ritter 3. Contributions of Richthofen, Hettner and Ratzel 4. Trends of Geography in the post World War-II period 5. Quantitative Revolution and its impact, positivism, behaviouralism, systems approach, radicalism, feminism 6. Towards Post Modernism: Changing concept of space in geography. Geography in the 21st Century
CC 14: Geography of India	***Unit-1: Geography of India*** 1. Structure & Relief of India, physiographic divisions (S.P.Chatterjee) 2. Climate, soil and vegetation: Characteristics and broad classification 3. Population: Distribution, growth, structure and policy 4. Distribution of population by race, caste, tribes, religion, language 5. Agricultural regions (Randhawa & ICAR). Green revolution and its consequences 6. Mineral and power resources distribution and utilisation of iron ore, coal, petroleum, natural gas; 7. Industrial development: Automobile and Information technology 8. Regionalisation of India: Physiographic ***Unit-2: Geography of West Bengal*** 1.Physical perspectives: Physiographic divisions, forest and water resources 2. Population: Growth, distribution and human development 3. Resources: Mining, agriculture and industries 4. Regional Problem: Darjeeling Hills and Sundarban

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Discipline Specific Elective Subjects (DSE):

Semester	Course	Code (DSE Paper)	Credit	Total Marks
Semester V	Soil & Bio Geography	1	6	70
	Urban Geography	2	6	70
Semester VI	Population Geography	3	6	70
	Social Geography	4	6	70

Discipline Specific Elective Course Syllabus (DSE):

DSC Paper	*Details of Syllabus*
Paper 1: Soil & Bio Geography	**Unit-1** 1. Factors or soil formation. Man as an active agent of soil transformation. 2. Soil profile. Origin and profile characteristics of Lateritic, Podzol and Chernozem soils 3. Definition and significance of soil properties: Texture, structure and moisture, 4. Definition and significance of soil properties: pH, organic matter and NPK 5. Soil erosion and degradation: Factors, processes and mitigation measures 6. Principles of soil classification: Genetic and USDA. Concept of land capability and its classification. **Unit-2** 7. Concepts of biosphere, ecosystem, biome, ecotone, community and ecology 8. Concepts of trophic structure, food chain and food web. Energy flow in ecosystems 9. Geographical extent and characteristic features of: Tropical rain forest, Taiga and Grassland biomes 10. Bio-geochemical cycles with special reference to carbon dioxide and nitrogen 11. Deforestation: Causes, consequences and management 12. Bio-diversity: Definition, types, threats and conservation measures
Paper 2: Urban Geography	**Unit-1** 1. Urban Geography: nature and scope, different approaches and recent trends in urban geography 2. Origin of urban places in Ancient, Medieval, Modern and Post-Modern periods-factors, stages, and characteristics. 3. Theories of Urban Evolution and Growth: Hydraulic Theory, Economic Theory 4. Aspects of urban places: Location, site and situation, Size and Spacing of Cities: The Rank Size Rule, The Law of the Primate City 5. Urban Hierarchies: Central Place Theory; August Losch's theory of Market Centres 6. Patterns of urbanisation in developed and developing countries **Unit-2** 1. Ecological processes of urban growth; Urban fringe; City- Region 2. Theories of city structure-concentric zone theory, sector theory, multiple nuclei theory 3. Urban Issues: problems of housing, slums, civic amenities (water and transport) 4. Patterns and trends of urbanization in India 5. Policies on urbanization. Urban change/landscape in post-liberalized period in India 6. Case studies of Delhi, Kolkata, and Chandigarh with reference to land use

Paper 3: Population Geography	**Unit-1** 1. Development of Population Geography as a field of specialization. Relation between population geography and demography. Sources of population data, their level of reliability and problems of mapping. 2. Population distribution: density and growth. Classical and modern theories in population distribution and growth, Demographic transition model. 3. World patterns determinants of population distribution and growth. Concept of optimum population. 4. Population distribution, density and growth profile in India. **Unit-2** 1. Population Composition and Characteristics– Age-Sex Composition; Rural and Urban Composition; Literacy. 2. Measurements of fertility and mortality. Concept of cohort and life table 3. Population composition of India. Urbanisation, Occupational structure. 4. Migration: Causes and types 5. National and international patterns of migration with reference to India. 6. Population and development: population-resource regions. Concept of human development index and its components. 7. Population policies in developed and less development countries. India's population policies, population and environment, implication for the future. 8. Contemporary Issues – Ageing of Population; Declining Sex Ratio; Population and environment dichotomy, HIV/AIDS.
Paper 4: Social Geography	**Unit-1** 1.Social Geography: Concept, Origin, Nature and Scope 2. Concept of Space, Social differentiation and stratification; social processes 3. Social Categories: Caste, Class, Religion, Race and Gender and their Spatial distribution 4. Basis of Social region formation; Evolution of social-cultural regions of India 5. Peopling Process of India: Technology and Occupational Change; Migration. 6. Social groups, social behaviour and contemporary social environmental issues with special reference to India **Unit-2** 1. Concept of Social Well-being, Quality of Life, Gender and Social Well-being 2. Measures of Social Well-being: Healthcare, Education, Housing, Gender Disparity 3. Social Geographies of Inclusion and Exclusion, Slums, Gated Communities, Communal Conflicts and Crime. 4. Social Planning during the Five Year Plans in India 5. Social Policies in India: Education and Health 6. Social Impact Assessment (SIA): Concept and importance

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Generic Elective Subjects (GE):

Semester	Course	Code (GE Paper)	Credit	Total Marks
Semester I	Rural Development	1	6	70
Semester II	Geography of Tourism	2	6	70
Semester III	Climate Change: Vulnerability and Adaptations	3	6	70
Semester IV	Disaster Management	4	6	70

Generic Elective Subjects Syllabus (GE):

GE Paper	***Details of Syllabus***
Paper 1: ***Rural Development***	***Block-1:*** ***Units:*** 1. Defining Development: Inter-Dependence of Urban and Rural Sectors of the Economy 2. Paradigms of Rural Development: Lewis Model of Economic Development, 'Big Push' theory of Development, Myrdal's thesis of 'Spread and Backwash Effects' 3. Need for Rural Development, Gandhian Approach to Rural Development 4. Rural Economic Base: Agriculture and Allied Sectors, Non-Farm Activities, 5. Rural Co-operatives and Agricultural marketing 6. Area Based Approach to Rural Development: Drought Prone Area Programmes, PMGSY
	Block-2: ***Units:*** 7. Target Group Approach to Rural Development: SJSY, MNREGA, Jan DhanYojana 8. Provision of Services – Physical and Socio-Economic Access to Elementary Education and Primary Health Care and Micro credit; Concept of PURA 9. Rural Governance: Panchayati Raj System 10. Rural Development Policies and Programmes in India 11. Rural Infrastructural Development programmes relating to: Rural Electrification, Transport, Housing, and Connectivity 12. Rural Development Programmes for Women and children: Janani SurakshaYojana , National Nutrition Mission, Drinking water and sanitation programmes, NRHM, Sarva Sikha Mission.
GE Paper	***Details of Syllabus***
Paper 2: Geography of Tourism ***(70 marks, 6 Credit)***	***Block-1:*** 1. Scope and Nature: Concepts and Issues, Tourism, Recreation and Leisure Inter-Relations; Geographical Parameters of Tourism by Robinson. 2. Types of Tourism: Ecotourism, Cultural Tourism, Adventure Tourism, Medical Tourism, Pilgrimage, International, National 3. Factors influencing tourism: historical, natural, socio-cultural and economic 4. Spatial pattern of tourism: Domestic and International; areal and locational dimensions comprising physical, cultural, historical and economic 5. Impact of tourism: physical, economic and social and perceptive positive and negative impacts; 6. Environmental laws and tourism - current trends, spatial patterns and recent changes;

	Block-2: ***Units:*** 7. Role of foreign capital and impact of globalization on tourism 8. Recent Trends of Tourism: International and Regional; Domestic (India); Sustainable Tourism, Meeting Incentives Conventions and Exhibitions (MICE) 9. Tourism in India: Tourism Infrastructure; Regional dimensions of tourist attraction; Case Studies of Dal lake, Goa, Garhwal Himalaya, Desert and Coastal Areas 10. Promotion of Tourism-National Tourism Policy 11. Infrastructure and support system-accommodation and supplementary accommodation; other facilities and amenities 12. Tourism circuits-short and longer detraction - Agencies and intermediaries - Indian hotel industry.
Paper 3: ***Climate Change: Vulnerability and Adaptations***	***Block-1:*** ***Units:*** 1. The Science of Climate Change: Origin, scope and trends. 2. Understanding Climate Change with reference to the Geological Time Scale 3. Evidences and factors of climate change: the nature- man dichotomy 4. Green House Gases and Global Warming 5. Global climatic assessment: IPCC reports
	Block-2: ***Units:*** 6. Climate change and vulnerability: Physical; economic and social 7. Impact of Climate Change: Agriculture and Water; Flora and Fauna; Human Health and morbidity 8. Global initiatives to climate change mitigation: Kyoto Protocol, Carbon trading, Clean development mechanism, COP, Climate fund 9. National Action Plan (of India) on Climate Change 10. Role of Local Bodies on climate change mitigation: Awareness and action programmes.
GE Paper	***Details of Syllabus***
Paper 4: Disaster Management ***(70 marks, 6 Credit)***	***Block-1:*** ***Units:*** 1. Definition and Concepts of Hazards and Disasters; Risk and Vulnerability; Classification of hazards 2. Causes and consequences of hazards: Physical, economic and cultural 3. Role of National and International organizations in disaster management 4. Causes, Impact and Distribution of: Earthquake and Tsunami, Landslides 5. Causes, Impact, Distribution of: Flood and drought 6. Causes, Impact, Distribution of: Deforestation, Desertification, Salinization ***Block-2:*** ***Units:*** 7. Response and Mitigation to Disasters: Institutional set up, NDMA and NIDM 8. Indigenous Knowledge and Community-based Disaster Management; Do's and Don'ts During and Post Disasters 9. Emerging approaches to Disaster management: (a) Pre-disaster stage, (b) Emergency Stage and (c) Post disaster stage 10. Regional perspectives of hazards in India with reference to dimension, causes, consequences and remedial measures: (a) Hills (b) Coasts 11. National and international policies for disaster management. 12. Role of geospatial technology (RS and GIS) in disaster management

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Skill Enhancement Course Subjects (SEC):

Semester	Course	Code (SEC Paper)	Credit	Total Marks
Semester III	Remote Sensing	1	2	60
Semester IV	Research Methods	2	2	60

Skill Enhancement Course Subjects Syllabus (SEC):	
SEC Paper	***Details of Syllabus***
Paper 1: Remote Sensing ***(60 marks, 2 Credit)***	***Units:*** 1. Principles of Remote Sensing (RS): Classification of RS satellites and sensors 2. Sensor resolutions and their applications with reference to IRS and LANDSAT missions, image referencing schemes and data acquisition. 3. Preparation of False Colour Composites from IRS LISS-3 and LANDSAT TM and OLI data. Principles of image rectification and enhancement. 4. Principles of image interpretation and feature extraction. Preparation of inventories of land use and land cover features from satellite images. 5. Guidelines for a project report based on the above themes. (A project file consisting of four exercises on the above themes is to be submitted).
Skill Enhancement Course Subjects Syllabus (SEC):	
SEC Paper	***Details of Syllabus***
Paper 2: Research Methods ***(60 marks, 2 Credit)***	***Units:*** 1. Geographic Enquiry: Definition and Ethics; Literature Review; Framing Research Questions, Objectives and Hypothesis; Preparing Sample Questionnaires and inventories 2. Data Collection: Type and Sources of Data; Methods of data Collection; Data Input and Editing 3. Data Analysis: Qualitative and Quantitative Analysis; Techniques Data Representation 4. Structure of a Research Report: Preliminaries; Text; Citation, Notes, References, Bibliography and Abstract and Key words.

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NETAJI SUBHAS OPEN UNIVERSITY

CBCS CURRICULUM FOR SEMESTERIZED UNDER-GRADUATE COURSE IN B.A (HONOURS) IN ECONOMICS (EEC)

Course Structure of EEC under CBCS

Semester	Course Name	Semester	Course Name
Semester I	CC1: Introductory Microeconomics CC2:Mathematical Methods for Economics-I AECC1: Language (Bengali/English) GE1:Applied Economics-1 (Microeconomics)	Semester IV	CC8: Intermediate Microeconomics-II CC9: Intermediate Macroeconomics-II CC10: Advanced Statistical Methods and Introductory Econometrics SEC2: E-Business GE4: International Economics
Semester II	CC3: Introductory Macroeconomics CC4: Mathematical Methods for Economics-II AECC2:Environmental Studies GE2: Applied Economics-II (Macroeconomics)	Semester V	CC11: Indian Economy-I CC12: Development Economics -I DSE 1: Money & Financial Markets DSE 2: Economic History of India (1857-1947)
Semester III	CC5:Intermediate Microeconomics-I CC6: Intermediate Macroeconomics-I CC7:Elementary Statistical Methods for Economics SEC1: Computer Applications in Business & Trade GE3: Public Finance	Semester VI	CC13:Indian Economy-II CC14: Development Economics -II DSE3: Environmental Economics DSE4: Economic Development of China since late 1970s

Core Course (CC), General Elective (GE), Discipline Specific Elective (DSE) : 6 Credit each (20 marks for Assignment & 50 marks for TEE); SEC & AECC: 2 credit each (60marks only TEE).

Marks distributions For Examination:

10 questions to be answered out of 10, each of 2 marks (Assignment)	10×2 = 20
04 questions to be answered out of 06, each of 5 marks (TEE)	5×4= 20
03 questions to be answered out of 5, each of 10 marks (TEE)	10×3 = 30
Total	70

SEMESTER- 1

Course objectives: After completion of the course the learners will be able to: Learn the basic idea of Microeconomics in particular and Economics in general.

Course contents

CC 1: INTRODUCTORY MICROECONOMICS Sem 1

Unit 1 EXPLORING THE SUBJECT MATTER OF ECONOMICS

Definition, scope and method of economics
The nature of economic problem: scarcity and choice
The question of what to produce, how to produce and how to distribute output
Economic systems

Unit 2 DEMAND AND SUPPLY: HOW MARKETS WORK, MARKETS AND WELFARE

Demand
Determinants of individual demand
Law of demand
Demand schedule
Demand curve
Shifts in the demand curve
Derivation of market demand
Supply
Determinants of individual supply
Law of supply
Supply schedule
Supply curve
Derivation of market supply curve
Shifts in the supply curve
Equilibrium price determination in competitive market
Effects of shifts in demand and supply
How prices allocate resources
The idea of market failure
Elasticities and their applications
Price ceiling and Price floor through government intervention

Unit 3 THE THEORY OF CONSUMER BEHAVIOUR

Marshallian utility approach (Cardinal Utility Theory)
Derivation of ordinary Demand curve
Consumer surplus
Indifference curve approach (Ordinal Utility Theory)
Assumptions
Properties
Exceptional indifference curves

Derivation of demand curve from indifference curve

The Budget line and its properties

Changes in price and shifts in budget line

Changes in income and shifts in budget line

Consumer optimal choice

Corner Solution

ICC. PCC, Engel Curve, Price effect, Substitution Effects and Income effect

Choice between Income and Leisure, Individual Labour Supply curve

Unit 4 THE FIRM AND PERFECT MARKET STRUCTURE

Defining a firm

Profit maximization hypothesis

Product curves

Short –run cost functions and output decisions in the short-run

Long- run cost functions and output decision in the long run

Unit 5 IMPERFECT MARKET STRUCTURE

Monopoly

Reasons for the growth of monopoly

Monopoly and anti-trust policy

Government policies towards competition

Various types of imperfect competition

Unit 6 INPUT MARKETS

Input market

Land market:

Rent

Ricardo

Marshall

Modern theory of rent

Labour markets

Labour demand curve

The firms demand curve for labour

Market demand curve for Labour

Backward bending individual supply curve for labour

Market supply curve for labour

Labour market equilibrium

Input demand curves

Shifts in input demand curves

Competitive labour markets

Labour markets and public policy

Suggested Readings

1. Karl E. Case and Ray C. Fair, *Principles of Economics*, Pearson Education Inc., 8th

Edition, 2007.
2. N. Gregory Mankiw, *Economics: Principles and Applications*, India edition by South Western, a Part of Cengage Learning, Cengage Learning India Private Limited, 4th edition, 2007.
3. Joseph E. Stiglitz and Carl E. Walsh, *Economics*, W.W. Norton & Company, Inc., New York, International Student Edition, 4th Edition, 2007.

CC 2: MATHEMATICAL METHODS FOR ECONOMICS–I

First Semester

2

Course objective:

After completion of the course the learner will be able to know the preliminary mathematical techniques required for economic analysis.

Course contents

Unit1 PRELIMINARIES

Why Economists Use Mathematics?
Variables, Constants and Parameters
Equation and Identities
Real number systems
Logic and mathematical proofs
Sets and set operations
Relations and Functions

Unit 2 FUNCTIONS OF ONE REAL VARIABLE

Graphs
Elementary types of functions: quadratic, polynomial, power, exponential, logarithmic
Sequences and series: convergence, algebraic properties and applications;
Continuous functions: characterizations, properties with respect to various operations and applications

Unit 3 SINGLE-VARIABLE DIFFERENTIATION

Slopes of curves
The slope of the tangent and the derivative
Rates of change and their economic significance
Simple Rules for Differentiation
Differentiation of sums, products, and quotients
Second-and –higher order derivatives and their applications

Unit 4 SINGLE-VARIABLE OPTIMIZATION

Some basic definitions
A First-derivative test for extreme points
Maxima and Minima
Local maxima and minima
Convex and Concave functions and inflection points

Unit 5 ECONOMIC APPLICATIONS OF INTEGRATION

Unit 6 DIFFERENCE EQUATIONS AS USED IN ECONOMICS

Suggested Reading:

K. Sydsaeter and P. Hammond, *Mathematics for Economic Analysis*, Pearson Educational Asia: Delhi, 2002.

AECC 1 Language (Bengali/English)

GE-1—APPLIED ECONOMICS - 1 (MICROECONOMICS) **Semester 1**

3

Course objective:

After completion of the course the learner will be able to know how mathematical techniques are employed for microeconomics.

Course contents:

UNIT 1: THE THEORY OF CONSUMER BEHAVIOUR

Ordinal Utility function

Derivation of MRCS

he Maximization of utility using Lagrangean multiplier

Economic significance of Lagrangean multiplier

Engel curve and Utility function

Unit 2: DEMAND FUNCTIONS

Derivation of demand functions from utility function and budget constraint

Properties of these demand functions

Derivation of Compensated demand function

Unit 3: ELASTICITIES OF DEMAND AND THEIR APPLICATIONS (using differentiation)

Price elasticity and total Expenditure

Relationships among elasticities

Sum of income elasticities for all goods

Slutsky Equation in Elasticities

Sum of All Price and Income Elasticities for a single good (Applying Euler's Theorem**)**

Constant elasticity demand curves

Unit 4: Price determination of Factors of production

Unit 5: THE THEORY OF THE FIRM

Production function

Homogeneous production functions

Cobb-Douglas function : its properties and its Applications
Derivation of different product curves (AP, MP)
Optimizing Behavour:
Constructing the AP and MP corresponding to the production function
Constrained Output Maximization
Constrained cost minimization
Profit maximization
Cost Functions and its Application with Cramer's rule
Euler's theorem and Distribution

UNIT 6: MARKET EQUILIBRIUM UNDER PERFECT COMPETITION

Market demand
Market Supply
Cost function and Supply Function in the short run
Market equilibrium
Application to Taxation
The Stability of Equilibrium:
Static Approaches to Stability (Using first-order differential equation)
Dynamic Equilibrium with lagged adjustment (using first–order difference equation)

Suggested Readings:

1. James M. Henderson and Richard E. Quandt. *Microeconomic Theory: A mathematical Approach.* 3rd Edition, Mcgraw Hill Book Company 1980.
2. R.S. Bhardwaj *Mathematics for Economics and Business*, Excel Books, New Delhi

SEMESTER –II

CC 3: INTRODUCTORY MACROECONOMICS

Course objectives: After the completion of the course the learner will be able to be equipped with the knowledge of basic functioning of a market economy at the macro level including understanding of national income accounting in both close and open economy.

Course Contents

Unit 1 BASIC ISSUES IN MACROECONOMICS

What is macroeconomics?
Scope of macroeconomics
Subject matter of macroeconomics
Objectives of studying macroeconomics
Types of Macroeconomics:
Macro static,

Macro dynamics,
Comparative statics

Closed and open economy macroeconomics
Major tools of macroeconomic Policy
Stock and Flow variables
Equilibrium and Disequilibrium
Partial and General Equilibrium Analysis
Usefulness of Macroeconomics

Unit 2 NATIONAL INCOME ACCOUNTING

National income Measuring Economic performance
Concepts of GDP
Measuring GDP: Product Method, Income Method, Expenditure Method
Three Routes, One Destination
Some Important Identities
Gross National Product (GNP) and Net National Product(NNP)
National Income (NI)
Personal Income
Disposable income
Circular Flow of Income
Real and Nominal GDP
Implicit GDP Deflator
Measuring the Cost of Living: Consumer Price Index
Problems involved in National Income Accounting
Importance of National Income Accounting
GDP as an Index of Welfare or Nation's well-being
National Income Accounting for an Open Economy
Balance of Payments: Current Account, Capital Account, Official Reserve Account
Deficits in Balance of Payments

Unit 3 MONEY AND INFLATION

Money:
What is Money?
Functions of Money
Money Supply and its Measures
High Powered Money
Money Supply Multiplier
Credit Multiplier and Credit Creation
The Quantity Theory of Money: Fisher and Cambridge Version

Unit 4 INFLATION

Inflation and its different types
Demand Pull Inflation and Policy Implications for it
Cost-Push Inflation and Policy Implications for it.
Justification for making distinction between the two
Social Costs of Inflation
Inflation Controlling Measures: Fiscal, Monetary and Income Policies

Unit 5 THE CLOSED ECONOMY IN THE SHORT–RUN

Simple Keynesian Model (SKM)–

The Consumption Function
The Saving Function
Paradox of thrift
Investment Function
Income Determination (Equilibrium),
Adjustment process/ mechanism and stability (with economic interpretation of the stability condition) –
Income Determination with Government Sector
Expenditure multiplier, Tax multiplier and Balanced Budget Multiplier

IS-LM Model

Commodity market equilibrium and the IS curve
Money market equilibrium and the LM curve
Equilibrium in the IS-LM model
Effectiveness of monetary policy in increasing national income using IS-LM Model
Effectiveness of fiscal policy in increasing national income using IS-LM Model
Should demand management (monetary and fiscal) policy be active or passive?
Limitations of IS-LM model

Unit 6 AGGREGATE DEMAND AND AGGREGATE SUPPLY CURVES

Simple derivation of the Aggregate Demand Curve (ADC) using Quantity Theory of Money
Derivation of the Vertical Aggregate Supply curve(ASC) in the Long-run
Derivation of Horizontal Short- run Aggregate Supply Curve (SRASC)
Economy's Short-run Equilibrium through the interaction of the ADC and this SRASC
From the short run to the Long run Equilibrium
IS-LM Model and Theory of Aggregate Demand

Comparison between the Simple Classical System and the Complete Keynesian System

Suggested Readings:

1. Dornbusch, Fischer and Startz, *Macroeconomics*, McGraw Hill, 11th edition, 2010.
2. N. Gregory Mankiw. *Macroeconomics,* Worth Publishers, 7th edition, 2010.
3. Olivier Blanchard, *Macroeconomics*, Pearson Education, Inc., 5th edition, 2009.
4. Richard T. Froyen, *Macroeconomics*, Pearson Education Asia, 2nd edition, 2005.

5. Andrew B. Abel and Ben S. Bernanke, *Macroeconomics*, Pearson Education, Inc., 7th edition, 2011.
6. Errol D'Souza, *Macroeconomics*, Pearson Education, 2009.
7. Paul R. Krugman, Maurice Obstfeld and Marc Melitz, *International Economics*, Pearson Education Asia, 9th edition, 2012.
8. Sebak K. Jana & Asim K. Karmakar *Macroeconomics*. Dey Book Concerns, 2016-17
9. Soumyen Sikdar, Principles of Macroeconomics, Oxford University Press, 2011.

CC 4: MATHEMATICAL METHODS IN ECONOMICS – II Sem 2

Course objective:
After completion of the course the learner will be able to make economic analysis using mathematics. This is a sequel to the course Mathematical Methods for Economics – I.

Course contents:

Unit 1. DIFFERENTIAL EQUATIONS

Unit 2. LINEAR ALGEBRA
Systems of linear equations
Vector and its Operation
Determinants and their basic properties
Application of Cramer's Rule

Unit 3 MORE ON LINEAR ALGEBRA
Matrix
Identity and Null Matrix
Transpose and Inverse Matrix
Conditions of Non-singularity of Matrix
The Rank of a matrix
Operations of Matrix
Input-output analysis

Unit 4. FUNCTIONS OF SEVERAL REAL VARIABLES
Functions of two or more variables
Partial derivatives and their uses in Economics
Quadratic forms in two variables

Unit 5: TOOLS FOR COMPARATIVE STATICS
The Chain Rules
Partial Elasticities
Homogeneous functions
Homothetic functions

Unit 6. MULTI-VARIABLE OPTIMIZATION

Convex functions:

Characterizations of convex functions,
Properties of convex functions
Applications of convex functions
Unconstrained optimization
Constrained optimization with equality and inequality Constraint: Linear Programming
Geometric characterizations
Lagrangean multiplier Method

Suggested Reading:

K. Sydsaeter and P. Hammond, *Mathematics for Economic Analysis*, Pearson Educational Asia: Delhi, 2002

A.Mukherji and S. Guha: *Mathematical Methods and Economic Theory*, Oxford University Press, 2011
Alpha C. Chiang and Kevin Wainwright, *Fundamental Methods of Mathematical Economics*,McGraw Hill Education, Fourth Edition, 2013.
Arup Mukherjee *Linear Programming and Numerical Analysis* ,Shreetara Prakashani, Kolkata-6, 2004

AECC2 ENVIRONMENTAL STUDIES SEM-2 3

GE-2 APPLIED ECONOMICS –II (MACROECONOMICS)

Semester 2 3

Course objective:
After completion of the course the learner will be able to know how mathematical techniques are employed for macroeconomics.

Course contents:

Unit 1. THE MODEL OF INCOME DETERMINATIONS

How to reach equilibrium in National income
The model of income Determination: applying rules of differentiation and their uses in comparative statics
Cramer's Rule and Its Application to national income model

Unit 2. CALCULUS USED IN DETERMINING FREQUENTLY-USED MULTIPLIERS

Investment multiplier
Dynamic multiplier with consumption lag
Export Multiplier
Government expenditure multiplier,
Tax multiplier
Balanced budget multiplier
Money supply multiplier

Unit 3 IS-LM MODEL

Unit 4. COST OF INVESTMENT

Unit 5 MATHEMATICS USED IN GROWTH MODEL

Harrod-Domar Growth model
The Razor's edge
Endogenous Growth model: AK Model

Unit 6 TECHNIQUES FOR INVESTMENT APPRAISAL

Net Present Value (NPV) Criteria,
Internal Rate of Return (IRR)
The Pay Back Technique

Suggested Readings:

1.Alpha C. Chiang and Kevin Wainwright, Fundamental Methods of Mathematical Economics, McGraw Hill Education, Fourth Edition, 2013.
For Risk analysis of Project see the following Reference:
2. Peter Cassimatis *Managerial Economics,* Routledge, 1996.

SEMESTER-III

CC 5: INTERMEDIATE MICROECONOMICS – I

Course objectives: After completion of the course the learner will be able to understand the fundamentals of microeconomic theories in the context of a market economy.

Course Contents

Unit1 CONSUMER THEORY REVISITED

Slutsky equation
Classification of Goods: normal, inferior and Giffen goods.
Shape of the demand curve following Eugen Slutsky equation
Choice Under Uncertainty (Expected utility and risk aversion)
Intertemporal choice and saving decision
Revealed Preference approach:
Strong and weak axioms of revealed preference
Properties of demand function

Unit 2 THE THEORY OF PRODUCTION

Production
Factors of production
Short –run production function and Long- run Production function
Production Function
Leontief Production function
General Concept of Homogeneous production Function and its properties
Cobb-Douglas as representative of Homogenous production function
Homothetic production function
The Law of variable Production: Law of production in the short run
Shape of Product Curves
Shape of total product curve
Shape of average product curve
Shape of marginal product curve
Relationships among total product curve, average product curve and marginal product curve and Economic Region of Production

Unit 3 FURTHER TOPICS IN THE THEORY OF PRODUCTION

Concept of Isoquants
Properties of Isoquants
Returns to Scale
Finding the optimal Employment of inputs by isoquant and iso-cost lines
Ridge lines and the Economic Region of Production
Output Expansion Path

Unit 4 THEORY OF COST

Relation between short run cost and long run cost curves
Derivation of LRAC curve from SRAC curve
Economies of scale and Diseconomies of Scale

Unit 5 CONCEPT OF REVENUE

Revenue concepts under different market conditions- TR,AR,MR
Relationship among TR, AR, and MR
Relation of MR, Price and elasticity of demand
Revenue under different price situations (Fixed vs Variable)

Unit 6 REVIEW OF PERFECT COMPETITION

Perfect Competition

Assumptions,
The perfectly competitive firm as a price taker
Short-run equilibrium under perfect competition
Break even point and Shut down point
Supply curve of the firm under perfect competition
Long run Equilibrium under industry in perfect competition

Suggested Readings:

1. Hal R. Varian, *Intermediate Microeconomics, a Modern Approach*, W.W. Norton and Company/Affiliated East-West Press (India), 8th edition, 2010. The workbook by Varian and Bergstrom may be used for problems.
2. C. Snyder and W. Nicholson, *Fundamentals of Microeconomics,* Cengage Learning (India), 2010.
3. B. Douglas Bernheim and Michael D. Whinston, *Microeconomics,* Tata McGraw-Hill (India), 2009.
4. Sebak K. Jana & Asim K. Karmakar *Microeconomics*, Dey Book Concerns, Kolkata, 2018
5. Anindya Sen, *Microeconomics: Theory and Applications*, OUP

CC 6: INTERMEDIATE MACROECONOMICS – I **Semester –III 2**

Course Objective: After the completion of the course the learner will be able to understand the fundamental macroeconomic theories in the context of a market economy

Course Contents

Unit 1 INFLATION AND UNEMPLOYMENT

Aggregate supply and Phillips curve
Short- run trade –off between inflation and Unemployment
Shift in Phillips curve
Rational Expectations and Inflation
Expected –Augmented Phillips curve
Long-run Phillips curve

Unit 2. EXPECTATIONS THEORIES IN MACROECONOMICS

Adaptive Expectations
Rational Expectation
Hall's Explanation for Rational Expectation
Policy ineffectiveness debate

Unit 3 BALANCE OF PAYMENTS (BoP) THEORY

The Elasticity Approach to BoP and the so-called Marshall- Lerner Condition
The Absorption Approach to BoP
The Monetary Approach to the BoP

Unit 4. EXCHANGE RATE

Purchasing power parity
Exchange rate determination

Unit 5 OPEN ECONOMY MODELS

Mundell-Fleming model
Dornbusch's overshooting model

Unit 6 INTERNATIONAL FINANCIAL MARKETS

Suggested Readings:

1. Dornbusch, Fischer and Startz, *Macroeconomics*, McGraw Hill, 11th edition, 2010.
2. N. Gregory Mankiw. *Macroeconomics,* Worth Publishers, 7th edition, 2010.
3. Olivier Blanchard, *Macroeconomics*, Pearson Education, Inc., 5th edition, 2009.
4. Steven M. Sheffrin, *Rational Expectations*, Cambridge University Press, 2nd edition, 1996.
5. Andrew B. Abel and Ben S. Bernanke, *Macroeconomics*, Pearson Education, Inc., 7th edition, 2011.
6. Errol D'Souza, *Macroeconomics*, Pearson Education, 2009
7. Asim K. Karmakar. *Balance of Payments Theory and Policy: The Indian Experience*, Deep & Deep Publications New Delhi, 2010
8. Paul R. Krugman, Maurice Obstfeld and Marc Melitz, *International Economics*, Pearson Education Asia, 9th edition, 2012.

C C 7: ELEMENTARY STATISTICAL METHODS FOR ECONOMICS Sem III 3

Course Objectives: After completion of the course the learner will be able to know the basic statistical applications necessary for economic data analysis.

Course contents:

Unit 1: DESCRIPTIVE STATISTICS

Statistics and its meaning,
Presentation of data,
Frequency Distribution and its Graphical Presentation:
Histogram,
Frequency Polygon
Cumulative Frequency Polygon or Ogive

Univariate Frequency Distribution and their Graphical Representation

Unit 2: MEASURES OF CENTRAL TENDENCY WITH APPLICATIONS

Central Tendency:
Arithmetic Mean,
Median and Mode (for both grouped and ungrouped data) –
Comparison of Mean Median and Mode –
Geometric and Harmonic Mean
Composite Mean.

Unit 3: MEASURES OF DISPERSION

Range
Mean Deviation
Standard Deviation
Quartile Deviation
The coefficient of variation
Moments
Skewness
Kurtosis
Measurement of Economic Inequality:
Gini –coefficient
Lorenz curve

Unit 4: TIME SERIES ANALYSIS

Components,
Measurements of Trends and Seasonal Variation
The variance of a time series

Unit 5: INDEX NUMBERS AND THEIR APPLICATIONS

Price and Quantity Index Numbers:
Various Formulae
Tests for an index number,
Cost of living Index Number
Uses of index number

Unit 6 : ANALYSIS OF BIVARIATE DATA

Graphing Bivariate Data: The Scatter Diagram
Simple Correlation Analysis including rank correlation
Simple Regression Analysis

Select Readings:

1. Richard J. Larsen and Morris L. Marx: *An Introduction to Mathematical Statistics*.
2. Goon, Gupta and Dasgupta: *Basic Statistics*- The World Press Pvt. Ltd. Calcutta
4. Goon, Gupta and Dasgupta: *Fundamentals of Statistics*, Vol I and Vol II, The World Press Pvt. Ltd. Calcutta
5. Das, N.G. Statistical Methods Part I Part II
6 .A.L. Nagar and R. K. Das, Basic Statistics, OUP, Second Edition
7. Kenney and Keeping: *Mathematics of Statistics*, Volume-I, Chapters 1 and 2.

8. Bowen and Starr: *Basic Statistics for Business and Economics*: Chapter
9. Michael Barrow: *Statistics for Economics, Accounting and Business Studies*,2009 FT Prentice Hall,

SEC 1 COMPUTER APPLICATION IN BUSINESS AND TRADE Sem 3 4

GE 3 PUBLIC FINANCE Sem 3 5

Course Objectives:

The course deals with the nature of government intervention and its implications for allocation, distribution and stabilization. Inherently, this study involves a formal analysis of government taxation and expenditures. The subject encompasses a host of topics including public goods, market failures and externalities. The learners will be able to know the theory of public economics and its application in the Indian economy.

Course Contents

Unit1 NATURE AND SCOPE OF PUBLIC ECONOMICS

Definition and Scope of Public Economics
Externalities,
Market Failure and Government Intervention
Coase Theorem

Unit 2 THEORIES OF PUBLIC GOOD

Definition of Public Good;
Characteristics of Pure Public Good
Distinction between Pure Public Good, Impure Public Good and Private Good
Free riding problem
Market Failure in case of Pure Public Good
Optimal provision of Public Goods
Lindahl Equilibrium
Voting Equilibrium

Unit 3 TAXATION

Classification of Taxes
Canons of Taxation
Benefit Principle
Equal Sacrifice Principle
Ability to Pay Principle

Incidence and Burden of Taxes
Effects of taxation
The Laffer curve

Unit 4 INDIAN PUBLIC FINANCE

Significance of taxation in Indian Context
Objectives of Taxation
Direct taxes
Indirect taxes
Goods and Services Tax (GST)
Tax reforms in India
Budget Deficits and Budget Surplus
Fiscal Deficit and Revenue Deficit
Fiscal Federalism in India

Unit 5 PUBLIC EXPENDITURE

Meaning and Classification of Public Expenditure
Government budget and its types;
Government expenditure multiplier
Tax multiplier
Balanced budget multiplier;

Unit6. PUBLIC DEBT

Meaning of Public Debt
Sources of Public Borrowings: Internal and External borrowing;
Why is Public Debt Incurred?
Demerits of Public debt
Effects of Public Debt
Public Debt in India

Suggested Readings:

1. J. Hindriks, G. Myles: *Intermediate Public Economics*, MIT Press, 2006.
2. H. Rosen, T. Gayer: *Public Finance*, 9th ed., McGraw-Hill/Irwin, 2009.
3. Joseph E. Stiglitz, *Economics of the Public Sector,* W.W. Norton & Company, 3rd edition, 2000.
4. R.A. Musgrave and P.B. Musgrave, *Public Finance in Theory & Practice,* McGraw Hill Publications, 5th edition, 1989.
5. John Cullis and Philip Jones, *Public Finance and Public Choice*, Oxford University Press, 1st edition, 1998.
6. Harvey Rosen, *Public Finance*, McGraw Hill Publications, 7th edition, 2005.
7. Mahesh Purohit, *Value Added Tax: Experiences of India and Other Countries,* 2007.

8. Kaushik Basu and A. Maertens (ed.), *The New Oxford Companion to Economics in India*, Oxford University Press, 2013.
9. M.M. Sury, *Government Budgeting in India,* 1990.

10. M. Govinda Rao, *Changing Contours of Federal Fiscal Arrangements in India, Amaresh Bagchi (ed.), Readings in Public Finance*, Oxford University Press, 2005.
11. Shankar Acharya, 2005, Thirty Years of Tax Reform in India, *Economic and Political Weekly,* May 14-20.
12. Rangarajan and D.K. Srivastava, 2005, Fiscal Deficit and Government Debt: Implications for Growth and Stabilization*", Economic and Political Weekly,* July2-8.
13. M. Govinda Rao, 2011, Goods and Services Tax: A Gorilla, Chimpanzee or a Genius like Primates? *Economic and Political Weekly*, February 12-18.
14. R.J. Chelliah (ed), Towards Sustainable Growth, OUP, 2009
15. *Report of the 14th Finance Commission,* 2010-15.
16. *Economic Survey*, Government of India (Latest).

SEMESTER IV

Course objectives: After completion of the course the learner will be able to: Learn the fundamentals of microeconomic theories.

Course contents:

CC 8: INTERMEDIATE MICROECONOMICS-II 1

Unit 1 GENERAL EQUILIBRIUM, EFFICIENCY AND WELFARE

Partial equilibrium vs. General Equilibrium techniques
Concept of General equilibrium
Definition of Efficient Allocation of Resources
Efficiency Concepts:
Efficiency in Exchange: Edgeworth Box Diagram
Efficiency in Production:
Optimal Choice of Inputs for a single firm &
Efficient Allocation of Resources among firms
Efficiency in production and exchange

Welfare economics:
The Welfare Theorems
The Positive Theory of General Equilibrium
Stability of Walrasian equilibrium

Unit 2 MARKET STRUCTURE -I

Monopoly: Basic Theory

Sources of monopoly power
Lerner's Degree of monopoly power
Average Revenue and Marginal Revenue
Profit Maximization in the short- run
Social Cost of monopoly
Dead -Weight Loss Under Monopoly

Price Discrimination under Monopoly: different degrees

Peak Load Pricing

Two -part Tariff

Unit 3 MARKET STRUCTURE -II
MONOPOLISTIC COMPETITION

Elements of monopolistic competition
Monopolistic competition: short run Equilibrium
Monopolistic competition: long run Equilibrium
Excess capacity under monopolistic Competition

Unit 4 MARKET STRUCTURE AND GAME THEORY-- III

Oligopoly and Game Theory

The need for a game
Definition of a game
Single move games (Two –Person, Zero-Sum Games)
Static games (Co-operative and Non-cooperative)
Move games
Cooperative games of perfect information
The Prisoner's dilemma
Nash equilibrium and Nash Bargaining Solution
Cournot Equilibrium: An Applications of game theory in oligopolistic market

Unit 5 CONCEPT OF OLIGOPOLY (COLLUSIVE AND NON- COLLUSIVE)
AND INPUT MARKET

Collusive Oligopoly:
Cartels
Non-Collusive Oligopoly:
Kinked Demand Curve Model (Sweezy 1939)
Input Market under Imperfect Competition
Monopsony,
Bilateral monopoly in labour market

Unit 6 MARKET FAILURE

When the Competitive Price System Fails to Achieve Efficiency
Possible cases:
(a) Imperfect Competition
(b) Externalities,
(c) Public goods

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Suggested Readings:

1. Hal R. Varian, *Intermediate Microeconomics, a Modern Approach*, 8th edition, W.W. Norton and Company/Affiliated East-West Press (India), 2010.The workbook by Varian and Bergstrom could be used for problems.
2. C. Snyder and W. Nicholson, *Fundamentals of Microeconomics,* Cengage Learning (India), 2010.
3. W. Nicholson*, Microeconomic Theory*, The Dryden Press, Japan,1985.
4.. D. Fudenberg and J. Tirole. *Game Theory*, The MIT Press, 1991.
5. R. Gibbons. *Game Theory for Applied Economists,* Princeton University Press.
6. Martin J. Osborne. *An Introduction to Game Theory*, the MIT Press, 2003
7. Timothy Fisher and Robert Waschik: *Managerial Economics*. Routledge, London,2002

CC 9: INTERMEDIATE MACROECONOMICS – II Semester IV 2

Course Objectives: This course is a sequel to Intermediate Macroeconomics I. In this course, the students are introduced to the long run dynamic issues like growth and technical progress. It also provides the micro-foundations to the various aggregative concepts used in the previous course.

Course Contents

Unit 1 ECONOMIC GROWTH

Harrod-Domar model
Solow one sector growth model
Phelp's Golden rule of Accumulation
Technological progress
Elements of endogenous growth-- AK Model

Unit 2 MICROECONOMIC FOUNDATION OF MACROECONOMICS-1

Consumption Function with:
Keynesian Absolute Income Hypothesis
Fisher's Theory of Optimal Intertemporal Choice
Friedman's Permanent Income Hypotheses;
Ando-Modigliani's Life Cycle Hypothesis

Unit 3 MICROECONOMIC FOUNDATION OF MACROECONOMICS-II

Investment Demand:
Three types of Investment Spending and their determinants**:**
Business fixed investment,
Inventory Investment and
Residential Investment
The Stock Market and Tobin's q

Accelerator model of inventories

Unit 4 MICROECONOMIC FOUNDATION OF MACROECONOMICS-III

Segmenting the Demand for Money :
The Transaction Demand for Money with
Baumol's Transaction Demand for Cash Management
The Precautionary Demand for Money
The Speculative Demand for Money

Unit 5 MONETARY AND FISCAL POLICY

Monetary Policy: Definition
Monetary policy objectives:
Price stability
Exchange- rate stability
Output stabilization
Financial stability
Three types of rules for interest rate setting:
Instrument rules (Taylor rule as an example)
Targeting rules (focusing more on discretion)
Money targeting rules
Inflation Targeting: specific implicit rule
(Amalgam of Rule-based policy and discretion)
Rules vs. discretion
Time–inconsistent policies

FISCAL POLICY: Definition
What is a budget?
Budget (or Fiscal) deficits
Deficit Financing
Public debt or government borrowing
Criteria for an "ideal" Fiscal Rule
Fiscal Policy in an open economy.

Unit 6 SCHOOLS OF MACROECONOMIC THOUGHTS

Classical Thought:
Say's law and quantity theory;
Friedman's restatement;
Classical dichotomy and neutrality of money

Keynesian Thought
Keynesian vs. classical
Basic tenets of New Classical and New Keynesian

Suggested Readings:

1. Dornbusch, Fischer and Startz, *Macroeconomics*, McGraw Hill, 11th edition, 2010.
2. N. Gregory Mankiw. *Macroeconomics,* Worth Publishers, 7th edition, 2010.
3. Olivier Blanchard, *Macroeconomics*, Pearson Education, Inc., 5th edition, 2009.
4. Charles I. Jones, *Introduction to Economic Growth*, W.W. Norton & Company, 2nd edition, 2002.
5. Andrew B. Abel and Ben S. Bernanke, *Macroeconomics*, Pearson Education, Inc., 7th edition, 2011.
6. Errol. D'Souza, *Macroeconomics*, Pearson Education, 2009.
7. Robert J. Gordon, *Macroeconomics*, Prentice-Hall India Limited, 2011.

CC 10: ADVANCED STATISTICAL METHODS FOR ECONOMICS AND INTRODUCTORY ECONOMETRICS

Semester IV
3

COURSE OBJECTIVES: After completion of the course the learner will be able to know

- the basic statistical applications necessary for economic data analysis and
- the basics of econometrics

Course Contents

Unit 1: Introduction to the Theory of Probability:

Various concepts and the Elementary ideas of Set Theory
The definition of probability
Probability Theorems, assuming two events only
Applications to the Theorems.

Random Variables and related elementary concepts
Discrete and
Continuous and Related concepts.
Expectation and Variance of Random Variables
Moment Generation Functions and Various Moments of a Random variable (both discrete and continuous)

Unit 2 PROBABILITY DISTRIBUTIONS

Discrete: Binomial and Poisson
Continuous: Uniform or Rectangular and normal

Unit 3 STATISTICAL INFERENCE OR SAMPLE STATISTICS

Various types of sampling:
Concepts
Applications,
Merits
Demerits

The Concept of a Statistic:
Statistic and Parameter
Sampling distribution of a statistic
Mean and proportion (Formulae only)

Unit 4: THEORY OF ESTIMATION

Point Estimation and interval Estimation:
Concepts, Properties and Applications

Unit 5 HYPOTHESIS TESTING

The Concepts of Hypothesis Testing: Various Concepts
Type 1 error
Type II error
z test
t test
Chi- square test
F test
Test for goodness of fit and
Tests for independence of attributes.

INTRODUCTORY ECONOMETRICS

Unit 6 NATURE AND SCOPE OF ECONOMETRICS

Simple Linear Regression Model: The Two Variable Case
Estimation of model by the method of OLS
Properties of estimators
Goodness of fit
Tests of hypotheses
Scaling and units of measurement
Confidence intervals
Violations of Classical Assumptions: Consequences, Detection and Remedies
Auto- correlation
Multicollinearity;
Heteroscedasticity;
Serial correlation.
Gauss-Markov theorem
Forecasting.

Suggested Readings:

For advanced statistical methods for economics:

1. V. K. Rohatgi and A. K. M. E. Saleh, An Introduction to Probability and Statistics, 2nd Edition, Wiley (2000).
2. Jay L. Devore, Probability and Statistics for Engineers, Cengage Learning, 2010.
3. Kenny and Keeping : Mathematical Statistics, Part 1 &Part II . Publisher, Van Nostrand, 1947.
4. Goon, Gupta and Dasgupta: *Fundamentals of Statistics*, Vol I, The World Press Pvt. Ltd. Calcutta
5. M.R. Spiegel (2003), *Theory and Problems of Probability and Statistics* (Schaum Series).

For Econometrics

1. G.S.Maddala, *Introduction to Econometrics*, 3rd edition, John Wiley & Sons Ltd(2005).
2. Jan Kmenta, *Elements of Econometrics*, Macmillan Publishing Company (1991).
3. D. Gujrati, Basic Econometrics, McGrawhill Higher Education (2003).
4. Greene W.H. : *Econometric Analysis*, 4th edition, Pearson Education (2000).
5. D.N. Gujarati and D.C. Porter: *Essentials for Econometrics*, Mc GrawHill, 4th Edition, International Edition, 2009.
6. Christopher Dougherty, *Introduction to Econometrics*, Oxford University Press, 3rd edition, Indian edition, 2007.

SEC 2: E- BUSINESS Sem- 4 4

Semester IV

GE-4 INTERNATIONAL ECONOMICS Semester IV 5

Course Objectives: After completion of the course the learner will be able to have a glimpse of the fundamentals of international economic theories and some relevant empirical facts. In addition, they will also be exposed to real-world examples and case studies.

Course Contents

Unit 1 INTERNATIONAL TRADE: IDEAS AND CONCEPT

What is international trade all about?

Meaning and scope of international economics

An overview of the world trade

Unit 2 THEORIES OF INTERNATIONAL TRADE-1

Ricardian:
Ricardian Theory of Trade in a two-country two-commodity Framework
Limitation of Ricardian Trade Theorem
Specific factors

Factor Endowment and Trade
Hecksher-Ohlin Theorem of Trade using Price and Physical definition-
Factor Price Equalization Theorem
Factor Intensity Reversal and H-O Theorem
Leontief Paradox

Unit 3 NEW TRADE THEORIES-II

i) Intra industry trade policy model (Krugman Model,1979),
ii) Strategic trade policy model (Brander and Spencer's model,1985)

Unit 4 THE RISE OF THE GLOBAL COMPANY

Multinationals and making of the modern world:
International Location of Production
Firms in the Global Economy
Outsourcing and Multinational Enterprises

Unit 5 TRADE POLICY

Instruments of trade policy
Political economy of trade policy
Controversies in trade policy.

Unit6 International Macroeconomic Policy

Fixed versus flexible exchange rates
Effects of Devaluation
Effects of exchange rate on domestic prices and ToT
International monetary systems
Financial globalization and financial crises

Suggested Readings:

1. Paul Krugman, Maurice Obstfeld, and Marc Melitz, *International Economics: Theory and Policy*, Addison-Wesley (Pearson Education Indian Edition), 9th edition, 2012.
2. Dominick Salvatore, *International Economics: Trade and Finance*, John Wiley International Student Edition, 10th edition, 2011
3. Miltiades Chacholiades 1990): *International Economics*, McGraw-Hill Ediucation.

SEMESTER –V 1

CC 11: INDIAN ECONOMY -1

Course Objectives: After completion of the course the learner will be able to: Know the current issues and problems facing Indian economy with additional knowledge on paradigm shifts and turning points.

