



**NETAJI SUBHAS OPEN UNIVERSITY**  
**SCHOOL OF SCIENCES**

H.Q.: DD-26, Salt Lake, Sector-I, Kolkata – 700 064

City Campus: K-2, Bidhannagar Fire Station, Sector- V, Salt Lake, Kolkata-700 091

Kalyani Campus: First Floor, Academic Building, Kalyani Ghoshpara, Kalyani 741235

Website: [www.wbnsou.ac.in](http://www.wbnsou.ac.in)

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## **Call for Paper**

for

### **UGC-DEB Sponsored One Day National Conference**

on

**‘Distance Education and its Obscurities: Addressing the “Inaccessibility”  
Conundrum in Mathematics and Other Disciplines’**

**Date: June 9, 2018**

**Venue:** Seminar Hall (1<sup>st</sup> floor),

Netaji Subhas Open University

DD-26, Salt Lake, Kolkata-64

*Organized by*

**School Of Sciences  
Netaji Subhas Open University**

DD-26, Salt Lake City, Sector- I,  
Kolkata-700 064

### **Background and Invitation**

A One Day National Conference on ‘**Distance Education and its Obscurities: Addressing the “Inaccessibility” Conundrum in Mathematics and Other Disciplines**’ is going to be organized by the School of Sciences, Netaji Subhas Open University, West Bengal, India as a part of a University Grants Commission-Distance Education Bureau (UGC-DEB) sponsored research project, on 9 June, 2018. On behalf of the Organizing Committee, it is our pleasure to invite you to participate in the seminar.



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### **About The National Conference**

It is essentially important to note that learners enrolled in Open Distance Learning institutions mainly belong to those sectors, for whom affording regular mode of higher education is costly in terms of economy, time and merit. Apart from the physical inaccessibility, emotional detachment with the classroom premise remain another reason for the estrangement of ODL institution. The feeling of oneness with the institution is nearly absent amongst the learners of the Open Universities. This is somewhat antithetical to the regular mode of university education. In regular universities students develop an emotional attachment with the classrooms and the campus. Whereas in case of the Distance Education Systems the absence of institutional infrastructure creates a psychological barrier amongst the students, this in turn emerges, as the major cause of disinterestedness amongst the learners to attend the classes held at study centres.

In this context, the Distance Education Institutions in general and the Open Universities in particular are working shoulder to shoulder with the government in mitigating these challenges. One of the imperatives in order to mitigate the challenge of 'Inaccessibility' can be greater use of Information and Communication Technology (ICT) in the delivery of lectures. Propagating science subjects through distance education has always remained a daunting task; mathematics being one of the pivotal discourse within the realm of science requires technology as a means to edifice the knowledge. This in turn requires the faculties and teachers to have sufficient knowledge of ICT and knowledge of how to develop e-content and Audio-Visual Lectures (AVL) being one such pivotal tool, especially for a course like Mathematics. Somewhat similar is the situation in other disciplines where, incorporation of ICT and its implications calls for academic discussions and debates.

Thus, a one-day conference is going to be organized by the School of Sciences, which essentially aims at enhancing the opportunities of using ICT in promulgating Mathematics as well as other disciplines through the system of Open Learning. In the backdrop of the decision of making the Post Graduate science courses of the University ICT enabled from the forthcoming academic session by the authority, the proposed conference will also help to prepare a comprehensive plan of developing various options under ICT for instance, Audio-Video Lectures, Webinars and Digital Self Learning Materials etc.

- ***The organizing committee of the conference also perceives and desires to publish a post-conference Edited Volume that shall amass the presented views of the scholars as well as few excellent articles from Resource Persons in the format of a Book with ISBN.***



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**Sub Themes:**

- **Inaccessibility: Definition and Scope.**
- **Approaches in Mitigation: Mathematical Approach, Socio-Economic Approach, Geo-Spatial Approach, Technical Approach and others.**
- **Discipline oriented decision making regarding the incorporation of ICT and the consequential implications and issues.**
- **Role of State: Laws and Policies, Implementation, Target Areas.**
- **Information and Communication Technology: ICT and the Indian Scenario, whether bridging the gap or propelling abeyance?**

