



# NETAJI SUBHASH ENGINEERING COLLEGE

Techno City, Garia, Kolkata – 700 152

## REPORTS ON PROFESSIONAL DEVELOPMENT PROGRAMMES ATTENDED DURING THE LAST FIVE YEARS

### ACADEMIC YEAR: 2017-2018

Angshuman Sahu, Assistant Professor of Netaji Subhash Engineering College, Civil engineering department, presented a conference paper on the topic “LIQUEFACTION SUSCEPTIBILITY OF SOIL: A DEEP LEARNING APPROACH” under the sub-theme of Computational geomechanics and geotechnical modelling organized by Indian Geotechnical conference, 2017 at the venue of IIT GUWAHATI in December, 2017.

Prof. Kingshuk Dan and Prof. Pramita Deb Sarkar have participated a three week UGC Refresher Course from 2<sup>nd</sup> January to 21<sup>st</sup> January organized by Academic Staff College, Jadavpur University and Dept. of Architecture, Jadavpur University on “Built Environment and Sustainable Technologies”. The Refresher course has covered a wide range of sustainable technologies like sustainable planning and urban design, sustainable building design, alternate materials used in construction, renewable energy sources, alternate construction, environmental pollution etc. In this regard, some important topics on which eminent speakers from academia and industries have delivered speeches are mentioned below.

1. Sustainability in Construction: C. Viswanathan
2. Economics of Sustainable Development: Prof. G. Gupta, Professor, IIM Ahmedabad
3. Sustainable Building materials: Dr. S. K. Agarwal, BMTPC
4. Earthquake resistance: Prof. Arup Guha Niyogi, Professor, Civil Engg Dept, Jadavpur University
5. Role of CBRI in Sustainable Development: Dr. Ashok Kumar, CBRI, Roorkee
6. Approach to Sustainable Construction: Mr. Siddhartah Mitra, LBC, Kerala
7. Urbanization & Smart City development: Prof. S. Roy, Civil Engg. Dept., IEST Shibpur

Faculty members who have attended above course have guided some student projects on sustainable materials and technologies like ground improvement using plastic waste, soil sub-grade improvement using PPC, solid waste management etc. A paper entitled “Stabilization of sub-grade soil using cement: experimental study” was published in National conference organized by Haldia Institute of Technology (ACEPR-2018).



*J*  
*08702/299*  
PROF.(DR.) TIRTHANKAR DATTA  
Principal  
Netaji Subhash Engineering College  
Techno City Garia,  
Kolkata - 700 152

Sayandeep Bhattacharjee, Assistant Professor of Netaji Subhash Engineering College, Civil engineering department have participated in one week Short Term Course on Advanced Computing Tools in Civil Engineering March, 2018. Eminent professors of Indian Institute of Technology, Kharagpur, have delivered power point presentation on almost all the basic topics of Civil Engineering and its application using various software tools.

### ACADEMIC YEAR: 2016-2017

The department of Electronics & Communication Engineering organized a workshop from 26<sup>th</sup> December, 2016 to 4<sup>th</sup> February, 2017 on CMOS, Mixed signal and radio frequency VLSI design, 11 participants were successfully completed the course. The principal objective of this workshop was to train and educate in the advance field of microwave and VLSI engineering. The workshop focused upon exploring new avenues with latest advances in the field of microwave and VLSI technology through lectures of distinguished faculties. Prof. Indrajit Chakrabarti, Dept. of Electronics & Communication Engineering, IIT Kharagpur and Prof. T.K. Bhattacharyya, Dept. of Electronics and Electrical Communication Engineering delivered the key-lectures to the participants.

A three days faculty development programme on "Orientation/Training Programme for faculty was held at the Department of Biomedical Engineering of Netaji Subhash engineering College, under the patronage of Techno India group from 10<sup>th</sup> January to 13<sup>th</sup> January, 2017. The FDP aims to provide opportunities to young faculty members, research scholars and post graduate students to enrich their teaching skill and research in the biomedical field. The Programme also intends to develop the knowledge of participants for simulation with advanced software in the relevant field for inculcating learning values in students and guiding and monitoring their progress. The FDP was attended by 36 participants from faculty members of ECE, EE, CSE, IT, Physics, Mathematics department.

### ACADEMIC YEAR: 2015-2016

A two days faculty development programme on "Professional/Training Programme for faculty was held at the Department of Biomedical Engineering of Netaji Subhash engineering College, under the patronage of Techno India group from 9<sup>th</sup> July to 10<sup>th</sup> July, 2015. The FDP aims to provide opportunities to young faculty members, research scholars and post graduate students to enrich their teaching skill and research in the biomedical field. The FDP was attended by 19 participants from faculty members of BME, ECE, and EE.