Course Contents:

UNIT 1 DEVELOPMENT AND PLANNING

India's Transition to a Developing Country Model
Two Phases of Development: Mixed Economy
Public Sector at Commanding Height (Phase I)
Increasing Role of Market (Phase II)

India's Move to Development Planning
Features
Objectives
Goals
Evolution of Indian Planning
Achievements of Economic Planning
Failures of Economic Planning
Niti Aayog

Unit 2 STRUCTURAL CHANGES

Growth in National Income over time
The Period 1951-1980
The Period of 1980s Onwards
Trends in Occupational Structure
Features of Occupational Structure
Concerns in changes in Occupational Structure
Measures for Improving Occupational Structure

Sectoral Growth/Changes

Trends in Savings
Trends in Investment Behaviour
Employment

Regional Disparities

Magnitude and Causes of Regional Disparities

Unit 3 POPULATION AND HUMAN DEVELOPMENT

Demography: size and trends
Stages of Demographic Transition
Demographic Dividend in India
Performance in Education
Health and Nutrition in India: Facts and Interpretations
Human Development
Why Human Development?
Components of Human development
The HDI
India's progress in human development vis-à-vis peer countries

Unit 4 GROWTH AND DISTRIBUTION

POVERTY IN INDIA

Poverty Measures
Multidimensional Poverty Index
Poverty Line and its Concept
Causes of Persistence of Poverty
Poverty Estimation and Poverty Incidence
Poverty Incidence: From the Early 1950s to 2011-12
Government Efforts to Combat Poverty
Impact of Economic reforms on Poverty Reduction

INEQUALITIES IN INCOME DISTRIBUTION IN INDIA

Some Commonly Used Measures of Inequality:
Gini coefficientof inequality
Theil Index
Decile Disperson Ratio
Share of income/consumption of the poorest x%

Inequality in Indian Economy (HDI Measurement)
Causes of Inequality
Effects of Economic Inequality
Policies regarding inequality Reduction
Impact of Reforms on Inequality Reduction

Unit 5 EMPLOYMENT AND UNEMPLOYMENT IN INDIA

Employment Trends
Nature and Estimates of Unemployment
Causes of Unemployment
Employment Policies
1950s to 2002
Post-2002
Informal Economy

Unit 6 COMPARATIVE PROFILE OF GROWTH AND STRUCTURAL CHANGES: WITH OTHER MAJOR ECONOMIES

Inter-sectoral Transfer of Workforce: Theoretical Insights and Trends
Comparative Profile of Structural Changes:
India vs. Developed Countries
Comparative Profile of Structural Changes:
India Vs. Other Developing Asian Countries
Comparative Profile of Structural Changes:
India Vs. Developed and BRICS Economies

Suggested Readings:

1. Jean Dreze and Amartya Sen, Jean Dreze and Amartya Sen, 2013. *An Uncertain Glory: India and its Contradictions*, Princeton University Press.
2. Pulapre Balakrishnan, 2007, The Recovery of India: Economic Growth in the Nehru Era, *Economic and Political Weekly*, November.
3. Rakesh Mohan, 2008, Growth Record of Indian Economy: 1950-2008. A Story of Sustained Savings and Investment, *Economic and Political Weekly*, May.
4. S.L. Shetty, 2007, India‘s Savings Performance since the Advent of Planning, in K.L. Krishna and A. Vaidyanathan, editors, *Institutions and Markets in India’s Development.*
5. Himanshu, 2010, Towards New Poverty Lines for India, *Economic and Political Weekly*, January.
6. Jean Dreze and Angus Deaton, 2009, Food and Nutrition in India: Facts and Intepretations, *Economic and Political Weekly*, February.
7. Himanshu. 2011, Employment Trends in India: A Re-examination, *Economic and Political Weekly*, September.
8. Rama Baru et al, 2010, Inequities in Access to Health Services in India: Caste, Class and Region, *Economic and Political Weekly*, September.
9. Geeta G. Kingdon, 2007, The Progress of School Education in India, *Oxford*

Review of Economic Policy.
10. J.B.G. Tilak, 2007, Post Elementary Education, Poverty and Development in India, *International Journal of Educational Development.*
11. T. Dyson, 2008, India's Demographic Transition and its Consequences for Development in Uma Kapila, editor, *Indian Economy Since Independence*, 19th edition, Academic Foundation.
12. Kaushik Basu, 2009, ―China and India: Idiosyncratic Paths to High Growth, *Economic and Political Weekly*, September.
13. K. James, 2008, Glorifying Malthus: Current Debate on Demographic Dividend in India‖ *Economic and Political Weekly*, June.
14. Reetika Khera, 2011, India's Public Distribution System: Utilization and Impact *Journal of Development Studies*.
15. Aniruddha Krishna and Devendra Bajpai, 2011, Lineal Spread and Radial Dissipation: Experiencing Growth in Rural India, 1992-2005, *Economic and Political Weekly*, September.
16. Kaushik Basu and A. Maertens, eds, 2013, *The New Oxford Companion to Economics*, Oxford University Press.
17.UNDP Human Development Reports and National Human Development Reports (various issues).

CC 12: DEVELOPMENT ECONOMICS-I Semester –5 2

Course Objectives: After completion of the course the learner will be able to know the current theoretical and empirical issues and problems concerning economic development.

Course Contents

Unit 1 BASIC CONCEPTS OF DEVELOPMENT

Approaches to Development:
Participatory Development
Inclusive Development
Sustainable Development
Human Development
Growth and Development
Broad Indicators of Economic Development:
Per capita Income
Human Development Index
Gender Development Index

Gender Empowerment Measure
Human Poverty Index

Unit 2 THEORIES OF DEVELOPMENT

Dependency school of development
Modernizations Theory
Theory of unequal exchange and development
Changing Approaches to Development:
The Washington Consensus
The Millennium Development Goals

Unit 3 PERSISTENCE OF UNDERDEVELOPMENT AND STRATEGIES OF DEVELOPMENT

Characteristics of underdevelopment
Obstacles to underdevelopment
Trap Models
The Idea of Vicious Circle of Poverty
Critical minimum effort thesis
Low level equilibrium trap
Process of cumulative causation
Big push argument
Balanced vs. unbalanced growth
Hirschman model
Choice of technique and investment criteria

Unit 4.CONCEPTOF SURPLUS LABOUR

Surplus labour as potential saving
Economic development with unlimited supplies of labour (Lewis Model).
Harris-Todaro model

Unit 5 INEQUALITY: DEFINITIONS, MEASURES AND MECHANISMS

Meaning of Inequality
Inequality measures
Lorenz Curve
Range
Coefficient of variation,
Gini-coefficient
How Inequality Affects the Economy? An Illustrative Framework
Connections between inequality and development

UNIT 6 POVERTY

Relative Poverty

Absolute Poverty
Poverty line
The Mechanism that generates Poverty Trap
Poverty Measures:
Head count ratio
Poverty gap ratio,
Income gap ratio,
Human Poverty Index,
Hunger Index
Tackling Poverty – The World Bank Approach

Suggested Readings

1. Debraj Ray, *Development Economics,* Oxford University Press, 2009.
2. Partha Dasgupta, *Economics, A Very Short Introduction,* Oxford University Press, 2007.
3. Abhijit Banerjee, Roland Benabou and Dilip Mookerjee, *Understanding Poverty,* Oxford University Press, 2006.
4. Kaushik Basu, *The Oxford Companion to Economics in India,* OUP, 2007.
5. Amartya Sen, *Development as Freedom,* OUP, 2000.
6. Daron Acemoglu and James Robinson, *Economic Origins of Dictatorship and Democracy*, Cambridge University Press, 2006.
7. Robert Putnam, *Making Democracy Work: Civic Traditions in Modern Italy*, Princeton University Press, 1994
8.Thirlwall: *Growth and Development*
9.Debraj Roy: *Development Economics*
10. G.M. Meier and J.E. Rauch. *Leading Issues in Economic Development*. Oxford University Press. (8th edition or latest)
11. K. Basu: *Analytical Development Economics*, OUP
12. Todaro and Smith: *Economic Development*, Pearson Education, 2009
13 Y. Hayami, *Development Economics* (Oxford University Press)
14 Hayami and Godo, Development Economics, OUP
15. Dani Rodrik, *The Globalization Paradox: Why Global Markets, States and Democracy Can't Coexist,* Oxford University Press, 2011.
10.Soumyen Sikdar(2013) *Contemporary Issues in Globalization: An Introduction to Theory and Policy in India*, OUP
11.Meier and Rauch (ed.), *Leading Issues in Development Economics*, OUP.

DSE 1 MONEY AND FINANCIAL MARKETS Semester –V 3

Course Objectives: This course exposes students to the theory and functioning of the monetary and financial sectors of the economy. It highlights the organization, structure and role of financial markets

and institutions. It also discusses interest rates, monetary management and instruments of monetary control. Financial and banking sector reforms and monetary policy with special reference to India are also covered.

Course Contents

Unit 1 MONEY

Concept
Functions
Measurement
Theories of money supply determination

Unit 2 FINANCIAL INSTITUTIONS, MARKETS

Role of financial markets
Role of institutions
Problem of asymmetric information –
Adverse selection and Moral hazard
Financial crises

Unit 3 MARKETS, INSTRUMENTS AND FINANCIALINNOVATIONS

Money market
Structure of Money Market
Functions of Money Market
Instruments of Money market
Money market reforms in India
Recent trends and Developments in the Indian Money market

Capital Market
Structure of Capital Markets
Importance of Capital markets
Functions of Capital Market
Instruments of Capital market
Capital Market Reforms in India
Recent trends and Developments in the Indian capital market
Role of financial derivatives and other innovations

Unit 4 INTEREST RATES

Interest Rate Determination
Sources of interest rate differentials
Theories of term structure of interest rates
Interest rates in India

Unit 5 BANKING SYSTEM

Balance sheet and portfolio management
Indian banking system

Changing role and structure
Banking sector reforms in India

Unit 6 CENTRAL BANKING AND MONETARY POLICY IN INDIA

Functions of Central Bank
Balance sheet
Goals
Targets
Instruments of monetary control
Monetary management in an open economy
Current monetary policy of India.

Suggested Readings:

1. F. S. Mishkin and S. G. Eakins, *Financial Markets and Institutions*, Pearson Education, 6th edition, 2009.
2. F. J. Fabozzi, F. Modigliani, F. J. Jones, M. G. Ferri, *Foundations of Financial Markets and Institutions*, Pearson Education, 3rd edition, 2009.
3. M. R. Baye and D. W. Jansen, *Money, Banking and Financial Markets,* AITBS, 1996.
4. Rakesh Mohan, *Growth with Financial Stability- Central Banking in an Emerging Market,* Oxford University Press, 2011.
5. L. M. Bhole and J. Mahukud, *Financial Institutions and Markets,* Tata McGraw Hill, 5th edition, 2011.
6. M. Y. Khan, *Indian Financial System*, Tata McGraw Hill, 7th edition, 2011.
7. N. Jadhav, *Monetary Policy, Financial Stability and Central Banking in India,* Macmillan, 2006.
8. S. K. Jana & A. K. Karmakar, *Indian Financial System*, Dey Book Concern. Kolkata-73, 2018
9. Various latest issues of RBI Bulletins, Annual Reports, Reports on Currency and Finance and Reports of the Working Group

DSE 2: ECONOMIC HISTORY OF INDIA (1857-1947) Sem-5 4

Course Objectives: This course analyses key aspects of Indian economic development during the second half of British colonial rule. In doing so, it investigates the place of the Indian economy in the wider colonial context, and the mechanisms that linked economic development in India to the compulsions of colonial rule. This course links directly to the course on India's economic development after independence in 1947.

Course Contents:

UNIT 1 INTRODUCTION: COLONIAL INDIA

Meaning of Colonialism

Three stages of British rule in India
Basic Features of Colonialism in India

Unit 2 MACRO TRENDS

The British Rule and the Exploitation of India
National income estimates
Nature and extent of poverty
Occupational Structure in British India (1881-1951)
Occupational Distribution of population
Population history in British India

Unit 3 AGRICULTURE

Agrarian structure immediately after 1858:
Landlord and Peasants
Agricultural labourers
Agricultural trends (1890-1947):
Trends in output, availability and productivity
Agricultural productivity in the 19th century
Agricultural production, 1890-1947
Agricultural markets:
Commercialization of Agriculture
Phases
Causes
Consequences

Land market
Tenancy or the market for User Rights
Labour market
Credit market
Effects of market expansion
Great Famines of the 19th Century

Unit 4 RAILWAY AND INDUSTRY

Growth of Railways and its Impact
Consequences of the British Rule in India:
De-industrialization
Decline of Handicrafts
Drain of Wealth
Nature of industrialization in the interwar period
Constraints to industrial breakthrough
Labour Relations

Unit 5 HISTORY OF INDIA'S FOREIGN TRADE: 1857-1947

Foreign trade

Volume of Trade
Composition of Trade

Capital flows and the colonial economy

Unit 6 ECONOMY AND STATE IN THE IMPERIAL CONTEXT

State Policies and Economic Underdevelopment

The Imperial priorities and the Indian economy
Hostile State policy to Indian interests

Government and Fiscal Policy

Suggested Readings:

1. *The economic history of India (1857-1947)* : Tirthankar Roy ; Oxford University Press, 3rd edition, 2011
2. *A people's history of India 28-Indian Economy 1858-1914*: Irfan Habib
3. *The Cambridge economic history of India* Vol.I c.1200-c.1750 edited by Tapan Raychaudhuri and Irfan Habib
4. *A concise economic history of India* Dhires Bhattacharya
5. *The Cambridge Economic History of India,* Vol.II c.1757- 1970 Dharma Kumar
6. *Colonialism and Indian Economy*, Amiya kumar Bagchi

7. *Development Planning: The Indian Experience* Sukhomay Chakraborty
8. *A New Economic History of Colonial India.* Edited by L. Chaudhury, B. Gupta, T.Roy and A.V.Swamy. An up-to-date critical survey and novel resource on Indian Economic History
9. *An economic history of India*. Deitmar Rothermund. London 1988
10. J. Krishnamurty, *Occupational Structure,* Dharma Kumar (editor), The Cambridge Economic History of India, Vol. II, 2005, Chapter 6.
11. Jean Dreze, *Famine Prevention in India in Dreze and Sen (eds.) Political Economy of Hunger*, WIDER Studies in Development Economics, 1990, pp.13-35.
12. *India and the British Empire, 1880-1935*, B.R. Tomlinson, 1975

SEMESTER-VI 1

Course Objectives: Building on the more aggregative analysis of trends in the Indian Economy, this course examines sector-specific trends in key indicators and their implications in the post-Independence period

Course Contents

CC 13: INDIAN ECONOMY-II Sem VI 1

Unit 1 MACROECONOMIC POLICY- I

MONETARY POLICY

Objectives of Monetary Policy

Trends in India's Monetary Policy

Unit 2 MACROECONOMIC POLICY- II

FISCAL POLICY

Objectives of Fiscal Policy

The Fiscal Imbalance and Deficit Finance

Rationale for Deficit Financing

Consequences of Deficit Financing

The Fiscal Imbalance and the New Fiscal Approach

Fiscal imbalances Indicators and their Corrections

Fiscal Policy Reforms and New Fiscal Policy since 1991

Fiscal Responsibility in India: FRBM Act

Principles of Fiscal Federation

The Finance Commission

Unit 3 INDIAN AGRICULTURE: POLICIES AND PERFORMANCE

Land Reforms;

Objectives, Aspects and Performance

Green Revolution and its Impact

Policies on Agriculture

Agricultural Prices Policy

Policies on Food Security

Agricultural Trade Policy

WTO and Indian Agriculture

Performance in Agriculture

Growth Concerns

Production and Productivity

Unit 4 INDUSTRIAL POLICY AND GROWTH, LABOUR LAWS AND REGULATIONS

Industrial Policies Before 1990s

Industrial Policy Resolution, 1948

Industrial Policy Resolution, 1956

Industrial Policy, 1977

Industrial Policy, 1980

Industrial Policy, 1985:A Move Towards Liberalization Measure

New Industrial Policy 1991

Trends in Industrial Production

Phase I: 1951-65
Phase II: 1966-80
Phase III: 1981-91
Phase IV: Post-1991

New Challenges
Technology Intensity
Competition Commission of India
Medium, Small and Micro Enterprises (MSME)
Importance, Role and Performance

LABOUR LAWS AND REGULATIONS

Labour Policy Prior to Independence in India
Labour Laws and Regulations for Organised Sector relating to:
(a)Working Conditions
(b) Employee Relations
(c)Wages and Monetary Benefits
Social Security Laws:
(a)Organised Sector
(b)Unorganised Sector
Social Security Measures for the Unorganised Sector
Recent Labour Reform Measures

UNIT 5 INDIA'S SERVICES REVOLUTION

Increasing Importance of the Service (or Tertiary) Sector
Trend in Services Sector
Composition within the Services Sector
Performance in Services Sector

Unit 6 OPEN ECONOMY MACROECONOMIC POLICY

Trade Policy
Import Substitution Policy
Export-led Growth
Trade Policy prior to 1991
Trade Policy: Post 1991
Impact Assessment
FDI Policy
A. First Phase (1950-80)
B. Second Phase (1980-91)
C. Third Phase—Post 1991
FII Policy- Post 1991
Impact of FDI and FII
Bilateralism

Regionalism
'Spaghetti bowl' problem
& Multilateralism

Suggested Readings:

1. Shankar Acharya, 2010, ―Macroeconomic Performance and Policies 2000-8,‖ in Shankar Acharya and Rakesh Mohan, editors, *India's Economy: Performances and Challenges: Development and Participation*, Oxford University Press.
2. Rakesh Mohan, 2010, ―India's Financial Sector and Monetary Policy Reforms,‖ in Shankar Acharya and Rakesh Mohan, editors, *India's Economy: Performances and Challenges: Development and Participation*, Oxford University Press.
3. Pulapre Balakrishnan, Ramesh Golait and Pankaj Kumar, 2008, ―Agricultural Growth in India Since 1991, *RBI DEAP Study no. 27*.
4. B.N. Goldar and S.C. Aggarwal, 2005, ―Trade Liberalisation and Price-Cost Margin in Indian Industries, *The Developing Economics*, September.
5. P. Goldberg, A. Khandelwal, N. Pavcnik and P. Topalova, 2009, ―Trade Liberalisation and New Imported Inputs, *American Economic Review, Papers and Proceedings*, May.
6. Kunal Sen, 2010, ―Trade, Foreign Direct Investment and Industrial Transformation in India, ïn Premachandra Athukorala, editor, *The Rise of Asia*,Routledge.
7. A. Ahsan, C. Pages and T. Roy, 2008, ―Legislation, Enforcement and Adjudication in Indian Labour Markets: Origins, Consequences and the Way Forward, in D. Mazumdar and S. Sarkar, editors, *Globalization, Labour Markets and Inequality in India*, Routledge.20
8. Dipak Mazumdar and Sandeep Sarkar, 2009, ―The Employment Problem in India and the Phenomenon of the Missing Middle‖, *Indian Journal of Labour Economics*.
9. J. Dennis Rajakumar, 2011, ―Size and Growth of Private Corporate Sector in Indian Manufacturing, *Economic and Political Weekly,* April.
10. Ramesh Chand, 2010, ―Understanding the Nature and Causes of Food Inflation, ‖ *Economic and Political Weekly*, February.
11. Mohan, R. (ed) India Transformed: 25 years of economic reforms. 2017, Penguin Random House India pvt.ltd.
12. Bishwanath Goldar, 2011, ―Organised Manufacturing Employment: Continuing the Debate‖, *Economic and Political Weekly,* April.
13. Kaushik Basu and A. Maertens, eds, 2013, *The New Oxford Companion to Economics in India*, Oxford University Press.
14. Biswajit Chatterjee and Asim K. Karmakar (eds.), *Food Security in India*, Regal Pub,2012.
15. Supriyo De ,2017 India's *Fiscal Policy: Prescriptions, Pragmatics and Practice.* Cambridge University Press.
16. Panagariya, A. and J. Bhagwati,2014 India's tryst with destiny. 2014, HarperCollins.
17. Dreze, J. and A. Sen2014 *An Uncertain Glory: India and its contradictions*. 2014, Penguin, UK.
18. Reddy, Y.V., N. Valluri and P. Ray *Financial and Fiscal policies: Crises and New*

Realities. Oxford University Press, New Delhi.
19. Government of India, *Economic Survey* (various issues), Ministry of Finance.
20. India Development Report (various issues), Oxford University Press.
21. Swaminathan, M.S.2010 .*From Green to Evergreen Revolution - Indian Agriculture: Performance and Challenges*, Academic Foundation, New Delhi.
Rangarajan, C. and D. Srivastava (2011): Federalism and Fiscal Transfers in India, Oxford University Press.

CC 14: DEVELOPMENT ECONOMICS -II Semester VI 2

Course Objectives: This course begins with basic demographic concepts and their evolution during the process of development. The structure of markets and contracts is linked to the particular problems of enforcement experienced in poor countries. The governance of communities and organizations is studied and this is then linked to questions of sustainable growth. The course ends with reflections on the role of globalization and increased international dependence on the process of development

Course Contents

Unit 1 DEMOGRAPHY AND DEVELOPMENT

Preliminary Concepts on Demography:
Birth and Death rates,
Age Structure,
Fertility and Mortality;
Demographic transitions during the process of development
Migration.

Unit 2 LAND, LABOR AND CREDIT MARKETS

Land Market
The distribution of land ownership
Land reform and its effects on productivity
Contractual relationships between tenants and landlords
Land acquisition

Labour Market
Nutrition and labor productivity
Credit Market
Informational problems and credit contracts
Micro-finance
Inter-linkages between rural factor markets.

Unit 3 GOVERNANCE AND INSTITUTIONS

What is Good Governance
Nexus between Good Governance and Economic Development
State, market and Institution
Role of Governance
Need for Governance in organizations and in communities
Good Governances— Characteristics

Unit 4. ENVIRONMENT AND SUSTAINABLE DEVELOPMENT

What is sustainability for renewable resources?
A Brief History of Environmental (Climate) Change:
From 1972 First World Geneva Conference to 2015 Paris Convention
How does climate change affect the poor?
Commons or Pool Resources
Governing the Commons: Institutions for collective actions
Environmental externalities and state regulation of the environment

Unit 5 GLOBALIZATION

Introduction: What is Globalization
Globalization in Historical Perspectives
Measurement of Globalization:
Goods and Services Exports
FDI
Technology Diffusion
Intensity
Sensitivity
Globalization Paradox

Unit 6. GLOBALIZATION AND INDIA

India in the Global Economy:
Trade GDP Ratio
Mean Tariff Rate
Diversification of Exports
Product Composition of Exports
Direction of Exports
Financial Integration
Globalization and its Impacts
World Inequality
Economics and Politics of Multilateral Trade Agreements
Financial Instability in a Globalized World

Suggested Readings

1. Debraj Ray, *Development Economics,* Oxford University Press, 2009.

2. Partha Dasgupta, *Economics, A Very Short Introduction,* Oxford University Press, 2007.
3. Abhijit Banerjee, Roland Benabou and Dilip Mookerjee, *Understanding Poverty,* Oxford University Press, 2006.
4. Thomas Schelling, *Micromotives and Macrobehavior*, W. W. Norton, 1978.
5. Albert O. Hirschman, *Exit, Voice and Loyalty: Responses to Decline in Firms, Organizations and States,* Harvard University Press, 1970.
6. Raghuram Rajan, *Fault Lines: How Hidden Fractures Still Threaten the World Economy*, 2010.
7. Elinor Ostrom, *Governing the Commons: The Evolution of Institutions for Collective Action,* Cambridge University Press, 1990.
8. Dani Rodrik, *The Globalization Paradox: Why Global Markets, States and Democracy Can't Coexist*, Oxford University Press, 2011.
9. Michael D. Bordo, Alan M. Taylor and Jeffrey G. Williamson (ed.), *Globalization in Historical Perspective,* University of Chicago Press, 2003.
10. Budhen K. Saikia. Asim K. Karmakar, & Sebak K. Jana , *An Introduction to Environmental Economics,* Panchajanya Book, Guwahati, 2017.
11. Debra Johnson and Collin Turner. *International Business: Themes and Issues in the Modern Global Economy,* 2nd Edition, Routledge,2010

DSE- 3 : ENVIRONMENTAL ECONOMICS SemVI 3

Course Objectives: This course focuses on economic causes of environmental problems. Selected topics on international environmental problems are also discussed.
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Course Contents

Unit 1 INTRODUCTION

What is environmental economics?
How does it relate to Environmental Policy?
How does it differ from other branches of Economics?
How to Approach Environmental Issues?
The Linkage between the Economy and the Environment: The Basic Ideas
Review of Microeconomics and Welfare Economics

Unit 2 THE THEORY OF EXTERNALITIES

Pareto optimality and market failure in the presence of externalities

Property Rights and the Coase theorem
Common Property Resources(CPRs)
The Tragedy of the Commons

Unit 3 THE DESIGN AND IMPLEMENTATION OF ENVIRONMENTAL POLICY

Overview

Pigouvian Taxes and Effluent Fees
Environmental Economics and Pollution Control Policies
Environmental Economics
Pollution Control Policies:

A. Command and Control instruments
B. Regulations or Incentive- based Instruments; Marketable Tradable (Pollution) Permits
C. Liabilities Laws in environmental cases

Why Incentive base approach is more efficient? than command and control?
Why Command and Control Strategy is popular?

Choice between taxes and quotas

Unit 4 INTERNATIONAL ENVIRONMENTAL PROBLEMS

Trans-boundary environmental problems
Trade and Environment.

Unit 5 ECONOMICS OF CLIMATE CHANGE

Climate change is a difficult area for policy-makers
A Brief History of Climate Change
The Potential Physical and Socio- Economical Consequences of Climate Change
Managing "the Climate Change Problem through Emission Control, Sequestration, geo-Engineering, Mitigation and Adaptation
To what extent climate change will impact on Development?

Unit 6 SUSTAINABLE DEVELOPMENT

What is meant by Sustainable Development?
Rules
Measurement

Suggested Readings:

1. Charles Kolstad, *Intermediate Environmental Economics*, Oxford University Press, 2nd edition, 2010.
2. Robert N. Stavins (ed.), *Economics of the Environment: Selected Readings*, W.W. Norton, 5th edition, 2005.
3. Roger Perman, Yue Ma, James McGilvray and Michael Common, *Natural Resource and Environmental Economics*, Pearson Education/Addison Wesley, 3rd edition, 2003.
4. Maureen L. Cropper and Wallace E. Oates, 1992, ―Environmental Economics: A Survey,‖ *Journal of Economic Literature*, Volume 30:675-740.
5. Molly Scott Cato, *Environment and Economy*, Routledge 2011
6. R.H. Coase, ' the Problem of Social Cost', Journal of Law and Economics,3/1:1-44: A Seminal work in neoclassical Economics , addressing Specifically the question of pollution., 1960.
7. F. Akerman, *Can We Afford the Future? The Economics of a Warming World*, London: Zed, 2009 : offers a neoclassical approach to climate change with focus on discounting.
8. Biswajit Chatterjee and Asim K. Karmakar, 'Trade and Environmenit in an Open Economy',In G.S. Monga (ed.), *Environment and Development* , New Delhi, Deep and Deep Publications.2001

DSE-4: ECONOMIC DEVELOPMENT OF CHINA SINCE THE LATE 1970s

Sem –VI

4

Course Objectives: This course focuses on China's recent growth and development and its position in comparison to India

Course Contents

Unit 1 China's road to modernization
Modernizing agriculture
Modernizing industry

UNIT 2. Key reforms in the late 1970s and 1980s

Unit 3 China's struggle to enter the WTO:
Benefits accrued to other emerging nations

Unit 4 China in the first two decades of the 21st Century

Unit 5 Structural Changes in the Chinese Economy
China and India: A Comparison

Unit 6 How the 2008 to 2009 financial tsunamis have affected China and India?

Suggested Readings:

1. Dauderstadt, M and Stetten, J. ' China and Globalization',
Intereconomics, July?August, 2005.226-234.

2. Siebert.H.(2007) 'China: coming to grips with the new global player', *World Economy*, Vol 30, No.6. 869-922.
3. Tseng, W.and Cowen, D. (eds) (2007) *India's and China's Recent Experience with Reform and Growth*, Basingstoke: Palgrave Macmillan.
4. Asim K. Karmakar & Sebak K.Jana, "When The Troubles Ripple Across: China and India's Recent Experience with Contagious Financial Crises ," Vidyasagar University Journalal of Economics Vol. XIX, 2013-14,pp48-76, Published in **2017.** Available in the Website
5. Xue Muqiao , *China's Socialist Economy*, Foreign Language Press, Beijing,1981.
6. Masahiko Aoki and Jinglian Wu (eds.),*The Chinese Economy: A New Transition*, IEA Conference Volume No. 150-IV, Palgrave Macmillanin the US.

Dr. Dhiren Konar **Dr. Bibekananda Roychoudhuri** **Dr. Asim K. Karmakar**

Director,SPS

Netaji Subhas Open University
Master's Degree Programme (PGMT) in Mathematics

Syllabus

Programme Objectives: The objective of the programme is to help the learners to achieve the deep concept of higher Mathematics. The M.Sc. degree of Mathematics in NSOU will not only help the student to concrete the abstract concept of Mathematics but also make them more aware of the current research of Mathematics. There are two specialization of M.Sc. Mathematics programme; Pure Mathematics and Applied Mathematics. Pure Mathematics is the theoretical part of Mathematics and Applied Mathematics is the application part of Mathematics. Both these specializations will enrich a student with deep mathematical flavor.

Expected Programme Outcome: After successful completion the students may increase their knowledge with the new tools and techniques of Mathematics. A student after completing this course may go either for various government jobs such as school service or research programme in various institutes and universities in India or abroad.

Course Structure

(Full Marks-1000)

Part-I

Paper I : Algebra
- Group A : Abstract Algebra (Marks: 50)
- Group B : Linear Algebra (Marks: 50)

Paper II : Analysis
- Group A : Real Analysis & Metric spaces (Marks: 50)
- Group B : Complex Analysis (Marks: 50)

Paper III : Differential Equations
- Group A : Ordinary Differential Equations (Marks: 50)
- Group B : Partial Differential Equations & Special Functions (Marks: 50)

Paper IV : Numerical Analysis & Computer Programming
- Group A : Numerical Analysis (Marks: 50)
- Group B : Computer Programming & its applications to problems of Numerical Analysis (Marks: 50)

Paper V : Mechanics
- Group A : Principles of Mechanics (Marks: 50)
- Group B : Elements of Continuum Mechanics and Special Theory of Relativity (Marks: 50)

Part-II

Paper VI : Topology & Functional Analysis
- Group A : General Topology (Marks: 50)
- Group B : Functional Analysis (Marks: 50)

Paper VII : Integral Transformations & Equations
- Group A : Differential Equations, Integral Transformations (Marks: 50)
- Group B : Integral Equations (Marks: 50)

Paper VIII : Differential Geometry & Graph Theory

Group A : Differential Geometry (Marks: 50)

Group B : Graph Theory (Marks: 50)

Paper IX & X: Special Paper –Any one of (i) Pure and (ii) Applied Mathematics)

(i) Pure Mathematics

Paper IXA:(i) Advanced Complex analysis (Marks: 50)

Paper IXB: (i) Advanced To pology (Marks: 50)

Paper XA : (i) Advanced Differential Geometry (Marks:50)

Paper XB: (i) Advanced F nctional Analysis (Marks: 50)

(ii) Applied Mathematics

Paper IXA: (ii) Operations Research (Marks: 50)

Paper IXB: (ii) Mathematical Models in Ecology (Marks: 50)

Paper XA:(ii) Fluid Mechanics (Marks: 50)

Paper XB:(ii) Mechanics of solids (Marks: 50)

Detailed Syllabus

Paper -1

Group - A : Abstract Algebra (50 Marks)

General Concept : Classical Algebraic System, Algebraic structures , Morphisms.
Group: Morphisms of groups, normal sub-groups and quotient Groups, fundamental homomorphism theorem, isomorphism theorem s of groups, Conjugacy. Permutation groups.
Ring : Ideals of a Ring, Quotient Ring, Prime and Maxi mal ideals in a commutative ring with unity. Isomorphism of rings. Characteristic of a ring.
Fields : Integral domain and Quotient field s. Prime fields, Euclidean domain. Polynomial rings, Principal ideal domain. Extension of fields. Finite fields. Root fields of Polynomials, Splitting fields.
References :

1. I. N. Herstein - Topics in Algebra, Vikas Pub.
2. G. Birkhoff and S. Maclane - A survey of Modern Algebra.
3. Serge Lang - Algebra, Addition - Westey pub.
4. G. Birkhoffa nd T. C. Bartee-Modern Applied Algebra, Mc-Graw Hill.
5. D. S. Malik, J. N. Mordeson, M. K. Sen - Fundamentals of Abstract Algebra, Mc- Graw Hill.
6. P. B. Bhattacharya, S. K. Jain, S. R. Noyapai - Basic Abstract Algebra Cambridge.

Group — B: Linear Algebra (50 Marks)

Vector space: Normal and Unitary vector spaces. Euclidean vector space. Orthonormal basis. Isomorphism and inversion of Linear transformations, Dimension of a vector.
Inner Product Spaces: Inner product function, Norm of a vector, Pythagoras theorem, Gram-Schmidt Orthogonalization.
Linear transformations: Linear map and linear functional. Matrix representation of Linear transformations. Similar and Congruent matrices. Reduction of a matrix to Normal form. Jordan Canonical form. Characteristic polynomial. Minimal polynomial. Calley - Hamilton Theorem. Diagonalization of real symmetric matrices. Kernel and Image. Space spanned by Eigen vectors.
Reductions of matrices: Characterization of real quadratic form. Rank and Nullity. Invariant subspace. Equivalent Quadratic forms. Reduction to Canonical forms- Reduction of matrices to Diagonal or Normal Form
Quadratic Forms: Sylvester law. Simultaneous reduction of two quadratic forms and Classification of quadrics.
References :

1. T . M. Apostol - Linear Algebra. John Wiley and Sons.
2. K. Hoffman & R. Kunze - Linear Algebra, Prentice-Hall.
2. V. A. Iyin & Poznyak - Linear Algebra, Mir Publication.
3. S . Lang - Linear Algebra, Springer-Verlag.
4. G. Hadly - Linear Algebra, Narosa.
5. A. Kurosh - Higher Algebra, Mir Publication.
6. A. R. Rao and P. Bhimasankaram -Linear Algebra, McGraw-Hill.

Paper—II

Group - A : Real Analysis and Metric Spaces (Marks 50)

Real Analysis: Open sets and closed sets and their properties. Bolzano-Weirstrass theorem. Heine—Borel Property. Monotone functions and Nature of their discontinuities. Functions of bounded variations. Lebesgue Measure of a bounded set. Measurable sets and their properties. Measurable functions. Convergence in Measure. Lebesgue theorem. Lebesgue integral of bounded measurable functions an d their proper ties. Comparison with Riemann-Integral. Lebesgue's criteria for Riemann integrability. Riemann - Stieltjes integrals, Simple properties. Fourier Series.

Metric space: Examples, c, S, c[a , b], Algebra of open and closed sets, closure, Interior and boundary of a set. Limit point, Housdroff property, Completeness. Connectedness. Important theorems in a metric space. Heine- Borel theorem. Continuous Functions over metric space –with applications. Uniform Continuity. Contraction theorem. Construction mappings Approximation theorem. Completeness in Matric spaces, examples, Baire theorem and Equivalent matrices. Compactness and Connectedness in metric space.

References:

1. G.F. Simmons- Modern Analysis
2. J. L. Kelley-Topology
3. P. Nathanson- Theory of functions of Real variable-I, II
4. Brown and Page - Functional Analysis
5. C. Goffman - Real functions

Group - B: Complex Analysis (50 Marks)

Complex Field: The algebra of complex numbers, extended complex plane, Riemann Sphere and Stereographic projection. Lines. Circles, Cross-ratio, Bilinear transformation.

Complex Functions : Functions of a complex variable, limit, continuity, differentiability, Cauchy-Riemann Equations, Sufficient condition for differentiability. Harmonic functions, Analytic functions.

Integration : Line integrals of a complex function, Cauchy's fundamental theorem and its consequences, Cauchy's integral formula. Maximum modulus theorem and its consequences, Morera's theorem, Liouville's theorem, Fundamental theorem of algebra .

Sequence and Series : Sequence and Series of Complex numbers and Complex functions, Uniform Convergence, Weierstrass' M-test, Weierstrass theorem on uniform convergence on Compact sets (statement only), term wise integration and differentiation. Power series. Cauchy-Hadarnard theorem. Uniqueness theorem.

Elementary Functions : Exponential function s, trigonometric functions, logarithm function. Many-valued functions. Branch Point.

Analytic Functions : Taylor's theorem, zeros of an analytic function, form of an analytic function near a zero, zeros are isolated point s, Schwarz's lemma. Open mapping theorem. Laurent series. Singularities : Pole, Essential singularity, Removable singularity. Form and behavior of a function near a pole, Casorati-

Weierstrass theorem, Riemann's theorem on Removable singularity, Simple examples.

Calculus of residues : Residue, Residue theorem, Meromorphic functions, Argument principle, Rouche's theorem . Contour integration.

References :

1. Theory of functions of a Complex variable-Vol I & II, A. I. Markushevich, Prentice-Hall, 1965.
2. Functions of one Complex Variable - J B. Conway, Springer-Verlag, 1973.
3. Complex variables and applications - R. V. Churchill & J. W. Brown, McGraw-Hill, International Edition (5th Edition), 1990.
4. Complex Analysis -1. V. Ahlfors, McGrow-Hill, 1953.
5. Foundations of Complex Analysis - S. Ponnusamy, Narosa Publishing House, 1995.

Paper - III

Group—A : Ordinary Differential Equations and Special Functions (50 Marks)

Existence and Nature of Solutions : Introduction, Order, Degree and Exactness of Differential equation, Principle of Duality, Picard's theorem.

General Theory of Linear Differential Equation : Basic concepts. Linear Differential Equation and its Properties, Existence and uniqueness theorems; Variation of parameters; Ordinary points: Regular singular points ; Tw o Space System; Auton omous System; Critic al points; Limit cycles.

System of linear differential equations : System of linear differential equations in Normal form, Homogeneous linear system. Wronskian; Characteristic Equation and Characteristic Values, Stability of solution of ordinary differential equation.

Second order linear differential equations: Uniqueness Theorem, Characteristic Equation and Characteristic Values, Boundary Conditions. Stourm-Liouville Systems, Fourier's Convergence Theorem.

Green's function : Green's functions and its properties, Sturm-Liouville theory; Boundary value problems.

Plain Autonomous Systems : Path of the system. Integral curves, Singular point. Critical point Node, Saddle point, Damped linear Oscillator.

Special Functions : Equation of Fuchsian type; Series solution by Frobenius method; Bessel , Legendre, Hermite, Laguerre and Hypergeometric differential equations: Simple properties of solutions; Asymptotic Expansions; Solutions in terms of contour integration.

Non-linear differential Equations: Fundamental Existence Theorem; Stability; Lyapunov's function; Differential Equations with periodic solutions; Method of Bogoliubev and Krylov.

References :

1. G. F. Simmons - Differential Equations
2. I. N. Sneddon - Special functions of mathematical physics
3. E. L. Ince — Ordinary Differential Equations
4. E A. Coddington and N. Levinson - Theory of Ordinary Differential Equations

Group — B : Partial Differential Equations (50 Marks)

Linear partial differential equations of the first order : Charpit method and Jacobi' s method or solutions; Lagrange's equation and its solution; Quasilinear partial differential equation of second order; Cauchy problem; Characteristic directions; Classification of equations; Normal form of equations; Adjoint and self-adjoint operators. Some important partial differential equations and their classifications; Wave equation: D'Alember t's solution, Riemann's method of solution of hyperbolic equations: Heat equation; Elementary solutions; Laplace's equation: Elementary solutions; Dirichlet and Neumann problems; The theory of Green's function for Laplace's equation

Elliptic differential equations: Laplace's equation, Poisson equation, Boundary value problems, Laplace's equation in spherical polar and cylindrical co-ordinates, Heat equation, Harmonic function and Mean value theorem.
Parabolic differential equations: Diffusion equation. Boundary conditions, Solution by method of separation of variables, Maxima-Minima Principle, Uniqueness Theorem.
Hyperbolic differential Equations: Wave equation and Helmholtz equation in spherical polar coordinates; Solution by the method of separation of variables: Solution by the method of Fourier series.
Green's function: Green's function method for solution of Laplace's equation, Green's functions for solving Diffusion equation, Green's functions for Wave equation-Helmholtz theorem.
References :

1. I. N. Sneddon - Elements of Partial Differential Equations
2. K. S. Rao - Introduction to Partial Differential Equations
3. H.F. Weinberg - A first Course in Partial Differential Equations
4. F. John - Partial Differential Equations

Paper - IV

Group - A : Numerical Analysis (50 Marks)

Introduction : Round-off errors an d Instability - inherent and induced, Control of Round-off errors , Hazards in Approximate Computations.
Solving System of n Linear Equations in n unknowns: LU Decomposition Methods, Determinant of a Matrix and Matrix Inversion, Least-Squares Solution Over-determined Linear Systems, ill- conditioned Matrix.
Eigen pair of an nxn Numerical Matrix: Power Method for Extreme Eigen values and Related Eigen vectors, Power Method with shifting.
Solution of Non- Linear Equations : Isolation or Bracketing of a Root (With odd multiplicity), Fixed Point Iteration, Newton-Raphson Meth od and Modified Newton-Raphson Method (for Real Roots only), Roots of Polynomial Equations with real Numerical Coefficients, Evaluation of Polynomials and their Derivatives. Bairstow's Method for Quadratic Factors of Polynomials, Quotient — Difference Algorithm for

Polynomial Roots, Nonlinear Systems, Newton 's Method, Quasi-Newton Method.

Polynomial Interpolation : Inverse Interpolation, Roots by Inverse Interpolation, Central Difference Interpolation Formulas - Gauss, Hermite Interpolation, Piecewise nominal Interpolation Cubic Spline Interpolation.

Approximation: Least Square Approximation to Discrete Data, Chebyshev Polynomials, Economized Power Series Approximation of Functions.

Numerical Integration: Newton-Cotes Integration formula. Romberg Method. Gaussian Quadrature Rules

Numerical Solution of Ordinary Differential Equations-Initial Value Problems: Taylor Series Method, Euler and Modified Euler Methods, Runge-Kutta Methods, Linear Multistep Methods: Adams-Bashforth, A darns-Moulton and Milne Formulae.

Two-point Boundary Value Problems of Ordinary Differential Equations: Finite Difference Method, Passage Method.

Elements of Finite Difference Method of Numerical Solution of Partial Differential Equations : Poisson Equation on a Rectangular Region, Parabolic Equation in One-space Dimension (Heat Equation) - Explicit Finite Difference Method, Crank- Nicolson Method (Implicit Method) Hyperbolic Equation in One- space Dimension (Wave Equation): Finite Difference Method, Method of Characteristics.

References :

1. H. R. Schwarz - Numerical Analysis, John Wiley and Sons, 1989.
2. C.E-Froberg -Introduction to Numerical Analysis, Addition Westley Publ. Co., Reading, 1979.
3. K.E.Atkinson -A n Introduction to Numerical Analysis. John Wiley and Sons, New York, 1978.
4. S, D. Conte, C. d e-Boor - Elementary Numeric al Analysis: An Algorithmic Approach, McGraw-Hill, 1981.
5. F. B. Hildebrand - Introduction to Numerical Analysis, McGraw-Hill, New York, 1982.
6. J. B. Scarborough - Numerical Mathematical analysis. Johns-Hopkins, 1978.
7. A. Ralston and P. Rabinowitz - A First Course in Numerical Analysis, McGraw-Hill, New York
8. L. Collate - The Numeric al treatment of differential equations. Springer, New York.

Group—B : Computer Programming and its Applications to Problems of Numerical Analysis (50 Marks)

Algorithms and Flowcharts: Algorithms, Objectives, Definition and Examples of Algorithms, Flowchart

Programming with C: Introduction to C Programming, Constants and variables, Operators and Expressions, Input and Output Statements, Control Statements, Arrays, Functions, Pointers : Address operators, pointer Declaration, Void Pointer, Passing Pointers to a Function, Pointers and One-Dimensional Array, Dynamic Memory Allocation. String Manipulation, Structure and Unions: Definition of Structure, Accessing a Structure, Nested Structure, Array of Structure, User Defined data type, Structure and pointers, Passing Structure and Function, Union. File Processing: File Pointer, Opening and Closing a File, File Handling Function, Writing to a File, Reading from a file, Operations on Data Files. Macro and Preprocessor : Macros, Macros with Arguments, The C Preprocessor.

Problems on Numerical Analysis: Solution of Algebraic and Transcendental Equations: Bisection method, Iteration Method or fixed Point Iteration, Newton-Raphson Method or Method of Tangent, Solution of System of Linear Equations: Jacobi's Iteration Method, Gauss-seidal's Iteration method, LU Decomposition Method. Integration: Trapezoidal rule,

Simpson's 1/3 Rule. Ordinary Differential Equations: Euler's Method, Runge-Kutta Methods. Fitting of a Straight Line.

Data Structure: Asymptotic Notations, Time and Space Complexities, Data Structure, Arrays, Stacks, Evaluation of Expression: Postfix expression, Queues, Linked Lists.

REFERENCES:

1. E. Balagurusamy, Programming in ANSI C, 4th Edition, The Mcgraw-Hill Companies, New Delhi (2009).
2. B.Gottfried, Programming with C, Schaum's Outlines, The Mcgraw-Hill Companies, New Delhi (2001).
3. Horowitz and sahani, Fundamental of Data Structure, Galgotia, New Delhi (1995).

Paper-V

Group — A: Principles of Mechanics (50 Marks)

Preliminaries: Concepts of Inertial frame, Newton's law s of motions, Conservative forces. Conservation laws. Equations of motion of a particle in different systems of co-ordinates. Motion of a particle on smooth and rough surfaces.

D'Alembert's principle: Generalized co-ordinates. Constraints. Classification of

Hamilton's canonical equations of motion, Integral of energy. Poisson Bracket and its proper ties. Poisson bracket relations concerning linear and angular momentum. Action Principles: Hamilton's principle and the principle of least action. Verification of Hamilton's principle by D 'Alembert 's principle. Derivation of Lagrange's equations and Hamilton's equations from Hamilton's principle.

Symmetries and Constants of Motion: Noether' s theorem, applications on important physical problems like Brachistochrone. Shortest distance, Laws of Reflection and Refraction.

Canonical transformation: Concept of Phase space, Different kinds of Canonical transformations. Configuration space. Point Transformation and equivalency of Lagrangian mechanics. Hamilton-Jacobi equation, application to action-angle variables.

References :

1. Classic al Mechanics : H. Goldstein, N arosa, 198 0.
2. Classic al Mechanics : J. R. Taylor, University Science Bo oks, 2005.
3. Classic al Mechanics : Rana and Joag
4. Mathematical Methods of Classical Mechanics : V. I. Arnold, Springer-Verlag, 1978.
5. Principles of Mechanics : J. L. Synge and B. A. Griffith

Group - B : Elements of Continuum Mechanics and Special Theory of Relativity (without tensor) - 50 Marks

Special Theory of Relativity : Galilean transformation. Postulates of special theory of relativity. Lorentz transformation. Time Dilation. Length contraction and dilation. Velocity addition theorem. Einstein's Mass-Energy relation. Transformation formula for mass.

Kinematics of fluids : Lagrangian and Eulerian methods. The equation of continuity. Streamlines. Velocity potential.Rotational and irrotational motion. Euler's dynamical equations of motion. Integration of Euler's equation s. Steady motion. Bernoulli's theorem. Motion in two dimensions. Source Sink and Doublets. Constancy of circulation. Kelvin's theorem on minimum kinetic energy. Viscous flow theory. Navier-Stoke's equation. Circulation in viscous flow. Flow between parallel plates.

Deformation of Solid: Deformation of Elastic Solid, Strain tensor. Equations of compatibility. Analysis of stress. Stress equations of equilibrium an d motion. Stress-strain relations. Generalized Hooke's law. Equilibrium equations for an isotropic elastic solid. Simple applications. Strain energy function. Saint Venant's principle. Wave propagation. Isotropic elastic solid.

References :

1. Dynamics Part II: A. S. Ramsey (Cambridge University Press)
2. An Introduction to the Theory of Relativity-: P. Bergmann
3. Theory of Relativity : Special and General: M. Ray (S. Chand & Co)
4. Treatise on Hydrodynamics : A. S. Ramsey (G. Bell & Sons London)
5. Theoretical Hydrodynamics : L M . Milne-Thomson (Macmillan)
6. A Treatise on the Mathematical Theory of Elasticity : A. E. K. Love (Dover)
7. Mathematical Theory of Elasticity : I. S. Sokolnikoff (McGraw H ill)
8. Mathematical Methods of the Theory of Elasticity : V. Z. Parton & P. I. Perlin (MIR)

Part–II

Paper–VI

Group - A: General Topology (50 Marks)

Topological spaces. Examples, Base for a Topology. Sub-base. Neighbourhood system of a point, Neighbourhood base. Limit point of a set. Closed sets. Closure of a set, Ku ratowski closure operator; Interior and boundary of a set, Sub -space Topology, First and Second Countable spaces. Continuous function over a Topological space. Homeomorphism; Nets, Filters, Their convergence, Product spaces, Projection function.Open and Closed function, Quotient spaces.

Separation axiom s T0 T1; T2; T3; T4 in Topological spaces. Product of T2-SPACES. Urysohns Lemma in Normal spaces, Tietze extension Theorem, Embedding in cube. Embed ding Lemma. Urysohn's metrization Lemma.

Open cover, Sub-cover, Compactness, Countable open cover, Lindeloff space, Compact sets, Finite Intersection property, Tychonoff Theorem on product of compact spaces , Continuous image of a comp act space s, Locally compact spaces, One point compactification.

Connected spaces, Separate d sets, Disconnection of a space, Union of connected sets, Closure of a connected sets , Connected sets of reals, Continuous image of connected spaces , Topological product of connected spaces, components, Totally disconnected spaces , Locally connected spaces. Uniformity in a set, Base, Sub-base of a Uniformity, Uniform spa ce. Uniform Topology. T_2—property of a Uniformity, Interior and closure of a s et in terms of uniformity, Uniformly continuous function. Product Uniformity.