Interested Scholars are requested to contribute their valued opinions and research articles for the conference. **All abstracts and papers should be sent to the email id: [projectsc.wbnsou@gmail.com](mailto:projectsc.wbnsou@gmail.com) .**

**Guidelines for Submitting an Abstract:**

Abstracts should not be of more than **400 words** and should contain **5 to 6 keywords**. The abstract should be sent in **MS Word Format (12 pt. Font)**. There should be a Proper Title followed by the name of the Contributor/s, Designation and Institution of Affiliation, Contact number and Email ID. Joint papers are acceptable but the number of authors should be limited to maximum Three authors. Abstracts are subjected to rejection on the basis of a Double Blind Review. **All Abstracts must be submitted by 15<sup>th</sup> May, 2018. Last date for informing about the acceptance of Abstract is 19<sup>th</sup> May, 2018.**

**Guidelines for Submitting Paper:**

Articles should be prepared and sent in **MS Word / LaTeX format** (word limit should not exceed **6000 words**). The standard **Times New Roman 12 pt. font, double spacing** should be used for preparing the script. **All titles and subtitles should be in Times New Roman 'Bold' font. Subtitles should be in Times New Roman 12 pt. bold and the main title should be Times New Roman 14 pt. bold font.** All graphs and tables should be properly cited. **APA 6.0 referencing style should be followed, with a proper bibliography (Alphabetically and Chronologically arranged) at the end of script.** Additional information should be provided as **ENDNOTES**, footnotes are not allowed. **All Papers should be submitted by 1<sup>st</sup> June, 2018 via email.**

- Double blind review process will be followed in the final selection of the papers. The university has every right to reject any paper. The university may also suspend the process of publication due to unprecedented circumstances



or unforeseen situations. The copyright of the papers published in the proposed volume will belong to Netaji Subhas Open University.

- The contributors are also requested to mention their Name, Designation and Institutional Affiliation, Contact Number and email id in the title page of the paper. A Declaration stating the originality of the paper and a statement mentioning that the paper has not been presented or published or communicated for publication elsewhere should also be submitted along with the paper to the editors in the abovementioned email address. The University or the Editors shall not bear any responsibility so far as the originality of the papers are concerned. The decision of the Editors regarding selection of papers will be final and binding.

*A Registration fees shall be charged from the participants and presenters for the conference*

✚ Academics and Teachers: Rs. 800

✚ Research Scholars and Students: Rs. 500

*All payments should be made online through bank transfer and the information regarding the success of payment (snapshot of bank deposit slips) should be sent separately to the above mentioned email id.*

**Bank Account Details;**

**Name of the Account Holder - Director, School of Science NSOU**

**Bank Name: Allahabad Bank**

**Branch Name: Salt Lake City, Kolkata 700064**

**Ac/No. - 50189358220**

**IFSC Code: ALLA0211829**

*For any inquiry regarding the conference and conference related issues, kindly communicate with the organisers through an email.*

Email Id: [projectsc.wbnsou@gmail.com](mailto:projectsc.wbnsou@gmail.com) .

**Organising Secretaries:**

Dr. Sanjay Kumar Ghosal (9432902847) & Mr. Mrinal Nath (9163265989)

Email id. - [s.ghosal@wbnsou.ac.in](mailto:s.ghosal@wbnsou.ac.in) Email id. - [mrinalnath.sosc@wbnsou.ac.in](mailto:mrinalnath.sosc@wbnsou.ac.in)

Kajal De



Director, School of Sciences

Date: 27-04-2018

UGC-DEB Sponsored One Day National Conference on  
**‘Distance Education and its Obscurities: Addressing the “Inaccessibility”  
Conundrum in Mathematics and Other Disciplines’,**  
to be held on 9<sup>th</sup> June, 2018

**Registration Form**

(All are mandatory field)

NAME (In Block Letters): .....

GENDER (Male/Female/Others): .....

AFFILIATION & DESIGNATION: .....

COMMUNICATION ADDRESS: .....

.....

EMAIL: ..... PHONE:.....

TITLE OF PRESENTATION: .....

.....

NATURE OF PARTICIPATION (Participation/Paper Presenter or both):

.....

FOOD HABIT (Veg/Non Veg): .....