A Two-week ISTE STTP on ENVIRONMENTAL STUDIES under National Mission on Education through ICT (NMEICT), MHRD, Govt. of India, conducted by IIT Bombay at Netaji Subhash Engineering College, Technocity, Garia, Kolkata-700152, West Bengal, India. The course covered the following topics: 1) Sustainable Development, 2) Ecology, 3) Biodiversity, 4) Natural Resources (Food, water, energy, forest), 5) Environmental Pollution, 6) Social issues and Environment, 7) Ethics, 8) Economics, 9) Global Climate Change. Besides refreshing the knowledge and skill of the teachers who



*J*  
9/27/2019  
PROF. (DR.) TIRTHANKAR DATTA  
Principal  
Netaji Subhash Engineering College  
Techno City Garia,  
Kolkata - 700 152

teach the particular subject, the workshop also enlightened the teachers from other subjects and disciplines about the topics. The workshop was truly a multidisciplinary in nature.

A Two Week ISTE STTP on Engineering Physics under National Mission on Education through ICT (NMEICT), MHRD, Govt. of India, conducted by IIT Bombay at Netaji Subhash Engineering College, Technocity, Garia, Kolkata-700152, West Bengal, India.

The course covered the following topics:

1. Optics: Interference, Diffraction, polarization, Fiber optics, Lasers and holography.
2. Electrostatics and Electrodynamics: Maxwell's equations in differential form, concept of vector potential and gauge, wave propagation in free space and dielectric media, Poynting theorem.
3. Special Theory of Relativity: Inertial frames, Michelson Morley experiment, Lorentz transformation, Mass energy relation.
4. Quantum Mechanics: Compton Effect, Born concept, Postulates of quantum mechanics, particle in a box, potential barrier and tunneling.
5. Crystallography and Solid State: Crystalline and amorphous solids, Miller indices, Bragg's law and Laue method, Free electron theory, Brillouin zone and reciprocal lattice, Magnetic materials, Superconductivity and applications.
6. Nuclear Physics: Radioactivity, Nuclear reactions, Fission and Fusion, Liquid drop model, Particle accelerator, Standard model of particle physics. The course was a refresher course, which assisted the teachers to enhance their teaching skills in these subjects. The final edited audio-visual content, along with other course material, were released in Open Source. The content can be freely used by all teachers, students and other learners.

The four- week AICTE approved FDP by IIT Bombay on "Use of ICT in Education for Online and Blended Learning" was organized by the department of Computer Science & Engineering, where the following faculty members played the roles of coordinators:

1. Workshop Coordinator: Dr. Atanu Das, Dept. of CSE, NSEC
2. Remote Centre Coordinator: Prof. Swapna Roy, Dept. Of EE, NSEC
3. Course Coordinator: Professor Deepak B. Phatak, Department of Computer Science & Engineering, Indian Institute of Technology Bombay, Mumbai - 400076

The program was sponsored under the National Mission on Education Through ICT (MHRD, GOVT OF INDIA) and conducted by Netaji Subhash Engineering College, Kolkata & IIT Bombay jointly. The date and duration of the programme were as follows:

2<sup>nd</sup> May to 10<sup>th</sup> July 2016, Assignment Submission Complete by 10<sup>th</sup> August, 2016

Face to face sessions at NSEC: 14, 15 May; 4, 5 June; and 25, 26 June 2016.

The FDP is primarily designed as a MOOC (Massive Open Online Course). It will have the following 3 components:

**1. Online work by individual participants:** Each participant is expected to access the online platform, using a PC at home or office on any convenient day and time during the week, with an online test every week. Each participant has to spend 6 to 8 hours of efforts per week during this component of the FDP.

This activity will be spread over 10 calendar weeks: 2 May 2016 to 10 July 2016.

**2. Face-to-Face interaction:** Participants will have to physically attend these sessions at their chosen/designated Remote Centers (RCs), established across the country by IIT Bombay.



08/02/2019  
PROF. (DR.) TIRTHANKAR DATTA  
Principal  
Netaji Subhash Engineering College  
Techno City Garia,  
Kolkata - 700 152

Focused interactive sessions with the participating teachers, will be conducted by the faculty from IIT Bombay. The discussions and local tutorial sessions will be moderated by the Workshop Coordinators appointed at each RC.