References :

1. Modern Analysis and Topology : Simons
2. General Topology : Kelley
3. Topological structure : Thron
4. Topology : Du gundji
5. General Topology : Adhikary, Chatterjee, Ganguly
6. General Topology : K. K. Jha
7. General Topology : Vaidyanathaswami

Group — B : Functional Analysis (50 Marks)

Metric spaces: Metric Topology, Complete metric spaces, examples G, C [a, b]; Separable metric spaces, Continuous functions; Homeomorphism, Isometry; Compact metric spaces, Sequential compactness, Banach Contraction Principle Theorem, Ascoli-Arzela Theorem.

Normed Linear space (N LS) : Ban ach space. C [a, b] a s a Banach space. Quotient space of a NLS, Algebra of convex sets. Bounded Linear operators, their continuity, Unboundable Lin ear operator, Norm $\| T \|$ if a bounded Linear operator T one NLS. Formulae for $\| T \|$.

Equivalent norms, Riesz Lemma. Finite Dimensionality of NLS by compact unit ball, Boundedness of Linear operators over finite dimensional NLS, space BdL (X , Y) of bounded Linear operators ; its completeness. Bounded Linear Functional, Hahn - Banach Theorem; its applications, conjugate s paces of NLS ; Canonical mapping ; Embed ding of a NLS into its second conjugate spaces under a Linear Isometry ; Reflexive Banach spaces ; Open map ping Theorem : Close d Graph Theorem.

Inner product s paces (I.P.S.): Cauchy - Schwarz inequality, I.P. spaces as NL S, Law of Parallelogram, orthogonal (orthonormal) system of vectors ; Hilbert spaces ; Project ion Theorem in a Hilbert spaces H, Riesz representation for a bounded linear functional, Complete orthonormal system in H. Adjoint of bounded Linear operator in a Hilbert space H. Algebra of adjoint operators. Self-adjoint operators in H; their norms, every bounded Linear operator in H as a sum of self-adjoint operators ; eigen-values and eigen vectors of self-adjoi nt operators.

References :

1. B. K.Lahiri : Elements of Functional Analysis
2. Leierstermise and Sobolev : Introduction to Functional Analysis
3. Brown and Page : Functional Analysis
4. Kreyszig : Functional Analysis
5. Goffman and Pedrick : Functional Analysis
6. Taylor: Functional Analysis

Paper -VII

Group-A: Differential Equation s & Integral Transformations (50 Marks)

Fourier Transform: Its property if Continuity and Differentiability, Fourier transform derivatives. Riemann - Labesgue Theorem. Fourier Inversion Theorem; Convolution Theorem and Parseval's relation for Fourier Transform; Fourier Sine and cosine transform. Some applications like (i) Heat conduction in solids (ii) Wave equation.

Laplace's Transform : Laplace Transform of derivatives, Properties of Laplaces Transform, like (i) Linearity (ii) Shifting (iii) Translation (iv) Convolution Theorem. Differentiation and Integration of Laplace Tranform. Inverse Laplace Transform : Inversion by (i) use of linear and shifting property, (ii) use of formulas for derivative and Integral if a Laplaces Transfor m, (iii) use of convolution. Theorem. Heaviside series expansion. Applications in Linear ordinary and partial differential equations.

Hankel Transforms: Its inversion formula. Hankel Transform of derivatives. Finite Hankel Transform and inversion formula. Finite Hankel Transform of derivatives. Applications in problem of (i) free symmetric vibration of a stretched circular membrane (ii) conduction of heat in an infinite circular cylinder.

References :

1. I.N. Sneddon– The use of Integral Transforms, McGraw-Hill. Singapore 1972.
2. R.R. Goldberg, Fourier transforms, Cambridge University Press, Cam bridge, 1961.
3. D. Brain- Integral Transformation and their applications. Springer-Verlag, New York, 2002.
4. R. Brace wall- The Fourier transform and its applications, McGraw-Hill, New York, 1999.

Group-B : Integral Equations and Genera lized Functions (50 Marks)

Preliminary concepts : Integral Equation, Special types of kernels - symmetric kernel, kernel producing convolution integral, separable or degenerate kernel. Integral operator. Resolvent, resolvent kernel and resovent equation. Function space. Orthon ormal system of functions. Gram-Schmidt orthogonalisation. Approximation and convergence in the mean. The Riesz Fisher theorem.

Method of successive approximations : Neumann series, Iterated kernel. L_2— kernels and functions.

Fredholm Theory : The Fredholm theorems. Degenerate kernels. Method of approximation by degenerate kernels. Continuous kernels.

Hilbern-Schmidt kernel : expansion theorem, the Hilbert-Schmidt theorem, Hilbert s' formula, applications of Hilbert-Schmidt theorem. Expansion of the resolvent kernel. Positive kernels. Mercer's theorem. Fredholm integral equation of the first kind.

References :

1. Lectures on the theory of Integral Equations, Mir Pub.
2. First course in Functional Analysis, PHI.
3. A course in Mathematical Analysis, Vol-III, Part-II Dover Pub.
4. Integral Equations, Wiley, New York
5. Functional Analysis

Paper-VIII

Group - A : Differential Geometry (50 Marks)

Tenso rs : Transformation of Co-ordinates ; Summation conventions ; dummy index, free index, Kronecker delta ; Contravariant and Covariant vector. Invariants; Second order ten sors and higher ord er tensors; Algebra of Tensors ; Contraction ; Symmetric and skew symmetric tensors. Quotient Law; Conjugate symme tric tensor. Curvilinear Co-ordinates.

Metric tensor : Linear element ds, Riemannian metric. Fundamental metric tensor, Riemannian space. Associated vectors, magnitude of vectors, angles. Christoffel symbols. First and Second kind; Relations Covariant differentiation of vectors a nd Tensors. Riemann - Christof elf Tensor and its proper ties; Riem ann - Chris toffel tensor of first kind; Ricci Tensor ; Scalar Curvature, Einstein space.

Curves and Surfaces in spaces: Serret-Frenet formula; Helices, Surfaces : The element of length and metric tensor. First Fundamental form; Angle between two intersecting curves on a surface; Geodesies on a surface: Gaussian Curvature : Geode

sic curvature. Necessary and sufficient condition for a curve on a surface to be geodesic.

Tensor derivative : Gauss formula: Weingarten's formula : Third Fundamental form of the surface. Equations of Gauss and Codazzi, Mensner's theorem ; Principal curvatures, line of curvature.

References :

1. M. C. Chak i: A text book of Tensor Calculus
2. Sokolnicoff : Tensor Analysis
3. Weatherburn : Riemannian Geometry and Tensor Calculus
4. Eisenhart : Riemannian Geometry
5. S pain : Tensor Calculus
6. W. B. Boothby : An introduction to Differentiable manifold and Riemannian Geometry

Group - B : Graph Theory (50 Marks)

Graph s and Directed Graphs (Digraph) : Parallel edges. Adjacent edges. Loop ; Simple Graph ; Degree of a vertex ; Regular Graph, Odd and Even vertex; Pendant vertex. Properties of a graph like: sum of degrees of vertices in a graph equals to twice the number of edges i n G, Simple Graph has a pair of vertices of equal degrees. Directed Graphs (Digraph), Representation of binary relations on finite sets by Digraphs.

Subgraphs : isomorphism of graphs, walks, paths and cycles ; length of a walk ; closed walk ; Circuits and cycles.

Connected Graphs : Components of a graph ; A simple Graph of n vertices and m components has at most $1/2$ (n–m) (n – m + 1) edges ; Complete Graph, Complement of a graph ; A Complete Graph of n vertices contain s 1/2 n (n –1) edges,

Eulerian and Hamiltonian Graphs : Eulerian graph, Hamiltonian Graphs, A Connected Graph of even degree vertices is Eulerian, Konigsberg Bridge problem; Hamiltonian Path .

Tree : Definition of Tree, Important properties like A tree of n vertices has (n - 1) edges ; A connected n - vertex graph with (n - 1) edges is a tree. Minimally connected tree ; Spanning tree ; Every connected graph has a spanning tree. Minimal s panning tree ; Kruskal's algorithm f or a minim al spanning tree ; Rooted tree, Binary tree.

Planar Graph : Imbedding of a Graph on a surface, Faces of a Planar Graph; Euler's polyhedral equation, Kuratowski's first Graph K_5 and Kuratowski second Graph $K_{3.3}$. Their properties.

Matrix representation of Graphs: Adjacency matrix of a Graph, Incidence matrix of a Graph.

Reference :

1. F. Harrary : Graph Theory
2. N. Deo : Graph Theory with applications to Engineering and Computer Science
3. M. K. Sen and B. C. Chakraborty : Introduction to Discrete M athematic s
4. M.K . Sen and D.S. Malik : Discrete Mathematical Structures
5. J. G ross and J. Yellen : Graph Theory and its applications

(i) Pure Mathematics

Paper-IXA (i): Advanced Complex Analysis (50 M arks)

Analytic continuation – The idea of analytic continuation. The analytic continuation of the exponential, trigonometric and hyperbolic functions. Direct analytic contin uation. Complete analytic function. Natural Boundary. Analytic continuation by power series. F unction el. Analytic continuation along a path. Monodromy theorem.

Conformal Mapping – I – Definition. Basic properties of con formal mapping. Conformal map pings by elementary functions. Schwarz Principal mappings by elementary functions. Schwarz cristoffel transformation. Some applications.
Entire function – Infinite product. Uniform convergenc e of infinite product s. Basic proper ties of entire function s. Factorization of entire functions.
Meromorphic fu nction – Mittag – Leffler theorem. Gamma function. Jensen's theore m. Poisson – Jensen theorem.C
Conformal Mapping – II – Univalent function. Normal families. The Riemann mapping theorem . The class Y.
Many valued function – The function log z. The power function. Branch points of an analytic function . Regular b ranches of analytic functions.
Riemann Surface – A few examples.

Paper IXB (i): Advanced Topology (50 Marks)

Compactness: More facts about nets and filters-subnets, clusters point, filter, ultrafilter. Characterization of compactness. Countable, Frechet , Sequential compactness, interrelationships, compactness in metric spaces, equivalence of the four types of compactness.
Compactification: More on Locally compact spaces, properties, compactification, more on one-point compactification, embedding Lemma, stone-Cech compactification, ordering in Hausdorff compactifications, Wallman's compactification.
Paracompactness: Locally finite family, paracompactness, basic properties, star operation, equivalent condition of paracompactness in respect of star operation, fully normal space, partition of unity.
Metrization: Metrization of topological space, Metrization of the product space R^j, Uryshon's metrization theorem, Nagata-Smirnov metrization theorem, Cartesian product of metrizable spaces, Two important results, namely, Arzela-Ascoli's theorem, Stone-Weirstrass.
Uniform space and proximity spaces: Definition of uniform spaces, basis, sub basis of a uniformity, topology induced by uniformity, uniformizable spaces, Metrizable spaces, uniformly continuous maps, Cauchy nets and filters, completeness in a uniform space, total boundedness and compactness.

Paper–XA (i) : Advanced Differential Geometry (50 Marks)

Differentiable Manifold: Differentiable mapping, Differentiable curves ; Integral Curve, Differential of a mapping, f-related vector field . One parameter group of transformations on a manifold. Co- tangent space, r-form and Exterior Product. Exterior differentiations, its existence and uniqueness. Pullback differential form. **Lie Group:** Left translation, right translation, Invariant Vector field. Lie algebra of the Lie Group G. Invariant Differential Form: Automorphism. Inner automorphism. One-parameter Sub Group of a Lie Group. Lie Transformation Group (Action of a Lie Group on a Manifold). Fundamental Vector field, Fundamental map.

Linear connection; Torsion tensor field and curvature tensor field on a Linear connection. Ricci Identity :

(i) for a 1-form w : $(\nabla x \nabla y_w - \nabla Y \nabla X^w - \nabla[X,Y]^w) = -W(R(X, Y),Z,P)$

(ii) for a 2-form w : $(\nabla X \nabla Y^w - \nabla Y \nabla X^w - \nabla[X,Y]^w)(Z, P) =$

$-W(R(X,Y)Z,P) - W(Z,R(X,Y) P)$

Riemanian Metric : Riemanian Connection (Levi - Civita Connection). Every Riemannian manifold (M, g) a of a unique. Riemannian Connection Manifold of constant curvature is an Einstein Manifold. A 3-dimensional Einstein manifold is a manifold of constant curvature.

Semi-symmetric Metric Connection. Weyl Conformal Curvature tensor. Goldberg's result :If (M, g) is a Riemannian manifold and A is the field of symmetric endom orphism corresp onding to Ricci tensor S i.e., g (AX, Y) = S (X, Y) for every Vector fields X, Y on M, then C (X, Y) Z = R (X, Y) Z- 1/n-2 {g (Y , Z) AX– g (X, Z) AY + S (Y, Z) X–S (X, Z) Y] + r/(n- 1) (n-2) {g(Y, Z) X– g) X, Z) Y}.

Confor mally sym metric. Ri emannian Manifold, A confor mally sym metric man ifold is of cons tant scalar curvature if $(\nabla z S)(Y, W) = (\nabla w S)(Y, Z)$ for all Y, Z, W.

References :

1. N.J. Hicks : Differential Manifold
2. W.M. Boothby : Int. to Differential Manifolds and Riemannian Geometry
3. Y. Matsushima : D ifferentiable Manifold
4. P. M. Cohn : Lie Groups
5. B. B. Sinha : Int. to modern Differential Geometry
6. S. Helgason : Differential Geometry, Lie Group and Symmetric Spaces.

Group – XB (i) : Advanced Functional Analysis (50 Marks)

Convex hull of a set in a vector space : Its representation Theorem ; Symmetric sets, balanced sets, absorbing sets in a vector space ; Isomorphism in vector spaces. Topological vector spaces (TVS), translation and multiplication operators as self-homeomorphism, Bounded sets in TVS ; basic properties in TVS. Separation Theorem in TV S ; Linea r operators and their continuity in TV S ; Locally compact TVS, Minkowski functionals, semi-norms, Kolmogorov theorem on normability of a TVS.

Bounded Linear functionals and their representation over R_n, l_p $(1< p <\infty)$ and C [0,1]. Banach Steinhaus Theorem, Weak convergence in Normed Linear Space (NLS). Best approximation in N LS, strictly convex norms, uniqueness criterion of best approximation.

Resolvant set r(T) and spectrum s(T) of a bounded linear operator T over NLS, compact linear o perators, spectral properties of a bounded self-adjoin t operators T over Hilbert space, spectral radius formula ; Projection operators, their algebra and properties.

Eigen value, eigen vector of a linear operator over NLS X with Dim (X) <¥, characteristic equation : finite dimensional spectral theorem ; Banach algebra X, identity element; invertible and non - invertible elements o f X, Topological divisor of zero in X. Gelfand-Mazur Theorem.

Weak and weak* topology in conjugate space X* of a NL S X ; their properties, weak* compactness, Banach-Alaogulu Theorem.

References :

1. W. Rudin — Functional Anal ysis
2. B. K. Lahiri — Functional Analysis

3. Brown an d Page — Functional Analysis
4. Bachman and Narici — Functional Analysis
5. Kreyszig — Functional Analysis

(ii) Applied Mathematics

Paper IXA (ii) : Operations Research (50 Marks)

Classical Optimization techniques: Multivariable Optimization with no Constraints, equality constraint and inequality constraints. Method of constrained variation, Method of Lagrange multipliers. Kuhn-Tucker conditions. Revised Simplex meth od, Dual simplex method and modified dual simplex method.

Post optimality Analysis: Discrete changes in the Cost vector and Requirement vector. Addition of a single variable, Deletion of a variable and Addition of a new constraint.

Quadratic Programming: Wolfe's and Beale's method.

Integer Programming: Gomory's cutting Plane method, Branch and bound method.

One dimensional minimization method: Fibonacci method and Golden section method.

Unconstrained optimization technique: Steepest descent method, Quadratically convergent method, Newton's method & Dairdon-Fletcher-Powell method.

Constrained optimization technique: Cutting plane method.

Paper IX B (ii) : Mathematical Models in Ecology (50 Marks)

Introduction: Basic concept of ecology ecological systems. Mathematical models. Variables, Deterministic and Stochastic models. Modelling in discrete time and continuous time.

Continuous Sing e-Species Population Models: Basic Postulates, General Model equation. Malthus growth model, Logistic growth model, Allce effect. Qualitative analysis, Harvard model. Exercises.

Discrete Single-Species Population Models: Discrete models and difference equations. Differential Vs Difference equations. Equilibrium points and Stability. Graphical solution of Difference equations. Density dependent population growth. Equilibrium points and Criterion of Stability. Rabbit problem. Fibonacci sequence. Exercises.

Delay Differential equations Models: Introduction, Types of Delay equations, Discrete time Delay model, Distribute d Delay models of population.

Interacting Population Models: Qualitative analysis, Generalization and Stability. Periodic solutions and limit cycles. Classical Prey-Predator models. Realistic Lotka-voltera models. Co-operative systems. Ecosystem models. Functional groups and Nutrient Flows. Food-Chain model. Logistic primary production, Material cycling.

Paper – XA (ii): Fluid Mechanics (50 Marks)

Irrotational motion in 3D : motion of a sphere, flow around an ellipsoid, stream functio n for axis- symmetric flow, method of source and sinks, motion of a rigid body in an unbounded fluid, inertial motion of a body. Boundary conditions, motion of a circular cylinder, the unsteady flow, hydrodynamic
reactions in a steady flow, Blastius-Chaplygin formulae, Kutta-Jouko uskii transformation, method of conformal mapping. Schwartz- Christofell formulae, Joukou skii's profile, flow around a flat plate and an elliptic cylinder. Vortex lines,vortex filaments, rectilinear and circular vortex, Stoke's formulae, Helmholtz's theorems, formulation of vortices, vortex layer, Karman vortex street.

Wave motion : plane waves, wave components, steady waves, progressive waves, energy of waves, group velocity, rate of trans mission of energy in simple harmonic surface waves, water at the common surface of two liquids, Long wave, capillary waves. Flow through pipes of circular, annular and elliptic cross-section s, boundary layer equations on a plane wall, Blasius solution for a flat plate.

References :

1. Milne-Thomson, L. M., Theoretical Hydrodynamics, Macmillan and Co. Ltd, London, 1955.
2. Ramsey, A. S., A Treatise On Hydromechanics, CBS Publishers and Distributors, New Delhi, 2000.
3. Chorlton, F., Textbook Of Fluid Dynamics, CBS Publishers and Distributors, New Delhi, 2003.
4. Lamb, H. Hydrodynamics, Cambridge University Press, 1932.
5. Kundu, P , K., Fluid Mechanic s. Academic Press, San Diego, 1990.
6. Landau. L. D., Liftshitz, E. M, Fluid Mechanics, Pergamon Press, London, 1959.
7. Kochin, N. E., KibeL I. A. & Roze, N. V. Theoretical Hydrodynamics, Interscience Publishers, 1964.

Paper X B (ii) : Mechanics of Solids (50 Marks)

Two Dimensional Elastostatic Problems: Introduction, Plane strain, Plane stress and Generalized plan stress, Plane elastotalic problem, Airy's stress function.

Extension and Torsion : Axial Extension of a Beam, Beam stretched by its own weight, Bending of a beam by terminal couples, Torsion of cylindrical bars of circular cross-section, Torsion of a cylindrical bar of any given section, Solution of the torsion problem for certain particular cases.

Semi- Infinite Solids With prescribed Displacements or Stresses on the Boundary: Semi-infinite solid with prescribed Displacements on the plane Boundary, Semi-infinite solid with prescribed surface traction on the plane boundary, Simple Solutions.

Variational Methods: Euler's Equation, Theorem of minimum potential energy, Theorem of minimum complementary energy, Reciprocal theorem of bethi and Rayleigh, Examples

Elastic Waves: Body Waves: Waves of dilatation and waves if distortion, Plane Waves, Surface Waves: Rayleigh wave, Love waves.

Transverse Vibration of Thin Elastic Plates: Basic Preliminaries, Differential equation of transverse vibration of thin plate, Vibration of a rectangular plate with simply supported edge, Free vibration of a circular plate: Clamped edge, Simply supported edge, Symmetrical vibration of a thin circular plate.

Plasticity : Basic Concepts : Relation between the stress and strain deviators, Stress-strain curve. Yield Criterion, Equation of Plasticity: Prandtl- Reuss Theory, Stress-strain relation of Von- Mises, Elasto-plastic problems.

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NETAJI SUBHAS OPEN UNIVERSITY

Master of Commerce (M.Com)

Programme Objectives: The objective of this programme is to equip the learners with necessary conceptual, entrepreneurial and analytical skills required for handling business operations. The post graduate degree in commerce is designed for the workforce who wish to work in commerce and industry. The fresh graduates and existing workforce can take the advantage of ODL system to increase their skills and competency in this particular field without disturbing their work schedule.

Expected Programme Outcome: After successful completion the students may increase their knowledge in the domain of commerce and management which intern increase their employability in the trade and commerce. The working persons may take this course for their vertical/ horizontal mobility in their work place. The fresh graduates may join this course to increase their employability in the trade, commerce and industry.

COURSE STRUCTURE

(20 Papers of 50 Marks each)

First Year (Part - I)

1. Principles & Practice of Management
2. Managerial Economics
3. Macro Economics and International Economic Problems
4. Business Environment
5. Direct & Indirect Taxation
6. Accounting Theory
7. Basic Statistical Concepts & Tools
8. Quantitative Techniques
9. Cost Accounting
10. Advanced Financial Accounting

2nd Year (Part - II)

11. Strategic Management
12. Marketing and Human Resource Management
13. Corporate Financial Environment
14. Advanced Statistical Concepts &Tools
15. Financial Statement Analysis &Reporting
16. Corporate Tax Planning and Management
17. Management Accounting
18. Financial Management
19. Auditing
20. Computer Applications is Business.

Full Marks = (500 + 500) = 1000 Marks

Detailed Course Contents

1st Year

Paper 1 : Principles & Practice of Management

Module - 1 : (25 Marks) :

1. **Management :** Concept - definitions - significance - is Management a Science or an art ? Evolution of management thoughts - basic managerial funcions- social responsibilities of management - professional management - managerial ethics.
2. **Planning :** Concept - definitions - significance - elements - principles process- premise - different types (including strategic planning) forecasting techniques

(qualitative & quantitative) - planning failures limitations of planning - decision making : steps - types -bounded rationality - management by objectives.

3. **Organization :** Concept - definitions - significance - principles - process determinants of organization structure-departmentation (different types) delegation of authority - decentralization of authority.
4. **Motivation :** Concept - definitions - significance - different approaches to motivations.

Module - 2 : (25 marks) :

5. **Leadership :** Concept-definition-significance-difference approaches to leadership (including situational approach).
6. **Communication :** Concept-definition-significance-process-types-barriers to communication-effective communication.
7. **Controlling :** Concept-definition-significance-steps-requirements of effective control-types-behavioural implications of control.

References :

Koontz, O'Donnell & Weihrich—Management

Koontz & Weihrich—Essentials of Management

Hicks & Gullett—Management

Stoner, Freeman & Gilbert Jr.—Management

Newman, Warren & McGill—The Process of Management

Robbins—Management : Concept & Practice

Banerjee, Shyamal—Principle & Practice of Management.

Paper 2 : Managerial Economics

Module-1 : (25 marks)

1. **Introduction :** Positive Vs. Normative Economics. Characteristics of Economic Models-Value Judgement in Economics.
2. **Decision Analysis-Tools & Techniques :** (a) Optimization - Unconstrained and Constrained Optimization concave functions and their role in optimization, Basic ideas of Linear Programming, Operations Research. (b) Decision-making under uncertainty-Introduction, Risk & Uncertainty, The Expected Utility Model, Limitations of Expected Utility Model in Decision Making, Expected Utility & Actual Behaviour.
3. **Demand Analysis :** (a) Neo-Classical Consumer Theory-A review of NeoClassical Consumer Theory. (b) Lancaster's Characteristics Approach to Consumer Theory. (c) Statistical Demand Curve. (d) Cross Price Elasticities & Product-Line Pricing. (e) Short-run & Long-run Elasticities (f) The Product Life-Cycle
4. **Production & Cost Analysis :** (a) Different types of production functions Cobb-Douglas. Leontief & CES Production Functions. (b) Recapitulations of Basic cost concept and relationship, elasticity of scale. (c) Multi-plant Operation. Cost minimization & Multi-plant Production. (d) The Learning Experience Curve. (e) Alternative Methods of Cost estimation-Engineering Analysis. Statistical Cost Estimation. Estimating Learning Curves.

Module- 2 : (25 marks) :

5. **Market Structure :** (a) Dominant Firms & Monopoly Power, (b) Monopoly Welfare Loss, (c) Modern views of Monopolistic Competition Lancaster's (haracteristics Approach), (d) Cooperative Oligopoly-Application of Game Theory, (e) Monopsony and Bilateral Monopoly.
6. **Theories of the Firm :** (a) Alternative Theories of Firm-Sales Maximization, Willamson's Expense Preference model, Marris's Growth Maximization Hypothesis, Behavioural Theory. (b) Multi Product firm & Multiproduct Pricing. (c) Peak-Load Princing, Pricing & Capacity Planning, Intertemporal Pricing, Cost Plus & Mark-up Pricing. (d) Adverising.
7. **Market-Failure : Externalities and Public Goods—** Introduction, Public Goods, Exernalities, Second Best and Arbitrary Standards, Role of Property Markets, State interventions in Imperfectly Competitive Industries.

References :

Baumol, W. J.—Economic Theory and Operation Analysis, Prentice Hall,

Dobbs Lan M. (2000)—Managerial Economics. Firms, Markets and Business Decision, Oxford, O. U. P.

Douglas, E. J. (1992)—Managerial Economics : Analysis and Strategy, Engle Wood Cliffs, Prentice Hall.

Haynes W. W. (1969)—Managerial Economics. Second Edition, New York : Business Publications Inc.

Paper 3 : Macroeconomics and International Economic Problems

Module-1 : Macroeconomics (25 marks) :

1. **Macroeconomic Paradigms :** What is a Paradigm ? Classical, Keynesian, Monetarist and New Classical Macroeconomics - Implications of these theories for LDCs.
2. **Basic Macroeconomic Problems :** Inflation and Unemployment - Shortrun and Long-run Phillips Curve - Money and Inflation, Unemployment.

   Stagflation, Expected Inflation and the Inflation-expecations-augmented phillips Curve, the Political Economy of Inflation and Unemployment.
3. **Central Bank, Money, Credit and Financial Markets :** Money Stock Determination, the Money Multiplier, Equilibrium in the Financial Markets, the Supply and Demand for Loanable Funds, Money, Credit and Interest Rates, Targets for the Central Bank.
4. **Business Cyles and Macroeconomic Policy :** Business Cycles - Basic Concepts and Simple Explanation. Economic Policy - (a) Active vs. Passive (b) Rule vs. Discretion (c) Rules for Monetary Policy and (d) Rules for Fiscal Policy.

Module-2 : International Economic Problems (25 marks) :

5. **Basic Characteristics of Open Economy :** National Income Accounting in an Open Economy, the International Flows of Capital and Goods, Small vs. Large Open Economy.
6. **Balance of Payments and Exchange Rates :** Nominal vs. Real Exchange

Rates, Fixed Exchange Rate Regimes, Adjustment under Fixed Exchange Rates, Flexible Exchange, Money and Prices, Exchange Rate Fluctuations and Interdependence, Capital Account Convertibility and its Primary Effect on Trade and the Macroeconomy.

7. **Foreign Exchange and Risk Management :** Foreign Exchange Operations, Forex Derivatives - Swaps, Futures, Options and Forward Contracts, Exchange Rae Arrangements in India - LERMS, Transaction Exposure, Translation Exposure and Economic Exposure, Management of ExposuresInternal Techniques, Netting, Marketing, Leading and Lagging, Pricing Policy, Asset and Liability Management and External Techniques.

8. **International Monetary System and Regional Economic Cooperation :** The Bretton Woods System and its demise, IMF, SDR, World Bank and Affiliate Organizations, GATT & WTO.

References : Gregory Mankiw—Macroeconomics
Dornbush, Fischer et al—Macroeconomics
Sodersten & Reed—International Economics

Paper-4 : Business Environment

Module - 1 : (25 Marks) :

1. Business Environment—An Overview.
2. Business and Society, Social responsibility, Business Ethics & CorporateGovernance
3. Political Environment—Political Institutions & Role of State in EconomicDevelopment.
4. Economic Environment-—Economic System Industrial Policy 1948,Industrial Policy 1956 and Industrial Policy 1991. Privatisation & Disinvestments. Financial Liberalization.

Module-2 (25 Marks) :

1. Technological Environment —Technology & Society, Technology andEconomy, Technology Policy & Management.
2. Legal Environment—Meaning & importance—Principal Provisions ofCompanies Act, 1956, Foreign Exchange Management Act, 2000, Consumer Protection Act, 1986, Patent Act, 1970 and Trade & Merchandise Marks Act, 1958.
3. International Environment — Globalization, Multi National Corporations& WTO.
4. Natural Environment — Sustainable Development and the Global reality.

References :

Francis Cherunilam : Bussiness Environment, Himalaya Publishing House.
K. Aswathappa : Essentials of Business Environment, Himalaya Publishing House.
V.P. Michael : Bussiness Policy and Environment, S. Chand & Company
Joseph W. McGuire : Busniess and Society, McGraw Hill
Uberio N. K. : Environmental Management, Excel Books.

Paper - 5 : Direct & Indirect Taxes

Module-1 : Direct Taxes (25 Marks) :

1. Taxation of Business income : A brief Introduction.

2. Deductions u/s 80HHC, 80HHD, 80HHE, 80HHF, 80-IA & 80-IB.
3. Set off and carry forward of losses.
4. Clubbing of income.
5. Assessment Procedure.
6. Advance Tax Payment.

Module-2 : Indirect Taxes (25 Marks) :

1. Central Excise Duties : Classification of goods, levy and collection ofduties, Excisable goods, recovery of duties not levied or not paid or short levied or short paid or erroneously refunded, claim for refund.
2. Custom duties : Levy of and exemption from customs duties-clearing ofimported goods and export of goods, goods-in-transit, duty-drawback.
3. Central Sales Tax : Definitions of certain terms, sale or purchase in courseof inter-state trade & commerce, sale or purchase of goods outside a state, sale or purchase in course of import or export, liability to tax on intersatate sales.
4. West Bengal Sales Tax : Definitions, registration of dealer and cancellationof registration.
5. VAT : A conceptual introduction.

References :

Taxman : Income Tax Act
Taxman : Direct Taxes - Law & Practice
Taxman : Indirect Taxes - Law & Practice
West Bengal Sales Tax Act
Central Sales Tax Act
Central Excise & Customs Act.

Note : Students Should follow university circular in respect of this paper.

Paper - 6 : Accounting Theory

Module-1 : (25 Marks) :

1. **Nature of Accounting Theory :** Classification of Accounting TheoriesFoundations of Accounting Theory-Accounting Environment.
2. **Capital, Value and Profit (income) :** Conepts of capital and profit maintenance of capital-valuation of capital-accounting profit vs. economic profit.
3. **Features and justification for Cash-flow Accounting :** Historical Cost Accounting vs. Cash-flow Accounting-Status of Cash-flow Accounting.
4. **Conceptual framework for Financial Accounting and Reporting :** Qualitative characteristics of Accounting Information.

Module -2 : (25 Marks) :

5. **Meaning, Importance and Problems of Disclosure in Reporting :** Form and Arrangement of financial Statements-Limitations of traditional measures-Economic Value Added (EVA).
6. **Principles of Govt. Accounting.**
7. **Nature and Scope of Social Acounting :** Objectives of Social Accounting Information-Social Accounts.
8. **Value Added Reporting :** Nature, meaning and scope.

References :

Porwal, L. S. : Accounting Theory - An Introduction.
Hendriksen, E. S. : Accounting Theory.
Sinha,G. C. : Studies in Accounting Thought.
Glautier & Underdown : Accounting Theory & Practice.

Paper-7 : Basic Statistical Concepts and Tools

Module - 1 : (25 Marks) :

1. **Introduction** - Recapitulation of basic concepts of Central Tendency. Measures of Dispersion.
2. **Correlation and Regression** - Bivariate data - Bivariate frequency distribution - scattered diagram - simple correlation - properties of product moment correlation coefficient - simple regression analysis-properties of linear regression - explained variation and unexplained variation - rank correlation - non linear regression - auto correlation, multiple regression.
3. **Interpolation -** Introduction - finite differences - E operators - differences of a polynomial function - Newton's Forward interpolation formulae Newton's backward interpolation formulae - Central difference formulae - Lagrange's interpolation formulae.
4. **Theory of Attributes** - Notations - classes and class frequencies - relation between class frequencies - class Symbols as Operators-independene and association of attributes - Yule's coefficient of association - Coefficient of Colligation.

Module-2 : (25 Marks) :

5. **Index Number -** Meaning and basic requirements of an index no. - Construction of index no. - using relatives and aggregates - test for index no. Cost of living index no. - Biases in Laspeyres' and Paasche's index no. – Base shifting and chain indices - uses of index no.
6. **Time Series Analysis -** Meaning and necessity of time series analysis components of time series analysis - measurement of secular train by free hand, curve fitting moving average method and mathematical curve fitting method-linear parabolic and exponential trend-measurement of seasonal variation - ratio to trend, ratio to moving average and link relative method - cyclical fluctuations-business forecasting.
7. **Statistical Quality Control :** Different types of quality measures - control charts for variables and attributes - Process cnontrol-TQM.

References :

Goon, Gupta, Dasgupta, Eundamentals of Statistics
Slockton and Cleark, Introduction to Business and Economics statistics
Taro Yamame, Statistical Mothods
N. G. Das, Statistics

Paper-8 : Quantitative Techniques

Module-1 : (25 Marks) :

1. **Introduction to Operation Reseach-History :** Approach, Techniques and tools.

2. **Linear Programming :** Motivation of linear programming problems. Statements of L. P. P. Formulation of L.P.P. Slack and Surplus variables L.P.P. Matrix form Basic solutions and Basic Feasible Solutions (B.F.S.) degenerate and Non-degenerate B.F.S. Fundamental Theorem of L. P. P. (statement only). Reduction of a feasible solution of BFS standard form of LPP. Solution by graphical method (for two variables), by a simplex method (not more than four variables). Feasibility and optimality condition, Method of Penalty. Concept of Duality. Duality Theory. The dual of the dual in the primal. Relation between the objective value of dual and principal/ problems. Dual problems with at most one unrestricted value, one constraint of equality.
3. **Transportation Problem :** Introduction - Mathematical formulation of transportation problem - the Transportation method for finding initial solutions-North West corner method - Least Cost Method - Vogel's Approximation method - test for optimality - Dual of a transportation model - steps of modi method-loops in transportation table - Degeneracy.
4. **Assignment Problem :** Introduction - Mathematical statement of the problem-Hungarian method of solution - Maximization case in assignment problem—Unbalanced assigment problem - restriction on assignment Travelling salesman problem.

Module-2 : (25 Marks) :

5. **Theory of Games :** Introduction - Two person zero sum games - Pure strategies - games with saddle points - rules to determine saddle points mixed strategies - Game without saddle points - the rules of dominance Methods of solution for games without saddle points—algebraic method arithmetic method - Graphical methods.
6. **Project Management PERT and CPM :** Introduction and Definition - Basic difference between PERT and CPM - PERT/CPM network components and precedence relationship - rules of Network Constructions - error and dummy in network critical path analysis-forward pass method - backward pass method-Float of an activity and event Critical Path - Probability in PERT analysis estimation of project completion time - project time cost trade of.
7. **Inventory Management :** Nature of the problem and need for control Deterministic and probabilistic conditions.

References :

Swarup, Gupta & Man Mohan : Operation Research, Sultan Chand V.K. Kapoor : Operations Resomch, Sultan Chand & sons.

C.R. Kothari : Quantitative Techniques - Nihas Publishing

R. C. Gupta : Quantitative Methods and Operations Research, CBS Publishing

Paper-9 : Cost Accounting

Module-1 : (25 Marks) :

1. Basics of cost and management accounting
2. Cost concepts and cost objects
3. Classification and analysis of cost.

4. Allocation of overhead cost-Limitation of the volume based methods-actual vs. predetermined.
5. Cost control, cost reconciliation and integrated accounts.

Module-2 : (25 Marks) :

6. **Methods of costing :** Job contract, process and service costing.
7. **Marginal costing :** (Conceptual concepts)- Concepts of marginal cost and marginal costing-Segregation of semi-variable overheads into variable and fixed elements-Ascertainment of marginal cost-Concept of profit under marginal costing-Break-even analysis-Computation of breakeven analysis and margin of safety.
8. **Marginal costing and management decisions :** Introduction of a new product-make or buy-problems of limiting factor and dropping a procut line.

References :

Owler & Brown : Wheldon's Cost Accounting, ELBS, Pitman.

Horngren, Hoster and Datar : Cost Accounting-A Managerial Emphasis, Prentice Hall of India Ltd.

Banerjee, B : Cost Accounting, World Press Pvt. Ltd.

Prasad. N. K. : Cost Accounting, Book Syndicate.

Paper-10 : Advanced Financial Accounting

Module - 1 : (25 marks) :

1. Disclosure in Company Accounts-Disclosure requirements as per Companies Act, Accounting Standard and SEBI guidelines
2. Structure of Company Accounts.
3. Valuation of Shares including goodwill.
4. Cash-flow Statement-Preparation as per AS 3 and interpretation.
5. Accounting for Liquidation of Companies-Preparation of The Statement of Affairs, The liquidator's Final Statement of Accounts and the Deficiency or Surplus Accounts.

Module-2 : (25 Marks) :

6. **Consolidated Accounts :** Preparation of consolidated Balance Sheet and Income Statement-Main provisions of AS 21.
7. **Schemes for Mergers and Amalgamations and Internal Reconstruction:** Provisions of AS 14.
8. **Segment Reporting :** Meaning of segment-Benefit of segment reportingProvisions of AS 17.

References :

Banerjee, B : Regulation of Corporate Accounting and Reporting in India. The World Press.

Bedford, N. M : Extensions in Accounting Disclosure, Prentice Hall

Chakraborty, H : Advanced Accountancy, Oxford University Press.

Hanif & Mukherjee : Advanced Accountancy.

PART - II

Paper - 11 : Strategic Management

Module - 1 : (25 marks) :

1. **Introduction :** Concepts of strategy and strategic management-levels of strategy-mission and objectives-basic idea about strategic intent and core competence.
2. **Analysis and Diagnosis :** Environmental analysis and diagnosis : environmental factors, ETOP-internal analysis and diagnosis : internal factors, SAP-SWOT analysis.
3. **Strategic Options :** Alternative grand strategies-stability, growth, retrenchment and combinations-Mergers, Acquisitions and joint Ventures. **Module - 2 : (25 marks) :**
4. **Choice of Strategy :** Process of strategic choice-Porter's approach : fiveforces model, three generic strategies, value chain analysis-Portfolio analysis.
5. **Strategy Implementation :** Interrelationship between formulation and implementaion-issues in strategy implementation : basic idea about resource allocation, leadership and structural considerations.
6. **Strategy Evaluation :** Evaluation and control in strategic managementcriteria for strategy evaluation-strategy evaluation framework.

References :

Ansoff, I : Corporate Strategy, Penguin

Ansoff, I : Implanting Strategic Management, PHI

Porter, M. E. : Competitive Strategy, free press

Subba Rao, V : Stratagic Management, Himalaya Publishing

Paper-12 : Marketing & Human Resource Management

Module - 1 : Marketing Management (25 Marks) :

1. **Marketing tasks, concepts and tools :** how marketing practices are changing in the new competitive economy-defining and delivering customer value and satisfaction.
2. **Market-oriented strategic planning-scanning the marketingenvironment :** analysing Consumer markets and buyer behaviouridentifying market segments and selecting Target markets.
3. **Positioning and differentiating the market offering through the productlife cycle developing new market offerings.**
4. **Setting the product and branding strategy :** developing price strategies and programmes.
5. **Designing and managing marketing channels :** managing advertising, sales promotion, public relations and direct marketing-managing the sales force.

Module - 2 : Human Resource Management (25 Marks) :

1. **Meaning, Scope & Functions of Human Resource Management :** Defining, Scope, Objective, Importance of HRM Qualities, Role of HR Manager, Difference between PM & HRM.
2. **Human Resource Planning, Recruitment and Selection, WelfareProgrammes.**

(a) HR Planning : Meaning Objectives, Processes, Succession Planning ;

(b) Recruitment & Selection : Concepts, Objectives, Sources ofRecruitment, Selection Process.

(c) Welfare Programmes : Meaning and Objectives and Types of WelfareProgrammes.

3. **Training & Performance Appraisal :** Meaning and Objectives ; Difference between
   (a) Training & developments ; Needs, Methods and evaluation.
   (b) Performance Appraisal : Meaning, Importance, Problems and ErrorsPotential Appraisal-Appriasal Methods.
4. **Industrial Disputes & Industrial Relations :**
   (a) Industrial Disputes : Meaning, forms & causes ; Methods for Prevention& Settlement
   (b) Industrial Relations : Meaning, Importance, Characteristics & FactorsConditions for Congenial IRs : Meaning, Objectives & forms & Workers' Participation in Management.

Referances :

Kotler,Marketing Management, PHI.

Kotler and Armstrong, Principles of Marketing, PHI.

Ramaswamy and Namakumari, Marketing Management : Planning, Implementation and Control-The Indian Context, Macmillan India.

Neelamegham, Marketing in India : Cases and Readings, Vikas.

Srinivasan, Case Studies in Marketing : The Indian Context, PHI.

Paper-13 : Corporate Financial Environement

Module - 1 : (25 marks) :

1. Introduction to Indian Financial Environment
2. Role and importance of Financial Management
3. Mutual Funds - Types of Mutual funds - Performance Measurement.
4. International Financial Institutions.
5. Overview of Indian Stock Market-Primary Market - Secondary Market.
6. Stock Market Analysis - Fundamental and Technical Approach.

Module - 2 : (25 marks) :

7. Efficient Market Theory.
8. Overview of Fixed Income Securities - Bond market Instruments : Government and Corporate Debt Market.
9. Yield curve Analysis - Term Structure of interest rates.
10. Introduction to Derivatives and Derivative Markets.
11. Forward and Futures Contracts - Valuation - Stock Index Funtures.
12. Options Contracts - Option Pricing-Option Trading strategies.

References :

Gupta, R. L., Advanced Financial Accounting, S. Chand & sons.

Gedford, N. M. : Extensionsin Accounting Disclosure, PHI

Zeff and Dharan, Readings and Notes on Financial Accounting, McGraw Hill

Banerjee & Basu, Corporate Financial Reporting, University of Calcutta.

Paper 14 : Advanced Statistical Concepts and Tools Module-1 : (25 Marks) :

1. **Basic concepts of probability :** Introduction, definition of various terms, classical definition, empirical definition and axiomatic definition of probability. Random experiment, event, law of addition of probability, multiplication law of probability, conditional probability, independent events, pairwise independent events, Bayes theorem and its application.
2. **Random variables :** definition of random variable, distribution function, discrete and continuous random variable, probability mass function, probability density function, discrete and continuous distribution function, joint probability law. Mathematical expectation-addition and multiplication theory of expectation and moment generating function.
3. **Discrete probability distribution :** introduction, Binomial distribution, moments recurrence relation between the moments, moment generating function, Poisson distribution, moments, recurrence relation between the moments, Moment generating function, geometric distribution, moments of geometric distribution.
4. Continuous probability distribution, rectangular distribution, moments and MGF of rectangular function. Normal distribution, Chief characteristics of Normal distribution and Normal probability curve.

Module-2 : (25 marks) :

1. **Introduction :** types of sampling, probability sampling, simple random sampling, systematic sampling, stratified random sampling, cluster sampling, non probability sampling - convenient sampling, purposive sampling, judgement sampling and quota sampling.
2. **Sampling distribution :** Introduction, sampling distribution of the mean, central limit theorem, T. F. Chi-square distribution.
3. **Theory of estimation :** Introduction, characteristics of estimators, consistency, unbiasedness, sufficiency and efficiency, most sufficient estimator.
4. **Testing of hypothesis. :** Basic concepts, hypothesis testing procedure, testing of population mean, population proportion, testing of difference between means, testing for population variance, testing of equality of two population variances, chi-square test, testing the goodness of fit, testing independence of categorized data.

eferences :

Goon, Gupta, Dasgupta : Fundamentals of Statistics. Vol I & II.

Mathai, Rathic : Probalility and Statistics.

Kapoor, Saxena : Mathematical Statistics.

Paper-15 : Financial Statement Analysis and Reporting

Module - 1 : (25 marks) :

1. **Introduction :** Meaning and objective of Financial Management Analysisorigin of Financial Statement Analysis-sources of financial

statement information -traditional approach vs. new approach to Financial Statement Analysis technique of Financial Statement Analysis.

2. **Profitability Analysis :** Application of accounting ratios for measuring profitability concept of economic value added.
3. **Analysis of growth and sustainable earnings :** The meaning of growth the analysis of chances in operation - Operating Leverage - Analysis of changes in financing - the analysis of growth in Investments - Analysis of Sustainable Earnings.
4. **Analysis of Liquidity and Solvency :** Measurement of liquidity and solvency by application of ratios-liquidity of inventory-Inventory turnover ratio-different approaches to calculate inventory turnover-liquidity of Debtors-Debtors turnover and velocity - Liquidity and Distribution of Current Assets.
5. **Analysis of Cash flow statement :** Utility of cash flow statement - cash flow statement as per AS3 – role of cash flow statment.
6. **Inter-firm comparison.**

Module - 2 : (25 marks)

7. **Concept of stock market efficiency :** Meaning of efficient stock market Random walk and market efficiency - Different forms of market efficiency - Anomalies of market efficiency - role of financial analyst in an efficient market.
8. **Corportate sickness :** Meaning of the term of corporate sickness Provisions of SICA-Suggested measures for turnaround.
9. **Prediction of Bond Risk and Credit Rating :** Different types of risks involved in bond holding - Meaning of Bond Risk Premium- with the help of models - utility of forecasting Bond Risk Premium-Meaning of Credit Rating - Models on forecasting of Credit Rating - Credit Rating and Accounting Ratios - Cash flow and Credit Rating.
10. **Analysis of Merger :** Differnet forms of corporate merger - Benefits and motives for merger - Evaluation of prospective merger proposals and post merger performance.
11. **Corporate Financial Reporting in India :** Emerging issues and reporting practices.

References :

Lev. B., Financial Statement Analysis : A new approach, PHI

Foster. G., Financial Statement Analysis, PHI

Foulke, A. R. Practical Financial Statement Analysis, Total McGraw Hill.

Paper - 16 : Corporate Tax Planning and Management

Module - 1

1. **Concept of Tax Planning :** Corporate Tax Planning - Tax Planning in Strategic & Project Releted Deceisions - Tax Avoidance.
2. **Tax Planning in functional Management :** Employees' remuneration : Tax implication and planning consonant with company law requiremetsResearch & development.

3. **Tax Planning with reference to financial management decisions :** Capital structure decision, Dividend policy - Inter - corporate diviend and capitalization of reserves and surplus.

Module - 2

4. **Corporate Strategies :** Setting up of new business. Tax aspects of amalgamation and merger. Tax implication of foreign collaboration agreemetnts. Corporate failure and contraction.
5. **Tax consideration with regard to specific management decisions suchas** (i) make or buy, (ii) own or lease, (iii) retain or replace.
6. **Tax management :** Procedural aspects of assessment, appeal and revision, review and rectification.

References :

Law and Practice of Income Tax in India-Kanga and Pallivala.

Direct Taxes : Law and Practice : Bhagati Prasad

Corporate Tax Planning F.A. Srinivas

Corporate Tax Planning : D. A. Upponi

Paper - 17 : Management Accounting

Module - 1 :

1. **Introduction :** Definition, functions and scope of management accounting ; difference with other branches of accounting ; role, position and responsibility of management accountant.
2. **Marginal Costing and Management Decision :** Concept and its application in Cost - Volume-Profit (CVP) analysis and managerial decision-making.
3. **Management Control Systems :** Standard Costing and Variance Analysis - definition-objectives - advantages and limitations of standard costing standard costing vs. budgetary control - analysis and interpretation of variances - reconciliation of budgeted and actual profit. Budgetary Control - Functional budgets - master budget - flexible budget - flexible budgeting - zero - base budgeting - performance budgeting - Programme budgeting.

Module - 2 :

4. **Performance Measurement and Responsibility Accounting :** Return on Investment - Residual Income - Economic value Added - Balanced Scorecard. Concept of responsibility centre-responsibility accounting and reporting - preparation of reports under responsibility accounting system.
5. **Transfer Princing :** Need - principles - different methods and their applicability.
6. **Activity based Costing and Activity - based Management :** Concept of activities - cost drivers - cost pool - activity - based costing (ABC) advantages and limitations of (ABC) - traditional costing vs. ABC - cost analysis and recovery of overheads under ABC - using ABC systems for cost management and profitability improvement.

References :

Management Accounting - M. Y. Khan & P. K. Jain, TMH

Management Accounting principles - R. N. Anthony & T. R. Recce. Homewood III : R. D. Irwin, Inc.

Management Accounting-I.M. Pandey, Vikas.

Paper - 18 : Financial Management

Module - 1 :

1. **Introduction :** Functions of Financial Management - Objectives of firm : Profit maximization and value maximization.
2. **Some basic concepts of Finance :** Time value of money - risk - return relationship.
3. **Various sources of Finance :** Long, medium and short-term - Indian financial system (brief introduction)
4. Cost of Capital
5. Analysis of leverages and capital structure theories and planning.

Module - 2 :

6. Management of various components of working capital
7. Capital budgeting decisions of the firm
8. Dividend decisions
9. Financial management of sick enterprises
10. Portfolio management.

References :

Financial Management - James C. Van Horne, PHI

Financial Management-Theory & Practice - Prasanta Chandra TMH.

Financial Policy and Management Accounting - B. Banerjee, world Press.

Financial Management - Khan & Jain, TMH

Financial Management - IM Pandey, Vikas.