DETAILS OF PAYMENT (Date, Mode and Number of Transaction): .....

.....

Date: .....

.....

Place: .....

Full Signature of the applicant

The conference aims at reaching a consensus on the potentials of ICT in higher Education and desires to open new arenas of research and academic discussions. I believe, that your presence will facilitate us in exploring this field of research and will open new dimensions of innovation.

**Date:** 18/5/2018

**Prof. Kajal De**  
Director, School of Sciences

### Organizing Committee:

#### Chief Patron:

*Professor Subha Sankar Sarkar, Hon'ble Vice Chancellor, NSOU*

#### Chairperson:

*Professor Kajal De, Director, School of Sciences and Professor of Mathematics, NSOU*

#### Organizing Secretaries:

*Dr. Sanjoy Kumar Ghosal, Assistant Professor of Mathematics, NSOU*

*Mr. Mrinal Nath, Assistant Professor of Computer Science, NSOU*

#### Treasurer:

*Dr. Sintu Ganai, Assistant Professor of Chemistry NSOU*

**R.S.V.P:** *Sampurna Goswami, Project Assistant, School of Sciences, NSOU.*

### Program:

**Inaugural session: 11:00 a.m. – 12:00 p.m.**

#### Welcome Address:

*Prof. Kajal De, Director, School of Sciences, NSOU.*

#### Address of the Guest of Honour:

*Professor Nageswar Rao, Vice-Chancellor, Uttarakhand Open University.*

#### Release of Edited Volumes of School of Sciences

#### Address by the Key Note Speaker:

*Padma Shri Professor Ajoy Kumar Ray, IIT Kharagpur and Former Director, IEST, Shibpur*

#### Presidential Address:

*Prof. Subha Sankar Sarkar, Vice Chancellor, NSOU.*

#### Vote of Thanks:

*Dr. Sanjoy Kumar Ghosal, Asst. Prof. of Mathematics.*

**Tea Break: 12:00 p.m. – 12:15 p.m.**

**Plenary Session: 12:15 p.m. – 12:40 p.m.**

#### Chair Person:

*Prof. Ajoy Kumar Ray, IIT Kharagpur*

#### Invited Lecture:

*Dr. Maloy Banerjee, IIT Kanpur*

**Parallel Sessions: 12:45 p.m. – 1:30 p.m.**

#### Chairperson (I):

*Prof. Ajoy Kumar Ray, IIT Kharagpur*

#### Chairperson (II):

*Prof. Sanjay Sen, Retd. CU*

**Lunch: 1:30 p.m. – 2:15 p.m.**

**Parallel Sessions: 2:15 p.m. – 3:15 p.m.**

#### Chairperson (III):

*Dr. Maloy Banerjee, IIT Kanpur*

#### Chairperson (IV):

*Prof. Arindam Bhattacharya, Prof. of Mathematics, Jadavpur University*

**Tea Break: 3:15 p.m. – 3:30 p.m.**

**Panel Discussion: 3:30 pm – 4:30 pm**

#### Coordinator:

*Prof. Kajal De, Director, School of Sciences, NSOU*

#### Valedictory Ceremony and Distribution of

**Certificates: 4:30 p.m. – 5:00 p.m.**

### UGC- DEB SPONSORED ONE-DAY NATIONAL CONFERENCE ON

*Distance Education and its Obscurities: Addressing the "Inaccessibility" Conundrum in Mathematics and Other Disciplines*



Organized by  
School of Sciences

Netaji Subhas Open University

**9<sup>th</sup> June, 2018**

**Venue: Seminar Hall (1<sup>st</sup> Floor), NSOU  
DD-26, Salt Lake, Sector I, Kolkata-700064**

### NSOU: An Overview

Netaji Subhas Open University is one of the premiere Open Universities of West Bengal and one of the renowned Open Distance Learning Institute in the World. The university is working tirelessly to achieve its goal of 'Reaching the Unreached'. The university has been awarded with the most prestigious International Award titled, 'Excellence in Distance Education Award (EDEA) for Institutional Achievement in Open and Distance Education by the Commonwealth of Learning (COL), Vancouver, Canada. NSOU is emerging as a modern university well equipped with Information and Communication Technology (ICT) as Instructional Aide with adept faculty members who are discovering new edifying techniques with ICT. With a humongous student base and over 70 academic programs managed by 3 Regional Centres spread across the length and breadth of the state, NSOU is emerging as an institution where technology meets education, giving rise to promising colours of innovation.