This activity will be conducted on 3 weekends: 14, 15 May; 4, 5 June; and 25, 26 June 2016.

**3. Team assignment:** This is to be done by teams of 3 to 5 members, formed from amongst the participants at each RC. The team is required to create and review the assignment, and submit the same online. Here again, each participant has to spend adequate effort, albeit in a coordinated manner with other members of the team. It will be undertaken from 11 July 2016, after completion of the 10 weeks of online activity, and will have to be submitted within four calendar weeks, before 5 August 2016.

The following eminent speakers took classes online and delivered lectures on various topics:

Prof. Deepak B. Phatak, Dept. of CSE, IIT Bombay

Prof. Sridhar Iyer, Dept. of CSE, IIT Bombay

Prof. Uday N. Gaitonde, Dept. of ME, IIT Bombay

Prof. Sahana Murthy, Dept of ET, IIT Bombay

Participation fees were fixed at Rs.1000/-, which were paid to the RCs. These covered the cost of arranging face-to-face component of the FDP at RCs. Cost of food and accommodation was to be borne by the participants. There were no fees to be paid to IIT Bombay. The participants registered on the IITB-NMEICT website for the FDP. Next, their registration was verified by IIT Bombay. After the verification, the participants were intimated. After this the participant had to pay Rs.1000/- as the participation fees to the RCC. Ordinarily, this payment was to be made before beginning of the FDP. However, as a special case, participants of this FDP were permitted to pay the fees on the first day of face-to-face interaction (on 14 May 2016). Registration began on 19 April 2016. After the successful completion of the course, certificates were issued by IIT Bombay, only to those participants who successfully complete prescribed online tests with minimum 50% aggregate score, meaningfully participate in face-to-face sessions, and submit the team assignment of an acceptable quality. AICTE will recognize this as a four-week FDP.

Following are the details of participants during the course:

Total No of Enrolled Participants: 24

Total No of Registered Participants: 23

Total No of Participants Completed FDP (Tentative):22

Sl. No.	Name of the Institute	Number of Participants
1	Netaji Subhash Engineering College, Kolkata	17
2	B. P. Podder Institute of Management and Technology	1
3	Greater Kolkata College of Engineering of Management	3
4	Future Institute of Technology	2

#### ISTE STTP Programme on "Introduction to Structural Engineering"

IIT Kharagpur organized two weeks ISTE Short Term Training Programme (STTP) on "Introduction to Structural Engineering" under National Mission on Education through ICT (MHRD, Govt. of India). The participating teachers of Netaji Subhash engineering College completed the equivalent of two-week full



08/02/2019  
PROF. (DR.) TIRTHANKAR DATTA  
Principal  
Netaji Subhash Engineering College  
Techno City Garia,  
Kolkata - 700 152

time work online, spread over six physical weeks where video lectures and assignments were uploaded beforehand. After completing the online assignments spread over 4 to 5 weeks the faculty members were present at the Remote Center (One remote center was Netaji Subhash Engineering College) for six days (from 4<sup>th</sup> January, 2016 to 9<sup>th</sup> January, 2016) face to face interaction and lecture sessions through A-VIEW technologies through internet. The workshop has benefited faculty members who are teaching subjects like structural analysis, design of steel structures, design of R.C. structures etc. Eminent personalities from IIT Kharagpur delivered speeches on different topics of Structural Engineering some of which are enlisted below.

1. Structural Analysis: Prof. Baidurya Bhattacharya, Department of Civil Engineering, IIT Kharagpur.
2. Design of Steel Structure: Prof. S. K. Bhattacharyya, Department of Civil Engineering, IIT Kharagpur.
3. Design of RC structures: Dr. Sushanta Chakraborty, Department of Civil Engineering, IIT Kharagpur.

The program certainly helped teachers to enhance teaching skills in aforesaid subjects. All course materials and audio visual contents were given to participating teachers and some important video lectures were shown to students. Teachers are motivated to attend workshops, seminars and other programmes related to advanced technologies used in static and dynamic structural analysis, various construction methodologies used in recent times. Seminar and project topics (Design of multistoried building using STAAD Pro, Design of Intze tank etc) are chosen in such a manner that students are keen to develop their knowledge/ innovative idea on structural engineering related subjects.

#### ACADEMIC YEAR: 2014-2015

A two-week workshop organized on Control System from IIT Kharagpur and was held from 2<sup>nd</sup> December, 2014 to 12<sup>th</sup> December, 2014, where 22 participants successfully completed the workshop. Prof. Siddharyha Mukhopadhyay, Department of Electrical Engineering, IIT Kharagpur and Prof. Tapan Kumar Ghoshal, Department of Electrical Engineering, Jadavpur University was the eminent speakers during the course.