Paper - 19 : Auditing

Module - 1 :

1. **Auditing :** Nature and scope, audit process, objective of audit - Relationship between Accounting and Auditing principles - Types of Audit - periodical audit, interim audit, continuous audit - Extended meaning of audit, philosophy of audit - Auditing as a social science and social objects of audit.
2. **Planning and Programming of Audit :** Planning the flow of audit work, Audit checklist-Review of audit notes and working papers - Reliance on another auditor, on internal auditor and on an expert.
3. **Evaluation of Internal Control System and Internal Audit :** Evaluation of internal control procedures - Techniques including questionnaire, flow -chart etc., -internal audit - scope, duty, rights - coordination between the two - Role of Audit Committee.
4. **Statements / Standards and Guidance Notes :** Concepts of generally accepted acounting principles - their significance with reference to audit - Concepts of generally accepted auditing Standards - Statements of Auditing and assurance standard issued by ICAI - Compliance with accounting standards including Standards issued under Income Tax Act.

5. **Audit of Limited Companies :** Statutory requirements - Audit report independence of auditor-concept of true and fair and materiality in the context of audit of companies - dividends and divisible profits.
6. **Special Audit :** Concept of Management and Operational Audit - its nature & purpose & organization ; Cost Audit - Forecast Audit - Audit of interim financial statements - Limited review - as per listing agreement.
7. **Application of EDP for Audit :** Specific problems of EDP audit - need for review of internal control - techniques of audit of EDP output - Use of computers for internal and management audit purposes - Audit implication of Computer - aided auditing.
8. **Professional Ethics and Code of Conduct :** Enhancing the quality of audit - emerging issues and measures.

References :

Contemporaray Auditing - Kamal Gupta, Tata McGraw Hill

Auditing : Theory & Practice - P. Kumar, P. Sachdeva & J. Sing,

Fundamentals of Auditing - Gupta & Aurora, Tata McGraw Hill

Cost Audit & Management Audit - Sexena & Vashit, Sultan Chand & Sons.

Paper - 20 : Computer Applications in Business

Mudule - 1 :

1. **Computer Hardware :** Computer system as information system ; Computer system difference - types of computer systems, hardware options - CPU, input devices, output devices, storage devices, communication devices, configuration of hardware ; devices and their applications.
2. **Personal Computers :** PC and its main components, hardware configuration, CPU and clock speed, RAM and secondary storage devices, other peripherals used with PC ; Factors influencing PC performance ; PC as a virtual office.
3. **Modern Information Technology :** Basic idea of Local Area Networks (LAN) and Wide Area Networks (WAN) ; E-mail ; Internet technologies, access devices, concept of a World Wide Web and Internet browsing ; Multimedia.

4. **Introduction to Operating Systems :** Software needs, operating systems, application software, programming languages ; DOS ; Windows-Window explorer, print manager, control panel, paintbrush, calculator, desktop, lvy computer, find, run, UNIX.

Module - 2 :

5. **Word Processing :** Introduction and working with MS-Word in MS-Office ; Word basic commands ; Formatting - text and documents ; Storing and tables ; Working with graphics ; Introduction to mail-merge.
6. **Spread Sheets :** Working with EXCEL-formatting, functions, chart features ; Working with graphics in Excel ; Using workshop as database in accounting, marketing, finance and personal areas.
7. **Presentation with Power-point :** Power-point basics, creating presentations the easy way ; Working with graphics in Power-point ; Show time, sound effects and animation effects.
8. **Introduction to Accounting Packages :** Preparation of vouchers, invoice and salary statemets ; Maintenance of inventory records ; Maintenance of accounting books and final accounts ; Financial reports generation, Practical knowledge on Wings Accounting and Wings Trade (Software), Tally etc.

References :

Introduction to Microprocessor - Aditya P. Mathur

Microprocessor, Microcmputer & Their Application - A. K. Mukhopadhyay.

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বাংলা
স্নাতকোত্তর পাঠক্রম

নেতাজি সুভাষ মুক্ত বিশ্ববিদ্যালয়
১ উডবার্ন পার্ক □ কলকাতা ঃ ৭০০ ০২০
ফোন ঃ ২২৮৩-৫১৫৭
টেলি ফ্যাক্স ঃ ০৩৩-২৮৩৫০৮২

মুক্ত বিশ্ববিদ্যালয়ের ধারণা

মুক্ত শিক্ষাব্যবস্থা এমনই এক ব্যবস্থা সেখানে শিক্ষাগ্রহণের মূল দায়িত্ব শিক্ষার্থীর উপরই ন্যস্ত থাকে। তা সত্ত্বেও তাঁদের একটি পদ্ধতিতে নথিভুক্ত থাকতে হয়, যাতে অন্য শিক্ষার্থীরাও অংশ নিতে পারে। শিক্ষার্থীর পাঠগ্রহণের পদ্ধতিতে একটা বিভেদ রেখা এইভাবে টানা যায়, (১) পুস্তকাগার থেকে বই সংগ্রহ করে পড়াশোনা করা এবং (২) প্রথানুযায়ী কোনো বিশ্ববিদ্যালয়ে যুক্ত হয়ে পড়াশোনা করা।

মুক্ত বিশ্ববিদ্যালয় উচ্চশিক্ষার একটি স্বয়ংসম্পূর্ণ, বিকল্প পদ্ধতি। এটি স্পষ্টতই প্রথাবদ্ধ, প্রাতিষ্ঠানিক ও কেন্দ্রীয়ভাবে নিয়ন্ত্রিত শিক্ষাব্যবস্থা থেকে স্বতন্ত্র। এর দর্শন বিশ্বজনীনতা, নমনীয়তা ও নতুন নতুন প্রবর্তনাকে ঘিরে গড়ে উঠেছে। এর আদর্শ এবং ভাবধারা, এর পদ্ধতি ও প্রকরণ সে ভাবেই তৈরি। এটি প্রথাগত ও প্রথাবহির্ভূত শিক্ষা ব্যবস্থার শ্রেষ্ঠ উপাদান সমন্বিত একটি ব্যবস্থা।

বিভিন্ন উপাদানের সমন্বয়ে এই প্রতিষ্ঠানের 'মুক্তত্ব' গড়ে উঠেছে। প্রথমত, এটি শিক্ষার্থীদের সহজে প্রবেশের সুযোগ করে দেয়। ভর্তির দাবিদাওয়াও তেমন কিছু নয়। শুধুমাত্র, সত্যিকারের জ্ঞান আহরণের বাসনাই এখানে প্রত্যাশিত। তাই এখানে যথাসম্ভব অধিক সংখ্যক শিক্ষার্থীকে সাগ্রহে গ্রহণ করা হয়ে থাকে।

দ্বিতীয়ত, স্বাভাবিকভাবেই এর ভৌগোলিক সীমা বিস্তৃত। এর লক্ষ্য শিক্ষার্থী যেখানেই থাকুন না কেন, শিক্ষাকে তাঁর দোরগোড়ায় পৌঁছে দেওয়া। এ জন্য যোগাযোগ ও সম্পর্ক স্থাপনের বিভিন্ন পদ্ধতি ব্যবহার করা হয়। তাই বিশ্ববিদ্যালয়ের পাঠকক্ষ বিস্তৃত ও বিস্তীর্ণ অঞ্চল জুড়ে প্রসারিত হয়।

তৃতীয়ত, মুক্ত বিশ্ববিদ্যালয় শিক্ষার্থী-কেন্দ্রিক। এর পাঠক্রম এবং পঠন-পাঠন পদ্ধতি পরিকল্পনা শিক্ষার্থীদের প্রয়োজন অনুযায়ী প্রণয়ন করা হয়। এখানে তাঁদের অভিপ্রায় ও প্রবণতার প্রতি সমধিক গুরুত্ব দেওয়া হয়। বিভিন্ন ধরনের পাঠক্রম—স্বল্পকালীন বা দীর্ঘমেয়াদী, উদার বা পেশাগত এই বিশ্ববিদ্যালয়ের অধীনে থেকে অনুসরণ করা যায়।

চতুর্থত, এটি উন্নতমানের শিক্ষার ন্যায়সঙ্গত বণ্টনে বিশ্বাসী, শিক্ষা সহায়ক সামগ্রী, পরামর্শ এবং পাঠ্যবস্তু, বিশ্ববিদ্যালয়ের যে কোন সম্পদই, শিক্ষার্থী যেখানেই থাকুন না কেন, তা সমভাবে প্রাপ্তব্য। এর ফলে পার্থক্য ও ভিন্নতাবোধ দূর হয়।

পঞ্চমত, এর প্রশাসন বিকেন্দ্রীভূত। বিশ্ববিদ্যালয় দূরবর্তী শিক্ষাব্যবস্থা বিস্তারের জন্য পাঠকেন্দ্রে এটি সুসংবদ্ধ পরিকাঠামো নির্মাণ করে। শিক্ষার্থীদের শুধু প্রয়োজন তাঁদের যাঁর যাঁর নিকটবর্তী কেন্দ্রে উপস্থিত হয়ে সমস্ত তথ্য অবগত হওয়া, সমস্ত আনুষ্ঠানিক বিধিবদ্ধ বিষয় সম্পাদন করা ও পাঠ্য বিষয় সংক্রান্ত সমস্ত বিষয় আলোচনা করা এবং সুবিধামত সময়ে নিজের কাজের মূল্যায়নের জন্য উপস্থিত হওয়া।

ষষ্ঠত, মুক্ত বিশ্ববিদ্যালয়ে শিক্ষার্থীর মূল্যায়ন ধারাবাহিক এবং মূল্যায়ন 'মানক' (credit) পদ্ধতিতে করা হয়। এর ফলে শিক্ষার্থীদের একটিমাত্র চূড়ান্ত পরীক্ষার জন্য বিব্রতবোধ করার প্রয়োজন হয় না। প্রত্যেকে তাঁর নিজস্ব গতিতে পড়াশুনো করতে পারেন।

সংক্ষেপে মুক্ত বিশ্ববিদ্যালয় তার সমৃদ্ধ জ্ঞান ভাণ্ডার সর্বাধিক সংখ্যকের ব্যবহার করার জন্য মুক্ত করে দেয়। ফলে তাঁদের শিক্ষাগত দক্ষতা ও জানবার আগ্রহ বৃদ্ধি পায়। সামাজিকভাবেও যাঁরা একদা শিক্ষাগত দক্ষতার অভাবে পশ্চাৎপদ ছিলেন তাঁরাও নিজেদের উন্নতি সাধনে সক্ষম হন। বিশ্বের বর্তমান প্রবণতা বিবেচনা করে এটা সঙ্গতভাবেই দাবি করা যায় যে, মুক্ত বিশ্ববিদ্যালয় প্রচলিত উচ্চশিক্ষাব্যবস্থার শুধু সম্পূরক-ই নয়, কার্যত এটি অচিরেই অধিকাংশ উন্নতিশীল দেশেই কেন্দ্রীয় ভূমিকা গ্রহণ করবে, যেখানে গ্রহীতার বিপুলতার তুলনায় সম্পদ অনেক কম।

নেতাজি সুভাষ মুক্ত বিশ্ববিদ্যালয়ের দর্শন ও উদ্দেশ্য।

দর্শন ঃ

নেতাজী সুভাষ মুক্ত বিশ্ববিদ্যালয় পশ্চিমবঙ্গের রাজ্য বিশ্ববিদ্যালয়, যা এ রাজ্যের মানব-সম্পদের ভিত্তি নির্মাণ করবে। জ্ঞানান্বেষীদের প্রয়োজন ও তাগিদ অনুযায়ী, একবিংশ শতাব্দির উপযোগী শিক্ষাদানের উদ্দেশ্যে এই বিশ্ববিদ্যালয় অন্যান্য রাজ্য ও জাতীয় মুক্ত বিশ্ববিদ্যালয়গুলির সাথে একযোগে দূরশিক্ষার মান উন্নয়ন ও যথোচিত প্রযুক্তি নির্মাণের কাজে আত্মনিয়োগ করবে, যাতে এদেশে আন্তর্জাতিক মানের দূরশিক্ষাব্যবস্থা তৈরি করা যায়।

উদ্দেশ্য ঃ

রাজ্যের বিভিন্ন অংশে উচ্চশিক্ষা প্রসারের জন্য এবং অন্যান্য বিশ্ববিদ্যলয়গুলির সহযোগিতায় উচ্চশিক্ষা এবং দক্ষতা বর্ধক শিক্ষাক্রম প্রদানের জন্য নেতাজি সুভাষ মুক্ত বিশ্ববিদ্যালয়।

- রাজ্যের সা-জ্ঞান সম্পন্ন সমাজ স্থাপনের উদ্দেশ্যে নমনীয় প্রক্রিয়ায় উচ্চ-মানের শিক্ষা প্রদান করবে এবং এ রাজ্যের ভাষায়, অর্থাৎ বাংলায়, দূরশিক্ষার মাধ্যমে উচ্চশিক্ষা প্রদান করবে।
- দুস্থদের কাছে শিক্ষা সহজলভ্য করে তুলবে।
- ইচ্ছুক শিক্ষার্থীর জন্য জীবনব্যাপী শিক্ষালাভের সুব্যবস্থা করে দেবে।
- সমাজের প্রাথমিক মূল্যবোধের সঙ্গে সমঝোতা না করে, প্রযুক্তির উন্নয়নের প্রচষ্টো করে যাবে।
- রাজ্যের ও জাতির সার্বিক উন্নয়নে অংশগ্রহণ করবে এবং শিক্ষার্থীদের ধর্মনিরপেক্ষ, বিজ্ঞানভিত্তিক ও গণতান্ত্রিক শিক্ষাগ্রহণে উদ্বুদ্ধ করবে।

- শিক্ষাদান প্রণালী

শিক্ষার্থীদের যথাসম্ভব বেশি সুযোগ করে দেবার জন্য বিশ্ববিদ্যালয় নানারকম শিক্ষাপ্রণালী প্রয়োগ করে পাঠ্যবস্তু এবং শিক্ষামূলক প্রকল্পের কার্যক্রম তৈরি করে। প্রথমেই, শিক্ষার মুদ্রিত উপকরণের

যোগান, প্রশিক্ষকদের সঙ্গে যোগাযোগ এবং মুখোমুখি আলোচনার ব্যবস্থা প্রভৃতি উপাদান পাওয়া যাবে। পরিশেষে শ্রাব্য-দৃশ্য কর্মসূচী, দূরভাষে মতের আদান-প্রদান এবং সময়ে সময়ে দূরদর্শনে আলোচনার আসরের ব্যবস্থা করা হবে। ইন্দিরা গান্ধী জাতীয় মুক্ত বিশ্ববিদ্যালয়ের সঙ্গে যৌথভাবে প্রতিমাসের চতুর্থ রবিবার বিকেল চারটে থেকে পাঁচটা পর্যন্ত আকাশবাণীর মাধ্যমে শিক্ষাদান এবং মতের আদান প্রদান চালু আছে। 'জ্ঞান-বাণী' এফ. এম. চ্যানেলের মাধ্যমে নিয়মিত শিক্ষাদান সম্প্রতি চালু হয়েছে।

● শিক্ষাদানের ভাষা

রাজ্যস্তরের উদ্যোগ হিসাবে বিশ্ববিদ্যালয়ের পাঠক্রম বাংলা ভাষার মাধ্যমেই চলবে। শিক্ষার্থীদের বাড়ির কাজ (home assignment) এবং প্রান্তিক পরীক্ষার উত্তরপত্র ইংরেজিতে লেখবার স্বাধীনতা আছে।

● পাঠকেন্দ্র এবং শিক্ষার্থী সহায়ক ব্যবস্থা ঃ

বিশ্ববিদ্যালয় শিক্ষার্থীদের পড়া এবং জানার সুবিধার জন্য পাঠবস্তু দিয়ে সহায়তা করে। শিক্ষার্থীদের প্রয়োজনে বিশ্ববিদ্যালয় পাঠকেন্দ্রসমূহের সাহায্যে নানারকম সহায়তার ব্যবস্থা করে। পাঠকেন্দ্রগুলি রাজ্যের সবকটি জেলায় যেখানে যানবাহনের সাহায্য পাওয়া যায় এমন সুবিধাজনক জায়গায় স্থাপিত হয়েছে। একজন সমন্বয়কারীর (কো-অর্ডিনেটর) তত্ত্বাবধানে, তাঁর দপ্তরের কর্মীদের সাহায্যে পাঠকেন্দ্রগুলি পরিচালিত হয়। এগুলি প্রয়োজনীয় তথ্য সরবরাহ, বিশ্ববিদ্যালয়ের কার্যক্রমের বিবরণ এবং ভর্তির আবেদনপত্র যোগান দেয়।

প্রতি শিক্ষাবর্ষের শুরুতে পাঠকেন্দ্রগুলি প্রাথমিক পরিচয়ের জন্য একটি সভায় সমস্ত শিক্ষার্থীদের আহ্বান করে, তাঁদের বিশ্ববিদ্যালয়ের পাঠক্রমের লক্ষ্য, উদ্দেশ্য ও কর্মধারার এবং দূরশিক্ষা ব্যবস্থার পঠন-পাঠন পদ্ধতি সম্পর্কে পরিচিত করায়।

পাঠকেন্দ্রগুলি তাদের শিক্ষা-সহায়কদের সঙ্গে সরাসরি আলোচনার নির্ঘণ্ট তৈরি করে সে সম্বন্ধে শিক্ষার্থীদের অবহিত করায়। সাধারণভাবে, সপ্তাহের শেষে এবং তত্ত্বাবধায়ক শিক্ষাকেন্দ্রের অবকাশের সময় আলোচনা পরামর্শ পর্ব অনুষ্ঠিত হয়।

পাঠকেন্দ্রগুলি বিশ্ববিদ্যালয় থেকে বিজ্ঞাপিত সময়সূচী অনুযায়ী পরীক্ষা পরিচালনারও ব্যবস্থা করে।

সংক্ষেপে, প্রতিটি পাঠকেন্দ্র শিক্ষার্থী এবং বিশ্ববিদ্যালয়ের মধ্যে দৈনন্দিন যোগাযোগ রক্ষাকারী হিসাবে কাজ করে।

প্রথম পত্র
বাংলা সাহিত্যের ইতিহাস

[আর্থ-সামাজিক-সাংস্কৃতিক প্রেক্ষিতে পঠনীয়। যুগলক্ষণ সম্পর্কে ধারণা থাকা আবশ্যক]

পর্যায় ঃ এক

প্রাক-তুর্কী পর্ব ঃ ১০ম - ১২শ শতক

(ক) সংস্কৃত-প্রাকৃত অপভ্রংশে রচিত বাঙালির সাহিত্য।

(খ) চর্যাপদ।

তুর্কী আগমন থেকে প্রাক্-চৈতন্য পর্ব ঃ ১৩শ-১৫শ শতক

(ক) শ্রীকৃষ্ণকীর্তন ঃ বড়ু চণ্ডীদাস।

(খ) ইউসুফ জোলেখা ঃ শাহ মুহম্মদ সগীর।

(গ) অনুবাদ কাব্য □ রামায়ণ ঃ কৃত্তিবাস □ মহাভারত ঃ কবীন্দ্র পরমেশ্বর, শাকর নন্দী □ ভাগবত ঃ মালাধর বসু।

(ঘ) মঙ্গলকাব্য □ মনসামঙ্গল ঃ হরি দত্ত, নারায়ণ দেব, বিজয় গুপ্ত, বিপ্রদাস পিপলাই □ চণ্ডীমঙ্গল ঃ মানিক দত্ত।

(ঙ) বৈষ্ণব পদাবলি □ বিদ্যাপতি, চণ্ডীদাস।

পর্যায় ঃ দুই

চৈতন্যযুগ ঃ ১৬শ শতক — মধ্য ১৭শ শতক

(ক) মঙ্গলকাব্য □ মনসামঙ্গল ঃ কেতকাদাস ক্ষেমানন্দ, দ্বিজ বংশীদাস □ চণ্ডীমঙ্গল ঃ দ্বিজ মাধব, মুকুন্দ চক্রবর্তী, দ্বিজ রামদেব □ ধর্মমঙ্গল ঃ রামাই পণ্ডিত, খেলারাম, রূপরাম চক্রবর্তী। □ শিবায়ন ঃ রামকৃষ্ণ রায় □ কালিকামঙ্গল বা বিদ্যাসুন্দর ঃ দ্বিজ শ্রীধর।

(খ) বৈষ্ণবপদাবলি □ মুরারি গুপ্ত, নরহরি সরকার, শিবানন্দ সেন, জ্ঞানদাস, গোবিন্দদাস, বাসুদেব ঘোষ, রামানন্দ বসু, বংশীবদন চট্টোপাধ্যায়, বলরাম দাস, যদুনন্দন দাস, মাধবদাস, অনন্ত দাস।

(গ) চরিতকাব্য □ বৃন্দাবন দাসের চৈতন্যভাগবত, লোচন দাসের চৈতন্যমঙ্গল, জয়ানন্দের চৈতন্যমঙ্গল, কৃষ্ণদাস কবিরাজের চৈতন্যচরিতামৃত, গোবিন্দদাসের কড়চা, চূড়ামণি দাসের গৌরাঙ্গ বিজয়।

(ঘ) অনুবাদকাব্য □ রামায়ণ ঃ অদ্ভুতাচার্য, চন্দ্রাবতী □ মহাভারত ঃ কাশীরাম দাস □ ভাগবত ঃ রঘুনাথের শ্রীকৃষ্ণপ্রেমতরঙ্গিণী, মাধবাচার্যের শ্রীকৃষ্ণমঙ্গল, দুঃখী শ্যামদাসের গোবিন্দমঙ্গল।

চৈতন্যোত্তর পর্ব ঃ মধ্য ১৭শ — ১৮শ শতক

(ক) বৈষ্ণবপদ □ প্রেমদাস, রাধামোহন ঠাকুর, চন্দ্রশেখর, শশিশেখর।
বৈষ্ণবপদ সঙ্কলন □ ক্ষণদাগীতচিন্তামণি, গীতচন্দ্রোদয়, গৌরচরিতচিন্তামণি, পদামৃতসমুদ্র, পদকল্পতরু।

(খ) চরিতকাব্য □ প্রেমদাস, অকিঞ্চন দাস, নরহরি চক্রবর্তী।

(গ) মঙ্গলকাব্য □ মনসামঙ্গল ঃ তন্ত্রবিভূতি, জগজ্জীবন ঘোষাল, জীবন মৈত্র □ ধর্মমঙ্গল ঃ রামদাস আদক, সীতারাম দাস, যাদুনাথ/যাদবনাথ, শ্রীশ্যাম পণ্ডিত, ঘনরাম চক্রবর্তী, মানিক গাঙ্গুলি □ অন্নদামঙ্গল ঃ ভারতচন্দ্র রায় □ কালিকামঙ্গল বা বিদ্যাসুন্দর ঃ কৃষ্ণরাম দাস, রামপ্রসাদ সেন, বলরাম চক্রবর্তী □ শিবায়ন ঃ রামেশ্বর ভট্টাচার্য।

(ঘ) অনুবাদকাব্য □ রামায়ণ ঃ শঙ্কর কবিচন্দ্র, জগৎরাম রায়, রামানন্দ ঘোষ □ মহাভারত ঃ

দ্বৈপায়ন দাস, নন্দরাম দাস, গঙ্গাদাস সেন □ ভাগবত ঃ শঙ্কর কবিচন্দ্র, বলরাম দাস, দ্বিজ মাধবেন্দ্র, দ্বিজ রমানাথ।

(ঙ) শাক্ত পদাবলি □ রামপ্রসাদ সেন, কমলাকান্ত প্রমুখ।

(চ) নাথ সাহিত্য।

(জ) ময়মনসিংহ গীতিকা, পূর্ববঙ্গ গীতিকা।

(ঝ) চট্টগ্রাম-রোসাঙের রোমান্টিক প্রণয়কাব্য।

পর্যায় ঃ তিন

রবীন্দ্রনাথ ঠাকুর (সমগ্র সাহিত্য)।

পর্যায় ঃ চার

উনিশ শতক (প্রথমার্ধ)

গদ্য ঃ

(ক) ফোর্ট উইলিয়ম কলেজের পণ্ডিতবর্গ ঃ উইলিয়ম কেরি, রামরাম বসু, গোলোকনাথ শর্মা, মৃত্যুঞ্জয় বিদ্যালঙ্কার, তারিণীচরণ মিত্র, রাজীবলোচন মুখোপাধ্যায়, চণ্ডীচরণ মুনশি, রামকিশোর তর্কচূড়ামণি, হরপ্রসাদ রায়।

(খ) রামমোহন রায়।

(গ) ভবানীচরণ বন্দ্যোপাধ্যায়।

(ঘ) ঈশ্বরচন্দ্র বিদ্যাসাগর।

(ঙ) অক্ষয়কুমার দত্ত।

কবিতা ঃ

(ক) কবিগান, পাঁচালি গান, টপ্পাগান।

(খ) ঈশ্বরচন্দ্র গুপ্ত।

সাময়িক পত্র ঃ

দিগ্‌দর্শন, সমাচার দর্পণ, বাঙ্গাল গেজেট, সম্বাদ কৌমুদী, সমাচার চন্দ্রিকা, সংবাদ প্রভাকর, জ্ঞানান্বেষণ, তত্ত্ববোধিনী ইত্যাদি।

উনিশ শতক (দ্বিতীয়ার্ধ)

কাব্যসাহিত্য ঃ

রঙ্গলাল বন্দ্যোপাধ্যায়, মাইকেল মধুসূদন দত্ত, হেমচন্দ্র বন্দ্যোপাধ্যায়, নবীনচন্দ্র সেন, কায়কোবাদ, ইন্দ্রনাথ বন্দ্যোপাধ্যায়, বিহারীলাল চক্রবর্তী, গোবিন্দচন্দ্র দাস, দেবেন্দ্রনাথ সেন, অক্ষয়কুমার বড়াল, গিরীন্দ্রমোহিনী দাসী, মানকুমারী বসু, দ্বিজেন্দ্রলাল রায়, কামিনী রায়।

প্রবন্ধ ঃ

প্যারীচাঁদ মিত্র, ভূদেব মুখোপাধ্যায়, রাজনারায়ণ বসু, বঙ্কিমচন্দ্র চট্টোপাধ্যায়, শিবনাথ শাস্ত্রী, হরপ্রসাদ শাস্ত্রী, স্বামী বিবেকানন্দ, অক্ষয়চন্দ্র সরকার, রমেশচন্দ্র দত্ত, সখারাম গণেশ দেউস্কর।

কথাসাহিত্য ঃ

প্যারীচাঁদ মিত্র, কালীপ্রসন্ন সিংহ, ভূদেব মুখোপাধ্যায়, বঙ্কিমচন্দ্র চট্টোপাধ্যায়, সঞ্জীবচন্দ্র চট্টোপাধ্যায়, তারকনাথ গঙ্গোপাধ্যায়, ত্রৈলোক্যনাথ মুখোপাধ্যায়, মীর মশাররফ হোসেন, রমেশচন্দ্র দত্ত, যোগেন্দ্রচন্দ্র বসু, হরপ্রসাদ শাস্ত্রী, স্বর্ণকুমারী দেবী।

নাট্যসাহিত্য ঃ

জি. সি. গুপ্ত, তারাচরণ শিকদার, রামনারায়ণ তর্করত্ন, কালীপ্রসন্ন সিংহ, উমেশচন্দ্র মিত্র, মাইকেল

মধুসূদন দত্ত, দীনবন্ধু মিত্র, মনোমোহন বসু, উপেন্দ্রনাথ দাস, রাজকৃষ্ণ রায়, জ্যোতিরিন্দ্রনাথ ঠাকুর, গিরিশচন্দ্র ঘোষ, অমৃতলাল বসু, দ্বিজেন্দ্রলাল রায়, ক্ষীরোদপ্রসাদ বিদ্যাবিনোদ।

সাময়িকপত্র ঃ

বিবিধার্থ সংগ্রহ, মাসিক পত্রিকা, এডুকেশন গেজেট, সোমপ্রকাশ, রহস্যসন্দর্ভ, অবোধবন্ধু, বঙ্গদর্শন, প্রচার, নবজীবন, ভারতী, বালক, সাধনা, বঙ্গবাসী, হিতবাদী, জন্মভূমি, বামাবোধিনী।

পর্যায় ঃ পাঁচ

বিশ শতক

কাব্যসাহিত্য ঃ

প্রমথ চৌধুরী, সত্যেন্দ্রনাথ দত্ত, কালিদাস রায়, যতীন্দ্রমোহন বাগচী, মোহিতলাল মজুমদার, যতীন্দ্রনাথ সেনগুপ্ত, কাজী নজরুল ইসলাম, বুদ্ধদেব বসু, বিষ্ণু দে, সুধীন্দ্রনাথ দত্ত, জীবনানন্দ দাশ, অমিয় চক্রবর্তী, প্রেমেন্দ্র মিত্র, সুভাষ মুখোপাধ্যায়, বিমলচন্দ্র ঘোষ, বীরেন্দ্র চট্টোপাধ্যায়, অরুণ মিত্র, সমর সেন, সুকান্ত ভট্টাচার্য, দিনেশ দাস, গোলাম কুদ্দুস, নীরেন্দ্রনাথ চক্রবর্তী, অলোকরঞ্জন দাশগুপ্ত, শঙ্খ ঘোষ, শক্তি চট্টোপাধ্যায়, সুনীল গঙ্গোপাধ্যায়, বিনয় মজুমদার, তরুণ সান্যাল, অমিতাভ দাশগুপ্ত।

উপন্যাস ঃ

শরৎচন্দ্র চট্টোপাধ্যায়, প্রভাতকুমার মুখোপাধ্যায়, জগদীশ গুপ্ত, তারাশঙ্কর বন্দ্যোপাধ্যায়, বিভূতিভূষণ বন্দ্যোপাধ্যায়, মানিক বন্দ্যোপাধ্যায়, অন্নদাশঙ্কর রায়, ধূর্জটিপ্রসাদ মুখোপাধ্যায়, গোপাল হালদার, বনফুল, শরদিন্দু বন্দ্যোপাধ্যায়, প্রমথনাথ বিশী, নবেন্দু ঘোষ, সুবোধ ঘোষ, নারায়ণ গঙ্গোপাধ্যায়, সতীনাথ ভাদুড়ী, আশাপূর্ণা দেবী, রমাপদ চৌধুরী, জ্যোতিরিন্দ্র নন্দী, ননী ভৌমিক, সাবিত্রী রায়, বিমল কর, সন্তোষকুমার ঘোষ, নরেন্দ্রনাথ মিত্র, গৌরকিশোর ঘোষ, অসীম রায়, সমরেশ বসু, গুণময় মান্না, অমিয়ভূষণ মজুমদার, প্রফুল্ল রায়, সুনীল গঙ্গোপাধ্যায়, শীর্ষেন্দু মুখোপাধ্যায়, শ্যামল গঙ্গোপাধ্যায়, অতীন বন্দ্যোপাধ্যায়, সৈয়দ মুস্তাফা সিরাজ, মহাশ্বেতা দেবী।

ছোটগল্প ঃ

শরৎচন্দ্র, প্রভাতকুমার মুখোপাধ্যায়, চারুচন্দ্র বদ্যোপাধ্যায়, প্রমথ চৌধুরী, পরশুরাম, প্রেমেন্দ্র মিত্র, অচিন্ত্যকুমার সেনগুপ্ত, জগদীশ গুপ্ত, মনীশ ঘটক, নজরুল ইসলাম, জীবনানন্দ দাশ, শৈলজানন্দ মুখোপাধ্যায়, তারাশঙ্কর বন্দ্যোপাধ্যায়, বিভূতিভূষণ বন্দ্যোপাধ্যায়, মানিক বন্দ্যোপাধ্যায়, বিভূতিভূষণ মুখোপাধ্যায়, শরদিন্দু বন্দ্যোপাধ্যায়, সুবোধ ঘোষ, নারায়ণ গঙ্গোপাধ্যায়, নরেন্দ্রনাথ মিত্র, জ্যোতিরিন্দ্র নন্দী, ননী ভৌমিক, নবেন্দু ঘোষ, সন্তোষকুমার ঘোষ, বিমল কর, রমাপদ চৌধুরী, সমরেশ বসু, সোমেন চন্দ, দীপেন্দ্রনাথ বন্দ্যোপাধ্যায়, দেবেশ রায়, তপোবিজয় ঘোষ, সৈয়দ মুস্তাফা সিরাজ, দিব্যেন্দু পালিত, মহাশ্বেতা দেবী।

প্রবন্ধ ঃ

প্রমথ চৌধুরী, জগদীশচন্দ্র বসু, জগদানন্দ রায়, হীরেন্দ্রনাথ দত্ত, অমূল্যচরণ বিদ্যাভূষণ, মোহিতলাল মজুমদার, শ্রীকুমার বন্দ্যোপাধ্যায়, শশিভূষণ দাশগুপ্ত, প্রমথনাথ বিশী, সুশীলকুমার দে, সুনীতিকুমার চট্টোপাধ্যায়, রাজশেখর বসু, সুকুমার সেন, ধূর্জটিপ্রসাদ মুখোপাধ্যায়, গোপাল হালদার, কাজী আবদুল ওদুদ, নীরেন্দ্রনাথ রায়, সুধীন্দ্রনাথ দত্ত, নীহাররঞ্জন রায়, সৈয়দ মুজতবা আলী, আবু সয়ীদ আইয়ুব, বুদ্ধদেব বসু, বিনয় ঘোষ, নারায়ণ গঙ্গোপাধ্যায়, ক্ষুদিরাম দাস।

নাটক ঃ

মন্মথ রায়, শচীন্দ্রনাথ সেনগুপ্ত, বিধায়ক ভট্টাচার্য, বনফুল, রবীন্দ্রনাথ মৈত্র, বিজন ভট্টাচার্য, তুলসী

লাহিড়ী, দিগিন্দ্রচন্দ্র বন্দ্যোপাধ্যায়, সলিল সেন, ধনঞ্জয় বৈরাগী, উৎপল দত্ত, বাদল সরকার, মনোজ মিত্র, রতনকুমার ঘোষ, মোহিত চট্টোপাধ্যায়।

সাময়িকপত্র ঃ

সবুজপত্র, শনিবারের চিঠি, কল্লোল, কালি-কলম, উত্তরা, প্রগতি, ভারতবর্ষ, প্রবাসী, বিচিত্রা, পূর্বাশা, কবিতা, পরিচয়, চতুষ্কোণ, চতুরঙ্গ, নতুন সাহিত্য।

দ্বিতীয় পত্র
ভাষাবিজ্ঞান ও সাহিত্যতত্ত্ব

পর্যায় ঃ এক

ভাষাবিজ্ঞান চর্চার ইতিহাস ; ভাষার শ্রেণিবিভাগ।

পর্যায় ঃ দুই

প্রথাগত ব্যাকরণ ও আধুনিক ভাষাবিজ্ঞান ; ধ্বনিবিজ্ঞান ; ধ্বনিতত্ত্ব ; রূপতত্ত্ব।

পর্যায় ঃ তিন

অন্বয় ও অন্বয়তত্ত্ব ; বাংলা বাক্যের অন্বয়গত নানা দিক ; অন্বয়তত্ত্ব অনুসারে বাংলা বাক্যের গঠন ও প্রকার ; সঞ্জননী তত্ত্ব ; সঞ্জননী অন্বয়তত্ত্ব-অনুসারে বাংলা বাক্যের অন্বয় ; সমাজবিজ্ঞান ও সমাজভাষাবিজ্ঞান ; উপভাষাতত্ত্ব ; ভাষা-পরিকল্পনা ; বাংলা ভাষার সংস্কার-পরিকল্পনার বিভিন্ন দিক ঃ লিপি সমস্যা ও সংস্কার, বানান সমস্যা ও সংস্কার ; পরিভাষা-অভিধান, উচ্চারণ-কোষ নির্মাণ ইত্যাদি।

পর্যায় ঃ চার

ভারতীয় সাহিত্যতত্ত্ব □ রসবাদ ; ধ্বনিবাদ ; বক্রোক্তিবাদ।

পাশ্চাত্য সাহিত্যতত্ত্ব □ ধ্রুপদী বা ক্লাসিকাল, নব্য ধ্রুপদী বা নিও-ক্লাসিকাল, রোমান্টিক, বস্তুবাদী ও অবয়ববাদী সাহিত্যবিচার এবং সমালোচনা।

তৃতীয় পত্র
কবিতা
(প্রাচীন, মধ্যযুগীয়, আধুনিক)

পর্যায় ঃ এক

চর্যাপদ □ আবিষ্কারের ইতিবৃত্ত ; পুথি-পরিচয় ; নাম-বিতর্ক ; রচনাকাল ; ধর্মতত্ত্ব ; ভাষা ; সাহিত্যমূল্য। □ নির্বাচিত দশটি চর্যার নিবিড় পাঠ ঃ ২, ৬, ৮, ১০, ১৭, ২১, ২৮, ২৯, ৩৩ ও ৪০ সংখ্যক পদ। বৈষ্ণব পদাবলি □ সাধারণী পরিচয় ; রসপর্যায় ; নায়িকালক্ষণ □ দশটি নির্বাচিত পদের নিবিড় পাঠ ঃ "ধরম করম গেল গুরু-গরবিত" (চণ্ডীদাস) ; "ধিক রহু জীবনে যে পরাধিনী জীয়ে" (ঐ) ; "নব অনুরাগিনি রাধা" (বিদ্যাপতি) ; "রয়নি কাজর বম ভীম ভুজঙ্গম" (ঐ) ; "নন্দ-নন্দন চন্দ-চন্দন" (গোবিন্দদাস) ; "কুলবতি কঠিন কপাট উদঘাটলুঁ" (ঐ) ; "শুনাইতে কানু মুরলীরব মাধুরী" (ঐ) ; "মনের মরম কথা শুন লো সজনি" (জ্ঞানদাস) ; "বড়ায়ি হেরি দেখ রূপ চেয়ে" (ঐ) ; "নটবর নবকিশোর রায়" (বলরামদাস)।

পর্যায় ঃ দুই

□ চৈতন্যচরিতামৃত ঃ কৃষ্ণদাস কবিরাজ ঃ সাধারণী পরিচয় ; নিবিড় পাঠ ঃ আদিলীলা (৪র্থ পরিচ্ছেদ) ও মধ্যলীলা (৮ম পরিচ্ছেদ) ; সাধ্য-সাধন তত্ত্ব ; শক্তিতত্ত্ব ও রাধাতত্ত্ব।

□ মনসামঙ্গল ঃ কেতকাদাস ক্ষেমানন্দ ঃ সাধারণী পরিচয় ; মনসাকাহিনির উৎস, বিকাশ ও পরিকাঠামো ; কেতকাদাসের কাব্যের সাহিত্যমূল্য ; সামাজিক ইতিহাসের উপাদান বিচার।

□ পদ্মাবতী ঃ সৈয়দ আলাওল ঃ সাধারণী পরিচয় ; কবি পরিচয় ; কাহিনি-বিশ্লেষণ ; বিস্তৃত বিচার ঃ রত্নসেন-পদ্মাবতী বিবাহখণ্ড ; চিতোর আগমনখণ্ড ; রোম্যান্টিক ও 'ধর্মনিরপেক্ষ' মধ্যযুগীয় কাব্যরূপে মূল্যায়ন ; সুফিতত্ত্ব ও 'পদ্মাবতী'।

পর্যায় ঃ তিন

□ মেঘনাদবধ কাব্য ঃ মাইকেল মধুসূদন দত্ত ঃ সাধারণী আলোচনা ; মহাকাব্যরূপে মূল্যায়ন ; কাহিনি-সংশ্লেষ ; বিস্তৃত পাঠ ঃ ১ম, ৪র্থ ও ৯ম সর্গ ; রসবিচার ; চরিত্র বিশ্লেষণ ; প্রাচ্য ও প্রতীচ্য প্রভাব।

□ রবীন্দ্র-কবিতা ঃ সাধারণী আলোচনা □ নিবিড় পাঠ (পনেরোটি নির্বাচিত কবিতা) ঃ 'মেঘদূত' ; 'বসুন্ধরা', 'জীবনদেবতা' ; 'স্বপ্ন' ; 'উদাসীন' ; 'আগমন' ; 'অপমানিত' ; "দূর হতে কী শুনিস" ; 'মুক্তি' ; 'তপোভঙ্গ' ; 'সবলা' ; 'সাধারণ মেয়ে' ; 'বাঁশিওয়ালা' ; "দেখিলাম অবসন্ন গোধূলি বেলায়" ; "তোমার সৃষ্টির পথ রেখেছ আকীর্ণ করি"।

□ রবীন্দ্র-পরবর্তী কবিতা □ নিবিড় পাঠ (পাঁচটি কবিতা) ঃ

মানকুমারী বসু ঃ 'একা' ; সত্যেন্দ্রনাথ দত্ত ঃ 'কবর-ই নূরজাহান' ; কাজি নজরুল ইসলাম ঃ 'বিদ্রোহী' ; মোহিতলাল মজুমদার ঃ 'কালাপাহাড়' ; যতীন্দ্রনাথ সেনগুপ্ত ঃ 'ঘুমের ঘোরে'।

□ প্রথম বিশ্বযুদ্ধ-পরবর্তী কবিতা □ আধুনিক বাংলা কবিতা ঃ সাধারণী আলোচনা ; আলোচ্য পর্বের বাংলা কবিতার দর্শন ; প্রকাশভঙ্গি, সৌন্দর্যভাবনা, আঙ্গিক এবং বিভিন্ন মতবাদ ও সাহিত্য আন্দোলনের সঙ্গে সম্পর্ক □ নিবিড় পাঠ (ছয়টি কবিতা) ঃ জীবনানন্দ দাশ ঃ 'বোধ' ; সুধীন্দ্রনাথ দত্ত ঃ 'শাশ্বতী' ; অমিয় চক্রবর্তী ঃ 'ইতিহাস' ; বুদ্ধদেব বসু ঃ 'শেষের রাত্রি' ; বিষ্ণু দে ঃ 'জল দাও' ; সুকান্ত ভট্টাচার্য ঃ 'হে মহাজীবন'।

চতুর্থ পত্র

উপন্যাস ও ছোটগল্প

পর্যায় ঃ এক

উপন্যাস ঃ

রাজসিংহ □ বঙ্কিমচন্দ্র চট্টোপাধ্যায়

চতুরঙ্গ □ রবীন্দ্রনাথ ঠাকুর

পণ্ডিতমশাই □ শরৎচন্দ্র চট্টোপাধ্যায়

আরণ্যক □ বিভূতিভূষণ বন্দ্যোপাধ্যায়

নাগিনীকন্যার কাহিনী □ তারাশঙ্কর বন্দ্যোপাধ্যায়

পর্যায় ঃ দুই

ছোটগল্প ঃ

ক্ষুধিত পাষাণ, হালদারগোষ্ঠী □ রবীন্দ্রনাথ ঠাকুর
নয়নচাঁদের ব্যবসা □ ত্রৈলোক্যনাথ মুখোপাধ্যায়
অরূপের রাস □ জগদীশ গুপ্ত
স্টোভ □ প্রেমেন্দ্র মিত্র
শ্রীশ্রীসিদ্ধেশ্বরী লিমিটেড □ পরশুরাম
রস □ নরেন্দ্রনাথ মিত্র
পথের কাঁটা □ শরদিন্দু বন্দ্যোপাধ্যায়
ডোমের চিতা □ রমেশচন্দ্র সেন
সংকেত □ সোমেন চন্দ
শহীদের মা □ সমরেশ বসু
কুষ্ঠরোগীর বউ □ মানিক বন্দ্যোপাধ্যায়
জাতুধান □ মহাশ্বেতা দেবী
চতুর্থ পানিপথের যুদ্ধ □ সুবোধ ঘোষ
রেকর্ড □ নারায়ণ গঙ্গোপাধ্যায়

পঞ্চম পত্র

প্রবন্ধসাহিত্য ও শৈলীবিজ্ঞান

প্রবন্ধসাহিত্য ঃ

বঙ্কিমচন্দ্র চট্টোপাধ্যায় □ সাম্য (নির্বাচিত অংশ)
রবীন্দ্রনাথ □ কৌতুকহাস্য, কৌতুকহাস্যের মাত্রা
রামেন্দ্রসুন্দর ত্রিবেদী □ সুখ না দুঃখ
সুকুমার সেন □ গল্পের গাঁটছড়া
রাজশেখর বসু □ ভেজাল ও নকল
সুনীতিকুমার চট্টোপাধ্যায় □ জাতি, সংস্কৃতি ও সাহিত্য (নির্বাচিত অংশ)
শ্রীকুমার বন্দ্যোপাধ্যায় □ রূপকথা
গোপাল হালদার □ সংস্কৃতির সংজ্ঞা
আবদুল ওদুদ □ বাংলার নবজাগরণ
বুদ্ধদেব বসু □ উত্তরতিরিশ

শৈলীবিজ্ঞান ঃ

শৈলীবিজ্ঞানের মূলতত্ত্ব
বাংলা গদ্য ও কবিতার শৈলীবিচার

ষষ্ঠ পত্র

নাটক ও বাংলা মঞ্চাভিনয়ের ইতিহাস

বাংলা মঞ্চাভিনয়ের ইতিহাস □ ১৭৯৬-২০০০

নাটক ঃ

বুড় সালিকের ঘাড়ে রোঁ □ মাইকেল মধুসূদন দত্ত
সাজাহান □ দ্বিজেন্দ্রলাল রায়
মালিনী □ রবীন্দ্রনাথ ঠাকুর
ছেঁড়া তার □ তুলসী লাহিড়ী
অঙ্গার □ উৎপল দত্ত
তপস্বী ও তরঙ্গিণী □ বুদ্ধদেব বসু
চাঁদ বণিকের পালা □ শম্ভু মিত্র
গল্প হেকিম সাহেব □ মনোজ মিত্র

সপ্তম পত্র

বিশেষ পত্র

(ক) রবীন্দ্রসাহিত্য
(খ) আধুনিক ভারতীয় কথাসাহিত্য
(গ) বাংলাদেশের সাহিত্য
(ঘ) লোকসাহিত্য
(যে-কোনো একটি বিষয়কে গ্রহণ করতে হবে)

(ক) রবীন্দ্রসাহিত্য

কবিতা ঃ

সোনার তরী □ সোনার তরী, পরশপাথর, বৈষ্ণব কবিতা, দুই পাখি, যেতে নাহি দিব, সমুদ্রের প্রতি, মানসসুন্দরী, ঝুলন, বসুন্ধরা, নিরুদ্দেশ যাত্রা ;

শ্যামলী □ দ্বৈত, আমি, চিরযাত্রী, বাঁশিওয়ালা, হঠাৎ দেখা, অমৃত ;

গদ্য ঃ

ছিন্নপত্র □ ঐযে মস্ত পৃথিবীটা (১৩), বিকেল বেলায় আমি (২৪) কাল আষাঢ়স্য প্রথম দিবসে (৫৫), এমন সুন্দর শরতের সকালবেলা (৬৯) রোজ সকালে চোখ চেয়েই (৭০), এখন একলাটি আমার সেই বোটের জানলার কাছে (৭৪) একে তো ভারতবর্ষীয় ইংরেজগুলোকে (৭৪), কবিতা আমার বহুকালের প্রেয়সী (৯৪), আজকাল কবিতা লেখাটা আমার পক্ষে যেন (১০৭), আমি এখন পথে (১২৮), মাঘ মাসের সাধনার সেই গল্পটা (২০৩)

ভারতবর্ষের ইতিহাসের ধারা

জীবনস্মৃতি

উপন্যাস ঃ

গোরা

ছোটগল্প ঃ

তিনসঙ্গী

সে

নাটক ঃ

রক্তকরবী

(খ) আধুনিক ভারতীয় কথাসাহিত্য

□ ভারতীয় সাহিত্য—আর্থ-সামাজিক পরিপ্রেক্ষা

□ প্রধান ভারতীয় কথাসাহিত্যিকবৃন্দ (বাংলা সাহিত্য ব্যতিরেকে)

উপন্যাস ঃ

মইলা আঁচল □ ফণীশ্বরনাথ রেণু (হিন্দি)

এক চাদর মইলি সি □ রাজিন্দার সিং বেদী (উর্দু)

সংস্কার □ ইউ. আর. অনন্তমূর্তি (কানাড়া)

ছোটগল্প ঃ

কাফন □ প্রেমচন্দ (হিন্দি)

টড়্পা □ গোপীনাথ মোহান্তি (ওড়িয়া)

দেওয়াল □ ভৈকম মুহম্মদ বশির (মালয়ালম)

কনেদেখা □ অমৃতা প্রীতম (পাঞ্জাবি)

টোবা টেকসিং □ সাদাত হাসান মান্টো (উর্দু)

দিনের বেলার প্যাসেঞ্জার গাড়িতে □ জয়কান্তন (তামিল)

মাছ ও মানুষ □ মহিম বরা (অসমিয়া)

সমাজ-সংস্কারক □ অরবিন্দ গোখলে (মারাঠি)

মরীচিকা □ আচন্ট শারদা দেবী (তেলুগু)

বদমাস □ ঝবেরচান্দ মেঘানি (গুজরাটি)

□ উপন্যাস ও ছোটগল্পগুলি বাংলা অনুবাদের মাধ্যমেই পঠনীয় □

(গ) বাংলাদেশের সাহিত্য

□ বাংলাদেশের সাহিত্য ঃ প্রেক্ষিত ও বিবর্তন

উপন্যাস ঃ

লাল সালু □ সৈয়দ ওয়ালীউল্লাহ

ক্রীতদাসের হাসি □ শওকত ওসমান

নীল ময়ূরের যৌবন □ সেলিনা হোসেন

প্রবন্ধ ঃ

সাহিত্যের পথ ও সাধনা □ আবুল ফজল ; সাহিত্যের স্বরূপ □ আহমদ শরীফ ; সংস্কৃতি ও সাংস্কৃতিক আন্দোলনের লক্ষ্য □ বদরুদ্দীন উমর ; স্বরূপের সন্ধানে □ আনিসুজ্জামান ; বিশ্বাসের জগৎ □ হুমায়ুন আজাদ।

নাটক ঃ

কবর □ মুনীর চৌধুরী

কি চাহ শঙ্খচিল □ মমতাজউদ্দীন আহমদ

ছোটগল্প ঃ

একটি তুলসী গাছের কাহিনি □ সৈয়দ ওয়ালিউল্লাহ ; পরীবানুর কাহিনি □ সত্যেন সেন শকুন □ হাসান আজিজুল হক ; অপঘাত □ আখতারুজ্জামান ইলিয়াস ; লোকটি রাজাকার ছিল □ ইমদাদুল হক মিলন ; পরজন্ম □ সেলিনা হোসেন ; আশ্রয় □ বিপ্রদাস বড়ুয়া ; মাটির আদম □ রিজিয়া রহমান ; একটি দিন □ আবদুল মান্নান সৈয়দ ; তাস □ সৈয়দ শামসুল হক।

কবিতা ঃ

নির্বাচিত কবিতাগুচ্ছ □ শামসুর রাহমান, আল মাহমুদ, সিকান্দার আবু জাফর, হাসান হাফিজুর রাহমান ও মহাদেব সাহা।

(ঘ) লোকসংস্কৃতি ও লোকসাহিত্য

লোকসংস্কৃতি ; গণসংস্কৃতি ও জনসংস্কৃতি ; পপলোর □ সংজ্ঞা ও সীমানা।

সংস্কৃতির বিবর্তন □ সাংস্কৃতিক নৃতত্ত্ব ঃ মান্যা ; ম্যাজিক ; ট্যাবু ; টোটেম।

তাত্ত্বিক আলোচনা □ ধর্ম ; দেবতা ; ব্রত ; পার্বণ ; লোকাচার ; লোকবিশ্বাস ; লোকসংস্কার

বাংলার লোকসংস্কৃতি ও আদিবাসী সংস্কৃতি।

সঙ্গীত ; নৃত্য ; চিত্র ; ভাস্কর্য ; নাট্য ; স্থাপত্য।

লোকসংস্কৃতির বিভিন্ন প্রকরণের বিশ্লেষণ-পদ্ধতির মূলতত্ত্ব ঃ

(ক) ঐতিহাসিক-ভৌগোলিক
(খ) টাইপ ও মোটিফ-ভিত্তিক
(গ) রূপতাত্ত্বিক
(ঘ) আঙ্গিকবাদী
(ঙ) জাতীয়তাবাদী
(চ) মনস্তাত্ত্বিক
(ছ) ঐতিহাসিক-বস্তুবাদী

নামতত্ত্ব □ ব্যক্তিনাম, স্থাননাম, সংস্কার-কেন্দ্রিক নাম।

পাঠ ও পর্যালোচনা □ ঠাকুমা'র ঝুলি (দক্ষিণারঞ্জন মিত্র মজুমদার),

টুনটুনির বই (উপেন্দ্রকিশোর রায়চৌধুরী) ঃ একটি করে গল্প।

লোকসাহিত্য ঃ ছেলেভুলোনো ছড়া (রবীন্দ্রনাথ ঠাকুর) ঃ দুটি ছড়া ; প্রচলিত বাংলা প্রবাদ ঃ পাঁচটি।

অষ্টম পত্র

স্বনির্ভর অনুশীলন

ভাষা ও সাহিত্য বিষয়ক-গবেষণা ঃ

(ক) গবেষণা-পদ্ধতি

(খ) অনুবাদ (ইংরেজি থেকে বাংলা)

রচনা ঃ

প্রদত্ত রচনাংশের সাহিত্যমূল্য বিচার

Netaji Subhas Open University

Bachelor Degree in Commerce (ECO/ B. Com)

(w.e.f. 2020-21)

Course Structure (Elective Commerce)

Semester	Course	Name of the Subject
Sem-1	CC1	Financial Accounting-I
	CC2	Business Regulatory Framework
	AECC1	Language (Bengali/English)
	GE1	Business Economics
Sem-2	CC3	Cost Accounting
	CC4	Management
	AECC2	Environmental Studies
	GE2	Business Mathematics
Sem-3	CC5	Financial Accounting-II
	CC6	Corporate and Labour Laws
	CC7	Business Communication
	SEC1	Computer Applications in Business
	GE3	Statistics for Business Decisions
Sem-4	CC8	Direct Taxation
	CC9	Indian Financial System
	CC10	Entrepreneurship Development
	SEC2	E-Business
	GE4	Indian Economy
Sem-5	CC11	Management Accounting
	CC12	Auditing
	DSEC1	Corporate Accounting/Tourism Management
	DSEC2	Tax Practice and Procedure /Retail Management
Sem-6	CC13	Business Ethics
	CC14	Indirect Taxation
	DSEC3	Corporate Financial Reporting and Financial Statement Analysis/ Logistics Management
	DSEC4	Financial Management/Non-Profit Organisation Management

Detailed Syllabus
Semster-1

CC1: Financial Accounting-I

Unit-1: Theoretical Framework: Accounting as information system, users of accounting information system, qualitative characteristics of accounting information, branches of accounting, Bases of accounting-cash and accrual; basic concepts and conventions-entity, money measurement going concern, cost, realization, accrual, periodicity, matching, consistency, prudence (conservatism), materiality, full disclosure.