### The School of Sciences

The School of Sciences (SoSci) is one of the most celebrated schools in the Netaji Subhas Open University. The school is full of vim and vigour and is highly spirited when it comes to the question of bringing about innovations in the academics and research orientation. The school provides both BDP courses in Physics, Chemistry and Botany and both BDP and PG courses in Mathematics (Applied/Pure), Geography (Urban), Zoology. The school have developed and well-equipped laboratory facilities for Geography, Physics,

Chemistry, Zoology and a gouging Computer Science laboratory. At, present 60 study centres, have been entrusted with the task of edifying the courses under SoSci. The school frequently organizes lecture programs, seminars and conferences of both National and International recognitions. One of the most unique events organised by the school is the Laboratory Counselling-cum-Evaluation Sessions (LCES) which is acknowledged in many ways. Therefore, SoSci portrays a picture where the faculties, the students and the staffs, within the periphery of NSOU, makes a well-knit family, a family that is exuberant, effervescent and at the same time whole-heartedly devoted to their purview of activity.

### 'Inaccessibility of Study Centres: Challenges faced by Distance Education in building an Educated society': A brief Introduction to our Project

The thin line of differentiation that lies in between the Regular mode and the Distance Mode of education is highlighted by the physical presence and the tangible communication between the learners and the Teachers. The ODL institutes are flexible in the sense that the institutes allow students with eclectic academic backgrounds, age groups and professions to continue and complete their education without abnegating their professional and personal commitments. What is also important is to understand that rural communities, which remains a target group of such institutes suffer from the lack of communication facilities and often cannot access the study centres, faculties and the university

infrastructures. Apart from such physical inaccessibility, psychological inaccessibility, emotional non-attachment with the institution is another determinant that needs to be addressed.

### Objective of the Conference:

Following the above explanation regarding the dilemma of 'Inaccessibility', and considering the fact that edifying highly technical science subject like Mathematics through ODL mode is extremely challenging and daunting task, the UGC-DEB sponsored one-day National Conference aims at enhancing the opportunities of using ICT in promulgating Mathematics as a serious science subject as well as other disciplines through the system of Open Learning. In the backdrop of the decision of making the Post Graduate science courses of the University ICT enabled for the forthcoming academic session by the authority, the proposed conference will also help to prepare a comprehensive plan of developing various options under ICT for instance, Audio-Video Lectures, Webinars and Digital Self Learning Materials etc.

### Invitation

Dear Academicians/ Participants,

It is an occasion of immense pleasure for me to invite you all to this 'UGC-DEB sponsored One-Day National Conference on, 'Distance Education and Its Obscurities: Addressing the "Inaccessibility" Conundrum in Mathematics and Other Disciplines' to be held on 9<sup>th</sup> June, 2018 Saturday in the Seminar Hall (1<sup>st</sup> Floor) of Netaji Subhas Open University, DD-26, Salt Lake, Sector I, Kolkata-64.

**Report on One Day National Conference titled ‘Distance Education and its  
Obscurities: Addressing the “Inaccessibility” Conundrum in Mathematics and other  
Disciplines’ on 9 July, 2018**

A One Day National Conference titled ‘Distance Education and its Obscurities: Addressing the “Inaccessibility” Conundrum in Mathematics and other Disciplines’, was held on 9<sup>th</sup> July, 2018, to analyse the expert and academic commentaries on the issues of Inaccessibility. The conference accepted research articles from scholars who are working in the field of Education as well as from students of Mathematics in order to construe few mathematical models in order to mitigate the challenge of Inaccessibility.

This conference was organized with two distinct objectives, one was to address the issues and opportunities arising out of the ongoing project at the School of Sciences titled, ‘Inaccessibility of Study Centres: Challenges faced by Distance Education in Building an Educated Society’ with Prof. Kajal De as the Principal Investigator and the other was to prepare a comprehensive plan of developing various options under ICT for instance, Audio Visual Lectures, Webinars, Digital Self Learning Materials and so on and so forth in the backdrop of the University Authority’s decision to make the post graduate science subjects ICT enabled.