Unit-2: Accounting Process: Accounting cycle, recording of transactions/events to preparation of Trial Balance under Double Entry system including Cash Book and Bank Reconciliation Statement.

Unit 3: Business Income: Capital and revenue expenditure, Depreciation-Accounting concept, factors in measurement, methods (straight line method and diminishing balance method), disposal of assets; Inventories- meaning, significance of inventory valuation (As per AS 2), Reserve & Provision- meaning and accounting; Rectification of errors.

Unit 4: Bill of Exchange: Basic concepts, types of bills, accounting for bill of exchange including accommodation of bill.

Unit 5: Accounting for Consignment and Joint Ventures: Consignment-features, accounting treatment in the book of consignor and consignee. Joint ventures-accounting procedure: joint bank account, records maintained by co-ventures –(i) all transactions, (ii) only his /her transactions (Memorandum joint venture).

Unit 6: Self Balancing Ledger: Concepts, preparation of adjustment accounts.

Unit 7: Accounting for Not for Profit Organizations: Preparation of financial statement of Not for profit organizations

Unit 8: Final Accounts: Preparation of financial statement of non-corporate business entities (Manufacturer/Trader-Sole Proprietorship & Partnership business).

Suggested Readings

- Basu A, Financial Accounting-I, Tee Dee Publications
- Basu and Das, Financial Accounting, (Vol-I), Rabindra Library
- Hanif & Mukherjee, Financial Accounting (Vol-I, Tata McGraw-Hill
- Maheswari, S.N. *Financial Accounting* (Vol. I & II), Sultan Chand & Sons
- Mukherjee and Mukherjee, Financial Accounting, Oxford University Press
- Nayak O Manna, Arthik Hisabnikashkarener Ruparekha, Parul Library
- Shukla, M.C. and Grewal, T.S., *Advanced Accounts,* S Chand Publication

CC2: Business Regulatory Framework

Unit 1: Indian Contract Act, 1872-I: Essentials of valid contract, Classification of contract; Offer and acceptance, Consideration; Capacity of the parties to contract; Free consent, Coercion, Undue influence, Mistake, Misrepresentation and fraud; Legality of object and consideration, Void, Voidable, Un-enforceable and illegal agreements; Contingent and Quasi-contract.

Unit 2: Indian Contract Act, 1872-II: Performance of Contract: Breach of Contract-remedies and damages, Termination of Contract. Indemnity and Guarantee: Bailment and Pledge, Agency-nature, kind, relation between principal, agent and third parties, Termination of agency.

Unit 3: Sale of Goods Act, 1930: Nature of contract of sale; Classification of goods; Condition and warranties; Passing of property; Rights of Unpaid Seller; Remedies for Breach of Contract of Sale of Goods; Sale by auction.

Unit 4: Indian Partnership Act, 1932: Meaning and kinds of partnership; Formalities for Registration; Rights and Duties of partners; Relation of partners with one another and with third parties; Dissolution of partnership (only causes and effects).

Unit 5: The Limited Liability Partnership Act, 2008
Definition, Salient Features of LLP, Advantages and disadvantages of LLP,
Differences between: LLP and Partnership, LLP and Company, Incorporation of LLP.

Unit 6: Negotiable Instruments Act, 1881: Definition and features of different types of negotiable instruments; Parties and their capacities with respect to cheque, alteration; effect; dishonour of negotiable instruments.

Unit 7: Consumer Protection Act, 1986: Definition, Objectives, *Consumer Dispute Redressal Agencies*: Composition and jurisdiction of District Forum, State Commission and National Commission, Mode of complaints; Procedures for complaints.

Unit 8: Information Technology Act, 2000: Scope, Digital Signature and Electronic Governance and **Right to Information Act, 2005**: Basic concepts and important provisions.

Suggested Readings

- Bhadra, Satpati & Mitra, Karbari Ainer Ruprekha (Bengali Version), Dishari
- Chandra P.R., Business Law, Galgotia
- Companies Act, 2013, Taxmann
- Information Technology Act, 2000
- Kapoor, N.D., Business Law, Sultan Chand
- Mathur, Satish B., Business Law, Tata McGraw-Hill

- Ramaiya, A., Guide to the Companies Act, Wadhwa & Co.
- Right to Information Act, 2005
- Sen & Mitra, Commercial Law including Company Law, World Press
- Tulsian, P.C., Business Law, Tata McGraw-Hill
- Udayan Roycchoudhury, S. Bhattachrya & S.P. Dutta, Business Regulatory Framework, Elegant Publication

GE1: Business Economics

Unit 1: Introduction: Meaning, nature and scope of Business Economics; Micro Economics and Macro Economics, Basic economic problems.

Unit 2: Theory of Consumer Behaviour: Concept of utility- total utility and marginal utility –Marshall's Law of diminishing marginal utility-limitations of it, Consumers' surplus. Hicks' theory of consumer behaviour, concept of indifference curves- properties with proofs, Budget line and its properties, Equilibrium of the consumer- price consumption curve and income consumption curve, Price effect is the sum of income effect and substitution effect.

Unit 3: Law of Demand: Linear and non-linear demand curve, demand function. Concept of elasticity; price elasticity, income elasticity and cross price elasticity- applications and uses, Elasticity on the linear demand curve, Marshallian measure, factors affecting price elasticity.

Unit 4: Theory of Production: Production function- total product curve, one variable input, law of variable proportion-three stages of production, Two variable input- Isoquant- different types and properties, Isocost curve – equilibrium of a producer with the help of an Isoquant and an Isocost curve.

Unit 5: Theory of Cost: Different concepts- Short run cost, long run cost, nature of short run and long run average cost curves.

Unit 6: Market: Definition, features, classification. Equilibrium conditions for a profit maximizing firm. Perfect competition- short run and long run equilibrium- break-even point and shut down point- short run supply curve, Monopoly including discriminatory monopoly, monopolistic competition, Oligopoly-Concepts and features.

Unit 7: Theory of Distribution: Wage determination, labour supply curve, labour exploitation, trade union, Theory of interest, loanable funds and liquidity preference, liquidity trap, Theory of Profit.

Unit 8: Elements of Macro Economics: Concepts and measurement of National Income, problems of measurement of National Income, various concepts of national income. Keynesian Consumption function, various concepts, factors affecting consumption function, investment multiplier – relation between multiplier and the

MPC, Quantity theory of money, inflation- causes, effects, demand pull and cost push, control of inflation, Acceleration theory, trade cycle, phases of it, graphical presentation.

Suggested Readings

- Ackley G, Macroeconomic Theory
- Gupta S.B.: Monetary Economics, Institutions, Theory & Practice
- Samuelson P.A, Economics
- Sarkhel Jaydeb, Business Economics (English and Bengali), Book Syndicate Private Limited

Semster-2

CC3: Cost Accounting

Unit 1: Introduction: Cost concepts, Objectives of cost accounting, Relationship with financial accounting and management accounting.

Unit 2: Concepts and Classification of Costs: Concepts, Costs and Expense, Direct Costs, Indirect Costs, Cost Centre, Cost Unit, Classification of Costs etc.

Unit 3: Elements of Costs: Direct materials, Direct labour, Direct expenses or chargeable expenses, Overhead expenses, Preparation of cost sheet.

Unit 4: Material Cost: Purchase procedure, receiving and inspection of materials, ascertainment of material cost, stores routine, stores records, receipts and issues of materials, methods of pricing of issues, Levels of stock and economic order quantity (EOQ).

Unit-5: Labour Cost: Time keeping, Time booking, Methods of remuneration, Incentive schemes, Labour costs, Labour turnover, Treatment of idle time and over time.

Unit 6: Overhead Cost: Meaning and classification, Primary and Secondary distribution, Recovery of overhead and treatment of over and under recovery of overhead.

Unit 7: Methods of Costing-I: (a) Job costing, (b) Contract costing.

Unit 8: Methods of Costing-II: (a) Process costing (excluding inter-process profit and equivalent production), (b) Operating costing (only in case of transport undertakings).

Suggested Readings

- Banerjee B, Cost Accounting, PHI
- Basu and Das, Cost Accounting, Rabindra Library
- Datta Uttam Kumar and Sur Debasis, Paribay Hisab Rakshan (Bengali), Publication Division of the Burdwan University
- Ghosh Anirban, Cost Accounting, Theory and Practice, Deep Prakashan
- Jawahar Lal & Seema Srivastava, Cost Accounting, Tata McGraw Hill

CC4: Management

Unit 1: Introduction: Basic concepts, Significance of management, Management as profession, Universality of management.

Unit 2: Management Theories & Principles: Evolution of management thought, School of management thought, Classical school (Scientific and Administrative Management School-Taylor and Fayol), Human Behavioural School, Modern School.

Unit 3: Planning and Decision Making: Concepts, types, steps in planning, decision making-concepts, process, SWOT Analysis, Strategic Planning.

Unit 4: Organising: Concepts, types, Functions of different levels of Management, Span of Management, Delegation, Centralization and Decentralization.

Unit 5: Motivation: Concepts, importance, theories- McGregor, Maslow, Herzberg.

Unit 6: Leadership: Concepts, styles, theories- trait and situational.

Unit 7: Coordination and Control: Meaning and techniques of coordination; Control-meaning, steps and types

Unit 8: Communication: Meaning and role, process, barriers to communication.

Suggested Readings

- Bhadra & Satpati, Management (Bengali), Dishari
- Drucker, P F, Management Challenges for the 21st Century, Butterworth, Oxford
- Koontz and Weirich, Essentials of Management, Tata McGraw Hill, New Delhi
- Tripathy, P C, Reddy, P N, Principles of Management, Tata McGraw Hill, New Delhi

GE2: Business Mathematics

Unit 1: Ratios, Proportions, Variation, Laws of Indices, Surds (Basic Ideas).

Unit 2: Compound Interest and Annuities: Simple AP and GP Series, Different types of interest rates, Types of annuities, Continuous compounding.

Unit 3: Equations: Simple statement of equations of different degrees, solution of simple simultaneous equations involving two and three unknowns, Solutions of quadratic equation, Theory of quadratic equation (proof not needed).

Unit 4: Permutations and Combinations, Binomial Theorem, Logarithms (Basic Ideas).

Unit 5: Real Number System: Constants, Variables and Functions, Elementary ideas of limit and continuity through the use of simple algebraic Functions.

Unit 6: Maxima and Minima values: Points of inflexion.

Unit 7: Differentiation: Rules for differentiation of algebraic functions, implicit functions, Derivative by using logarithm of a function, Second order differentiation.

Unit 8: Integration: Standard integrals-elementary methods, Integration of Algebraic functions.

Suggested Readings

- F. S. Budnick, Mathematics for Business, Economics and Social Science, TMH
- M. Raghavachari, Mathematics for Management, TMH
- Maiti A.K. & Pal Tapas Kr., Banijjik Ganit –o- Parisankhan (Bengali &English)
- Dey S.N. Baybsaik Ganit O Prisankhan, Chhaya Prakashani
- P. K. Giri and J. Bannerjee, Introduction to Business Mathematics, Academic Publishers
- S. Baruah, Basic Mathematics and its Application in Economics, Macmillan
- Arup Ratan Kundu, Mathematics for Management - An Introduction, TMH
- Sancheti and Kapoor, Business Mathematics, Sultan Chand
- Das N. G. & Das J. K., Business Mathematics and Statistics, Tata McGraw Hill

Semster-3

CC5: Financial Accounting-II

Unit 1: Accounting for Incomplete Records: Preparation of financial statement from incomplete records.

Unit 2: Insurance Claim for Loss of Stock: Concept of underinsurance and average clause, Computation of claims with price fluctuation and abnormal items.

Unit 3: Partnership Accounts-I: Profit and loss appropriation accounts; capital and current account, **C**hange in profit sharing ratio, Admission, Retirement, retirement-cum-admission, death.

Unit - 4: Partnership Accounts – II: dissolution and piecemeal distribution Amalgamation of firms, Conversion into limited company.

Unit -5: Accounting for Inland Branch: Concept of dependent branch, Accounting- Synthetic Method, Cash and Debtors method, Analytical method/Stock & Debtors method at cost and at invoice price.

Unit 6: Departmental Accounts: Concept, preparation of Departmental and consolidated Trading & Profit and Loss Account excluding interdepartmental transfer.

Unit 7: Hire Purchase and Installment Payment System: Meaning & differences, recording in the books of hire vendor and hire purchaser, Default and repossession.

Unit -8: Investment Accounts: Preparation of investment accounts for fixed interest bearing securities, Valuation of investment Under FIFO and Average method.

Suggested Readings

- Basu and Das, Financial Accounting II & III, Rabindra Library
- Hanif and Mukherjee, Financial Accounting (Vol II & III), McGraw-Hill
- Maheswari and Masheswari, Advanced Accounting (Vol.I & II), Vikash Publishing
- R.L. Gupta & Radhaswamy, Advanced Accountancy (Vol. I & II), S. Chand
- Sehgal and Sehgal, Advanced Accounting (Vol I & II), Taxmann
- Students' Guide to Accounting Standard, Rawat, Taxmann

CC6: Corporate and Labour Laws

Unit 1: Companies Act, 2013-I: Types of Companies; Important documents – Memorandum of Association, Articles of Association, and Prospectus.

Unit 2: Companies Act, 2013-II: Formation of company-procedure for registration and incorporation, share capital- equity, preference, right, bonus, transfer of shares (basic concepts), debentures.

Unit 3: Companies Act, 2013-III: Directors- appointment, types and qualifications, Company meetings-notice, quorum and resolutions; mandatory committees, Corporate Social Responsibility (CSR).

Unit 4: Factories Act, 1948: Definitions, Provisions regarding health, safety and welfare for employees; Women and Minors.

Unit 5: Industrial Disputes Act, 1947: Definitions, Different Authorities–Powers & Duties; Retrenchment provisions and penalties.

Unit 6: Trade Union Act, 1926: Meaning and Registration of Trade Union; Privileges of registered Trade union.

Unit 7: Payment of Wages Act, 1936: Scope, Definitions, Provisions regarding wage payment; Deduction from wages.

Unit 8: Payment of Minimum Wages Act, 1948: Scope; Definitions, Fixation and revision of minimum wages.

Suggested Readings

- Bhadra, Satpati & Mitra, Karbari Ainer Ruprekha (Bengali Version), Dishari
- Chandra P.R., Business Law, Galgotia
- Companies Act, 2013, Taxmann
- Information Technology Act, 2000
- Kapoor, N.D., Business Law, Sultan Chand
- Mathur, Satish B., Business Law, Tata McGraw-Hill
- Ramaiya, A., Guide to the Companies Act, Wadhwa & Co.
- Right to Information Act, 2005
- Sen & Mitra, Commercial Law including Company Law, World Press
- Tulsian, P.C., Business Law, Tata McGraw-Hill
- Udayan Roycchoudhury, S. Bhattachrya & S.P. Dutta, Business Regulatory Framework, Elegant Publication

CC7: Business Communication

Unit 1: Introduction: Meaning, Objectives, Elements and Characteristics of Communication; Communication Models; Effective Communication.

Unit 2: Business Communication I: Meaning, Features, Advantages and disadvantages of Formal Communication; Meaning, Features, Advantages and disadvantages of Informal Communication; Importance of Business Communication.

Unit 3: Business Communication II: Barriers of Business Communication- Meaning and Types; Group Discussion, Mock Interview; Seminars.

Unit 4: Modern form of Communication: Meaning, Advantages and Disadvantages of E-mail; Meaning and Advantages of Video-conferencing and Conference calling; Advantages of Video-conferencing, Social Media as a form of Communication- Facebook, WhatsApp, Twitter, Instagram etc.

Unit 5: Practice in Effective Communication: Meaning of Notice, Circular, Resolution, Minutes; Distinction between Notice and Circular; Meaning, Features, Types and Styles of Report.

Unit 6: Drafting: Rules for drafting a Report; Drafting of Notice, Resolutions, Minutes, Reports and Circulars.

Unit 7: Writing Skills: Meaning of Business Letter; Importance of Business Letter; Style of Business Letter; Essentials of Business Letter; Form and Arrangements of Business Letter; Drafting and Different Types of Business Letter.

Unit 8: Interviewing Skills: Introduction; Definition of Interview; Types of Interview; Guidelines for Preparation of Successful Interview; Writing of application letter; Definition of Curriculum Vitae and Resume.

Suggested Readings

- Anjanee, S. & Bhavana Adhikari, Business Communication, TMH
- Chaturvedi &Chaturvedi, Business Communication: Concepts, Cases and Applications, Pearson
- M.K.Shegal &Vandana Khetarpal, Business Communication, Excel Books
- R.K.Madhukar, Business Communication, Vikash Publishing House Pvt. Ltd.
- Rao, Kumar & Bindu, Business Communication, Cengage
- Khanna, Puja., Business Communication, Vikash
- Raman & Sharma, Technical Communication, Oxford
- Lesikar, Flatley et al, Business Communication, McGraw Hill

SEC1: Computer Applications in Business

Unit 1: Basic Concepts: Characteristics of a Computer; Advantages of Computers; Limitation of Computers; Types of Computers; Applications of computers, Hardware, Firmware, Live ware; Software; Input-output devices etc.

Unit 2: Data communication and Computer networks: Transmission Modes - Simplex, Half- Duplex, Full Duplex. Analog and digital transmission. Synchronous and Asynchronous transmission. Multiplexing. Network Concept, Types - LAN, WAN, MAN, VAN, SAN. Various Topologies - Bus, Star, Ring, Mesh, Tree. Protocol Models - OSI, TCP/IP.

Unit 3: Word Processing: Introduction to word Processing; Word processing concepts, working with word document, opening an existing document/creating a new document; Saving, selecting text, editing text, Finding and replacing text, Formatting text, Bullets and numbering, Tabs, Paragraph Formatting, Page Setup.

Unit 4: Spreadsheet and its Business Applications: Spreadsheet concepts; Creating a work book, saving a work book, editing a work book, inserting, deleting work sheets, entering data in a cell, formula Copying, Moving data from selected cells, Handling operators in formulae: Inserting Charts- LINE, PIE, BAR, Mathematical ROUND ALL, SUM, SUMIF, COUNT, COUNTIF; Statistical – AVERAGE, MAX, MIN, STDEV, FREQUENCY, INTERCEPT, SLOPE.; Financial - PMT, PPMT, IPMT; Logical - IF, AND, OR.

Unit 5: Presentation Software: Microsoft Power Point, Open Office.org Impress, Apple's Keynote etc. Creating a presentation; Editing, Sorting, Layout, Set-up row, Rehears timing.

Unit 6: Various Modern Accounting Software: Features, advantages and disadvantages of some modern accounting software: Tally.ERP 9, Zoho Books, MARG ERP 9+Vyapar- Accounting & Invoicing, Book Keeper – Accounting & Invoining etc.

Unit 7: Practical applications: Loan & Lease statement; Ratio Analysis, Graphical representation of data Payroll statements: Frequency distribution. Cumulative and calculation of Means, Mode and Median; Regression.

Unit 8: Multimedia essentials: Definition, building blocks of multimedia, multimedia system, multimedia application.

Suggested Readings:

- Sanjay Saxena, A First Course in Computers, Vikas Publishing House, New Delhi
- Pradeep K. Sinha and Preeti Sinha, Foundation of Computing, , BPB, Publication
- Deepak Bharihoka, Fundaments of Information Technology, Excel Book,New Delhi
- V. Rajaraman, Introduction to Information Technology, PHI. New Delhi

- R. Hunt, J. Shelley, Computers and Commonsense, Prentice Hall of India New Delhi
- Leon, M. Leon, Fundamentals of Information Technology, Leon Vikas, (4) Software manuals
- ITLESL, Introduction to Computer Science, Pearson Education
- ITLESL, Introduction to Information Technology, Pearson Education
- Sinha & Sinha, Fundamentals of Computers, BPB Publication
- Rajaraman, Fundamentals of Computers, PHI

GE3: Statistics for Business Decision

Unit 1: Introduction:-Definition of Statistics; Primary and Secondary data; Classification of data; Importance and scope of Statistics in business decisions; Limitations.

Unit 2: Collection and Presentation of Statistical Data: - Methods of data collection; Tabulation of data; Graphs and charts; Frequency distributions; Diagrammatic presentation of frequency distribution.

Unit 3: Measures of Central Tendency: - Common measures of central tendency - mean, median and mode; Partition values - quartiles, deciles, percentiles.

Unit 4: Measures of Dispersion: - Common measures of dispersion – range, quartile deviation, mean deviation and standard deviation; Measures of relative dispersion.

Unit 5: Correlation and Regression: -Scatter diagram; Simple correlation coefficient; Simple regression lines; Spearman's rank correlation; Measures of association of attributes.

Unit 6: Interpolation: Finite differences; Newton's forward and backward interpolation formulae; Lagrange's interpolation formula.

Unit 7: Index Numbers: Meaning and types of index numbers; Problems in the construction of index numbers; Methods of construction of price and quantity indices.

Unit 8: Time Series Analysis: Causes of variation in time series data; Components of time series; Additive and multiplicative models; Trend determination methods; Computation of seasonal indices; Simple forecasting through time series data.

Suggested Readings:

- Das N. G. & Das J. K., Business Mathematics and Statistics, Tata McGraw Hill

- Sharma J K, Business Statistics, Pearson Education
- Goon, Gupta and Dasgupta, Fundamentals of Statistics, The World Press
- Fundamentals of Statistics, S.C.Gupta, Himalaya Publishing House
- Das J. K., Statistics for Business Decisions, Academic Publishers

Semster-4

CC8: Direct Taxation

Unit 1: Basic Concepts and Definitions: Assessee, Person, Previous Year, Assessment Year, Sources of income, Heads of income, Gross total income, Agricultural income,

Unit 2: Residential Status and Incidence of Tax: Status of different persons except company.

Unit 3: Incomes which do not form part of total income-except Section 10AA.

Unit 4: Computation of Income under Different Heads-I: Salaries; Income from house property.

Unit 5: Computation of Income under Different Heads-II: Profits & gains of business or profession-basic concepts and simple problems, Capital gains-basic concepts except exemptions; Income from other sources-basic concepts except deemed dividend.

Unit 6: Clubbing of Income, and Set off & Carry Forward of Losses.

Unit 7: Deductions from Gross Total Income and Rebate: Under Section 80C, 80CCC, 80CCD, 80CCE, 80D, 80DD, 80DDB,80E, 80G, 80GG, 80GGC, 80TTA, 80TTB, 80U, Rebate U/S 87A.

Unit 8: Computation of Total Income and Tax Liabilities of an Individual (excluding Alternate Minimum Tax).

Suggested Readings

- Singhania & Singhania, Student Guide to Income Tax, Taxmann
- Swatantara Sethi, Self Preparation and Filling of Income Tax Returns by Individuals
- Taxmann's Income Tax Act as mended by Finance Act, Taxmann
- Ahuja & Gupta, Systematic Approach to Income Tax, Bharat
- Bhadra & Satpati, Direct & Indirect Tax (Bengali), Dishari

CC9: Indian Financial System

Unit – 1: Introduction: Financial System - Meaning and significance; Role of finance in an economy, Components (instruments, markets, services, regulators); Role of financial intermediaries, Structure of Indian Financial System.

Unit 2: Money and Indian Banking System I: Functions of Money; Alternative measures to money supply in India –components of money, High powered money – meaning and uses – Concept of Money Multiplier.

Unit 3: Money and Indian Banking System II: Commercial Banks – Importance and functions; Structure of Commercial Banking system in India; Credit Creation Process of Commercial Banks.

Unit 4: Reserve Bank of India: Functions; Instruments of Monetary and Credit control, Main features of Monetary Policy since independence.

Unit 5: Money Market: Concept, Types of Indian Money Market- Call Money Market, Treasury Bills Market, Certificate of Deposit, Commercial Papers, Recent trends of Indian money markets.

Unit 6: Capital Market I: Meaning, Types, Functions; Primary & Secondary markets- Meaning, Functions & Role, Differences between Primary & Secondary markets, Intermediaries of Primary Markets.

Unit 7: Capital Market II: Functionaries of stock Exchanges-Brokers, Sub-Brokers, Institutional Investors & NRIs, Role and Functions of SEBI

Unit-8: Financial Services: Merchant Banking-Functions & Roles, SEBI guidelines, Credit rating-concept & types, Functions & limitations, Profile of Indian Rating Agencies.

Suggested Readings

- Bhole, L. M., Financial Markets and Institutions, TMH, New Delhi
- Gurusamy S., Financial Services, TMH
- Khan, M. Y., Indian Financial System-Theory and Practice, TMH, New Delhi
- Meir Kohn, Financial Institution and Market, Oxford University Press. New Delhi
- Nayak and Sana, Indian Financial System (English and Bengali), Rabindra Library
- Pathak, B., Indian Financial System-Pearson, New Delhi

CC10: Entrepreneurship Development

Unit-1: Introduction: Definition of Entrepreneurship, types of entrepreneurship; elements, determinants and importance of entrepreneurship, Concept of startup, Entrepreneurship Development; Entrepreneurship as career.

Unit-2: Traits of Entrepreneur: Entrepreneurial personality, knowledge and skill of entrepreneur, entrepreneurship development training.

Unit -3: Planning for Entrepreneurship: Basic concept, operational planning, planning for human resources and marketing planning.

Unit-4: Sources of business ideas and tests of feasibility: Significance of writing the business plan/ project proposal; Contents of business plan/ project proposal; Designing business processes, location, layout, operation, planning & control; preparation of project report.

Unit-5: Resource Mobilization: Resource Mobilization for start-up. Accommodation and utilities; Preliminary contracts with the vendors, suppliers, bankers, principal customers.

Unit-6: Family business in India: Role of family business, Contemporary role models in Indian business, their values, business philosophy and behavioral orientations; Conflict in family business and its resolution.

Unit -7: Micro, Small and Medium Enterprises (MSMEs): Definitions, Role of MSMEs, Financing and Management of MSMEs.

Unit 8: Role and Functions of Different Agencies: Industries/entrepreneur's associations, Self-help groups, business incubators, angel investors, venture capital and private equity fund.

Suggested Readings

- Kuratko and Rao, Entrepreneurship: A South Asian Perspective, Cengage Learning.
- Robert Hisrich, Michael Peters, Dean Shepherd, Entrepreneurship, McGraw-Hill Education
- Desai, Vasant. Dynamics of Entrepreneurial Development and Management. Mumbai,
- Dollinger, Mare J. Entrepreneurship: Strategies and Resources. Illinois, Irwin.
- Holt, David H. Entrepreneurship: New Venture Creation. Prentice-Hall of India, New Delhi.
- Plsek, Paul E. Creativity, Innovation and Quality. (Eastern Economic Edition), New Delhi:
- Prentice-Hall of India. ISBN-81-203-1690-8.
- Singh, Nagendra P. Emerging Trends in Entrepreneurship Development. New Delhi:
- ASEED.
- SS Khanka, Entrepreneurial Development, S. Chand & Co, Delhi.
- Hifrich, Manimala, Peters & Shepherd, Entrepreneurship, McGraw-Hill
- Kumar Arya, Entrepreneurship, Pearson

- Bamford and Bruton, Entrepreneurship, McGraw Hill
- SIDBI Reports on Small Scale Industries Sector.
- Roy, Entrepreneurship, Oxford

SEC 2: E-Business

Unit 1: Introduction: Emergence of E-Business, Concept, Features and Importance, E-Business based activities, Advantages, Limitations, Techniques and barriers.

Unit 2: Business Models of E-Business: Key Elements of an E-Business Model, Electronic business models based on Relationship of Transaction Parties: B2B, B2C, C2C, C2B, Electronic business models based on Relationship of Transaction Types: Brokerage Model, Aggregator Model.

Unit 3: Technology Enabling E-Business: Networks and Internet-URL, TCP, Search Engine, The World Wide Web: Hypertext, Markup Languages, and Web Browser. Web Security Issues, Encryption Techniques: Symmetric and Asymmetric.

Unit 4: E-Marketing: Traditional Marketing, Web presence goals and meeting the needs of the web visitors, E-Marketing Value Chain, Website – vehicle for E-Marketing, Metrics defining Internet Units of Measurement, The Browsing Behavior Model, Online Marketing, E-Advertising, E-Branding, E-Marketing Strategies.

Unit 5: E-CRM: Customer Relationship Management (CRM)-concept, features, goals, significance, benefits, functional components, business framework, Phases, Types, strategies.

Unit 6: E-Payment: Types of E-Payment: Electronic Card, Digital Cash, Digital Wallet, Online Stored value systems, E-Cheque, Electronic Billing presentation and payments, Online Banking, Case Study: Paytm and Free Charge.

Unit 7: E-Security: Importance, Dimensions, Types of Security Threats, Technological Solutions: Encryption and Decryption, Digital Envelope, Digital certificate, Digital Signature, SSL, S-HTTP, VPN, Firewalls, Antivirus Software.

Unit 8: Mobile Commerce: Wireless Environment, Definition of Mobile Commerce, Features, Advantages and Limitations, Technologies for Mobile Commerce - Wireless Spectrum, WAP, Generations of Wireless Technology-1G, 2G,3G,4G, M-Commerce Applications, Relevance of M-Commerce in India.

Suggested Readings

- Joseph, P.T. E-Commerce A Managerial Perspective. PHI
- Kenneth C. Laudon & Carol Guercio Traver, E-Commerce: Business, Technology, Society, Pearson.

- Agarwala, Kamlesh N., Amit Lal and Deeksha Agarwala, Business on the Net: An Introduction to the Whats and Hows of E -Commerce, Macmillan India Ltd.
- Bajaj, Deobyani Nag, E-Commerce, Tata McGraw Hill Company, New Delhi.
- Turban, E., et. al., Electronic commerce: A Managerial Perspective, Pearson Education Asia.
- Diwan, Prag and Sunil Sharma, Electronic Commerce -A Manager's Guide to E-Business, Vanity Books International, Delhi.
- Dietel, Harvey M., Dietel, Paul J., and Kate Steinbuhler., E-business and E-commerce for managers, Pearson Education.
- Greenstein, M. and T.M. Feinman, Electronic Commerce: Security, Risk Management and Control, Tata McGraw hill.
- Kosiur, David, Understanding Electronic Commerce, Prentice Hall of India Private Ltd., New Delhi.
- Whiteley, David, E-commerce, McGraw Hill, New York.

GE4: Indian Economy

Unit 1: Introduction: Basic Issues in Economic Development Concepts and measures of development and underdevelopment; Concept of national income: GDP, GNP, NDP, NNP, NI (concepts only).

Unit 2: **Features of Indian Economy:** Basic Features of Indian Economy Sectoral distribution of National Income and Occupational Structure; Structural Change in Indian Economy, issue of Service-led Growth.

Unit 3: Sectoral Trends and Issues-I: Agricultural Sector: Problem of low productivity; Green Revolution and its impact; Land Reforms; Problems of rural credit and marketing.

Unit 4: Sectoral Trends and Issues-II: Industry and Service Sector: An overview of industrial growth during pre-reform and post-reform period; Role of Public Sector: its performance and the issue of disinvestment; Role of MSME sector, problems faced by the MSME Sector; Role of the Service Sector: growth of banking and insurance sector during the post-reform period.

Unit 5: Sectoral Trends and Issues-III: External Sector: Problem of unfavourable balance of payments and policy measures.

Unit 6: Issues in Indian Social Economy: Problem of Poverty, Poverty alleviation measures; Problem of Unemployment and the policy measures.

Unit 7: Five Year Planning: Objectives and features.

Unit 8: NITI Ayog: Brief overview.

Suggested Readings

- Dutt & Sundaram, Indian Economy, S.Chand • Mishra &Puri, Indian Economy, Himalaya Publishing House
- Uma Kapila, Indian Economy
- Joydeb Sarkhel & Swapan Kr. Roy, Bharoter arthanaiti(Bengali)
- Banerjee & Majumdar, Business Economics and Business Environment,ABS
- Banerjee & Majumdar, Banijjik Arthaniti –o- Banijjik Paribesh(Bengali), ABS
- Ratan Khasnabish & Ranesh Roy, Banijjik Arthaniti –o- Bharoter arthanaitik Paribesh(Bengali)
- Prakash, B.A., Indian Economy, Pearson • Fernando, Indian Economy, Pearson

Semster-5

CC11: Management Accounting

Unit 1: Introduction: Meaning, Scope, Importance, Functions, Characteristics, Comparison with Financial Accounting and Cost Accounting.

Unit 2: Working Capital Management: Concept, need, composition of working capital, operating cycle, Factors determining working capital, Forecasting of working capital.

Unit 3: Changes in Financial Position: Fund Flow Statement, Cash Flow Statement (as per relevant Accounting Standard), Uses and limitations.

Unit 4: Accounting Ratios: Meaning, nature, objectives, classification, uses and limitations.

Unit 5: Financial Analysis: Application of accounting ratios in measuring liquidity, solvency, profitability, capital structure and managerial efficiency.

Unit 6: Budget & Budgetary Control: Budget-Meaning, Objectives and Importance, Distinction between Budget and Budgetary Control, Classification of budgets, Techniques of Budgeting, functional, cash and flexible budgets.

Unit 7: Marginal Costing: Concepts, Scope, Objectives, Importance, Advantages, Limitations, Application of Marginal Costing-P/V Ratio, Break-Even Analysis, Margin of Safety, Angle of Incidence, Cost-Volume-Profit Analysis.

Unit 8: Standard Costing: Introduction, advantages, limitations, types, variance analysis: Material, labour and overhead.

Suggested Readings

- M.Y.Khan & P.K.Jain, Management Accounting, Tata McGraw Hill
- Jain, Narang Management Accounting, Kalyani
- Sinha, G., Accounting Theory and Management Accounting, Vidyoday Library Pvt. Ltd.

CC12: Auditing

Unit 1: Introduction : Definition, Scope, Objectives, Importance and Limitations; Errors and Frauds – Concept, Classification of errors and frauds, Auditor's duty regarding non-detection of errors and frauds; Conducting audit of an organization – Audit Engagement, Audit Programme, Audit File, Audit Note Book, Audit Working Papers, Audit evidence, Preliminary steps before commencement of audit; Audit Procedure – Routine Checking, Test checking, Surprise Checks, Audit-in-depth; Auditing Standards – Concept, Objectives.

Unit 2: Types of Audit: Regulatory mandate based- Statutory vs. Non-statutory Audit; Coverage based- Complete, Partial; Objective wise - Internal and Independent Financial audit; Technique Based - Balance Sheet, Systems, EDP; Periodicity based - Periodical, Continuous, Interim, Final; Specific matter based - Special Audit, Social Audit, Performance Audit, Propriety Audit, Tax Audit, Human Resource Audit, Energy Audit, Environment Audit [Basic concepts only, Cost Audit – Concepts, Objectives and Legal Provisions as per Companies Act., Management Audit - Concepts, Objectives and Importance].

Unit 3: Internal Control and Internal Audit: Internal Check-Definition, Objectives, Internal Control-Definition, Objectives, Evaluation, Internal Control Questionnaire, Comparison with Internal Checks; Internal audit-Definition, Objectives, Regulatory Requirement of Internal Audit (Companies Act).

Unit-4: Vouching, Verification & Valuation: Meaning, objectives, features and importance, General principles of vouching; Vouching of different items of transactions, liabilities of auditor arising out of vouching, Meaning and importance of Verification and valuation, Verification and valuation of different assets and liabilities and auditors' role thereof.

Unit 5: Company Audit: Company Auditor-Qualification, Disqualification, Appointment, Remuneration and Removal, Status, Rights, Duties and Liabilities, Depreciation - Definition, Objectives and causes, Different methods, Treatment prescribed under Companies Act, Auditor's duty; Divisible profits and dividends – Meaning, Provisions regarding declaration and payment of dividend, Auditor's duty.

Unit 6: Audit Report & Certificate: Concept, Distinction between Report and Certificate, Characteristics of a good audit report; Types and content of Audit Report; True & fair view- auditor's duties.

Unit 7: Investigation: Meaning, purpose and scope of investigation, Difference between investigation and audit; Investigation as to suspected fraud / defalcation, Sickness of a concern.

Unit 8: Audit of different Institutions: Audit of Educational institutions–Schools, Colleges etc., Clubs, Charitable institutions, Nursing Home / Hospitals.

Suggested Readings

- Auditing Assurance Standards and Guidelines issued by ICAI
- Basu Sanjib Kumar, Fundamentals of Auditing, Pearson
- Basu, B.K, An Insight into Auditing- A Multidimensional Approach, Basushree Book Stall
- Gupta, Kamal, Contemporary Auditing, Tata McGraw-Hill
- Kamal Gupta, Auditing, Tata McGraw-Hill
- Maity Badal Kumar, Auditing, New India Book
- Sana, Sarkar, Biswas and Das, Auditing –Principles and Practices, McGraw-Hill
- Tandon, B.N., Principles of Auditing, S. Chand & Co

DSEC1: Corporate Accounting

Unit -1: Accounting for Share Capital-I: Issue, Forfeiture and reissue of shares; Issue of right and bonus shares, Underwriting of shares.

Unit -2: Accounting for Share Capital-II: Buyback of shares, Redemption of Preference shares.

Unit 3: Accounting for Debentures: Issue and redemption of debentures.

Unit 4: Final Accounts: Preparation of Profit & Loss Statement and Balance Sheet of Corporate entities as per Schedule III, Dividend and applicable tax (excluding calculation of managerial remuneration).

Unit 5: Amalgamation, Absorption: Meaning; relevant accounting standard and meaning of different terms, Accounting in the books of Transferor Company, Accounting in the books of Transferee Company; inter-company transactions (excluding inter-company shareholding).

Unit 6: Internal and External Reconstruction: Meaning, Provisions and Accounting, Surrender of Shares for redistribution; preparation of Balance Sheet after reconstruction.

Unit-7: Valuation of Goodwill: Goodwill – valuation using different methods, i.e. Average
Profit, Super Profit, Capitalisation and Annuity.

Unit 8: Valuation of Shares: Valuation using different methods: Asset approach, Earnings approach, Dividend Yield, and Fair Value; Cum-div and Ex-div, Majority and Minority views.

Suggested Readings

- Basu and Das, Financial Accounting II & III, Rabindra Library

- Hanif and Mukherjee, Financial Accounting (Vol II & III), McGraw-Hill
- Maheswari and Masheswari, Advanced Accounting (Vol.I & II), Vikash Publishing
- R.L. Gupta & Radhaswamy, Advanced Accountancy (Vol. I & II), S. Chand
- Sehgal and Sehgal, Advanced Accounting (Vol I & II), Taxmann
- Students' Guide to Accounting Standard, Rawat, Taxmann

OR

Tourism Management

Unit 1: Introduction: Tourism- Meaning, Importance and Types; Tourism Products- Meaning, Characteristics, Classification; Tourism Management – Meaning and Objectives.

Unit 2: Concepts and Types of Tourists: Definitions and Historical development of tourism; Heritage - Meaning, Types, Evolution; Types of Tourists-Visitor, Excursionist; Types and Forms of Tourism; Tourism system - Nature, characteristics; Model of tourism system- Leiper's Model; Components of tourism and its characteristics.

Unit 3: Domestic and International Tourism: Domestic tourism - Features, Pattern of growth, Profile; Analysis of pattern of growth and profile of famous domestic tourism in the state of Himachal Pradesh, Madhya Pradesh, Gujarat, Goa, Kerala and West Bengal; International tourism - Generating and Destination regions, Pattern of growth and Profile; Analysis of International destination of USA, UK, France, China & Malaysia.

Unit 4: Travel Statistics and Motivation: Tourism Statistics - Types and Methods of measurement; Types of tourist motivation.

Unit 5: Tourism Impacts: Positive and Negative Impacts of Tourism; Socio – Cultural Impact, Economic, Environmental and Political Impact; Impact Assessment – Social, Economic and Environmental.

Unit 6: Tourism Accounting and Auditing: Environmental and Social Accounting, Tourism Satellite Accounting (TSA), Auditing.

Unit 7: Tourism Organizations: Objectives and Role of ITDC, ASI, TFCI, Ministries of Railways and Civil Aviation; An overview of National and International organizations and associations: IATO, TAAI, FHRAI, WTO, ICAO and IATA, FAITH.

Unit 8: Travel agencies in India: Role, Functions and Services, Travel Agents' Association of India (TAAI) – Objectives, Role in Tourism Development.

Suggested Readings

- Travel Industry: Chunky Gee et-al
- Tourism Systems - Mill and Morisson
- Successful Tourism Management - Prannath Seth
- Tourism Management Vol - 4 - P.C. Sinha
- Tourism Development - R. Gartner
- Tourism Planning and Development - J.K. Sharma
- Studies in Tourism - Sagar Singh
- Tourism: Principles and Practices - Cooper C., Fletcher J., Gilbert D and Wanhil. S
- Tourism: Principles and Practices - McIntosh, R.W.
- Tourism: Past, Present and Future - Burkart & Medlik
- Sustainable Tourism Development, Guide for Local Planners by WTO
- Cultural Tourism in India- S.P. Gupta, Krishna Lal, Mahua Bhatacharya

DSEC2: Tax Procedure and Practice

Unit 1: Computation of total income and tax payable: Individual only.

Unit 2: Interest and fees: Interest u/s 234A, 234B, 234C and fees u/s 234F

Unit 3: Payment of Taxes: Self-Assessment Tax, Advance Tax and TDS from Salary, Lottery and Interest on Securities.

Unit 4: Return of income-I: Return forms, Mode of Submission, Permanent Account Number (PAN), Quoting of Aadhar number.

Unit 5: Return of income-II: Types of Return and Assessment.

Unit 6: Tax Deduction Account Number (TAN), Tax Clearance Certificate: Relevant Provisions.

Unit 7: Filling of Tax return-I:

(a) Preparation and submission of the Income Tax Return (ITR) offline/online (e-filling) for individual taxpayer [e-filing without using DSC and with using DSC, EVC]

(b) View form 26AS, Upload return, View e-file returns, e-verification.

Unit 8: Filling of Tax return-II:

(a) Use of e-tax calculator (including interest calculation u/s 234A, 234B, 234C)

(b) E-Pay tax (Challan No./ITNS 280, ITNS 281)

(c) Preparation and submission of online form 10E [Relief u/s 89(1)]

Suggested reading

- www.incometaxindiaefiling.gov.in

- www.incometaxindia.gov.in
- Singhania & Singhania, Student Guide to Income Tax, Taxmann
- Swatantara Sethi, Self Preparation and Filling of Income Tax Returns by Individuals
- Taxmann's Income Tax Act as mended by Finance Act, Taxmann
- Ahuja & Gupta, Systematic Approach to Income Tax, Bharat
- Bhadra & Satpati, Direct & Indirect Tax (Bengali), Dishari

OR

Retail Management

Unit 1: Introduction to Retailing: Concept of retailing, Functions of retailing, Terms & Definition, Retail formats and types, Retailing Channels, Retail Industry in India, Importance of retailing, Changing trends in retailing.

Unit 2: Understanding the Retail Consumer: Retail consumer behaviour, Factors influencing the Retail consumer, Customer decision making process, Types of decision making, Market research for understanding retail consume.

Unit 3: Retail Market Segmentation and Strategies: Market Segmentation and its benefits, Kinds of markets, Definition of Retail strategy, Strategy for effective market segmentation, Strategies for penetration of new markets, Growth strategies, Retail value chain.

Unit 4: Retail Location Selection: Importance of Retail locations, Types of retail locations, Factors determining the location decision, Steps involved in choosing a retail location, Measurement of success of location.

Unit 5: Merchandise Management: Meaning of Merchandising, Factors influencing Merchandising, Functions of Merchandising Manager, Merchandise planning, Merchandise buying, Analysing Merchandise performance.

Unit 6: Retail Operations and Retail Pricing: Store administration, Premises management, Inventory Management, Store Management, Receipt Management, Customer service, Retail Pricing, Factors influencing retail prices, Pricing strategies, Controlling costs.

Unit 7: Retail Space Management and Marketing: Definition of Space Management, Store layout and Design, Visual Merchandising, Promotions Strategy, Relationship Marketing Strategies, CRM, Retail Marketing Mix, Retail Communication Mix, POP Displays.

Unit 8: Emerging trends in retailing: Changing nature of retailing, organized retailing, Modern retail formats, E-tailing, Challenges faced by the retail sector.

Suggested Reading

- Madaan, Fundamentals of Retailing, Tata McGraw-Hill
- Pradhan, S., Retailing Management, McGraw Hill
- Seshanna & Prasad, Retail Management, McGraw Hill
- Berman, Evans & Mathur, Retail Management, Pearson

Semster-6

CC13: Business Ethics

Unit 1: Introduction: Meaning, Scope, Features and Significance of Ethics; Types of Ethics.

Unit 2: Ethics and Values: Values, Attitudes and Morale, Relationship between Business and ethics.

Unit 3: Principles of Business Ethics: Meaning, Elements, Ethical dilemma, Factors influencing Business Ethics; Arguments for and against Business Ethics.

Unit 4: Ethics in Management: Introduction, Ethics in HRM, Ethics in Marketing, Ethics in Accounting and finance.

Unit 5: Ethics in Work Place: Work Place Culture and Values.

Unit 6: Corporate Culture: Meaning, Role, Functions, Impact of Corporate Culture, Globalization and cross culture issues in ethics, Corporate Code of ethics.

Unit 7: Corporate Social Responsibility: Meaning, Provisions of Companies Act, Corporate Ethics.

Unit 8: Ethics & Corporate Governance: Concept of Corporate Governance, Scope, Reports on Corporate Governance and its benefits and limitations--Corporate Governance and Business Ethics [Brief Concept]

Suggested Readings

- Albuquerque, Business Ethics, Oxford
- Ferrell, Fraedrich, Farrell, Business Ethics, Cengage

CC14: Indirect Taxation

Unit 1: Basic Concepts of Indirect Tax and Overview of Goods and Services Tax (GST): Concept of indirect tax, difference between direct and indirect tax, indirect tax structure in India, concept and features of GST, application of SGST, CGST, IGST, UTGST, Rate of GST, definitions.

Unit 2: Taxable Events and Concepts of Supply under GST: Meaning of taxable event, supply as per GST law, mixed and composite supply.

Unit 3: Charges of GST: Forward and reverse charge.

Unit 4: Composition Levy and Exemption under GST: Meaning of composition scheme, applicability, tax rate under composition scheme, aggregate turnover, eligibility of composition supply, Goods exempt from tax, Services exempt from tax etc.

Unit 5: Place, Time and Value of Supply under GST: Place of supply of goods and services other than export and import; Time of supply of goods and services; Value of supply of goods and services.

Unit 6: Input Tax Credit (ITC): Brief overview, Eligibility for claiming Input Tax Credit under GST, Important definition for ITC, condition for availing of credit under GST etc.

Unit 7: Registration under GST

Unit 8: Customs Duty: Basic concepts, Definition: Customs Airport, Customs Port, Customs Station, Dutiable Goods, Export, Goods, Import, Indian Customs Water. Taxable events and date of determination of duty, Types of Customs Duty, Determination of Assessable Value, Duty drawback.

Suggested readings

- Datey, V. S. Goods and Services Tax, Taxmann.
- Acharjee, M. Goods and Service Tax.
- Singhania & Singhania, Student Guide to Income Tax including GST, Taxmann.
- Chatterjee T. B. and Sony V. Goods and Services Tax, Book Corporation.
- Banger and Banger. Goods and Services Tax, Aadhya Prakashani.

DSEC3: Corporate Financial Reporting and Financial Statement Analysis

Unit 1: Introduction- Corporate Financial Reporting: Meaning, Objectives, Importance, Users, Qualities and Structures, GAAP- Accounting Standard: Conceptual Framework.

Unit 2: Cash Flow Statement Analysis: Meaning, objectives, difference with Fund Flow Statement; activity classification and preparation and presentation as per relevant Accounting Standard, Interpretation of Cash Flow Statements.

Unit -3: Accounts of Holding Company: Preparation of Consolidated Balance Sheet as per relevant standard with one subsidiary except Chain and Cross holding.

Unit -4: Segment Reporting: Basic Concepts, Benefits, Determination of Reportable Segments as per relevant standard.

Unit 5: Introduction- Financial Statement Analysis: Meaning, Objectives, Need, Components, Approaches to Financial Statement Analysis-Traditional and Modern, Types of Financial Statement Analysis, Parties interested in FSA.

Unit 6: Methods of Financial Statement Analysis: Comparative Statement – meaning, preparation, uses, merits and demerits; Common -size Statement – meaning, preparation, uses, merits and demerits; Trend Analysis – meaning, determination, uses, merits and demerits.

Unit 7: Accounting Ratios for Financial Statement Analysis-I: Meaning, objective, Classification of Accounting Ratios, Advantages & Limitations Preparation of Classified Financial Statements and Statement of Proprietor's Fund from the given Ratios.

Unit 8: Accounting Ratios for Financial Statement Analysis-II: Analysis and Interpretation of important ratios for measuring –Liquidity, Solvency, Capital Structure, Profitability and Managerial Effectiveness.

Suggested Readings

- R. L.Gupta & Radheswamy, Advanced Accountancy Vol. II, S. Chand
- Maheshwari & Maheshwari, Advanced Accountancy Vol. II, Vikash Publishing
- Sehgal & Sehgal, Advanced Accountancy Vol. I II, Taxman Publication
- Accounting Standards issued by ICAI
- B. Banerjee, Regulation of Corporate Accounting & Reporting in India, World Press.
- Lev, Financial Statement Analysis-a new approach, Prentice Hall
- Foster G, Financial Statement Analysis, Prentice Hall
- Bernstein & Wild, Financial Statement Analysis; theory, application & interpretation, Mcgraw Hill
- Ormiston, Understanding Financial Statement, Pearson
- Bhattacharyya, Asish K., Introduction to Financial Statement Analysis, Elsevier
- Hanif & Mukherjee, Financial Accounting, Vol III, McGraw Hill
- Subramanyam, K.R. and Wild, Financial Statement Analysis, McGraw Hill
- Students' Guide to Accounting Standard, Rawat, Taxmann
- Jawaharlal, Corporate Financial Reporting Theory and Practice, Taxmann
- Sur Debasish, Fianancial Statement Analysis-A Comprehensive Approach, Excel

OR

Logistics Management

Unit 1: Concept of Logistics: Objectives and Concept of Logistics, Evolution of Logistics, Types of logistics, Concept of Logistics Management, Role of Logistics in an Economy, Logistics and Competitive Advantage, Logistics Mix, Logistics in Organised Retail in India.

Unit 2: Supply Chain Management: Objectives and Concept of Supply Chain Management (SCM), Functions and Contribution of Supply Chain Management, Framework for Supply Chain Solution, Supply Chain Relationships, Building a long-term relationship with vendors, Supplier relationship management (SRM). Difference between Logistics and Supply Chain Management.

Unit 3: Material Storage System: Objectives and Concept of Material Storage System, Unit Load Storage, Storage principles, Storage design and its benefits, Storage Methods.

Unit 4: Warehousing: Objectives and Concept of Warehousing, Need for warehousing management, Evolution of warehousing, Functions of Warehouses, Types of Warehouses, Warehousing Cost, Warehousing Strategies, Significance of Warehousing in Logistics, Warehousing Management System (WMS).

Unit 5: Logistical Packaging: Objectives and Concept of Logistical Packaging, Design Consideration in Packaging, Types of Packaging Material, Packaging Costs.

Unit 6: Transportation: Objectives and Transportation System, Transportation Infrastructure, Different Modes of Transportation, Freight Management, Factors Affecting Freight Cost, Transportation Network, Containerisation.

Unit 7: Customer Service: Objectives and Concept of Customer Service, Attributes of customer service, Different phases of customer services, Customer Service for Competitiveness, Value-Added Logistical Service.

Unit 8: E-Commerce Logistics: Objectives and Concept of E-Commerce, Requirements of Logistics in E-Commerce, E-Logistics Structure and Operation, Logistic Resource Management (LRM).

Suggested Readings

- Ganapati and Nandi, Logistics Management, Oxford University Press;
- C. Rama Gopal, Export import Procedures- Documentation in Logistics, New Age International Publication;
- Paul and Aserkar, Export Import Management, Oxford University Press.
- Chopra and Meindl, Supply Chain Management, Pearson.

DSEC 4: Financial Management

Unit 1: Introduction: Functions; Objectives, Profit maximization vs. Value maximization; Role of Chief Financial Officer.

Unit 2: Time Value of Money: Concept of Compounding, Discounting, Annuity and perpetuity.

Unit 3: Sources of Finance and Cost of Capital: Different sources of finance, Cost of capital- concept, relevance, specific cost, weighted average cost and marginal cost of capital.

Unit 4: Leverage: Concept of Business Risk and Financial Risk, Operating, Financial and Combined Leverage, Trading on Equity.

Unit 5: Capital Structure Theories: Capital Structure Decisions and Pattern, Designing optimum Capital Structure, Constraints, Features of Sound Capital Structure, Various Capital Structure Theories (except M-M Model).

Unit 6: Capital Budgeting Decision-I: Objectives, Process, Understanding different types Investment Decisions, Techniques of Decision Making: Non-discounted Cash Flow Approaches – Payback Period method, Accounting Rate of Return.

Unit 7: Capital Budgeting Decision-II: Discounted Cash Flow Approaches: Net Present Value, Discounted Payback Period, Profitability Index, Internal Rate of Return (Elementary Level).

Unit 8: Dividend Decisions: Meaning, Types of Dividend; Factors determining dividend decisions, Dividend Theories-Walter's Model, Gordon's Model, Modigliani and Miller (Introductory Level).

Suggested Readings

- B. Banerjee, Financial Policy & Management Accounting, PHI
- James C. Van Horne, Financial Management, PHI
- Kar & Bagchi, Financial Management, Dey Book Concern
- Khan & Jain, Financial Management, Tata McGraw-Hill
- Pandey I.M., Financial Management-, Vikash
- Sana, Biswas, Sarkar and Das, Financial Management, McGraw-Hill

OR

Non-Profit Organisation Management

Unit 1: Concept, Functions and Establishment of NGO: Concepts and Functions; Development issues, Development indicators; Legal procedures for establishment of NGOs; Overview of Societies Registration Act, Indian Trust Act, Indian Company's Act, Charitable endowment Act and FCRA, Memorandum of

Association and Bye laws, Tax Reliefs under various Acts, Issues and Challenges in NGO Management.

Unit 2: Results-Based Management and Project Cycle Management: Concept of Results-Based Management; Results-Based Management in programme and project planning; The project cycle; Logical Framework.

Unit 3: Designing and Planning a Project: Identifying and analysing problems, Deciding the overall strategy, Defining the response, Strategic Planning.

Unit 4: Project Monitoring and Evaluation: Monitoring, Internal Evaluations, External Evaluations.

Unit 5: Fund-raising and Grant Proposals - Institutional Readiness: Developing a coherent fund-raising strategy and Grant Proposals, Identification of budget lines and donor expectations, Structure of grant proposals, Elaboration of a Grant Proposal.

Unit 6. Communication, Leadership Development and Human Resource Management: Principles of communication, Successful negotiations, Leadership Development, Building and leading a team, Conflict resolution, Human Resource Management, Human Resource Policy, Staffing and Compensations, Staff development.

Unit 7: NGO Governance: Linking experience to Best Practice: Governance-Concepts, challenges, perspectives and ethical concerns, Impact of different governance structures, Good Governance standards codes and accountability, Role of Board Members, Executive Directors, Senior Managers, Founders and other stakeholders.

Unit 8: Co-ordinating Agencies, Funding Agencies and Schemes of NGOs: International Organisations, National and Regional Organisations, Schemes for NGOs under various ministries of Government of India, NABARD and Human Rights Commission.

Suggested Readings

- Steve Rothschild, "The Non Nonprofit: For-Profit Thinking for Nonprofit Success" , The Jewish Floridian - University of Florida Digital Collections.
- Beth Kanter, Allison Fine and Randi Zuckerburg "The Networked Nonprofit: Connecting with Social Media to Drive Change",

- Jim Collins, “Good to Great: Why Some Companies Make the Leap and Others Don't”
- Chip Heath and Dan Heath, “Made to Stick: Why Some Ideas Survive and Others Die”
- Leslie R. Crutchfield, Heather Mcleod Grant and Steve, “Forces for Good: The Six Practices of High-Impact Nonprofits”
- David Lubetzky, “Do the Kind Thing: Think Boundlessly, Work Purposefully, Live Passionately”

Netaji Subhas Open University
Bachelors of Library and Information Science (BLIS)
SYLLABUS

Programme Objectives: The BLIS course intends to generate skilled professional in the field of library and information science. Acquainted with the essential character of the field of library and information studies and its processes associated with knowledge creation, communication, identification, selection, navigation, acquisition, organization and description, storage and retrieval, preservation & conservation, analysis, interpretation, evaluation, and dissemination of information. This is the subject domain through which user's requirement relating to information needs, their information seeking behaviour may be met. The course also intends to make understandable about the inter-relationship and importance of contributions of library and information studies to other fields of knowledge by recognising the role of library and information services in a diverse global society.

Expected Programme Outcome: The successful learners are either be engaged in professional career or they are expected to join their professional life. The expected outcomes are:

- To create a pool of skilled professional who may manage, organise and navigate the whole educational system by facilitating right information to the right people at any time to any people.
- To dedicate their professional career for the development of the subject-domain by catering services in different academic libraries, special libraries, public libraries, research centres, government departments, non-government organisations.

Course structure

Paper - I : Library and Society
Paper-II : Library Management
Paper-III : Library Classification Theory
Paper-IV : Library Cataloguing
Paper-V : Reference and Information Services
Paper VI : Classification Practice
Paper VII : Cataloguing Practice
Paper VIII : Computer Basics and Applications [Theory]
[Full Marks-800, 64 credits]

Detailed syllabus

Paper- I : Library and Society
Module-1 : Development of Libraries and Their Role in Society
Unit-1 : Role of Library in Modern Society
Unit-2 : Laws of Library Science
Unit-3 : Library Development in UK and USA
Unit-4 : Library Development in India–Plans and Programmes.
Module-2 : National Libraries of UK, USA, France, India
Unit-5 : National Libraries : A Descriptive Account of National Libraries : National Libraries of UK, USA, France, India.
Unit-6 : Academic Libraries : University, College and School Libraries.

Unit-7 : Public Libraries : Role and Functions
Unit-8 : Special Libraries and Information Centres.
Module-3 : Library Movement in India
Unit-9 : Library Legislation and Model Public Library Act.
Unit-10 : Library Legislation in Indian States.
Module-4 : User Study
Unit-11 : User Community ; their characteristics, User Study
Unit-12 : Library and Education : Formal, non-formal and distance education. Unit-13 : Community information centres and services
Unit-14 : Library Extension Services
Module-5 : Library Associations, Systems and Programmes
Unit-15 : Criteria of the Profession, Ethics and Duties
Unit-16 : Organizations involved in the Development of Library and Information Services
Unit-17 : Resource Sharing : Concept, need and Activities
Unit-18 : Resource Sharing ; Programmes.

Paper - II : Library Management
Module-1 : Principles of Library Management
Unit-1 : General Principles of Management and their application to Library Management.
Unit-2 : Library Organizational Structure
Unit-3 : Physical Planning of Libraries – standards.
Module-2 : Library Operations and Services
Unit-4 : Collection Development
Unit-5 : Circulation Activities
Unit-6 : Collection Maintenance, Shelving and stock verification
Unit-7 : Preservation of library materials
Module-3 : Personnel Management
Unit-8 : Library staff-job analysis, In-service Training, Staff Manual, Library Committees
Unit-9 : Library Rules and Regulations
Unit-10 : Office Management
Module-4 : Financial Management
Unit-11 : Library Finance
Unit-12 : Budgeting and Accounting
Unit-13 : Library Statistics
Unit-14 : Annual Report

Paper - III : Library Classification Theory Module-1 : Classification in General
Unit-1 : Basic Concepts and Terminology
Unit-2 : Classification of knowledge
Unit-3 : Library classification : Need and Purpose.
Module-2 : General Theory of Library Classification
Unit-4 : Basic Laws, Canons, Postulates and Principles
Unit-5 : Facet Analysis and Facet Sequence
Unit-6 : Phase Relations
Unit-7 : Common Isolates
Module-3 :
Unit-8 : Modes of formation of Subjects
Unit-9 : Steps in construction of classification schemes–Enumerative and Faceted
Module-4 : Notation - Need, Functions
Unit-10 : Notation : Need, Functions and Types

Unit-11 : Qualities of Notation
Unit-12 : Hospitality in Array and Chain Unit-13 : Devices
Unit-14 : Call number and its structure
Module-5 : Study of selected Schemes of Classification
Unit-15 : Dewey Decimal Classification
Unit-16 : Universal Decimal Classification
Unit-17 : Colon Classification
Unit-18 : Modern Trends, BSO, Role of CRG.

Paper-IV : Library Cataloguing Theory
Module-1 : Basic Concept
Unit-1 : Library Catalogue : Definition, Objectives, Purpose and functions
Unit-2 : Physical Forms of Catalogue
Unit-3 : Types of Catalogue
Module-2 : Format of Catalogue Entries
Unit-4 : Kinds of entries
Unit-5 : Data Elements in different types of Entries
Unit-6 : Filing of Entries : Classified and Alphabetic
Unit-7 : Centralized Cataloguing, Cataloguing-in-Publication
Module-3 : Choice and Rendering of Headings
Unit-8 : Western Names and Indic Names
Unit-9 : Corporate Authors
Unit-10 : Pseudonyms, Anonymous works and Uniform Titles Unit-11 : Catalogue code
Module-4 : Subject Cataloguing Concept, Purpose, General Principle
Unit-12 : Subject Cataloguing
Unit-13 : List of Subject Headings
Unit-14 : Other methods of deriving subject headings

Paper-V : Reference and Information Services
Module-1 :
Unit-1 : Concept of Reference and Information Services
Unit-2 : Varieties of Reference Services
Unit-3 : Functions of the Reference Department
Unit-4 : The Reference Process
Module-2 : Study of Bibliographical Tools
Unit-5 : Bibliographies Need and Types, Bibliographical control Unit-6 : Subject Bibliography
Unit-7 : National Bibliography (BNB & INB)
Unit-8 : Trade Bibliography
Unit-9 : Study of Abstracting and Indexing Tools
Module-3 : Reference Sources Part-I :
Unit-10 : Dictionaries
Unit-11 : Encyclopaedia
Unit-12 : Ready Reference Sources
Part-II :
Unit-13 : Geographical Sources
Unit-14 : Biographical Sources
Unit-15 : Reference Sources for Current Events
Unit-16 : Evaluation Reference Sources
Module-4 : Information Services
Unit-17 : Concept and Need for Information

Unit-18 : Types of Documents : Primary, Secondary and Tertiary
Unit-19 : Organization of Information services
Unit-20 : Information Services and Techniques.

Paper-VI : Classification Practice
Unit-1 : Construction of class members of documents according to the 19th ed. Dewey's Decimal Classification, 1979.
Unit-2 : Construction of Class numbers of documents according to the Colon Classification, 6th. ed. 1960.
Unit-3 : Construction of Book number as formulated by S. R. Ranganathan.

Paper - VII : Cataloguing Practice
Module-1 :AACR-2R- an introduction ; Subject Headings-introduction ; general rules for description ; single personal author ; Tracings. List of Subject Headings.
Module-2 : Editorial work ; shared responsibility ; Multivolumes ; Corporate Bodies ; Choice among different names ; References.
Module-3 : Serials ; Analysis ; Uniform Titles ; Cataloguing of Bengali documents.
Module-4 : Classified Catalogue Code-introduction Tracing ; Class index entry ; Personal author ; corporate body ; series ; Periodicals.

Paper VIII : Computer Basics and Applications [Theory] Module-1 : Introduction to Computer Applications
Unit-1 : Introduction to Computer – Functional parts of Computer : Hardware, Software, Operating System (MS-DOS/Unix).
Unit-2 : Computer Language- High level language ; Software package, Software System Application software, Flowcharting, Boolean logic and operators.
Unit-3 : Library Automation-Areas in library automation (House Keeping) - Library automation-Indian scenario-Computer Based Information Service (CAS & SDI).

Syllabus For
Bengali

Course Code (EBG)

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বাংলা সাম্মানিক বি.এ. পাঠক্রম

১। আবশ্যিক বিষয় ঃ ভিত্তিমূলক পাঠক্রম

(ক) বাংলা (FBG)	৪ মানক
(খ) ইংরাজী (FEG)	৪ মানক
(গ) মানবিক বিদ্যা ও সমাজ বিজ্ঞান (FHS)	৮ মানক
(ঘ) বিজ্ঞান ও প্রযুক্তি (FST)	৮ মানক
	২৪ মানক

২। ঐচ্ছিক বিষয় ঃ সাম্মানিক স্তর (EBG)

প্রথম পত্র	ঃ	সাহিত্য ও সংস্কৃতির ইতিহাস (৬+২)	৮ মানক
দ্বিতীয় পত্র	ঃ	ভাষা তত্ত্ব এবং ছন্দ ও অলঙ্কার (৪+৪)	৮ মানক
তৃতীয় পত্র	ঃ	কাব্য ঃ প্রাচীন ও আধুনিক (৫+৩)	৮ মানক
চতুর্থ পত্র	ঃ	উপন্যাস এবং ছোটগল্প (৪+৪)	৮ মানক
পঞ্চম পত্র	ঃ	প্রবন্ধ এবং রম্যরচনা (৬+২)	৮ মানক
ষষ্ঠ পত্র	ঃ	নাটক ও নাট্যমঞ্চ এবং সাহিত্যের রূপভেদ (৪+৪)	৮ মানক
সপ্তম পত্র	ঃ	লোকসাহিত্য এবং ভারতীয় সাহিত্য (৪+৪)	৮ মানক
অষ্টম পত্র	ঃ	অনুবাদ, বানানবিধি, সম্পাদনা, অনুচ্ছেদ, প্রতিবেদন	৮ মানক
			৬৪ মানক

৩। প্রয়োগ অভিমুখী পাঠক্রম (যে কোন একটি)

(ক) প্রাথমিক হিসাববিদ্যা (AOC–01)

(খ) খাদ্য প্রক্রিয়াকরণ (AOC–02) **৮ মানক**

(গ) গার্হস্থ্য রসায়ন (AOC–03)

পাঠক্রমের মোট মানক (২৪ + ৬৪ + ৮) = ৯৬ মানক বা ১২০০ নম্বর

মূল্যায়ন পদ্ধতি ঃ অভ্যন্তরীণ মূল্যায়ন— ৩০%

(Internal Assessment)

প্রান্তিক পরীক্ষা— ৭০%

(Term End Examination)

প্রথম পত্র
(সাহিত্য ও সংস্কৃতির ইতিহাস)

১। সাহিত্যের ইতিহাস (প্রাচীন যুগ)

বাঙালি জাতির উদ্ভব, বাংলাভাষার উদ্ভব, বাঙালির লেখা সংস্কৃত—অপভ্রংশ কবিতা ও চর্যাপদ, তুর্কী আক্রমণ, তুর্কী বিজয় ও বাঙালির সমাজ জীবন ও সাহিত্যে তার প্রভাব, শ্রীকৃষ্ণকীর্তন ও ইসলামিক সাহিত্য—'ইউসুফ জোলেখা', চণ্ডীদাস সমস্যা, বিদ্যাপতি, চণ্ডীদাস।

২। সাহিত্যের ইতিহাস (মধ্য যুগ)

অনুবাদ সাহিত্য, মঙ্গলকাব্যধারা, চৈতন্যদেব — জীবন ও সাহিত্য, বৈষ্ণব পদাবলী, সপ্তদশ শতাব্দীর মুসলমান কবি, ভারতচন্দ্র রায়, শাক্ত পদাবলী, কবিগান।

৩। সাহিত্যের ইতিহাস (আধুনিক যুগ)

আধুনিক বাংলা গদ্যভাষা ও সাহিত্য, যুগসন্ধির কবি ও কাব্য, আধুনিক বাংলা কাব্য, নাট্যমঞ্চ ও নাটক।

৪। সংস্কৃতির ইতিহাস

উপন্যাস—সূচনা ও প্রতিষ্ঠাপর্ব, রবীন্দ্রনাথ, রবীন্দ্র সমকালীন ও রবীন্দ্র উত্তর বাংলা সাহিত্য, স্বাধীনতা, দেশভাগ ও পরবর্তীকাল।

সংস্কৃতি এবং তার স্বরূপ, বাঙালির সংস্কৃতি ও বাঙালি জাতি, ভারত সংস্কৃতি, সুফি প্রভাব ও ইসলামী উপাদান, চৈতন্য প্রভাব।

দ্বিতীয় পত্র
(ভাষাতত্ত্ব এবং ছন্দ ও অলংকার)

(ক) ভাষাতত্ত্ব (৪ ক্রেডিট)

১। ভাষাবিজ্ঞান পরিচয় (সাধারণ ধারণা), ভাষাবংশ ও বাংলা ভাষার বিবর্তন।

২। বাংলা ভাষার স্তরবিভাগ — বিভিন্ন স্তরের লক্ষণসমূহ, উপভাষা, সাধু ও চলিত।

৩। বাংলা ভাষার ধ্বনি-বিচার, শব্দ গঠন প্রক্রিয়া, শব্দার্থ পরিবর্তন, বাংলা শব্দভাণ্ডার।

(খ) ছন্দ (২ ক্রেডিট)

১। ছন্দের পরিভাষা সমূহ—বাংলা ছন্দের রীতিগত বিভাগ, ছন্দোবন্ধ (পয়ার, চতুর্দশপদী, অমিত্রাক্ষর)।

২। ছন্দ-বিশ্লেষণ (অনুশীলনী)।

(গ) অলংকার (২ ক্রেডিট)

১। অলংকার কি ?

২। শব্দলংকার—অনুপ্রাস, যমক, বক্রোক্তি, শ্লেষ।

৩। অর্থালংকার—উপমা, রূপক, উৎপ্রেক্ষা, সমাসোক্তি, অতিশয়োক্তি, ব্যতিরেক, বিরোধাভাস, ব্যাজস্তুতি, স্বভাবোক্তি, অর্থান্তরন্যাস, একাবলী।

৪। অলংকার নির্ণয় — অনুশীলনী।

তৃতীয় পত্র
(কাব্য)

(ক) কাব্য — প্রাচীন ও মধ্যযুগ (৪ ক্রেডিট)

১। চর্যাপদ—নির্বাচিত পাঁচটি পদ। (১নং, ৫নং, ৬নং, ২৮নং, ৩৩নং)
২। শ্রীকৃষ্ণকীর্তন—রাধাবিরহ খণ্ড।
৩। বৈষ্ণবপদ—চণ্ডীদাস, বিদ্যাপতি, জ্ঞানদাস, গোবিন্দদাস—প্রত্যেকের ২টি করে পদ। (পাঠমালায় নির্দিষ্ট করা আছে)
৪। কৃত্তিবাসী রামায়ণ—অরণ্যকাণ্ড।
৫। বৃন্দাবনদাসের চৈতন্যভাগবত—(আদি খণ্ড) নির্বাচিত অংশ।

(খ) কাব্য — আধুনিক যুগ (৪ ক্রেডিট)

১। মেঘনাদবধ কাব্য — মধুসূদন দত্ত (ষষ্ঠ সর্গ)
২। রবীন্দ্রনাথ ঠাকুরের পাঁচটি কবিতা (সোনার তরী, শতাব্দীর সূর্য আজি, শঙ্খ, আফ্রিকা, অমৃত)
৩। নজরুল ইসলামের তিনটি কবিতা (নারী, দারিদ্র, গানের আড়াল)
৪। জীবনানন্দ দাশের তিনটি কবিতা (বনলতা সেন, বিড়াল, ভিখিরি)

চতুর্থ পত্র
(উপন্যাস এবং ছোট গল্প)

(ক) উপন্যাস (৪ ক্রেডিট)

১। কপালকুণ্ডলা—বঙ্কিমচন্দ্র চট্টোপাধ্যায়।
২। পদ্মানদীর মাঝি—মানিক বন্দ্যোপাধ্যায়।
৩। অরণ্যবহ্নি—মহাশ্বেতা দেবী।

(খ) ছোট গল্প (৪ ক্রেডিট)

১। রবীন্দ্রনাথ ঠাকুর—স্ত্রীরপত্র।
২। তারাশঙ্কর বন্দ্যোপাধ্যায়—তারিণী মাঝি।
৩। বিভূতিভূষণ বন্দ্যোপাধ্যায়—পুঁই মাচা।
৪। পরশুরাম—চিকিৎসা সংকট।
৫। বনফুল—গণেশ জননী।
৬। সুবোধ ঘোষ—সুন্দরম্।
৭। নারায়ণ গঙ্গোপাধ্যায়—টোপ।

পঞ্চম পত্র
(প্রবন্ধ ও রম্যরচনা)

(ক) প্রবন্ধ (৬ ক্রেডিট)

১। বিবিধ প্রবন্ধ ঃ বঙ্কিমচন্দ্র চট্টোপাধ্যায় (গীতিকাব্য, ভারতের স্বাধীনতা ও পরাধীনতা)।
২। কালান্তর ঃ রবীন্দ্রনাথ ঠাকুর (কালান্তর, সভ্যতার সংকট)

৩। চরিত কথা ঃ রামেন্দ্রসুন্দর ত্রিবেদী—(নিয়মের রাজত্ব)।
৪। ভাববার কথা ঃ স্বামী বিবেকানন্দ (শূদ্র জাগরণ, বর্তমান ভারত)
৫। সংস্কৃতির বিবর্তন ঃ অন্নদাশঙ্কর রায় (আমাদের সংস্কৃতির বিবর্তন)
৬। প্রবন্ধ সংগ্রহ ঃ প্রমথ চৌধুরী (বই পড়া)

(খ) রম্য রচনা (২ ক্রেডিট)
১। হুতোম প্যাঁচার নক্সা—কালীপ্রসন্ন সিংহ (চড়ক)
২। বিচিত্র প্রবন্ধ ঃ রবীন্দ্রনাথ ঠাকুর (বাজে কথা)
৩। পঞ্চতন্ত্র ঃ মুজতবা আলি (বই কেনা)
৪। কমলাকান্তের দপ্তর ঃ বঙ্কিমচন্দ্র চট্টোপাধ্যায় (পতঙ্গ)

ষষ্ঠ পত্র
(নাটক ও নাট্যমঞ্চ এবং সাহিত্যের রূপভেদ)

(ক) নাটক (৩ ক্রেডিট)
১। নীলদর্পণ—দীনবন্ধু মিত্র
২। রথের রশি—রবীন্দ্রনাথ ঠাকুর
৩। নবান্ন—বিজন ভট্টাচার্য।

(খ) নাট্যমঞ্চ (১ ক্রেডিট)
৪। মঞ্চের উপযোগিতা, মঞ্চরূপের বৈচিত্র্য, মঞ্চ ও নাটকের সম্পর্ক সূত্রের অনুসরণে মঞ্চধারা (সূচনা থেকে ১৯৪৭ পর্যন্ত)

(গ) সাহিত্যের রূপভেদ (৪ ক্রেডিট)
১। কাব্য (গীতিকবিতা, আখ্যান কাব্য, মহাকাব্য)
২। নাটক (ট্রাজেডি, কমেডি, প্রহসন, পৌরাণিক, ঐতিহাসিক, সামাজিক, একাঙ্ক, সাংকেতিক
৩। প্রবন্ধ (গুরু ও লঘু)
৪। কথাসাহিত্য—উপন্যাস—(ঐতিহাসিক, সামাজিক, পত্রোপন্যাস, আত্মজৈবনিক, কাব্যধর্মী)। ছোটগল্প—(অতিপ্রাকৃত, উদ্ভট, সাংকেতিক ও প্রতীক ধর্মী)।

সপ্তম পত্র
(লোকসাহিত্য এবং আধুনিক ভারতীয় সাহিত্য)

(ক) লোকসাহিত্য (৪ ক্রেডিট)
১। ময়মনসিংহ গীতিকা
লোকসাহিত্য—রবীন্দ্রনাথ ঠাকুর
বাংলার ব্রত—অবনীন্দ্রনাথ ঠাকুর
২। লোকসাহিত্যের সংজ্ঞা ও উপকরণসমূহ
(কথা, গান, নাট্য, ছড়া, ধাঁধা, মন্ত্র, গীতিকা)

ক্ষেত্র সমীক্ষা—লোককাহিনি, লোকউৎসব, লোকভাষা, ইতিবৃত্ত, কিংবদন্তী, ছড়া, ধাঁধার যে কোনো একটির তথ্য সংগ্রহ ও বিশ্লেষণভিত্তিক আলোচনার উপস্থাপনা)।

(খ) আধুনিক ভারতীয় সাহিত্য [(২+২) ক্রেডিট)]

১। উপন্যাস ঃ চিংড়ি — শিবশঙ্কর পিল্লাই (২ ক্রেডিট)

২। ছোট গল্প (হিন্দি) ঃ সদ্‌গতি — মুন্সি প্রেমচাঁদ

ছোট গল্প (উর্দ্দু) ঃ বাচ্চা — ইসমাতচুকদাই

ছোট গল্প (তামিল) ঃ কুঞ্জবনের খ্যাপা — জয়কান্তন

নাটক ঃ চোপ্ আদালত চলছে — বিজয় তেণ্ডুলকর।

অষ্টম পত্র

(অনুবাদ, বানানবিধি, সম্পাদনা, অনুচ্ছেদ, প্রতিবেদন)

(ক) অনুবাদ

১। প্রকারভেদ — ভাবানুবাদ, আক্ষরিক অনুবাদ, কবিতার অনুবাদ।

২। অনুবাদের সমস্যা — ভাষা ও সংস্কৃতিগত ভেদে মূলানুগত্য।

৩। রূপান্তর — রবীন্দ্রনাথ ঠাকুর।

গীতাঞ্জলি — মূল ও অনুবাদ।

(খ) বানানবিধি

বাংলা বানানের বিবর্তন ধারা—বানানের সমস্যা ও সমাধান প্রয়াস—(বাংলা বর্ণমালা ও তাদের উচ্চারণ—কথ্য ও লেখ্যর ভেদ—বানান সরলীকরণ ও তার সীমা।)

(গ) সম্পাদনা

সম্পাদনার সাধারণসূত্র—প্রুফ রীডিং ও তার নিয়ম বিধি—অনুচ্ছেদ সজ্জা—পাদটীকা—গ্রন্থপঞ্জী — প্রতিস্থাপন কৌশল।

(ঘ) প্রতিবেদন/অনুচ্ছেদ

রচনা প্রণালী, প্রকারভেদ, অনুশীলনী।

পরীক্ষা পদ্ধতি

প্রথম সেমিষ্টার → FBG, FEG, FHS

দ্বিতীয় সেমিষ্টার → FST, EBG–1

তৃতীয় সেমিষ্টার → EBG–II, III

চতুর্থ সেমিষ্টার → EBG–IV, V

পঞ্চম সেমিষ্টার → EBG–VI, VII

ষষ্ঠ সেমিষ্টার → EBG–VIII, AOC

Netaji Subhas Open University

Master of Arts in Education

SYLLABUS

PROGRAMME OBJECTIVES:

The Programme intends the learners with the following primary objectives:

- To develop the knowledge, skills and attitudes necessary to pursue further studies in Education.
- To deliberate on the varied understanding of the concept of Education; its various purposes/aims and its substances from different perspectives.
- Imparting an adequate knowledge on the bases of educational aims and goals according to different schools of thought in the Indian and Western traditions.
- Equipped the learners with the changing faces of education and relevant reforms and debates.
- Enabling learners to understand the psychological bases of education, learner and learning factors.
- To appreciate the international dimensions of education and its multicultural and contemporary perspectives.
- To orient the learners to the pervasiveness of Educational technology; develop a critical appreciation of the use of ICT in education in the context of modern India.
- To emphasize that education should help the learners contrast to her or his knowledge according to the social context she or he is placed in.
- Equip the learners to know the broad educational concerns addressed by emerging curricula and a study of possible future trends.
- To introduce the nature of educational research, methods of acquiring knowledge and different paradigms of educational research.
- To develop an understanding of the concept of educational management and administration.
- Acquaint learners with the fundamental and contemporary issues of environmental and population education.
- Give an understanding of Special Education, Inclusive Education, Teacher Education and Women Education perspectives in particular-their status and concerns.

EXPECTED PROGRAMME OUTCOMES:

The PG in Education program may be helpful to the candidates who are aspiring for:

1. Higher study in Education or in the concerned areas, viz., M. Phil. Ph.D. etc.;
2. Professional studies in the Teacher Education or in the relevant areas,
3. Appearing TET, CTET and allied competitive examinations to obtain jobs in Teaching at various levels (after fulfilling the minimum eligibility).
4. Job Promotion towards Sub-Inspector of Schools or Education Services at Government level (after fulfilling the minimum eligibility);
5. Meeting the growing demands of human resources in Educational Planning and Management at Government, Semi-Government and Private sectors;
6. Grasping wider and more comprehensive understanding of Education as a field of knowledge and serving varied needs of learners as parents, guardians, teachers, social activists, NGO workers, policy framers, administrators or decision makers in the field of Educational practices.

NETAJI SUBHAS OPEN UNIVERSITY

Master of Arts in Education
Proposed Syllabus
Course Structure

Part- I

Paper 1: Philosophy of Education and History of Education in India 100 Marks

Module- 1: Philosophy of Education. 50 Marks
Module- 2: History of Education in India. 50 Marks

Paper- II: Psychological Foundation of Education 100 Marks
Module-1: Psychological Foundation of Education 50 Marks
Module- 2: Factors Related to Learning 50 Marks

Paper- III: Sociological Foundation of Education 100 Marks
Module 1: Education and Society 50 Marks
Module II: Theories of Sociology and Social Issues in Education 50 Marks

Paper IV: Methodology of Educational Research and Educational Statistics. 100 Marks
Module 1: Methodology of Educational Research 50 Marks
Module 2: Educational Statistics 50 Marks

Part II

Paper V : Educational Technology and Curriculum Studies 100 Marks
Module 1: Educational Technology 50 Marks
Module 2: Curriculum Studies 50 Marks

Paper VI : Educational Administration and Management 100 Marks
Module 1 : Educational Administration 50 Marks
Module 2 : Educational Management 50 Marks

Paper VII : Evaluation and Measurement in Education and Guidance and Counselling 100Marks
Module 1 : Evaluation and Measurement in Education 50 Marks
Module 2 : Guidance and Counselling 50 Marks

Paper VIII : Subject of Special Study. (Any One of the Following) 100 Marks
1. Special Education

2. Teacher Education
3. Education of Women in India
4. Population Education

Paper – I
Philosophy of Education and History of Education in India
Module 1 – Philosophy of Education

Unit 1- Western Schools of Philosophy – Idealistic, Naturalistic, Realistic, Pragmatic and Marxist schools.

Unit 2- Oriental schools of Philosophy- Brahmanic, Buddhist and Islamic schools.

Unit 3- Aims and concepts of Education with reference to the individualistic and socialistic views in Education.

Unit 4- Educational Philosophy of Plato, Rousseau, Froebel, Pestalozzi, Vivekananda, Rabindranath Tagore and Mahatma Gandhi

Unit 5- Some issues in Education- i) Freedom and Discipline in Education, ii) Democratic ideals in Education, iii) Education and Humanity and iv) Internationalism in Education.

Module 2 – History of Education in India

Unit 6- Education in Vedic and Post Vedic period.

Unit 7- Brahmanic Education, Education in Buddhist period and Islamic Education In the Medieval India.

Unit 8- Education in India during British rule with special reference to i) Adam's report (1835-1838), ii) Macaulay's Minute on Indian Education (1835), iii) Wood's Despatch (1854), iv) First Indian Education Commission or Hunter Commission (1882), v) Indian University Commission (1902), Calcutta University Commission or Sadler Commission (1917- 1919), vii) Post war Education Commission or Sargent Report.

Unit 9- Education in free India with special reference to i) Indian Education Commission or Radhakrishnan Commission (1948-1949), ii) Secondary Education Commission or Mudaliar Commission (1953), iii) National Education Commission or Kothari Commission (1964-1966), iv) National policy of Education (1986) and subsequent developments.

Unit 10- Some issues in Indian Education i) Women's Education, ii) Adult Education iii) Non-formal Education, iv) Vocational Education, v) Teacher Education and vi) Education for all.

REFERANCES:

1) **Randall Curren, A Companion to the Philosophy of Education.**
2) **Nel Nodding, Philosophy of Education**
3) **Nurullah, S and Naik, J.P. A History of Education In India**
4) **A. Banerjee, Philosophical Foundation of Education**

5) J.C. Chakraborty, Educational Philosophy

6) A.S.Altekar, Education In Ancient India
7) S.P. Chaube, History of Education in India.
8) S.K. Das, Educational System of Ancient Hindus
9) S.N. Mukherjee, History of Education.
10) B.R. Purkait, Milestone in Modern Indian Education

Paper II
Psychological Foundation of Education
Module – 1: Psychological Foundation of Education

Unit 1- Educational Psychology- Definition of Educational Psychology, Scope of Educational Psychology, modern trends and methods of Educational Psychology.

Unit 2- Growth and Development of learners- Concept of Growth and Development Stages of development. Determinants of Development, Heredity and Environment. Physical Development, Motor Development, Emotional and Social Development.

Unit 3- The process of Learning- Concept and types of learning, Theories of learning- Pavlov's Conditioning, Thorndike's Trial and Error, Skinner's Operant Conditioning and Gestalt theory. Modern views of learning.

Unit 4- Transfer of learning- Concept and Types of Transfer, Theories of Transfer and uses of Transfer in teaching- learning.

Unit 5- Memory and Forgetting- Concept of Memory and Forgetting, Processes Involved in memory. Information Processing Model of memory. Causes of forgetting. Nature of forgetting according to nature of processing and other cognitive views.

Module 2- Factors Related to Learning

Unit 6- Learner's Intelligence- Concept of Intelligence. Nature of Intelligence. Nature of Intelligence according to Spearman, Thurstone, Guilford and Sternberg.

Unit 7- Learner's Motivation- Concept of Motivation. Theories of Motivation- Maslow, Weiner, McLelland and Atkinson. Motivation and Learning.

Unit 8- Learner's Attention- Nature of Attention. Determinants of Attention. Theories of Attention- Broadbent's Funnel Theory, Resource allocation Theory, Modern views of Attention.

Unit 9- Learner's personality and Mental Health- Concept of Personality. Theories of Personality- Elementary idea of Psychodynamic, Trait and Social Learning Theories. Concept of mental health and adjustment. Causes of disturbed mental Health. Education and mental health.

Unit10- Learner's with Exceptional ability

Giftedness- Concept and Special needs of gifted learners. Identifying gifted Learners and their education.

Mental Retardation – Concept and types of mental retardation. Characteristics of Retarded Learners. Causes of disturbed mental health. Education of the Retarded Children.

REFERENCES:

1) **Elizabeth B. Hurlock, Adolescent Development.**
2) **S.S. Chauhan, Advanced Educational Psychology**
3) **E.R.Hilgard, Learning Theories**
4) **P.N.Bhattacharya, A Text Book Of Psychology**
5) **S.K. Mangal, Advanced Educational Psychology**

Paper III

Sociological Foundation of Education

Module – 1: Education and Society

Unit 1- Sociology of Education- Evolution of Society (A brief account). Meaning and Scope of Sociology of Education. Social determinants of Education – Religion, Class, Culture, Technology, Economic Issues. Society and its constituent factors- Location, Population, Human Relation. Education as Social Subsystem. Social function of Education.

Unit 2- Socialization- Concept of Socialization. Agencies of Socialization and Education- Family, Community, Peer Group, Media, School, State Policy and Religion.

Unit 3- Social Change. Meaning and Factors of Social Change. Education and Culture, Education and Democracy. Education as a vehicle of Social Change. Scientific and Technological development.

Unit 4- Modernity- Concept and Characteristics of Modernity. Modernization through Education

Unit 5- Social Stratification and Mobility- Meaning of Social Stratification and Mobility. Relationship of Education and Social Stratification and Mobility. Dimension of culture diversity in India and their impact on Education- Language, Religion, Ethnicity, Caste and Territoriality. Education, National Development, National Identity, National Integration.

Module 2- Theories and Social Issues in Education

Unit 6- Theories of Sociology and their impact on Education- Functionalist, Marxist and Integral Humanist Theories. Social Determinants of Education- Views of Durkheim, Parsons Merton, Bourdium and Young.

Unit 7- Equality of Educational opportunity- Meaning of Equality of Educational opportunity. Constitutional privation in India. Factors effecting Equality of Educational opportunity. Problems of Education of Disadvantaged People- Women, Disadvantaged Community, Physically and Mentally Challenged. Problems related to Rural, Urban, Industrial Population.

Unit 8- Group- Nature and types of Groups. Primary and Secondary Groups. Formation of classroom groups and cliques. Impact of groups on Education. Sociometry.

Unit 9- Delinquency and Youth Unrest- Sociological and other views on their causes and remedies

Unit10- Educational Institution as a Social micro system- Inter institutional and intra institutional dynamics in educational institution. Institutional climate- its meaning. Determinants and impact on Education. Leadership- Types, style and Characteristics

REFERENCES:

1) **Y.K. Sharma, Sociological Foundation of Education**
2) **Hemlata Talesra, Sociological Foundation of Education**
3) **Lalita Kabra, Scheduled Caste Girls: Educational Backwardness**
4) **Divya Nagar, Deprived Children**

Paper – IV
Methodology of Educational Research and Statistical Treatment of Data

Module – 1
Methodology of Educational Research

Unit 1a) Concept, Aim and Nature of Scientific Research- Concept and Aims of Scientific Research. Nature of Scientific Research. Educational Research and Scientific Research. Types of Educational Research- Fundamental, Applied and Action Research. Historical and Philosophical research in Education. Ethnographic Research. Qualitative and Quantitative research.

Unit 1b) Variables- Concept of variables. Types of Variables- Dependent and Independent Variable, Intervening variables, Extraneous variables. Research and control variables.

Unit 2- Sample and Sampling- Concept of Population and Sample. Characteristics of good sample. Probability sampling techniques - Concept of probability. Types and characteristics of probability sample and sampling. Nonprobability sampling. Types and characteristics of nonprobability sample and sampling.

Unit 3a) Formulation of research problem and research design- Characteristics of good research problem. Selection of research problem. Framing hypothesis, meaning

of hypothesis, place of hypothesis in research, types of hypothesis.

3b) Research design- Meaning of Research design,need and characteristics of good research design.Descriptive research- Survey, Experimental research design, types of experimental design- single group design, quasi-experimental design, randomized design, randomized block design and factorial design, correlational research design.

Unit 4- Tools and collection of data- meaning and types of data, tools and methods of data collection – Observation, interview, questionnaire, test scales, analysis of data.

Unit 5- Writing a research report- importance of writing a research report. Purpose of Writing a research report. Steps involved in report writing.

Module- 2
Statistical Treatment of Data

Unit 6- Need of Statistical Treatment of Data and descriptive analysis – need of statistical treatment of data in educational research. Preparation for data analysis- frequency distribution. Measures of central tendency- Mean, Median and Mode. Measures of variability - Standard deviation and Quartile Deviation. Graphical representation of data- frequency polygon and histogram. Nature of distribution - Concept of normal distribution and normal probability curve. Deviation from normality- Skewness and Kurtosis.

Unit 7- Relation and prediction – Correlation – Product Moment Correlation, Biserial and Point biserial Correlation, Phi-coefficient. Spearman's Rank Correlation. Significance of correlation. Regression and Prediction- Linear and multiple regression. Multivariate relation – Partial correlation and multiple correlation.

Unit 8- Testing hypothesis- Comparison of two means- t-test (correlated and uncorrelated), t-test for small N. Analysis of variance.

Unit 9- Nonparametric test- Chi-square test, sign test, Wilcoxon Signed Rank Test, Median test, Mann-Whitney U test.

Unit 10- Psychological scaling- percentile score and percentile rank. T-score and Z-score.

REFERENCES:

1) Arun Kumar Singh, Tests, Measurements, and Research Methods in Behavioral Sciences.
2) A. Anastesi, Psychological Testing
3) Best, J.W. & Kahn, J.V. Research in Education
4) Kerlinger, F.N. Foundation of Behavioural Researches
5) Robert J. Gregory, Psychological Testing.

Paper V

Educational Technology and Curriculum Studies

Module – 1: Educational Technology

Unit 1- Concept of Educational Technology. Definition, Nature, Scope and Limitation of Educational Technology. Components of Educational Technology: Hardware and Software approach. Educational Technology and Instructional Technology.

Unit 2- Instructional design and Programmed Learning. Taxonomies of instructional objectives. System Approach-Concept and components of instructional system. Programmed Instruction- Concepts, Theories and Types- Linear and Branching; Computer assisted instruction.

Unit 3- Teaching Methods and Teaching Models. Concept of Teaching and major methods of teaching. Models of Teaching- Concept and types of models. Uses and limitations. Microteaching and Team teaching.

Unit 4- Communication and Classroom Interaction. Definition and types of communication. Barriers of classroom communication. Classroom Interaction- Meaning of Classroom Interaction. Analysis of Classroom Interaction by Flanders Interaction category system.

Unit 5- Teaching Aids and Trends of Educational System. Teaching Aids- Psychology of using Teaching Aids, types of Teaching Aids- Projected, Non projected and Audio-visual aids. Computer as teaching aid. Formal and Non-formal education, Distance and correspondence education.

Module 2- Curriculum Studies

Unit 6- Concept of Curriculum. Traditional and Modern approaches of Curriculum. Types of Curriculum. Role of Curriculum in Education.

Unit 7- Bases of Curriculum, Philosophical Psychological and Sociological bases of Curriculum.

Unit 8- Learning theories and Curriculum. Cognitive developmental approach, Connectionism and Constructivism. Information processing Model.

Unit 9- Curriculum Construction. Principles of Curriculum Construction. Taxonomies of Educational Objectives. Curriculum Development process and System approach. Determinants of content selection – culture based, knowledge based and need based.

Unit 10- Curriculum Evaluation. Meaning and purpose of Curriculum evaluation. Means of Curriculum Evaluation. Formative Summative Evaluation.

REFERENCES:

1) **J.C. Agarwal, Essentials of Educational Technology.**
2) **F.W. Benghort, Educational System Analysis.**
3) **R.S. Bloom, Taxonomy of Educational Objectives.**
4) **U.Rao, Educational Technology**
5) **M.K. Sen. Shiksha Projuktibigyan.**

Paper VI
Educational Administration and Management
Module – 1: Educational Administration

Unit 1- Nature and scope of Educational Administration. Agencies of Educational Administration. Role of central and state govt. and local bodies. Views of NPE 1986 and Rammurty Committee on Educational Administration.

Unit 2- Theories of Educational Administration.

a) **Classical Theory**
b) **Neo classical Theory**
c) **Modern Management Theory**

Unit 3- Concept of Organisation. Departmentation. Delegation of authority. Decentralisation. Autonomy of institution. Self managed institution. Organisational structure.

Unit 4- Educational Finance: Resource acquisition and allocation. Sources of finance. Privatization of educational institution. Partnership between public and private sector institution.

Unit 5- Inspection and Supervision- Meaning and concept. Role of modern Supervisor.

Module 2- Management

Unit 6- Concept of Management. Relation between Management and administration. Managerial function of educational administrators- Planning, Organising, Staffing, Controlling, Directing. Application of Management science in the field of education. Roles of teachers in different areas of educational Management including teaching learning process and social responsibility.

Unit 7- Leadership in educational Management. Management in action- guidance, supervision, control, communication, coordination. Leadership skills. Theories of leadership. Leaders as team manager and motivator. Effective decision making by the leaders.