The conference program was characteristically separated into seven distinct slots. The conference began with a highly cerebral inaugural event. The Guest of Honour, Prof. Nageshwar Rao, the then Hon’ble Vice Chancellor of Uttarakhand Open University and presently the Vice-Chancellor of Indira Gandhi National Open University, is a stalwart in the field of Open and Distance Education in India. His address brought forth few positive implications of incorporating ICT in Higher Education. He also suggested few alternative approaches to mitigate the challenges, impeding the smooth organization of academic curriculum at the Open Universities and Institutions in India. The Chief Guest, Padmashri Prof. Ajoy Kumar Ray, Former Director of IEST Shibpur, and presently associated with the IIT Kharagpur as Professor, delivered an address that was much more scientific and objective in its character. He exemplified his speech with simple scientific examples and showed how empirical theories can solve the issues arising out of the inaccessibility conundrum in ODL Institutes. The Presidential address was delivered by the Hon’ble Vice Chancellor of NSOU, Prof. Subha Sankar Sarkar, who in his speech brought forth the achievements and failures of the host Institution.

A Lecture by Prof. Malay Banerjee, Professor, Department of Mathematics and Statistics, IIT Kanpur was arranged as a plenary session. Prof. Banerjee spoke on mitigating the

challenges faced by the ODL Institutes by using mathematical modelling. Being a connoisseur in the field of mathematics, his speech was enlightening for the audiences.

There were four parallel sessions, two sessions included papers on Open Distance Learning, chaired by Prof. Ajoy Roy, Former Director, IEST, Shibpur and Dr. A.B.Aich, Director, Study Centre, NSOU. Most of these papers tried to understand the implications of ICT in Open and Distance Learning institutes. There were few case studies, mostly based on the ICT usage in Kolkata. There were three excellent research work where mathematical modelling has been used to determine options to mitigate the obscurities in Open and Distance Education institutes, like assessing the drop-out rates in ODL, maintaining the optimum inventory of SLMs & improving the quality of service of Study Centres.

There were two other parallel sessions chaired by Prof. Malay Banerjee, Professor of Mathematics, IIT Kanpur and Prof. Arindam Bhattacharya, Professor of Mathematics, Jadavpur University that consisted of research papers on hard-core mathematics. Few were application oriented papers while few were theoretical in nature. The motive to include papers based on mathematics was to understand the mathematical approaches and alternatives to address the inaccessibility challenge, as mathematical calculations and models are one of the best way to calculate and construe a probable derivative to analyse the challenges faced by Distance Educational institutes.

The one-day conference ended with a panel discussion. The panellists were Prof. Kajal De, Professor of Mathematics & Director, School of Sciences, NSOU, Prof. Arijit Ghosal, Professor of Mathematics, Burdwan University, Prof. Samiran Ghosh, Professor of Applied Mathematics, Calcutta University, Dr. P.R. Ghosh retired Associate Professor of Mathematics, Vidyasagar Evening College and Prof. Sanjib Kr, Datta, Professor of Mathematics, Kalyani University – all are erudite in the field of mathematics and have been associated with the Netaji Subhas Open University since its inception. The panellist were of the view that Regional languages should be emphasised while creating Audio Visual Lectures or while writing the Self Learning materials. However, it was later decided that the medium should remain English since, most of the learners are more comfortable in expressing the thought in English, especially for technical science subject. The panellists also argued that the innovations should be deployed in the areas of evaluation and examinations. They proposed that since the learner base for ODL institutes are humongous, therefore a method of digital evaluation can be a potential alternative to bring about transparency in the learner evaluation system.

This One-day, UGC-DEB sponsored National Conference was a grand success in regards to meeting the objectives of the venture. The papers were of high quality and the presenters proposed justified recommendations. The Inaugural event was a success in its own way

with the two distinguished speakers addressing the august house in a manner and style, novel in the respective fields. The Invited speaker, delivered a speech that tried to analyse the theme of a conference through mathematical approach. Finally, the panel discussion ignited debates and discussions on the incorporation of ICT in Post-Graduation science courses at the Netaji Subhas open University.