Unit 8- Educational planning- concept and objectives. Approaches to planning. Micro, macro, grass root level planning. Drawbacks of Educational planning. Institutional planning.

Unit 9- Control process. Performance Standard for critical areas of control in Educational Management.: role of accreditation bodies: NAAC, NCTE quality control in education. Application of TQM principles in education. Performance appraisal.

Unit10- Development of Educational organization. Managing change, resolution of conflict. Development of manpower and training.

REFERENCES:

1) **R.P. Bhatnagar, Educational Administration**
2) **Aruna Goel, Educational Administration and Management**
3) **Niyati Bhatt. Higher Education Administration and Management**

Paper VII
EVALUATION AND MEASUREMENT IN EDUCATION and GUIDANCE AND COUNSELLING

Module – 1: EVALUATION AND MEASUREMENT IN EDUCATION

Unit1- Concept and characteristics of Measurement. Concept and characteristics of Evaluation. Place of Evaluation in education. Difference and relationship between Measurement and Evaluation. Evaluation and Examination. Types of Evaluation.

Unit 2- Educational objectives and Evaluation – Meaning and types of Educational Objectives. Taxonomy of Educational Objectives under Cognitive Affective and Psychomotor Domain. Sources of Educational Objectives. Use of the objectives in Educational Evaluation.

Unit 3 – Tools of Evaluation - need for Tools of Evaluation. Type of Tools. Criterion referenced tests – Characteristics, uses and limitations. Method of preparing criterion referenced tests. Norm referenced tests – Characteristics and types. Essay tests – Merits and Demerits. Improvement of Essay tests. Objective Tests – Types, Merits and Demerits. Intelligence Tests. Aptitude Tests. Personality Tests. Interest Inventories. Attitude Scales. Diagnostic Tests.

Unit 4 – Emerging Trends in Evaluation – Types of Conventional Tests. Written, Oral and Practical Examinations. Their merits and demerits. Overall demerits of existing examination system. Question Bank. Grading system – Concept, Method, Advantages and Disadvantages. Semester System – Concept, Advantages and Disadvantages. Use of computer in Evaluation.

Unit 5 – Recording, Reporting and Using Evaluation outcomes. Need for recording and reporting. Conventional recording and reporting. Cumulative Record Card. Computer recording and Online transfer of data. Exit Portfolio.

Module 2
Guidance and Counseling

Unit 6 – Concept of Guidance and Counseling – Meaning of Guidance and Counseling. Difference and Relation between the two. Base principles of counseling. Counseling and Psychotherapy.

Unit 7 – Steps in Guidance and Counseling. Steps in Counseling. Steps in Guidance. Ethical issues in Counseling.

Unit 8 – Area of Guidance and Counseling. Clinical, Personal, Marital, Rehabilitation counseling. Educational and Vocational Guidance.

Unit 9 – Approaches of Guidance and Counseling. Directive, Non-directive and Eclectic approaches. Individual and Group Counseling.

Unit 10 – Essential Information for Guidance and Counseling. Personal Information – Information about Physical, Intellectual, Personality, Academic Achievement and others. Educational Information – Scope and Opportunities available. Occupational Information – Scope and Opportunities for employment. Career prospects.

REFERENCES:

6) **Arun Kumar Singh, Tests, Measurements, and Research Methods in Behavioral Sciences.**
7) **A. Anastesi, Psychological Testing**
8) **Best, J.W. & Kahn, J.V. Research in Education**
9) **Kerlinger, F.N. Foundation of Behavioural Researches**
10) **Robert J. Gregory, Psychological Testing.**

Paper VIII (E1)
SPECIAL EDUCATION
(Old Syllabus)

Module – 1: Education of Physically Disabled

Unit 1- Introduction to Special Education- Concept of Exceptionality, Disability and Special Education. History of Special Education. Scope of Special Education- Types of disability.

Unit 2- Strategies of Special Education- Special school, integration and inclusive education. Rehabilitation of disabled. Status of Special Education in India.

Unit 3- Visual impairment- Definition, types, and etiology. Characteristics and education of Visual impairment.

Unit 4- Hearing handicap- Definition, types, and etiology and identification. Characteristics and education of Hearing handicap.

Unit5- Cerebral Palsy- Definition, types and causes of Cerebral Palsy. education of Cerebral Palsy.

Module 2- Education of the mentally exceptional children

Unit6- Mental retardation- Definition, types and causes of Mental retardation. identification. Characteristics and education of Mentally retarded.

Unit7- Gifted children- Concept of giftedness. Characteristics and problems of Gifted children. Identification and education of Gifted children.

Unit 8- Learning Disability- Definition, types and causes of Learning Disability. Characteristics and Measurement of Learning Disability. education of Learning Disability.

Unit9- Emotional Disturbance- Definition, types and causes, characteristics of Emotional Disturbance. education of Emotionally Disturbed.

Unit 10- Agencies of Special Education- National International Government and Nongovernmental agencies. Community participation and parent participation. Constraints of Special Education.

REFERENCES:

1) Sachindra Mohan Sahu, Education of Children with Special Needs

2) **Bishnupada Nanda, Bisesdharmi Shikha**
3) **S.K. Mangal, Special Education**

Paper VIII (E1)-Revised Syllabus
Special Education
(w.e.f 2017-19 academic session)

MODULE 1: INCLUSIVE EDUCATION

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Unit 1: Understanding Diversity

1.1 Concept of Diversity
1.2 Types of Diversity: Gender, linguistic, cultural, socio-economic and disability
1.3 Diversity in learning and play
1.4 Addressing diverse learning needs
1.5 Diversity: Global Perspective

Unit 2: Introduction to Inclusive Education

2.1 Marginalisation vs. Inclusion: Meaning & Definitions
2.2 Changing Practices in Education of Children with Disabilities: Segregation, Integration & Inclusion
2.3 Diversity in Classrooms: Learning Styles, Linguistic & Socio-Cultural Multiplicity
2.4 Principles of Inclusive Education: Access, Equity, Relevance, Participation & Empowerment
2.5 Barriers to Inclusive Education: Attitudinal, Physical & Instructional

Unit 3: Adaptations Accommodations and Modifications

3.1 Meaning, Difference, Need & Steps
3.2 Specifics for Children with Sensory Disabilities
3.3 Specifics for Children with Neuro-Developmental Disabilities
3.4 Specifics for Children with Loco Motor & Multiple Disabilities
3.5 Engaging Gifted Children

Unit 4: Inclusive Academic Instructions

4.1 Universal Design for Learning: Multiple Means of Access, Expression, Engagement & Assessment
4.2 Co-Teaching Methods: One Teach One Assist, Station-Teaching, Parallel Teaching, Alternate Teaching & Team Teaching
4.3 Differentiated Instructions: Content, Process & Product
4.4 Peer Mediated Instructions: Class Wide Peer Tutoring, Peer Assisted Learning Strategies
4.5 ICT for Instructions

Unit 5: Supports and Collaborations for Inclusive Education

5.1 Stakeholders of Inclusive Education & Their Responsibilities

5.2 Advocacy & Leadership for Inclusion in Education
5.3 Family Support & Involvement for Inclusion
5.4 Community Involvement for Inclusion
5.5 Resource Mobilisation for Inclusive Education

Unit 6: Polices & Frameworks Facilitating Inclusive Education

6.1 International Declarations: Universal Declaration of Human Rights (1948), World Declaration for Education for All (1990)
6.2 International Conventions: Convention against Discrimination (1960), Convention on Rights of a Child (1989), United Nations Convention of Rights of Persons with Disabilities (UNCRPD) (2006)
6.3 International Frameworks: Salamanca Framework (1994), Biwako Millennium Framework of Action (2002)
6.4 National Commissions & Policies: Kothari Commission (1964), National Education Policy (1968), National Policy on Education (1986), Revised National Policy Education (1992), National Curricular Framework (2005), National Policy For Persons with Disabilities (2006)
6.5 National Acts & Programs: IEDC (1974), RCI Act (1992), PWD Act (1995), National Trust Act (1999), SSA (2000), RTE (2006), RMSA (2009), IEDSS (2013)

REFERENCES

- **Stow L. &Selfe, L. (1989).** ***Understanding Children with Special Needs*****. London: Unwin Hyman**
- **Bartlett, L. D., &Weisentein, G. R. (2003).** ***Successful Inclusion for Educational Leaders*****. New Jersey: Prentice Hall.**
- **Chaote, J. S. (1997).** ***Successful Mainstreaming*****. Allyn and Bacon**
- **Westwood, P. (2006).** ***Commonsense Methods for Children with Special Educational Needs -Strategies for the Regular Classroom.*** **4th Edition, London Routledge Falmer: Taylor & Francis Group.**
- **Lewis, R. B., &Doorlag, D. (1995).** ***Teaching Special Students in the Mainstream*****. 4th Ed. New Jersey: Pearson.**
- **Sedlak, R. A., &Schloss, P. C. (1986).** ***Instructional Methods for Student Learning and Behaviour Problems*****. Allyn and Bac**

MODULE-2: EDUCATION OF THE DIFFERENTLY ABLED CHILDERN

Unit 1: Visual Impairment-- Nature and Assessment

1.1. Process of Seeing and Common Eye Disorders in India
1.2. Blindness and Low Vision--Definition and Classification
1.3. Demographic Information--NSSO and Census 2011
1.4. Importance of Early Identification and Intervention
1.5. Functional Assessment Procedures

Unit 2: Educational Implications of Visual Impairment

2.1. Effects of Blindness--Primary and Secondary

2.2. Selective Educational Placement
2.3. Teaching Principles
2.4. Expanded Core Curriculum-- Concept and Areas
2.5. Commonly Used Low Cost and Advanced Assistive Devices

Unit 3: Hearing Impairment: Nature & classification
3.1 Types of Sensory Impairment (Hearing Impairment, Visual Impairment) & Dual sensory impairment (Deaf-blindness)
3.2 Importance of hearing
3.3 Process of hearing & its impediment leading to different types of hearing loss
3.4 Definition of hearing loss, demographics & associated terminologies: deaf/ Deaf/ deafness/ hearing impaired/ disability/ handicapped
3.5 Challenges arising due to congenital and acquired hearing loss

Unit4: Impact of Hearing Loss

4.1 Characteristics of learners with hearing loss and impact of different degrees of hearing impairment on communication
4.2 Language & communication issues attributable to hearing loss and need for early Intervention
4.3 Communication options, preferences & facilitators of individuals with hearing loss
4.4 Issues & measures in literacy development and scholastic achievement of students with hearing loss
4.5 Restoring techniques using human (interpreter) & technological support (hearing devices)

Unit5: Learning Disability: Nature, Needs and Intervention

5.1 Definition, Types and Characteristics
5.2 Tools and Areas of Assessment
5.3 Strategies for reading, Writing and Maths
5.4 Curricular Adaptation, IEP, Further Education,
5.5 Transition Education, Life Long Education
Unit6: Autism Spectrum Disorder: Nature, Needs and Intervention

6.1 Definition, Types and Characteristics
6.2 Tools and Areas of Assessment
6.3 Instructional Approaches
6.4 Teaching Methods
6.5 Vocational Training and Career Opportunities

REFERENCES

- **Moyes, R.A. (2010). Building Sensory Friendly Classrooms to Support Children with Challenging Behaviors: Implementing Data Driven Strategies, Sensory World, Texas.**
- **Pierangelo, R., & Giuliani G.A. (2003). Transition services in Special Education, Allyn& Bacon.**
- **Reddy G.L., & Rama, R. (2000). Education of Children with Special Needs, New Delhi - Discovery Pub**
- **Simpson, R. L., & Myles, B, S. (2008). Educating Children and Youth with Autism: Strategies for Effective Practice. (2nd edition) Pro Ed. Texas**

• Bradford, L. J. & Hardy, W.G. (1979). Hearing and Hearing Impairment. New York: Grune and Stratton.
• Davis, H. & Silverman, S. R. (1970). Hearing and Deafness - Part I. Holt, London: Rinehart & Winston.
• Holbrook, C.M., & Koenig, A. J. (Eds.) (2000). Foundations of Education, Vol I: History and Theory of Teaching Children and Youths with Visual Impairments. (2nd ed): New York: AFB Press.
• Taylor, B. (1988). Reading Difficulties: Instruction and Assessment, Random House, New York.
• Wong, B. Y. L. (1996) .The ABCs of learning disabilities (1st ed.) Academic Press, San Diego, CA.

Paper VIII (E2)
TEACHER EDUCATION
Module – 1: Principles of Teacher Education

Unit 1- Concept of teacher education- Difference between Training and Education, Need for 'training in teaching' and 'education for teachers'.

Unit2- Some Philosophical issues on teacher education:
- **i) Image of a teacher**
- **ii) Role of a teacher**
- **iii) Education and social change**
- **iv) Value oriented teacher education**

Unit3- Origin and Development of teacher education.

Unit4- Objectives of teacher education.

Unit 5- Managing Agencies of teacher education.

Module 2- Practices of Teacher Education

Unit 6- Programme of Teacher Education at different levels of Education in India.

Unit 7- Framing of curriculum of teacher education.

Unit8- Professional preparation for teacher education-
- **Pre-service teacher education.**
- **In-service teacher education.**

Unit9- Some contemporary issues in Teacher Education
- **Models of Lesson Plan**
- **Micro Teaching**

Simulated teaching
Action Research

Unit 10- Problems and Prospects of Teacher Education in India and their remedial measures.

REFERANCES:

1) **R.S. Shukla, Emerging Trends in Teachers Education**
2) **R.S. Shukla Education of Teachers in India**

Paper VIII (E3)
EDUCATION OF WOMEN IN INDIA
Module – 1: Prospectives of Women's Education

Unit1- Overview of Women's Education in India. Concern for Women's Education. Historical Perspectives, present status and other issues of Women's Education.

Unit2- Development of Women's Education during pre-independence period. Contribution of Missionaries. Role of British Govt.

Unit3- Contribution of Indian thinkers. Rammohan Roy, Iswar Chandra Vidyasagar. Radhakanta Dev and Nibedita.

Unit4- Major constraints of Women's Education – Social, Political, Psychological, Economic and Religious.

Unit5- Women's Education, Literacy and Population Growth. UNESCO Document.

Module 2-
Post independence Development of Women's Education in India

Unit6- Policy perspectives. Role of UGC, MHRD, National policy of education- 1968, 1986, POA 1992. Constitutional Provision.

Unit7- Committees and Commissions on Women's Education- Radhakrishnan, Mudaliar and Kothari Commission.Durgabai Deshmukh committee, Hansraj Mehta Committee and Bhaktabatsalam Committee.

Unit8- Present Status of Women's Education. A brief account of the growth of Women's

Education.

Unit9- Women's Education, empowerment and social transformation.

Unit10- Trends of research in Women's Education.

REFERANCES:

1) **A.Kumar, Women Education**
2) **S.P.Agarwal, Women Educatio in India**

Paper VIII (E4)
POPULATION AND ENVIRONMENTAL EDUCATION
Module – 1: POPULATION EDUCATION

Unit1- Concept of Population Education- Concept, History and Objectives of Population Education. Population Education Programme in India.

Unit2- Population Dynamics. Definition and component of population. Demographic characteristics. Changes in population. Population control measures- Family planning, education and reproductive health.

Unit3- Population and quality of life. quality of life Resource, Level of living, Social and political system, process of development. Health and sustainable development

Sex education- Objective, curriculum, Methodology
Adolescent education- Objective, curriculum
Family life education
Health education

Unit4- Population and Natural resource. Types- renewable nonrenewable. Conservation and recycling of resource

Unit5- Agencies and curriculum of population education. Agencies- formal and non-formal.

Curriculum of Population Education. Integration and correlation of curriculum. Co-curricular activities.

Planned Lesson- A few probable methods of teaching.

Module 2- Environmental Education

Unit6- Concept of Environmental Education: Definition, nature, scope, objectives and limitations of Environmental Education.

Unit7- Concern for Environment. Pollution, Resource degeneration. Population explosion. Man and environment- ecological and psychological views.

Unit8- Agencies of Environmental Education. formal and non-formal. Governmental and nongovernmental agencies. Mass Media- Newspaper, Radio, Electronic media and others.

Unit9- Curriculum and Approaches of Environmental Education. Principles and content of Environmental Education. Methodology. Environmental consciousness.

Unit 10- Teacher's training for Environmental Education. Present status, agencies, curriculum of Teacher's training. Problems and remedies of Teacher's training, different aids of Environmental Education.

REFERENCES:

1) **R.N. Sinha, Population Education**
2) **V.K. Nanda, Environmental Education**

Netaji Subhas Open University
Master of Social Work (MSW)
SYLLABUS

Programme Objective: The objective of the programme is to prepare qualified professionals, who would bring about the desired social change in our societies by applying the skills and techniques that they would acquire in the tenure of two years .The course aims to acquaint the learners with the various social problems that we often come across by giving them a rigorous field work and to reach the root cause of these problems. In this manner the learners are encouraged to apply their theoretical knowledge in practice. The course is meant for the learners who come from various fields of social sciences. The learners are sincerely inclined to bring about social development and thus the course help them to work efficiently in various settings and people.

Expected Programme Outcome: The learners are expected to work with the NGOs and NPOs and also in the government department as social welfare officer etc. After successful completion of this course the students may opt for higher studies like Ph.D. They may also work in various social activities in collaboration with reputed NGOs as trainees.

Course Structure

Part - I (1st year)

PAPER	TITLE	MARKS
I	History and Philosophy of Social Work	100
II	Methods of Social Work – 1 (Social Case Work/Social Group Work)	100
III	Methods of Social Work-2 (Community Organisation)	100
IV	Man and Society (Sociology/Indian Economic System)	100
V	Human Growth & Behaviour and Health & Hygiene (Human Growth & Behaviour/Health Care Management)	100
VI	Social Work Research and Statistics (Social Work Research/Statistics/Use of Computers)	100
VII	Field Work (Placement Reports)	100
VIII	Viva Voce	50

Part - II (2nd year)

PAPER	TITLE	MARKS
IX	Social Welfare Administration	100
X	Community Development (Rural and Urban)	100
XI	Contemporary Social Problems & Social Policy	100

XII	Crime and Correctional Administration	100
XIII	Social Legislation	100
XIV	Areas of Social Work Practice	100
XV	Project Work (Study Reports)	100
XVI	Viva Voce	50

Full marks: 1500 (120 credits)

DETAILED COURSE CONTENT

PART – I

PAPER - I : HISTORY AND PHILOSOPHY OF SOCIAL WORK

1. Development of Social Work as a profession : concept of charity, philanthropy, changes in the approach from charity to social development.
2. Historical development of Social Work in India.
   - Social reform movement in 19th and 20th Century : Christian Missionary, Brahmo Samaj, Arya Samaj, Theosophical Society, Ramakrishna Mission and Prarthana Sabha.
   - Social Welfare in British period and in the post Independence Period.
3. History of Social Welfare Institutions and the Social Work profession in the United Kingdom and United States of America.
4. Concept of voluntary action. The changing roles of the State and NGOs in Social Welfare with special reference to the fields of Education, Health, Disability, Women and child Development and Age Care. Future of voluntary action.
5. Social Philosophy of Rabindranath Tagore, Swami Vivekananda and Mahatma Gandhi.
6. Contribution of social work profession to the achievement of Social Justice and Human Rights in India, Constitutional provisions in India and their implications.
7. Basic assumptions, values, ethics and principles of Social Work.
8. Problems faced by social work profession in India.
9. Introductory concept of the terms.
   i. Social Welfare

ii. Social Service
iii. Social Reform
iv. Social Work
v. Social Legislation
vi. Social Policy
vii. Social Defence
viii. Social Change
ix. Social Development
x. Social security
xi. Social Justice

PAPER - II : METHODS OF SOCIAL WORK - I

A. SOCIAL CARE WORK

(50 MARKS)

1. Definition, component and principles of Social Case Work.
2. The phases of problem solving process : Intake, Study, Diagnosis, Treatment and Termination.
3. Use of Casework skill in dealing with cases of
   i. Marital discord
   ii. Problems of Family Relationship
   iii. Problems of the Aged
   iv. Mentally Retarded persons
   v. Persons affected with TB, VD, AIDS, Cancer, Leprosy.
4. Definition, objectives and techniques of interview in Social Casework. Criteria for successful interview.
5. Characteristics of Client-Caseworker relationship. Professional Self of a Social Caseworker and its implications in Social Casework.

6. Concept and importance of Record Keeping in Social Casework.
7. Psycho-analytical concept and orientation in Social Casework : Contribution of Freud, Adler and Erickson.

B. Social Group Work
(50 Marks)

1. Definition, characteristics and types of Group. Importance of Group in personality development.
2. Definition and principles of Social Group Work, models in group work, historical development of Social Group Work.
3. Role of professional Social Worker in helping groups to utilise group relations, leadership in Social Group Work.
4. Record keeping, supervision and evaluation in Social Group Work.
5. Concept of Programme Planning. Importance of programme planning in Social Group Work.
6. Use of Group Work in different fields of Social Work : SHG, Correctional Services.
7. Group formation-sub-groups-triad, dyad and cliques. Crisis/conflicts in group situation and interventions : Communication and interaction in groups.
8. Techniques and skills in Social Group Work.

PAPER - III : METHODS OF SOCIAL WORK - II

Community Organisation

1. Definition, types, characteristics and basic problems of the community.
2. Community Organisation as a method of Social Work : definition, scope, principles, methods and techniques of Community Organisation.
3. Leadership in Community Organisation
   i. Concept
   ii. Theories
   iii. Types

iv. Role

4. Community Participation : concept, importance and methods to achieve.

5. Community Organisation in rural and urban communities.

6. Relevance of Community Organisation as a method across different spheres of social work intervention e.g. health, education, housing, sanitation, income generation, displacement, etc.

7. Social Action-concept, scope and process, its relationship with Community Organisation.

8. Relation of Community Organisation with other methods of Social Work.

9. Role of Community Organisation worker—guide, enabler, catalyst, educator and therapist.

10. Concept of Cmmunication : definition, types, methods, suitable structure and channels of communication in organization. Precondition to effective communication, barriers to communication.

11. Sarvodaya Movement as a model of Community Organisation.

PAPER - IV : MAN AND SOCIETY

Part - I

Sociology

(50 Marks)

1. Definition and scope of Society from the angle of Economics, Psychology, Social Anthropology, Political Science and Sociology. Importance of Sociology in social work.

2. Elements of Society :

   i. Community

   ii. Associations

   iii. Institutions

3. Indian Social Structure-social systems of :

   i. Tribal

ii. Urban

iii. Rural

4. Change in Indian social institutions
   i. Family
   ii. Marriage
   iii. Caste
   iv. Religious groups
   v. Gender bias
5. The effects of Globalisation on economic, cultural, social and family Structures. The adverse effects of development, displacement and migration for livelihood.
6. The influence of modernisation and urbanisation on the socio-economically depressed sections.
7. Contemporary Social Problems
   i. Trafficking
   ii. Child and elderly persons abuse
   iii. Criminality
   iv. Juvenile delinquency
   v. Youth unrest
8. The process of socialisation-deviance and social control.

Part - II

Indian Economic System

(50 Marks)

1. Concepts and brief account of
   i. Feudalism
   ii. Capitalism
   iii. Socialism
   iv. Mixed Economy and
   v. Welfare State
2. Brief introduction to major theories of economic growth.

3. Economic condition of India with particular reference to
   i. National income
   ii. Population
   iii. Poverty
   iv. Unemployment
   v. Illiteracy
4. Planning in India-as an instrument of socio-economic policy—with special reference to :
   i. education
   ii. health
   iii. housing
   iv. class and caste equality
5. The problems and objects of development :
   i. Agriculture
   ii. Industries
   iii. Rural and urban Development

   With special reference to the vulnerable population.

PAPER-V : HUMAN GROWTH & BEHAVIOUR AND HEALTH & HYGIENE

Human Growth & Behaviour

(50 Marks)

1. Human Growth and Development :

   Concept and principles of development, social and cultural environment.
2. Growth and development in each stage of life span-conception to old age, opportunity and services including health and nutrition needed to support and enhance growth and development at each level.
3. Principles of growth and development : Basic human needs from infancy through adulthood.
4. Role of heredity and environment or human growth and behaviour.
5. Personality : Concept and theories.
6. Motivation of human behaviour : Concept, theories and types, biological and social

motives.

7. Social prejudice, propaganda, public opinion.
8. Human Groups : Group dynamics, Group morale and leadership, Group behaviour-audience, crowd and mob behaviour.

Health Care Management

(50 Marks)

1. (a) Definition of Health-physical, mental, social and spiritual.

   (b) Personal hygiene, Home sanitation, First aid, Concept of hygiene : personal, environmental and sexual.

2. Reproductive and Child Health

   (a) Antenatal Care :

   (b) Post-natal Care :

3. Symptoms, causes, control and prevention of following diseases :
   - (i) TB
   - (ii) VD
   - (iii) AIDS
   - (iv) Cancer
   - (v) Hepatitis B
   - (vi) Malaria
   - (vii) Diarrhoea
   - (viii) Leprosy

4. Role of Social Worker in School Health Services :
   - i. Personal hygiene
   - ii. Classroom facilities
   - iii. Environment
   - iv. Sanitation and
   - v. Child to child practice.

5. Elements of Nutrition and Balanced Diet. Nutrition requirements in different target groups :
   - i. Infants
   - ii. Pre-school Children

iii. Expectant and Nursing Mothers.

6. Causes, symptoms and treatment of mental disorder. Types of mental disorder-Psychoneurotic, Psychiatry, Psychotic.

7. Drug addiction : Causes, symptoms, treatment of the addicts, rehabilitation, role of different institutions and individuals.

PAPER-VI : SOCIAL WORK RESEARCH AND STATISTICS

Social Work Research

(50 Marks)

1. Introduction to Social Research
   - i. Survey and Research—meaning, importance and types
   - ii. Distinction between survey and research
   - iii. Social Work Research—meaning, importance, scope and limitations
   - iv. Distinction between Social Research and Social work Research.
2. Methodology of Social Work Research
   - i. Identification of problems and formulation research proposal
   - ii. Formulation of hypothesis
   - iii. Attributes of a good hypothesis
   - iv. Test of hypothesis
3. Research Design
   - i. Selection of topic
   - ii. Determination of sample from universe
   - iii. Sampling methods
   - iv. Time frame
   - v. Statistical tool to be used
4. Data Collection
   - i. Selection of source of data-primary and secondary, both
   - ii. Preparation of questionnaire

iii. Abbreviation
iv. Case Study
v. Interview
vi. Limitations of each

5. Presentation and Tabulation of Data
   i. Analysis and interpretation
   ii. Writing of findings in a structured way
6. Project planning, feasibility test and writing of project report.

Statistics

(50 Marks)

1. Introduction
   i. Definition
   ii. Importance, scope and limitation of Statistics
2. Analysis of Univariate Data
   i. Features of Frequency Distribution
   ii. Common charts and diagrams
   iii. Measures of central tendency and dispersion
   iv. Mean deviation
   v. Standard deviation
   vi. Quartile deviation
3. Analysis of Bivariate Data
   i. Bivariate Frequency Distribution
   ii. Simple correlation
   iii. Rank correlation
   iv. Linear regression
4. Simple tests of Hypothesis
   i. t-test
   ii. Chi-square test

Use of Computer

(20 Marks)

1. Word Processing
   - i. Document creation
   - ii. Editing
   - iii. Formatting
   - iv. Using tools such as spelling check, Thesaurus, etc. in Word Processors and Printing Documents.
2. Working knowledge under MS Excel and DBMS Environment.

PAPER-VII : FIELD WORK

To reinforce the knowledge acquired through studies, actual practice in the field situation under the guidance of a Supervisor from the agency itself, students will be sent to different agencise for Black Placement of at least 30 days duration. Each student needs to spend the entire period of placement—

(i) to study the organisational aspects as well as

(ii) to practice the Case Work, Group Work, Community Organisation theories that they have learnt in the classroom situation.

The University will evaluate the performance of the students on the basis of the reports submitted. The students will have to pass independently in Fieldwork in order to qualify for the degree.

The students themselves will have to borne all expenses in this connection. Along with the report students will have to produce a Certificate of statisfactory completion of the Fieldwork. The Block Placement must be completed within eight months from the beginning of the course and the report will have to be submitted within one month from the completion of the Fieldwork. A Committee formed by the Board of Studies shall conduct a viva-voce examination basically centering the Fieldwork soon after the theoretical examination is over. The students will have to pass in the viva-voce also in order to complete the M.S.W. course.

PAPER-VIII : VIVA VOCE

Soon after the theoretical Examinations are over, a viva-voce examination will be held covering both—The theoretical papers as well as field work reports submitted.

PART – II

PAPER-IX : SOCIAL WELFARE ADMINISTRATION

1. Concept, importance, principles and areas of social welfare administration; difference between public administration and social welfare administration.
2. Administrative process and its components : Planning, Organization, Staffing, Direction, Coordination, Resource mobilization, Budgeting.
3. Concept, techniques, components, methods and principles of Supervision, Monitoring and Evaluation, Public Relation.
4. Concept and importance of Organization, Organizational Behaviour, Motivation; Team Building, Leadership, Decision Making and Group Dynamics.
5. Personnel Policies, Human Resource Planning and Development, Manpower Planning in the context of social welfare administration; Staff Development, Training, Employee Counseling.
6. Social Welfare Administration at the central level : Administrative structure, activities and various schemes of the Union Ministry e.g. MSJE, Department of Women and Children, Department of Youth Affairs.
7. Social Welfare Administration at the state level : Administrative structure, activities and various schemes of the State Government in the areas of women and children, Disability, Social Defence and Backward Class.
8. Role of NGO/Voluntary Organisation in social welfare and development, rules, regulation and criteria for various Grants-in-aid to NGO programme, Elements, Accountability and Transparency.
9. Formulation of Project Proposals : Needs Assessment, Guidelines and Technique.
10. Project Management : Components, skills, techniques, operation and methodology.

PAPER-X : COMMUNITY DEVELOPMENT

A. Rural Community Development

(50 Marks)

1. Rural Socio-Economic Structure : Rural Demography, Rural Social Structure, Rural Economic Structure, Rural Poverty; Migration pattern.
2. Concept, scope and importance of the study of Rural Community Development in India.
3. Historical review of early experiments in rural development with reference to Sriniketan, Gurgaon, Bhu Daan, Gram Daan and Nilokheri project.
4. Administrative organization of the Ministry of Rural Development and State Department of Rural Development and Panchayati Raj : objectives, function and financing pattern, implementation and target group of various Rural Development Programmes : SGRY, NFFWP, IWDP, DADP, SCP&TSP, IAY, RSVY.
5. Concept, historical development, structure and function of PRI, Legislative provision in PRI, need and importance of people's participation in local self government to strengthen participatory governance.
6. Concept of coordination and convergence in rural development, role of Bank, Cooperatives and Industries in rural development.
7. Concept, importance and review of Tribal Development in India.

B. Urban Community Development

(50 Marks)

1. Concept, importance, scope and growth of Urban Community Development in India.
2. Concept, origin, characteristics of urban slums programme intervention for slum development in India, Resettlement and Rehabilitation Programme for the Urban Slumdwellers.
3. Special agencies of urban community development with special reference to W.B., structure, function of CMPO, KMDA, CIT, HIT, Haldia Development Authority, Siliguri Development Authority and Durgapur Development Authority.

4. Concept, composition, function of Urban Local Bodies : Municipalities, Municipal Corporation, Notified Area Authority. Relevance of Nagarpalika Bill and 74th Amendment of Constitution.
5. Background, administration, objectives, function and target group of various urban development programmes : SJSRY, WSSP, PMRY etc.
6. Urban Informal Sector : nature, genesis, special problems, programme interventions.
7. Role of Bank, Commercial Institutions and NGOs in urban development.

PAPER-XI : CONTEMPORARY SOCIAL PROBLEMS AND SOCIAL POLICY

1. Concept of social problem, nature and causes, types, theoretical explanations of social problem with reference to India.
2. Problem related to family and marriage in India, marital conflict : causes and consequence of divorce, desertion, problem of child marriage, dowry.
3. Problem of social dependency : aged, disabled, Home less : general profile, causal factor and intervention of social work method.
4. Problem of women : historical review, profile, problem of atrocities against women, policy to combat the problem.
5. Problem of Trafficking on Women and girls : nature, causes, extent and magnitude, social, economic and legal measures for prevention.
6. Problem of prostitution in India : nature, causes, extent and magnitude, criminal activities associated with prostitution, plight of the children of sex workers and child sex workers, social, economic and legal intervention for rehabilitation of sex workers.
7. Problems of children in need of Care and Protection : Categories, nature of problems, causes, extent and magnitude, combating measures.
8. Poverty : Concept, manifestation, incidence and magnitude, causes, problems of poverty, Anti-poverty strategies, effective measures in poverty alleviation.
9. Unemployment : Magnitude, Types, Causes, Consequences, measures taken to control unemployment.
10. Population Explosion : Increase in population, Causes of population growth, effects of population explosion, population policy, Family Welfare Programmes, population control.

11. Juvenile Delinquency : Nature and incidence, characteristics, factors, sociology of Juvenile delinquency, methods of treating delinquents, custody in juvenile institutions, preventive programmes.

12. Drug Abuse and; Alcoholism : Aberrant Behaviour, Basic concepts, extent and nature of drug abuse, motivation of drug abuse, theories of causation, role of family and peer group in drug abuse, combating drug trafficking, problems of alcoholism, preventive programmes.

13. Problems of Young Population : Demography of yound population, problems of young people, youth agitation, youth leadership, programmes for the youth welfare and development.

PAPER-XII : CRIME AND CORRECTIONAL ADMINISTRATION

1. Concept of crime, Crime, criminal, and Criminology. Classification of crime crime as a social problem in India : major factors.

2. Concept, nature and extent of Juvenile Delinquency in India, major factors, legal provision and juvenile justice system, programme for control and prevention of delinquency.

3. Emergence of crime in Europe, contribution of Cesare Beccaria, Jeremy Bentham, Enrico Ferri.

4. Emergence of crime in North America, theories of crime.

5. Concept and importance of correctional service, correctional legislation - IPC, Cr. P.C, Prison Act, Reformatory School, Probation of Offenders Act.

6. Origin of prison, prison reform movement in India and penal reform in India.

7. Administration and function of correctional institution with reference to Presidency Jail and Alipore Jail.

8. Probation, Parole, Statutory Provision and after care, principles and practice, role in the control and management of crime.

9. Structure and function of correctional institution : state organization, observation home, children homes, special homes and shelter homes.

10. Application of social work method in correctional institution, role of social worker in probation, parole and after care.

11. Human Rights and the Law Enforcement Agencies - Police, Judiciary and Statutory Agencies.

PAPER-XIII : SOCIAL LEGISLATION

1. Concept, guiding principles, legislation and the role of law in social welfare and social security.
2. Provision related to social justice and human rights in the constitution with reference to rights of women and children, tribals, minorities and displaced persons.
3. Social legislation as an instrument of social change : Legal Aid, Family Court, PIL, National and State Legal Services Authorities, Lok Adalat.
4. Sailent feature, provision and implementation of legislation with reference to marriage and divorce, inheritance, succession, maintenance of spouse and children.
5. Laws safeguarding the rights of women and children e.g., J. J. Act, 2000, Child Labour (Prohibition & Regulation) Act 1986, Dowry Act 1961, Child Marriage Restraint Act 1929, ITPA 1986, Equal Remuneration Act, Maternity Benefit Act, MTP 1972, PNDT 1995.
6. Salient feature, compensation, range of benefit and administration of Old Age Pension, workmen's compensation, maternity benefit, unemployment assistance.
7. Review of social security measur with reference to women, children, SC&ST, Disabled.
8. Role of NGO in promotion and protection of rights of women, children and other weaker section of the society : Advocacy, Campaign, Lobbying, Net working.

PAPER-XIV : AREAS OF SOCIAL WORK PRACTICE

A. Disability :

I. Medical aspect : Types of disability, causes, preventive measure as early intervention.

II. Social aspect : Impact of disability as family and society, programmes and policies of disability, role of professional social workerin dealing with the problem.

III. Implication of disability related legislation and status regarding their implementation-PWD Act 1995, Mental Health Act 1987, RCI Act 1992; and National Trust Act 2000.

B. Child Development and Child Protection :

i) Demographic profile of children in India.

ii) Developmental Needs of Children, Role of parents, Family and Peer.

iii) Programme and policy on child development.

iv) Child protection-Constitutional safeguards, child rights in CRC.

v) Child Abuse-Nature, forms & consequence, trafficking in children.

vi) Children and Law - Juvenile Justice (care & protection of children) Act 2000. Child Labour (prohibition & Regulation) Act 1986, ITPA - 1986.

C. Age Care :

i) Demography of the aged in India

ii) Aging as a social problem-social, economical and psychological problem of widow-hood.

iii) Programmes for Welfare of the aged, community based Approach in age care.

iv) Role of social work profession in Age Care.

D. Women Development :

i) Status of Women in India, Factos affecting status of women.

ii) Problems of women in the areas of Health, Education, Employment and political participation.

iii) Women & Law : Marriage Act, Property Rights, Trafficking, Adoption, Maternity Benefit, Equal Remuneration, Female Foeticide & infanticide.

iv) Role of women's organization, NGOs, SHGs in the development & empowerment of women.

v) Programmes for the women development at the National & State Level.

E. Youth Welfare :

Demographic profile of youth in India. Importance of youth. Youth welfare Programmes. Role of Social Worker in Youth Welfare.

F. Welfare of the Backward Classes :

Demograptic Profile of Schedule Caste and Schedule Tribe Population. Social, Cultural and economic Problems faced by them. Different approaches to their solution. Welfare proprammes initiated by the Government and NGOs.

PAPER-XV : PROJECT WORK / AGENCY PLACEMENT

The final year students of M.S.W. course are required to do Project Work. Agency placement. Each one of them will have to conduct a study based on a particular problem/ issue as part fulfilment of the requirements of M.S.W. degree. The topic for study / social investigation to be independently conducted by each student during the stage of M.S.W. Part II shall be finalised by the students in consultation with the Counsellors.

On completion of the study they will have to prepare Project Report in English or Bengali and submit the same to the Coordinator of the respective Study Centre before the commencement of the M.S.W. final examination. The report must bear the signature of the Supervisor-Counsellor. If decided by the anthority, they can go for agency placement alternatively.

PAPER-XVI : VIVA VOCE

Soon after the final examination is over, the students will have to appear in a viva-voce examination to be conducted by a Committee appointed by the University. To get a M.S.W. degree the students will have to get pass marks both in the Project Work as well as in the viva-voce examination besides the theoretical papers.

Paper – I

Reference Books

(i) An introduction to Social Work—Betly J. Piccard

(ii) From Charity to Social Work—Kathleen Woodroote

(iii) History and Philosophy of Social Work in India—Prof. A. R. Wadia

(iv) Handbook of Social Welfare—Dr. D. Paul Choudhury

(v) Towards a Philosophy of Social Work in India—S. Dasgupta

(vi) Concept and History of Social Work—G. R. Madan

Paper – II

(i) Social case work : A Problem Solving Process—Perlman, Helen Harris

(ii) Theory and Practice of Social case Work—Hamilton G.

(iii) Social Group Work : Principles and Practice—H. B. Trecker

(iv) Social Group Work Practice—Wilson & Ryland

Paper – III

(i) Community Organization—Dr. (Prof.) Banmala

(ii) Encyclopaedia of Social Work in India (Vol. I)—Govt. of India

(iii) Community organization-Theory & Principles—R. G. Murray

(iv) Community Organization in India—K. D. Gangrade

(v) Social Action—S. Dasgupta

(vi) Social Action—N. V. Moorthy

Paper – IV

(i) Sociology—Morris Ginsbery

(ii) Sociology—S. Sachder

(iii) Indian Economy—Mishra & Puri

(iv) Artha Vidya—Joydeb Sarkhel

Paper – V

(i) Elements of Social Pshycology—B. Kuppuswamy

(ii) Introduction to Psychology—C. T. Margan
(iii) Fields of Applied Psychology—A. Anastasi
(iv) Psychology : The Fundamentals of Human Adjustment—N. L. Munn
(v) Child Psychology—Skinner & Harriman
(vi) Human Growth & Development—Chris Backett
(vii) Health women, Healthy, Mothers : An information Guide—Dr. A. A. Arkutu
(viii) Communicable Disease Control Handbook—J. Hawker & Others.
(ix) Training Mamal for Middle Level Health Workers—VHAI

Paper – VI

(i) Research Methods—Ram Ahuja
(ii) Samajik Gabesona : Padhhati Prakriya—Krishnadas Chattopadhyay
(iii) Social Research Methods—Lorence Newman
(iv) Social Statistics—Hubert M. Junior
(v) Statistical tools & techniques—P. K. Giri & J. Banerjee

Paper – IX

(i) Social Welfare Administration—S. L. Goel & R. K. Jain
(ii) Organisation of Social Welfare—A. S. Kohli & S. R. Sharma
(iii) Social Welfare Administration—D. Paul Choudhury
(iv) Encyclopaedia of Social Welfare Administration—A. S. Kohli & S. R. Sharma

Paper – X

(i) Urbanization and Urban Systems in India—R. Ramachandran
(ii) Social Problems in India—Ram Ahuja
(iii) Urban and Regional Planning in India—K. V. Sundaram
(iv) Sociology—D. C. Bhattacharya
(v) Urbanization, Migration and Rural Change—Biplab Dasgupta
(vi) Slums and Community Development—Marshall B. Clinard

Paper – XI

(i) Social Problems in India—Ram Ahuja

(ii) Handbook of Sociology—Ogbarn & Nimkaff

(iii) Indian Social Problems—Vol I & II—G. R. Madan

(iv) Our Laws. Multiple Action Research Group

(v) National Perspective Plan for Women—Govt. of India

Paper – XII

(i) Indian Social Problems Vol. I & II.—G. R. Madan

(ii) Sociology—D. C. Bhattacharyya

(iii) Rights of Women in India—Justice Mallick & Dr. Bela Dutta Gupta

(iv) Criminal Procedure Code—P. D. Mathew

(v) The Juvenile Justice Act—P. D. Mathew

(vi) Social Legislation in India—K. D. Gangrade

Paper – XIII

(i) Social Justice and Development of Weaker Section—Bindheswar Pathak

(ii) Theory of Justice—Rams John

(iii) Social Justice and the Indian Constitution—V. R. Krishna Iyer (Ed)

(iv) Social Security and National Development—M. M. Singh

(v) A Study of Organization in Rural Development—K. K. Mukherjee

Paper – XIV

(i) National Perspective Plan for Women, Gov. of India

(ii) Status of Women in India—Dr. Phularenu Guha

(iii) Indian Social Problems—G. R. Madav

(iv) Youth Policy—Dept. of Youth Affairs & sports, Govt. of India

NETAJI SUBHAS OPEN UNIVERSITY
Master of Library and Information Science (MLIS)
SYLLABUS

Programme Objectives: Master of library and information science (MLIS) programme is a one-year post graduate professional programme to train the intended learners to cope up with the information ecosystem and to make them prepared as skilled and competent information professionals in the changing environment of ICT-enabled information society and also to boost up their innovative and research skills in their relevant study area.
MLIS programme of NSOU has been designed and developed at par with the mission of the institute, and all possible types of support services are supposed to provide to the learners' at distance.

Expected programme outcome:

- To create professionals in the field of library and information science.
- To dedicate their professional career for the development of the subject-domain by catering services in different academic libraries, special libraries, public libraries, research centres, government departments, non-government organisations.
- To create a resource pool who will be able to handle and manage the recent developments in the subject domain specially in the ICT environment.

COURSE STRUCTURE:

Paper 1-Information, Communication and Society
Paper 2-Information Sources, Systems and Services
Paper 3-Information Processing and Retrieval (Theory)
Paper 4-Information Institutions, Products and Services
Paper 5- Management of library and Information Centres
Paper 6-Information Technology: Application
Paper 7-Research Methodology

Paper-8 (Elective Paper) (Any one):
Paper-8E1: Preservation and Conservation of Library Materials
Paper-8E2: Academic Library System
Paper-8E3: Public Library System

Paper-9: Dissertation
Full credit: 900 marks (72 credits)

DETAILED COURSE CONTENT

Paper 1: Information, Communication and Society
Module-1: Information Nature Property and Scope
Unit 1: Comparative study of data, information and knowledge
Unit 2: Data: Definition, Types, Nature, Properties and Scope
Unit 3: Information: Definition, Types, Nature, Properties and Scope
Unit 4: Information Science as a discipline

Module 2: Information Generation and Communication
Unit 5: Evolution of human communication and media
Unit 6: generation of information: models and forms
Unit 7: Information Theory: Shanon and Weaver, Entropy
Unit 8: Communication Process and media
Module 3: Knowledge generation Cycle
Unit 9: Structure and development of knowledge
Unit 10: Knowledge Generation to Utilization
Unit 11: Knowledge and Social survival
Module 4: Information and Society
Unit 12: Social implications of information
Unit 13: Information: an economic resource
Unit14: Information Policies: National and International
Unit 15: Information Society

Paper-2: Information Sources, Systems and Services
Module-1: Multimedia
Unit 1: Physical Media of Information
Unit 2: Print media, Multimedia (Hypermedia) & Hypertext
Unit 3: Non - print media: Microform, Electronic and Optical media
Module -2: Information Sources. Systems and Services (Subject-wise organised)
Unit 4: Humanities
Unit 5: Social Sciences
Unit 6: Science and Technology
Unit 7: Non-disciplinary Subjects
Unit 8: International Organisations
Module -3: Information Sources for Users
Unit 9: Content analysis and its correlation to clientele
Unit 10: Customised Organisation of Information Sources
Unit 11: Aids to Information Sources
Module- 4: Information Services
Unit 12: Information Services: concepts, definitions, need and trends
Unit 13: Evaluation of Alerting Services (CAS, SDI), Bibliographic, Referral, Document Delivery and Translation Services
Unit -14: Study of National and International Information Systems and Services

Paper 3: Information Processing and Retrieval (Theory)
Module-1: Intellectual Organisation of Information
Unit 1: Intellectual Organisation : an Overview
Unit 2: Classification Systems: General Systems
Unit 3: Classification Systems: Special Systems
Unit 4: Thesaurus: Structure and Functions
Module-2: Bibliographic Description and Subject Indexing
Unit 5: Bibliographic description: an overview
Unit 6: Standards for Bibliographic Record Format
Unit 7: Bibliographic description of non-print media
Unit 8: Metadata
Unit 9: Indexing in theory and practice
Module-3: Indexing Languages and Vocabulary Control
Unit 10: Indexing Languages : Types and Characteristics

Unit 11: Vocabulary Control, Tools of Vocabulary Control
Unit 12: Structure and Construction of an IR Thesaurus
Unit 13: Trends in Automatic Indexing
Module-4: Information Retrieval
Unit 14: IR Models, Search Strategies, Feedback
Unit 15: Evaluation of IR Systems
Unit 16: Information Retrieval Techniques
Unit 17: Trends in IR Models

Paper 4: Information Institutions, Products and Services
Module-1: Information Institutions
Unit 1: Information Institutions: Evolution and Growth
Unit 2: Information Centres: Types and their Organisations
Unit 3: Data Centres and Referral Centres
Unit 4: Information Analysis and Consolidation Centres
Module-2: Information Services
Unit 5: Literature Searches and Bibliographies
Unit 6: Document Delivery Service
Unit 7: Translation Services
Module-3: Information Products
Unit 8: Information Newsletters, House Bulletins, In-house Communications
Unit 9: Trade and Product Bulletins
Unit 10: State-of the-art Report and Trend Reports
Unit 11: Technical Digest
Module-4: Date-base Support Services
Unit 12: Data-bases: types and uses
Unit 13: Data-base Intermediaries such as Searchers, Editors, etc.
Unit 14: On-line Information Systems and Information Networks

Paper-5: Management of Library and Information Centres
Module-1: Management Perspectives
Unit 1: Principles of Management
Unit 2: Management Functions
Unit 3: Managerial Quality and Leadership
Unit 4: Schools of Management Thought
Module-2: System Analysis and Control
Unit 5: Library as a System
Unit 6: Project Management, PERT\CPM
Unit 7: Decision Tables
Unit 8: Performance Evaluation, Standards, MIS
Unit 9: Work Flow and Organisation Routines
Module-3: Personnel Management
Unit 10: Overview of Personnel Management
Unit 11: Manpower Planning
Unit 12: HRD-Quality Improvement Programmes
Unit 13: Performance Appraisal
Unit 14: Total Quality Management
Module-4: Financial Management
Unit 15: Budgeting and Types
Unit 16: Budgetary Control System

Unit 17: Costing Techniques
Unit 18: Cost Effectiveness and Cost Benefit Analysis Out Sourcing

Paper 6: Information Technology: Applications
Module-1: Library Automation
Unit 1: Planning and implementation of Library Automation;
Unit 2: Computer-based Acquisition Control;
Unit 3: Computer-based Cataloguing, Gist & Unicode Standard, ASCII, ISCII;
Unit 4: Computer-based Serials Control;
Unit 5: Retro-Conversion, Bar-coding.
Module-2: Database Management System
Unit 6: Database Models;
Unit 7: Software System, Libsys, TLMS, VTLS, CDS/ISIS, Oracle/Postgras, SQL/MSSQL;
Unit 8: OPAC Systems;
Unit 9: Database Structure, Organisation and Search.
Module-3: Operating Systems and Programming
Unit 10: Single User Operating System- MS Windows;
Unit 11: Multi-User Operating System- LINUX, UNIX, Windows NT;
Unit 12: Programming Languages: Algorithms;
Unit 13: Flowcharting;
Unit 14: Search and Sorting Algorithm and Structure.
Module-4: Networking
Unit 15: Resource Sharing through Networks;
Unit 16: Network and their classification;
Unit 17: Network Architecture and Services;
Unit 18: Bibliographic information Networks

Paper 7: Research Methodology
Module- 1: Introduction to Research Methodology
Unit 1: Concept, Need, Purpose of Research
Unit 2: Types of Research methods (Scope: Fundamental, Applied, Quantitative and Qualitative)
Unit 3: Steps of Research
Unit 4: Ethical and Social aspects of research (Scope: general theoretical overview)
Module- 2: Research Methods and Design
Unit 5: Research Methods: Quantitative
Unit 6: Research Methods: Qualitative
Unit 7: Problems, Hypothesis/ Research Question, Variables
Unit 8: Literature Review: techniques
Module-3: Data Collection, Analysis and Interpretation
Unit 9:Data Collection: tools and techniques (Scope: Tools and Techniques: Sampling Questionnaire, Interview, Schedules, Observation, Scaling, Role of NSSO, Census, etc.)
Unit 10: Presentation of Data: techniques (Scope: Tabular and graphical, frequency distribution, etc.)
Unit 11: Data analysis and Interpretation: an overview (Scope: basic theory, objectives, Goals, etc., Statistical packages- MS Excel, SPSS, R, etc.)
Unit 12: Application of statistical techniques (Scope: measures of central tendency, measures of dispersion, correlation and regression, testing hypotheses)
Module 4: Research communication and promotion
Unit 13: Report writing: format and structure; Study of Style manuals, Citation standards,

Plagiarism detection
Unit 14: Research communication: process and channels (Scope: Research in progress, etc.)
Unit 15: Research promotion agencies: their roles (Scope: Government Agencies- UGC, UGC-DEB, TIFR, DST, DSIR, ICSSR, ICHR, TISS, ISI, NISCAIR, and others).
Unit 16: Trend in LIS Research

Paper 8E1: Preservation and Conservation of Library Materials
Module-1: Concept of Preservation and Conservation of Library Materials
Unit 1: Need for Preservation
Unit 2: Evolution of Writing Materials
Module-2: Library Materials
Unit 3: Palm Leaves: Their Nature and Preservation
Unit 4: Manuscripts, Books, Periodicals, Newspapers, etc.
Unit 5: Non-Book Materials
Unit 6: Micro-documents
Module-3: Enemies of Library Materials
Unit 7: Physical Agents
Unit 8: Chemical Agents
Unit 9: Biological Agents
Unit 10: Digital Preservation
Module-4: Control of Deterioration
Unit 11: Environment Control
Unit 12: Control of Micro-biological Agents
Unit 13: Rehabilitation of Documents
Unit 14: Repair and Restoration
Unit 15: Conservation of Non-book Materials
Module-5: Binding
Unit 16: Different types of Binding for Library Materials
Unit 17: Binding Materials and their varieties
Unit 18: Binding Process
Unit 19: Standards for Binding

Paper 8E2: Academic Library System
Module-1: Academic Library
Unit 1: Nature and Characteristics
Unit 2: Role of Library in Academic Support System
Unit 3: Librarian and Teacher, Coordinated academic Team
Unit 4: Library as Learning Support
Unit 5: Library and Higher Education
Module-2: Kinds of Academic Library
Unit 6: Academic Institutions and their Libraries
Unit 7: Users' Groups and their Needs
Unit 8: Library Services and Users' Support within and beyond the Library
Unit 9: Role of Library in different kinds of Academic Institutions
Unit 10: Integration of Classroom teaching and Library Support
Module-3: Organization and Management of Library Services
Unit 11: Departmentalization and Coordination of Library Services
Unit 12: Library Committee and their Functions, Library Authority
Unit 13: Curriculum Development and Collection Development

Unit 14: Reference Services, Information Services and Referral Services
Unit 15: Users' Services
Module-4: Collection Development
Unit 16: Collection Development: Policies and Procedures
Unit 17: Problems of Collection Development
Unit 18: Library Collection—Books, Serials, etc.
Unit 19: Cooperative Collection Management
Unit 20: Infra-structural Facilities, Library Planning, Library Building, Equipment, etc.

Paper 8E3: Public Library System
Module1:
Unit 1: Public Library: origin and Growth
Unit2: Public Library and Society
Unit 3: Agencies in the Promotion and Development of Public Library System
Unit 4: Library Policy and Legislation
Module 2:
Unit 5: Resource Mobilization and Financial resources
Unit 6: Physical and Documentary Resources
Unit 7: Human Resource Development
Module 3:
Unit 8: Organizational structure of Public Library System
Unit 9: Public Library Standards
Unit 10: Governance and Performance Evaluation of Public Libraries
Module 4:
Unit 11: Types of Library Services
Unit 12: Application of Information Technology in Public Libraries
Unit 13: Resource Sharing and Networking
Unit14: Public Library scenario in the United Kingdom and United States of America

Netaji Subhas Open University

School of Humanities

ANNEXURE 1

New Syllabus for English (BDP- EEG)

Effective for Under-Graduate Learners registered July 2015onwards)

The new syllabus comes with a select Reading List at the end of each Elective Paper, to enable learners prepare themselves with fore-knowledge about the expanse of the curriculum. Each Unit of the concerned EEG Study Material (SLM) carries a further exhaustive Reading List.

Course Structure

1.	Compulsory Subjects : Foundation Course		
	(a) Humanities and Social Science (FHS)		8 Credits
	(b) Science and Technology (FST)		8 Credits
	(c) Bengali (FBG)		4 Credits
	(d) English (FEG)		4 Credits
		TOTAL	**24 Credits**

2.	Elective Subjects : Honours Course (EEG)	
	Paper 1 – From the Beginnings to Chaucer: Literature and Language in Evolution	8 Credits
	Paper 2 – The Renaissance and the Reformation	8 Credits
	Paper 3 – The Restoration	8 Credits

	Paper 4 – The Eighteenth Century	8 Credits
	Paper 5 – The Romantic Period	8 Credits
	Paper 6 – The Victorians	8 Credits
	Paper 7 – Literature of the Modern and Postmodern Periods	8 Credits
	Paper – Indian Writing in English	8 Credits
	TOTAL	**64 Credits**

3.	Application Oriented Course (Any one) (a) Basic Accounting (AOC-01) (b) Food Processing (AOC-02) (c) Household Chemistry (AOC-03)	8 Credits
	TOTAL	**8 Credits**

4.	Environmental Studies	4 Credits
	TOTAL	**4 Credits**

TOTAL CREDITS FOR THE COURSE

GROUP	CREDITS
Compulsory Subjects : Foundation Course	24 Credits
Elective Subjects : Honours Course (EEG)	64 Credits
Application Oriented Course	8 Credits
Environmental Studies	4 Credits
TOTAL	100 Credits (1250 marks)

EVALUATION SYSTEM :

Internal (Home) assessment	:	30%
Term-end Examinations	:	70%

THE DETAILED EEG SYLLABUS WITH READING LIST

EEG 1. From the Beginnings to Chaucer: Literature and Language in Evolution

Module 1 – History of English Literature – Old and Middle English

Unit 1 – Anglo – Saxons and the Continental Invaders in Britain

Unit 2 – Old English Literature – Poetry and Prose Beginnings

Unit 3 – England from 1066 AD to 1400 AD

Module 2 - Select Textual Representations of the Periods

Unit 1 – Extracts from *Beowulf*. Trans. E. Talbot Donaldson. Norton Critical Edition, Ed. Joseph F. Tuso:

Prologue – Pp 1 – 2

The Fight with Grendel – Pp 12 – 15

Beowulf's Funeral – Pp 49 - 55

Unit 2 – Geoffery Chaucer: *Prologue to The Canterbury Tales*: Portrait of the Wife of Bath (From Penguin Edition Ed. Nevil Coghill)

Unit 3 – *The Second Shepherds' Play* ed. Nettleton. Vol 1 or Norton Edition

Module 3 – Philology

Unit 1 – Scandinavian and French Influences

Unit 2 – Latin Influence

Unit 3 – Shakespeare's use of Language; Influence of the Bible

Module 4 – Phonetics, Rhetoric and Prosody

Unit 1 – Phonetics

Unit 2 – Prosody

Reading List for Paper 1

1. Baugh, Albert C. *A History of the English Language*. London: Routledge and Kegan Paul, 1951.
2. Boitani, Piero and Jill Mann (Eds). *The Cambridge Companion to Chaucer*. Cambridge: CUP, 2003.
3. Campbell, James (ed.), *The Anglo-Saxons*, Oxford, 1982.
4. Daiches, David. *A Critical History of English Literature Vol. 1*. Ronald Press Company, 1960. Repr. New Delhi: Random House India, 2007.
5. Ford, Boris. *The Pelican Guide to English Literature: The Age of Chaucer*. London: Penguin Books, 1971.
6. Greenblatt, Stephen, and M. H. Abrams. "Mystery Plays." *The Norton Anthology of English Literature*. New York: W.W. Norton, 2006.
7. Jespersen, Otto. *Growth and Structure of the English Language*. Delhi: OUP, 1938.
8. Malone, Kemp; Albert C. Baugh (1969). Albert C. Baugh, ed. *A Literary History of England*: Vol 1, The Middle Ages (2nd Ed.). London: Routledge.
9. O'Connor, J.D. *Better English Pronunciation*. Cambridge: CUP, 1980.
10. Stenton, F. M., *Anglo-Saxon England*, Oxford, 1971
11. Tuso, Joseph F., *Beowulf: The Donaldson Translation*, Norton Critical Editions, W.W. Norton & Company, New York, 1975.

EEG 2. The Renaissance and the Reformation

Module 1 – Renaissance and Reformation: The Manifold Perspectives

Unit 1 – Impact of the Renaissance and the Reformation

Unit 2 – Developments in Poetry and Prose

Unit 3 – Developments in Drama

Module 2 – Reading Poetry

Unit 1 – Thomas Wyatt: Farewell Love; Philip Sidney: Loving in Truth

Unit 2 – William Shakespeare: Shall I Compare Thee; That Time of Year
Unit 3 – John Donne: The Good Morrow; George Herbert: Virtue; John Milton: On His Blindness

Module 3 – Reading Prose
Unit 1 – Francis Bacon: Of Studies; Of Gardens
Unit 2 – Sermon on the Mount. From the *New Testament Bible, The Authorised Version*
Unit 3 – Philip Sidney: Apologie for Poetry. *English Critical Texts*, Ed. D.J Enright and Ernst De Chickera. Pp 3 – 6. "Since the authors of ...Poesy therefore is an art of imitation."

Module 4 – Reading Drama
Unit 1 – Christopher Marlowe: *Edward II*
Unit 2 – William Shakespeare: *Macbeth*
Unit 3 – William Shakespeare: *As You Like It*

Reading List for Paper 2

1. Abrams, M H. *A Glossary of Literary Terms*, 7th *Edn*. London: Thomson Heinle, 1999.
2. Bacon, Francis. *Bacon's Essays*. Los Angeles: Indo-European Publishing, 2010.
3. Bevis, Kathryn. *John Milton: A Beginner's Guide*. London. Hodder & Stoughton, 2003.
4. Bradley, A C. *Shakespearean Tragedy*. London: Penguin, 1991.
5. Drabble, Margaret (ed). *The Oxford Companion to English Literature, 5th Edn.* Oxford: OUP. 1995.
6. Ford, Boris (ed). *The New Pelican Guide to English Literature, Vol. 2,* 'The Age of Shakespeare'. London: Penguin Books Ltd, 1955.
7. Gurr, Andrew. *Playgoing in Shakespeare's London*. Cambridge: CUP, 2004.
8. Leech, Clifford. *Marlowe, Twentieth Century Views*. Delhi: Prentice-Hall, 1979.
9. Nicoll, Allardyce. *Stuart Masques and the Renaissance Stage*. London: Benjamin Blom, 1963.
10. Sengupta, S C. *Shakespearean Comedy*, Delhi: Oxford University Press, 1950.
11. Vendler, Helen. *The Art of Shakespeare's Sonnets*. USA: Harvard University Press, 1999.

EEG 3. The Restoration

Module 1 - The Restoration in England: Politics, Society and Culture

Unit 1 – England in the wake of the Restoration

Unit 2 – Neo-Classicism – Impact on Literary Thought

Unit 3 – Puritanism and the Stage

Module 2 – Reading Poetry

Unit 1 – John Dryden: *Mac Flecknoe*

Unit 2 - Anne Kingsmill Finch, Countess of Winchilsea: The Introduction; Aphra Behn: Song – Love Armed

Unit 3 – Samuel Butler: Extract from 'Hudibras'. *The Oxford Anthology of English Poetry* (Vol. 1) ll 1 – 76.

Module 3 – Reading Prose

Unit 1 – Extract from John Bunyan: 'The Pilgrim's Progress'**.** *Norton Anthology of English Literature* (Vol. 1) Pp 2146 – 48. Mr Christian's Dream of Vanity Fair. 'Then I saw in my dream...'

Unit 2 – Extract from 'The Diary of Samuel Pepys'**.** *New Oxford Book of English Prose*, ed. John Gross. Pp 144-45. The Great Fire of London

Unit 3 – Extract from John Dryden's 'An Essay of Dramatic Poesy'**.** *English Critical Texts*, Ed. D.J Enright and Ernst De Chickera. Pp 88 – 91. ll 1496 – 1589. 'To begin with ...love Shakespeare.'

Module 4 – Reading Drama and Dramaturgy

Unit 1 – Features of Restoration Drama

Unit 2 – William Congreve: *The Way of the World*

Unit 3 – Extract from John Dryden's *All For Love* – Act 1

Reading List for Paper 3

1. Barash, Carol. *English Women's Poetry, 1649 – 1714: Politics, Community and Linguistic Authority*. Oxford: Clarendon Press, 1996.

2. Coote, Stephen. *Samuel Pepys: A Life*. London. Hodder and Sloughton, 2000.
3. Dobree, Bonamy. *Restoration Comedy*. London: OUP, 1921.

4. Dobree, Bonamy. *John Dryden*. London: Longmans, Green, 1956. Revised Edn: 1961.
5. Grover, Madhu ed. *John Dryden: Mac Flecknoe*. New Delhi: Worldview Pub., 2001.
6. Hill, Howard Erskine & Alexander Lindsay eds. *William Congreve: The Critical Heritage*. London: Routledge, 1989.
7. Richetti, John ed. *The Cambridge History of English Literature, 1660 – 1780.* Cambridge: C.U.P, 2012.
8. Sengupta, Kajal (ed.) *The Way of The World* by William Congreve. New Delhi: Oxford University Press, 1997.
9. Talon, H. *John Bunyan: The Man and His Works*. Trans. B. Wall. Cambridge, 1951.
10. Trevelyan, G.M. *English Social History*. London: Penguin, 1986.

EEG 4. The Eighteenth Century

Module 1 – Background and New Literary Forms
Unit 1 – Features of the Enlightenment
Unit 2 – Characteristics of the Augustan Age
Unit 3 – Rise of the Novel

Module 2 - *Module 2 – Reading Poetry*
Unit 1 – Alexander Pope: *The Rape of the Lock*. Cantos 1 to 3
Unit 2 – James Thomson: *Spring*
Unit 3 – Thomas Gray: *Elegy Written in the Country Churchyard*

Module 3 - *Module 3 – Reading Prose*
Unit 1 – Jonathan Swift: *Gulliver's Travels*. Books I & II
Unit 2 – Daniel Defoe: *Robinson Crusoe*
Unit 3 – Joseph Addison: *Sir Roger at Church*; Richard Steele: *Recollections of Childhood*

Module 4 – Reading Drama and Dramaturgy
Unit 1 – Oliver Goldsmith: *She Stoops to Conquer*
Unit 2 – Richard Brinsley Sheridan: *The Rivals*
Unit 3 – Dr Samuel Johnson: Extract from Prefaces to Shakespeare – 'Shakespeare's World';
'Shakespeare's Wordplay' in *The New Oxford Book of English Prose* ed. John Gross – Pp 221 – 22.

Reading List for Paper 4

1. Auburn, Mark. *Sheridan's Comedies: Their Contexts and Achievements*. Lincoln: U of Nebraska Press, 1977.
2. Cohen, Ralph. *The Art of Discrimination: Thomson's "The Seasons" and the Language of Criticism*. Berkeley: Univ. of California Press, 1964.
3. Hunt, J.D. (ed.) *The Rape of the Lock: A Casebook*. London and Basingstoke: Macmillan, 1968.
4. Jack, Ian. *Augustan Satire: Intention and Idiom in English Poetry 1660-1750*. Oxford: Clarendon Press, 1952.
5. Porter, Roy. *The Creation of the Modern World: The Untold Story of the British Enlightenment.* New York: W.W. Norton, 2000.
6. Rousseau, G S. *Goldsmith: The Critical Heritage*. Boston: Routledge & Kegan Paul, 1974.
7. Sutherland, James. *A Preface to Eighteenth Century Poetry*. London: Oxford University Press, rpt. 1975.
8. Walker, Hugh. *The English Essay and Essayists*. London & Toronto: J. M. Dent and Sons, 1915.
9. Watt, Ian. *The Rise of the Novel: Studies in Defoe, Richardson and Fielding*
10. Woodman, Thomas. *A Preface to Samuel Johnson.* New York: Longman, 1993.

EEG 5 – The Romantic Period

Module 1 – The Romantic Revival

Unit 1 – Romanticism in English Literature

Unit 2 – Romantic Poetry

Unit 3 – Romantic Prose

Module 2 – Reading Romantic Poetry

Unit 1 – William Blake: Chimney Sweeper Poems, The Lamb, The Tiger

Unit 2 – William Wordsworth: Tintern Abbey; Samuel Taylor Coleridge: Christabel Part I

Unit 3 – John Keats: Ode to a Nightingale; Percy Bysshe Shelley: Ode to the West Wind

Module 3 – Reading Romantic Prose

Unit 1 – Jane Austen: *Pride and Prejudice*

Unit 2 – Charles Lamb: The Superannuated Man; Dream Children: A Reverie

Unit 3 – William Hazlitt: On A Sundial; On Going A Journey

Module 4 – Romantic Literary Thought

Unit 1 – Wordsworth: *Preface to Lyrical Ballads*

Unit 2 – Keats' Letters (Taken from *English Critical Texts* edited by D.J Enright & Ernst De Chickera)

Unit 3 – De Quincey: Extract from *Recollections of the Lake Poets* – Essay titled "Southey, Wordsworth and Coleridge".

Reading List for Paper 5

1. Abrams, M.H. *The Mirror and The Lamp: Romantic Theory and the Critical Tradition.* London and New York : Oxford University Press, 1953.
2. Abrams, M.H, *Natural Supernaturalism*. New York : W. W. Norton and Co., 1971.
3. Fogle, R.H. *The Imagery of Keats and Shelley*, University of North Carolina Press., 1949.
4. Ford, Boris (ed). *The New Pelican Guide to English Literature, Vol. 5,* 'From Blake to Byron'. London: Penguin Books Ltd, 1955.
5. Glen, Heather. *Vision and Disenchantment: Blake's Songs & Wordsworth's Lyrical Ballads*. Cambridge: CUP, 1983.
6. Hele, Desmond King. *Shelley: His Thought and Work*. Vancouver: Fairley Dickinson Univ. Press, 3rd Sub Edn.1984.
7. Hough, Graham. *The Romantic Poets.* London: Hutchinson, 1967
8. Paley, Morton D. *Twentieth Century Interpretations of Songs of Innocence and of Experience: A Collection of Critical Essays.* New Jersey: Prentice Hall, 1969.

EEG 6 – The Victorians

Module 1 – The Victorian Scene

Unit 1 – Society, Culture and Politics

Unit 2 – Victorian Poetry

Unit 3 – Victorian Prose – Fictional and Non Fictional

Module 2 – Reading Victorian Poetry

Unit 1 – Alfred, Lord Tennyson: Ulysses, Break, Break, Break

Unit 2 – Matthew Arnold: Dover Beach, To Marguerite

Unit 3 – Robert Browning: My Last Duchess, Porphyria's Lover

Module 3 – Reading Victorian Prose

Unit 1 – Charles Dickens: *David Copperfield*

Unit 2 – Thomas Hardy: *Far From the Madding Crowd*

Unit 3 – Thomas Carlyle: *The Hero as Poet*

Module 4 – Victorian Women Writers

Unit 1 – Charlotte Bronte: *Jane Eyre*

Unit 2 – Elizabeth Barrett Browning: I Thought Once; Emily Bronte: No Coward Soul

Unit 3 – Christina Rossetti: A Dirge; A Birthday

Reading List for Paper 6

1. Armstrong, Isobel. *Victorian Poetry: Poetry, Poets and Politics*. Routledge. 1993. Print.
2. Bevis, Mathew. *The Oxford Handbook of Victorian Poetry*. Oxford University Press. 2013.
3. Carpenter, Richard C. " The Mirror and the Sword: Imagery in Far From the Madding Crowd." *The Nineteenth-Century Novel: A Critical Reader*. Ed. Stephen Regan. London: Routledge, 2001.
4. Cecil, David. *Hardy the Novelist: An Essay in Criticism*. Indianapolis: Bobbs-Merrill, 1946.
5. Gezari, Janet. *Last Things: Emily Bronte's Poems*. Oxford UP: London, 2007.
6. Goldberg, Michael K., Joel J Brattin, and Mark Engel, eds. *On Heroes, Hero-Worship, and the Heroic in History.* Berkeley: University of California Press, 1993.
7. Ingham, Patricia. *Authors in Context: The Brontes.* OUP: London, 2006.
8. Morrow, John. *Thomas Carlyle.* New York: Hambledon Continuum, 2006.

EEG 7. Literature of the Modern and Postmodern Periods

Module 1 – Literature and Culture in the 20th Century
Unit 1 – The Background of the Age
Unit 2 – The Moderns
Unit 3 – Towards Postmodernity

Module 2 – Reading Poetry
Unit 1 – W.B Yeats: The Second Coming; T. S Eliot: The Love Song of J. Alfred Prufrock
Unit 2 – Rupert Brooke: The Soldier; Wilfred Owen: Strange Meeting
Unit 3 – Philip Larkin: Church Going; Seamus Heaney: Digging

Module 3 – Reading Prose
Unit 1 – D.H Lawrence: *Sons and Lovers*
Unit 2 – Joseph Conrad: The Lagoon; W. Somerset Maugham: The Lotus Eater
Unit 3 – G.B Shaw: Freedom; George Orwell: Shooting an Elephant

Module 4 – Reading Drama
Unit 1 – G. B Shaw: *Pygmalion*
Unit 2 – John Osborne: *Look Back in Anger*
Unit 3 – Harold Pinter: *The Birthday Party*

Reading List for Paper 7

1. Alvarez, A., ed. *The New Poetry*. London: Penguin, 1962.
2. Billington, Michael. *The Life and Work of Harold Pinter.* 1996. London: Faber and Faber, 2007.
3. Bloom, Harold, ed. *Seamus Heaney: Comprehensive Research and Study Guide*. Philadelphia: Chelsea House, 2003.
4. Bradbury, Malcolm and James McFarlane, *Modernism: A Guide to European Literature 1890-1930,* Penguin, rev.ed. 1991.
5. Brownjohn, Alan. *Philip Larkin*. London: Longman, 1975.
6. Corcoran, Neil. *English Poetry Since 1940*. London: Longman, 1993.

7. Earnshaw Steven (ed.), *Just Postmodernism,* Amsterdam, Atlanta (GA): Rodopi, 1997.
8. King, P. R. *Nine Contemporary Poets*. London: Methuen, 1979.

EEG 8. Indian Writing in English

Module 1 – Locating our Voices
Unit 1 – Background: The Colonial and Postcolonial Scenarios
Unit 2 – The Emerging Genres
Unit 3 – In Search of a New Idiom

Module 2 – Reading Poetry
Unit 1 – H.L.V Derozio: The Harp of India; Toru Dutt: Our Casuarina Tree
Unit 2 – A. K Ramanujan: A River; Nissim Ezekiel: Poet, Lover, Birdwatcher; Goodbye Party for Miss Pushpa T.S
Unit 3 – Kamala Das: An Introduction; Mamang Dai: Remembrance, Temsula Ao: A Tiger-Woman's Prayer

Module 3 – Reading Fiction
Unit 1 – R.K Narayan: *The English Teacher*
Unit 2 – Anita Desai: *Fire on The Mountain*
Unit 3 – Salman Rushdie: *Haroun and the Sea of Stories*

Module 4 – Drama, Short Story and Non-Fiction
Unit 1 – Mahesh Dattani: *Tara*
Unit 2 – Meenakshi Mukherjee: The Anxiety of Indianness
Unit 3 – Extract from Ruskin Bond: *Rusty: The Boy from the Hills*; Raja Rao: India- A Fable

Reading List for Paper 8

1. Bande, Usha. *The Novels of Anita Desai*. New Delhi: Prestige Books, 1988.
2. Chaudhuri, Asha Kuthari. *Contemporary Indian Writers in English: Mahesh Dattani*. New Delhi: Cambridge UP, 2008. Print.
3. Das, Sanjukta. *Derozio to Dattani: Essays in Criticism*. Delhi: Worldview, 2009.

4. Iyengar, K.R.S. *Indian Writing in English.* 1962. New Delhi: Sterling Publishers, 1999.

5. King, Bruce. *Modern Indian Poetry in English.* New Delhi: OUP, 2001.

6. Mukherje, Meenakshi. "The Anxiety of Indianness." *The Perishable Empire: Essays on Indian Writing in English*. New Delhi: OUP, 2000.

7. Naik, M.K. A History of Indian English Literature. New Delhi: Sahitya Akademi, 1982.

8. Naik, M.K. *The Ironic Vision: A Study of the Fiction of R.K.Narayan*. New Delhi: Sterling,1983.

Revised FEG syllabus.

The existing FEG SLM will be followed minus the following Units:
7, 10, 12, 14, 15, 18, 20, 23

EXAMINATION SYSTEM :

SEMESTER	SUBJECT
SEMESTER-I	FBG, FEG, EEG–I
SEMESTER-II	FHS, EEG–2
SEMESTER-III	FST, EEG–3
SEMESTER-IV	EEG–4 & 5
SEMESTER-V	EEG 6 & 7
SEMESTER-VI	EEG–8, AOC & Env. Studies

NETAJI SUBHAS OPEN UNIVERSITY

B.Ed. Special Education (Hearing Impairment/ Intellectual Disability/ Visual Impairment)- ODL

Programme Objectives

After completing the B.Ed. (Special Education) programme the student-teachers will:

a. Acquire knowledge & skills about human development, contemporary Indian education, andpedagogy of various school subjects and assessment for learning.
b. Acquire knowledge & skills about nature and educational needs of children with disabilities as well as of few selected specific disabilities.
c. Develop conceptual understanding of educational provisions and skills for working with children with various disabilities in Special and inclusive settings.
d. Enhance knowledge and skills for professional development.

Expected Programme Outcomes

After successful completion of the B. Ed. Special Education programme, students may register as a Special Education teachers/Educators with Rehabilitation Council of India, New Delhi and act as a Special Educator for the children with disabilities in various settings (including Inclusive, Special, Open School and Home Based Education). The B.Ed. (Special Education) programme will prepare human resources to enable them to acquire knowledge and develop competencies and skills to impart education and training effectively to children with special needs as well as all other children and this being teachers for all children.

Duration of the Programme

2 years 6 months (5 Semesters of Six-month duration)

Programme Structure

	Paper	Paper Code	Paper Type (Theory/Prac)	Full Marks	Credits
Semester - I	Human Growth &Development	A1	Theory	100	4
	Contemporary India and Education	A2	Theory	100	4
	Introduction to Sensory Disabilities (VI, HI, Deaf-Blind)	B7	Theory	50	2
	Introduction to Neuro Developmental Disabilities (LD, MR[ID], ASD)	B8	Theory	50	2
	Introduction to Locomotor & Multiple Disabilities (CP,MD)	B9	Theory	50	2
	Cross Disability and Inclusion	E1	Practical	50	2
	Total Marks and Credits for 1st Semester			**400**	**16**
Semester - II	Learning, Teaching and Assessment	A3	Theory	100	4
	Pedagogy of Teaching (Special Reference to Disability) **PART-I**: Science (Special reference to Disability) **PART-II**: Mathematics (Special Reference to Disability) **PART-III**: Social Science (Special Reference to Disability)	A4	Theory	100	4
	Inclusive Education	B6	Theory	50	2
	Assessment and Identification of Needs (H.I.) Assessment and Identification of Needs (M.R.) Identification of Children with Visual Impairment and Assessment of Needs (V.I.)	C12	Theory	100	4
	Disability Specialization	E2	Practical	50	2
	Total Marks and Credits for 2nd Semester			**400**	**16**
Semester - III	Pedagogy of Teaching (Special Reference to Disability) PART IV: Bengali PART V: English	A5 Any One	Theory	100	4
	Curriculum Designing, Adaptation and Evaluation (H.I.) Curriculum Designing, Adaptation and Evaluation (M.R.) Curriculum, Adaptation and Strategies for Teaching Expanded Curriculum (V.I.)	C13	Theory	100	4

	Intervention and Teaching Strategies (H.I.) Intervention and Teaching Strategies (M.R.) Intervention and Teaching Strategies (V.I.)	C14	Theory	100	4
	Disability Specialization	E2	Practical	100	4
	Total Marks and Credits for 3rd Semester			**400**	**16**
Semester – IV	Skill based Optional Course (Cross Disability And Inclusion) Guidance and Counselling	B10 (A)	Theory	50	2
	Technology and Disability (H.I.) Technology and Disability (M.R.) Technology and Education of the Visually Impaired (V.I.)	C15	Theory	100	4
	Psycho Social and Family Issues (H.I.) Psycho Social and Family Issues (M.R.) Psycho Social and Family Issues (V.I.)	C16	Theory	50	2
	Reading and Reflecting on Texts	D17		50	2
	Drama and Art in Education	D18		50	2
	Main Disability Special School (Related to Area-C)	F1	Practical	100	4
	Total Marks and Credits for 4th Semester			**400**	**16**
Semester – V	Skill based Optional Course (Disability Specialization) Management of Learning Disability	B11 (E)	Theory	50	2
	Basic Research & Basic Statistics	D19	Theory	50	2
	Cross Disability and Inclusion	E1	Practical	100	4
	Other Disability Special School (Related to Area-B)	F2	Practical	100	4
	Inclusive school (related to AREA B & C)	F3	Practical	100	4
	Total Marks and Credits for 5th Semester			**400**	**16**
Total Marks and Credits				**2000**	**80**

Semester wise Programme Details

1ST SEMESTER (JULY-DECEMBER)

	Course Code	Title	Internal Assess-ment	Term End	Pass Marks	Full Marks	Credits
AREA-A (Core Course)	**A1**	**Human Growth &Development** Unit 1: Approaches to Human Development Unit 2: Theoretical Approaches to Development Unit 3: The Early Years Unit 4: Middle Childhood to Adolescence Unit 5: Transitions into Adulthood	20	80	50	100	4
	A2	**Contemporary India and Education** Unit 1: philosophical Foundations of Education Unit 2: Understanding Diversity Unit 3: Contemporary Issues and Concerns Unit 4: Education Commissions and Policy Unit 5: Issues and Trends in Education	20	80	50	100	4
AREA-B (Cross Disability And Inclusion)	**B7**	**Introduction to Sensory Disabilities (VI, HI, Deaf-Blind)** Unit 1: H.I- Nature and Classifications Unit 2: Impact of hearing Loss Unit 3: V.I- Nature and Assessment Unit 4: Educational Implications of V.I Unit 5: Deaf- Blindness	10	40	25	50	2
	B8	**Introduction to Neuro Developmental Disabilities (LD, MR[ID], ASD)** Unit 1: Learning disability: Nature, needs and Intervention Unit 2: Intellectual Disability: Nature, needs and Intervention Unit 3: ASD: Nature, needs and Intervention	10	40	25	50	2
	B9	**Introduction to Locomotor & Multiple Disabilities (CP,MD)**	10	40	25	50	2

		Unit 1: C.P Unit 2: Amputees, Polio, Spinal Cord Injuries, Spina –Bifida and Muscular Dystrophy Unit 3: Multiple Disabilities and Other Disabling conditions					
AREA-E (Practical Related to Disability)	**E1**	**Cross Disability and Inclusion**	20	24	25	50	2
Total Marks in 1st Term End Examination			**90**	**310**	**200**	**400**	**16**

2ND SEMESTER (JANUARY –JUNE)

	Course Code	Title	Internal Assess-ment	Term End	Pass Marks	Full Marks	Credits
AREA-A (Core Course)	**A3**	**Learning, Teaching and Assessment** Unit 1: Human Learning and Intelligence Unit 2: Learning Process and motivation Unit 3: Teaching- Learning Process Unit 4: Overview of Assessment and School system Unit 5: Assessment: Strategies and Practices	20	80	50	100	4
	A4 Any One	Pedagogy of Teaching (Special Reference to Disability) **PART-I**: Science (Special reference to Disability) **PART-II**: Mathematics (Special Reference to Disability) **PART-III**: Social Science (Special Reference to Disability)	20	80	50	100	4
AREA-B (Cross Disability And Inclusion)	**B6**	**Inclusive Education** Unit 1: Introduction to Inclusive Education Unit 2: Policies and frameworks facilitating Inclusive Education Unit 3: Adaptations, Accommodations and Modifications Unit 4: Inclusive Academic Instructions Unit 5: Supports and collaboration for Inclusive Education	10	40	25	50	2

AREA-C (Disability Specialisation Courses)	**C12**	**Assessment and Identification of Needs (H.I.)** Unit 1: Early Identification of Hearing Loss Unit 2: Audiological Assessment Unit 3: Assessment of Language and Communication Unit 4: Assessment of Speech Unit 5: Educational assessment and identification of needs	20	80	50	100	4
		Assessment and Identification of Needs (M.R.) Unit 1: Intellectual Disability- Nature & Needs Unit 2: Assessment Unit 3: Assessment at Pre-school and School level Unit 4: Assessment at Adult and Vocational level Unit 5: Assessment of Family Needs					
		Identification of Children with Visual Impairment and Assessment of Needs (V.I.) Unit 1: Anatomy and Physiology of Human Eye Unit 2: Types of V.I and Common Eye Disorders Unit 3: Implications of V.I Unit 4: Identification and Assessment of V.I Unit 5: Assessment of learning Needs of Children with VIMD					
AREA-E (Practical Related to Disability)	**E2**	Disability Specialization	20	24	25	50	2
Total Marks in 2nd Term End Examination			**90**	**310**	**200**	**400**	**16**

3RD SEMESTER (JULY-DECEMBER)

	Course Code	Title	Internal Assess-ment	Term End	Pass Marks	Full Marks	Credits
AREA-A **Core Course**	**A5** **Any One**	Pedagogy of Teaching (Special Reference to Disability) PART IV: Bengali PART V: English	20	80	50	100	4
AREA-C (Disability Specialisation Courses	**C13**	**Curriculum Designing, Adaptation and Evaluation (H.I.)** Unit 1: Curriculum and Its Designing Unit 2: Developing Literacy Skills: Reading Unit 3: Developing Literacy Skills: Writing Unit 4: Curricular Adaptation Unit 5: Curricular Evalution.	20	80	50	100	4
		Curriculum Designing, Adaptation and Evaluation (M.R.) Unit 1: Curriculum Designing Unit 2: Curriculum at Pre- School and Primary School level Unit 3: Curriculum at Secondary, Pre- vocational and Vocational level Unit 4: Curriculum Adaptations Unit 5: Curriculum Evaluation					
		Curriculum, Adaptation and Strategies for Teaching Expanded Curriculum (V.I.) Unit 1: Concept and Types of Curriculum Unit 2: Teaching Functional Academics Skills Unit 3: Teaching of Independent Living Skills Unit 4: Curricular Adaptation Unit 5: Curricular Activities					
	C14	**Intervention and Teaching Strategies (H.I.)** **Unit 1:** Need and Strategies for early intervention of hearing loss **Unit 2:** Auditory Learning and Speech Reading	20	80	50	100	4

		Unit 3: Speech Intervention Strategies **Unit 4:** Communication and Language Teaching Strategies **Unit 5:** Educational intervention strategies					
		Intervention and Teaching Strategies (M.R.) Unit 1: Intervention Unit 2: Individualized Education Programme Unit 3: Teaching Strategies and TLM Unit 4: Intervention for Mal-adaptive Behaviour Unit 5: Therapeutic Intervention					
		Intervention and Teaching Strategies (V.I.) Unit 1: Theoryretical Perspectives Unit 2: Mathematics Unit 3: Science Unit 4: Social Science Unit 5: Teaching of Children with Low Vision					
AREA-E (Practical Related to Disability)	**E2**	Disability Specialization	40	60	50	100	4
Total Marks in 3rd Term End Examination			**100**	**240**	**200**	**400**	**16**

4TH SEMESTER (JANUARY –JUNE)

	Course Code	Title	Internal Assess-ment	Term End	Pass Marks	Full Marks	Credits
AREA-B Cross Disability And Inclusion	**B10 (A)**	**Skill based Optional Course (Cross Disability And Inclusion)** B 10(A) Guidance and Counselling	10	40	25	50	2
AREA-C (Disability	**C15**	**Technology and Disability (H.I.)**	20	80	50	100	4
		Technology and Disability (M.R.)					
		Technology and Education of the Visually Impaired (V.I.)					
Specialisation Courses)	**C16**	**Psycho Social and Family Issues (H.I.)**	10	40	25	50	2

		Unit 1: Psychological aspects and disability Unit 2: Family needs Unit 3: Family Empowerment **Psycho Social and Family Issues (M.R.)** Unit 1: Family Unit 2: Psycho- social issues Unit 3: Involving families Unit 4: Adolescent Issues Unit 5: CBR and CPP **Psycho Social and Family Issues (V.I.)** Unit 1: Family of a child with VI Unit 2: Parental issues and concerns Unit 3: Rehabilitation of children with VI Unit 4: Meeting the challenges of children with VI					
AREA-D (Enhancement of Proffesional Capacities (EPC)	**D17**	**Reading and Reflecting on Texts**	10	40	25	50	2
	D18	**Drama and Art in Education**	10	40	25	50	2
AREA-F Field Engagement/School Attachment/Internship	F1	Main Disability Special School (Related to Area-C)	40	60	50	100	4
Total Marks in 4th Term End Examination			**100**	**240**	**200**	**400**	**16**

5TH SEMESTER (JULY –DECEMBER)

	Course Code	Title	Internal Assess-ment	Term End	Pass Marks	Full Marks	Credits
AREA-B Cross Disability And Inclusion	**B11(E)**	**Skill based Optional Course (Disability Specialization)** **B 11(E) Management of Learning Disability**	10	40	25	50	2
AREA-D	**D19**	**Basic Research &Basic Statistics**	10	40	25	50	2

Enhancement of Proffesional Capacities (EPC)		Unit 1: Introduction to research Unit 2: Type and process of Research Unit 3: Measurement and Analysis of data					
AREA-E (Practical Related to Disability)	**E1**	**Cross Disability and Inclusion**	40	60	50	100	4
AREA-F (Field Engagement/School Attachment/Internship	**F2**	**Other Disability Special School (Related to Area-B)**	40	60	50	100	4
	F3	**Inclusive school (related to AREA B & C)**	40	60	50	100	4
Total Marks in 5th Term End Examination			**140**	**260**	**200**	**400**	**16**
Grand Total in Two and Half Years Course			**520**	**1480**	**1000**	**2000**	**80**

NETAJI SUBHAS OPEN UNIVERSITY

Post Graduate Political Science (PGPS)

Post Graduate Political Science Syllabus

Programme Objective:

Open and Distance Learning seeks to promote higher education as an effective alternative way along with conventional systems of education around the founding principles of universality, flexibility and innovativeness. With an aim to provide easy and affordable access to quality education emphasis is given to adopt a learner centric approach in disseminating education and thereby meet with the ultimate objective to embrace the maximum learners who wishes to be a part of the greater academic community within the ambit of higher education. The discipline of Political Science shaped its programme accordingly in lieu of the greater goals of Open and distance learning to ensure both quality education and visibly wide territorial reach.

Political Science as a discipline inculcates analytical thinking of an individual, develop the ability to think critically and help in applying logical reasons to reach conclusions.

It enhances the knowledge of diverse political system of the world and share their experiences to make a comprehensive understanding of the political system of our own country.

It further inspires an individual to become an effective citizen of the country by making them aware of the duties along with the rights as enshrined in the Constitution of India. In doing so it galvanizes the theoretical understanding with that of the real life in practice.

Expected Programme Outcome:

Students pursuing Political Science will be enable to apply their knowledge on domestic and international politics in a much vivid and organized manner. The proficiency of the discipline would enable to usher in the insightful innovations in the formulations of public policy both at national and international level.

The course has been designed in such that one could cultivate the basic tools underlying the modern social science research, adopt a multidisciplinary approach in integrating the discipline with other major subject of social sciences and thereby promotes competency in presenting well articulating and thought provoking research findings.

The curriculum therefore adorns the students equally in terms of skill enhancement and employability to meet the requirements of both the professional and the academic world.

Graduate Attributes:

Learners involved in ensuing Political Science as one of their major subject will evoke the following graduate attributes-

It would inculcate the learners to appreciate and internalize the self and lifelong learning habits.

Enhances academic skills to effectively employ the body of knowledge in their professional practice.

Develop a strong sense of civic responsibility.

A general awareness regarding the Constitution boosted their commitment as citizens.

Creates a general awareness regarding Global Knowledge Society and make the learners apprehensive of the major issues adversely affecting the globe like that of environmental hazards, gender inequality etc.

The disciplinary knowledge flourishes intellectual and personal attributes needed to cope with the professional practices.

The disciplinary knowledge will strengthen the scope of employability in varied areas including Research, Administrative Services, Journalism, Policy Framing, and Legal Advisors and so on.

Curriculum Design:

Course Duration: Two Years

Detailed Syllabus of Post Graduate Political Science (PGPS)

Paper – I to VIII

Paper – I : **Political Thought & Movements in Colonial India**

Paper – II : **Politics in India since Independence**

Paper – III : **Issues in Political Thought**

Paper – IV : **Issues in Political Theory**

Paper – V : **Comparative Politics**

Paper – VI : **Public Administration**

Paper – VII : **International Relations**

Paper – VIII : **Politics and Society in Asia : Select Regions**

PAPER – I

Political Thought & Movements in Colonial India

Module - 1	:	**Modernity**
Unit-1	:	Rammohun Roy
Unit-2	:	Bankim Chandra Chattopadhyay
Unit-3	:	Syed Ahmed Khan
Unit-4	:	Rabindranath Tagore
Module - 2	:	**Nationalism**
Unit-1	:	Bankim Chandra Chattopadhyay
Unit-2	:	Rabindranath Tagore
Unit-3	:	Mohandas Karamchand Gandhi
Unit-4	:	Subhas Chandra Bose
Module - 3	:	**Socialism**
Unit-1	:	Swami Vivekananda
Unit-2	:	M. N. Roy
Unit-3	:	Jawaharlal Nehru
Unit-4	:	Jayaprakash Narayan
Module - 4	:	**Movements**
Unit-1	:	Swadeshi Movement
Unit-2	:	Peasant and Tribal Movements
Unit-3	:	Working Class Movement
Unit-4	:	Dalit Movements

PAPER – II

Politics in India since Independence

Module - 1	:	**Concepts and Approaches**

Unit-1	:	Concepts and approaches to the study of Indian Politics
Unit-2	:	Institutionalizing Democracy
Unit-3	:	Secularism and Communalism in Post-independence India
Unit-4	:	State and Nation-building in India

Module - 2	:	**Political Structure**
Unit-1	:	Federalism and State Autonomy
Unit-2	:	Party System, Electoral Process and Coalition Politics
Unit-3	:	Parliamentary Sovereignty and Judicial Activism
Unit-4	:	Panchayati Raj and Grassroot Politics
Module - 3	:	**Political Dynamics**
Unit-1	:	Social Cleavages : Caste and Class
Unit-2	:	Business and Politics
Unit-3	:	Women and Politics
Unit-4	:	Regionalism and Ethnicity
Module - 4	:	**Political Movements**
Unit-1	:	Working Class Movements and Peasant Movements
Unit-2	:	Movements for Civil Liberties and Human Rights
Unit-3	:	Environmental Movements
Unit-4	:	Dalit Politics

PAPER – III

Issues in Political Thought

Module - 1	:	
Unit-1	:	State and Civil Society
Unit-2	:	Individualism
Unit-3	:	Conservatism
Unit-4	:	Secularism
Module - 2	:	
Unit-1	:	Justice
Unit-2	:	Equality
Unit-3	:	Freedom
Unit-4	:	Rights

Module - 3 :

Unit-1 : Classical Democracy
Unit-2 : Contemporary Democracy
Unit-3 : Nationalism
Unit-4 : Fascism

Module – 4 :

Unit-1 : Socialism
Unit-2 : Anarchism
Unit-3 : Revolution
Unit-4 : Totalitarianism

PAPER – IV

Issues in Political Theory

Module - 1 :

Unit-1 : Classical Liberalism
Unit-2 : Liberal Welfarism : John Rawls
Unit-3 : Liberatarianism : Robert Nozick
Unit-4 : Communitarianism

Module - 2 :

Unit-1 : Pluralism
Unit-2 : Consociationalism
Unit-3 : Elite Theories
Unit-4 : Multiculturalism

Module - 3 :

Unit-1 : Hegemony : Antonio Gramsci
Unit-2 : Ideology : Louis Althusser
Unit-3 : Instrumentalist view of State : Ralph Miliband
Unit-4 : Structuralist view of State : Nicos Poulantzas

Module - 4 :

Unit-1 : Postmodernism
Unit-2 : Postcolonialism
Unit-3 : Feminism
Unit-4 : Ecologism

PAPER – V

Comparative Politics

Module - I

1. Transition from the study of Comparative Government to Comparative Politics.
2. Methods of Comparison, Advantages of Comparison, Comparison of similar and contrasting systems.
3. Approaches to the study of Comparative Politics: Systems Approach, Structural-Functional Approach.
4. Theories of Development and Modernization : Neo-Liberal, Dependency & World Systems Theory.

Module - II

1. Nationalism and Nation Building in Britain, France and China.
2. The State and Civil Society in the East and the West.
3. Political Parties and Pressure Groups in comparative perspective : USA & UK.
4. Role of Military in the politics of Pakistan & Indonesia.

Module - III

1. Globalization and economic reforms:Select Asian & African Countries.
2. Ethnic Politics in Comparative Perspective:East Europe, Asia, Africa & Sri Lanka.
3. Religion and Politics in Comparative Perspective:East & West.
4. Feminist Politics in Comparative Perspective:Western & Non-Western view points.

Module - IV

1. Challenges of Democracy in Bangladesh.
2. Democratic transition in Nepal.
3. Challenges to Authoritarianism in Egypt.
4. Democratic transition in Latin America.

PAPER – VI

Public Administration

I. Public Administration: The Quest for a Science of Administration

i) Public Administration: The Classical Perspective.
ii) Comparative and Development Administration.
iii) New Public Administration and New Public Management.
iv) Recent Advances in Public Administration : Ecology & Feminism.

II. Administrative Theories

i) Human Relations Approach: Elton Mayo and Chester Barnard, Mary Parker Follett.
ii) Behavioural Approach- Herbert Simon.
iii) Development Administration-Fred Riggs.
iv) Public Choice Theory and Public Policy Analysis.

III. Democratic Administration and Good Governance

i) Good Governance: Meanings and Aims.
ii) Transparency and Accountability in Public Administration.
iii) Decentralisation and Devolution and Development.
iv) Good Governance in the Indian Context.

IV. Emerging Issues in Public Administration

i) Gender and Public Administration.
ii) Public Administration and Civil Society.
iii) Globalisation and Public Administration.
iv) Indian Administration in the era of Liberalisation.

PAPER – VII

International Relations

Module - I	:	**Theories of International Relations**
Unit-I	:	Liberal and Neo-Liberal Approaches – Realist and Neo-Realist Critiques of Liberalism
Unit-II	:	Systems Theory
Unit-III	:	Marxist and other Radical and Neo-Radical Approaches
Unit-IV	:	Post-Structuralist and Post-Modernist Approaches
Module - II	:	**Contemporary Issues**

Unit-I	:	U.S. Policy in the Post-Cold War Era
Unit-II	:	Europe in Contemporary World Politics
Unit-III	:	China in Contemporary World Politics
Unit-IV	:	Russia in Contemporary World Politics
Module - III	:	**Foreign Policy**
Unit-I	:	Conceptual Framework for understanding Foreign Policy
Unit-II	:	Determinants of Foreign Policy
Unit-III	:	Domestic sources of Foreign Policy – Role of Public Opinion, Parliament, Political Parties, Interest Groups and Bureaucracy
Unit-IV	:	Decision-Making in Foreign Policy
Module - IV	:	**Foreign Policy of India**
Unit-I	:	Factors conditioning Foreign Policy – Geographic/Strategic-India's Operational Environment : Domestic and Foreign
Unit-II	:	The Making of India's Foreign Policy : The Structure of Decision-Making-Personalities, Processes and Institutions
Unit-III	:	Evolution of India's Foreign Policy – Non-Alignment : A Critical Estimate
Unit-IV	:	India's Bilateral Relations with (a) Its Neighbours (b) United States (c) Erstwhile Soviet Union & Russia (d) European Union

PAPER – VIII

Politics and Society in Asia:Selected Regions

Module - I **West Asia**

i) Arab Nationalism:Pan Arabism:Historical foundations of Arab Nationalism:Nahda ; The Arab League ; Nasserism ; Zionism ; The Palestinian Issue and Arab Nationalism ; Future of Arab Nationalism.

ii) Religion and Politics in West Asia:Islam and Politics in Turkey, Saudi Arabia, Egypt; The Politics of Islamic re-assertion.

iii) The Politics of Oil in West Asia:History of OPEC since its foundation; Formation of OPEC; Oil and Politics since 1970s.

iv) Politics of Regionalism and Regional Associations : PLO, Arab League, GCC, OIC, Arab Co-operation Council.

Module - II **Central Asia**

i) The Central Asian Republics – Features, Problems and Prospects.

ii) Security and Geo-Strategic issues in Central Asia.

iii) Problems of Economic Transition.

iv) Islam and Democracy.

Module – III **Asia Pacific**

i) The Concept of the Asia-Pacific Region and its significance in International Relations.
ii) Authoritarianism, Civil-Military Relations and Prospects of Democratisation in Select Asia-Pacific Countries : Indonesia, Philipines and South Korea.
iii) Political Economy of the Asia Pacific Region.
iv) Ethnic Problems in the Asia Pacific Region.

Module – IV **South East Asia**

i) State and Civil Society in South East Asia : An Overview.
ii) Issues relating to the Chinese Immigrants in South East Asia : Case Studies of Malayasia and Singapore.
iii) Society, Culture and Politics in Thailand and Myanmar.
iv) Globalisation and Culture in South Asia in the Post-Cold War era.

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