The course was covered into five following modules:

Module 1: Basic Concept: Introduction and significance of control system; Module 2: Model and response; Module 3: System Analysis; Module 4. Control Design; and Module 5: Implementation and validation.

A two week ISTE workshop on "Cyber Security" was held from July 10th 2014 to July 20th 2014 at Department of Computer Science and Engineering, Netaji Subhash Engineering College, Kolkata, India, which is a remote center of IIT – Bombay, Mumbai, India. Dr. Swapna Roy, Assistant professor, Dept. of Electrical Engineering of our college was Center Coordinator who handled the technology infrastructure and other logistics. Dr. Rajdeep Chakraborty, Assistant Professor, Department of Computer Science and Engineering of our college coordinated the workshop on "Cyber Security". There were 31 participants from Department of Computer Science and Engineering, Department of Information Technology and Department of MCA of our college.



08/02/2019  
J  
Prof. (Dr.) Tirthankar Datta  
Principal  
Netaji Subhash Engineering College  
Techno City Garia,  
Kolkata - 700 152

The course was on Cyber Security covering wide range of topics such as Secret Key Cryptography, Public Key Cryptography, Applications of the crypto hash, Key Management and PKI, Network Security, DDoS Attacks, Authentication Protocols, Transport Layer Security (SSL/TLS), Access Control and Firewalls, Software security, Worms, viruses, bots, etc., Malware protection, Web application security, Browser security, Intrusion detection and prevention. In this workshop various laboratories are also conducted such as DVWA, Wire Shark, Snort and Metasploit. The course was completed successfully.

A two week ISTE workshop on "Introduction to Design of Algorithms" was held from 25 May to 30 May, 2015 where at Netaji Subhash Engineering College a remote center was set up under the Dept. of Computer Science & Engg. . Dr. Swapna Roy was Center Coordinator who handled the technology infrastructure and other logistics. Dr. Piyali Chatterjee served the role of Workshop Coordinator for corresponding subjects whose duty was to help in conducting laboratories and tutorials. There were 26 participants including 2 outstation faculties from other universities.

The course was on Algorithm Design that is core course for any undergraduate programme in CSE. It covered the basic foundations of designing correct and efficient sequential algorithm, complexity analysis and fundamental design technique etc. The participants got audio visual contents and interacted with eminent speakers for clearing doubts. They participated in solving assignments, tutorials, quizzes etc. After the completion of course, all participants got merit certificates. The course was completed successfully.

Two-week ISTE workshops are conducted during the vacation periods in summer and winter. Participating teachers attend live lectures delivered by IIT faculty at a remote center close to their own college, and also attend tutorial and lab sessions conducted in the same centers. The lecture transmission and live interaction takes place in distance mode using the AVIEW technology through internet, at selected remote centers across the country. This initiative is part of the 'National Mission on Education through ICT,' which is supported by MHRD. Faculty coordinators are appointed at each remote centre to handle the technology infrastructure and other operational logistics. Additionally, for each workshop there will be a workshop Faculty Coordinator for that subject, who will help in the conduct of labs and tutorials at each center. Under this initiative, the department of Electrical Engineering organized a two-week main workshop on Signals & Systems from IIT Kharagpur during 2<sup>nd</sup> and 12<sup>th</sup> January, 2014, where 43 faculty members were participated and successfully completed. Prof. Siddharyha Mukhopadhyay, Department of Electrical Engineering, IIT Kharagpur and Prof. Tapan Kumar Ghoshal, Department of Electrical Engineering, Jadavpur University, Kolkata delivered their lectures in the workshop. The course modules included five parts, such as:

Module 1. Basic Concept: Introduction and significance of control system

Module 2. Model and response

Module3. System Analysis

Module4. Control Design



08/02/2019  
PROF. DR. J. FIRTHANKAR DATTA  
Principal  
Netaji Subhash Engineering College  
Techno City Garis,  
Kolkata - 700 152

## Module 5. Implementation and validation

The remaining two workshops apparently dealt with similar topic, for example Computer Networking, where the organizers designed the course module to enrich the participants in protocol designs.

A Two week workshop on 'Environmental Studies' under the National Mission on Education through ICT(MHRD) from 2<sup>nd</sup> to 12<sup>th</sup> June 2015 offered by IIT Bombay. The overall course was online lectures given by eminent professors of different IITs and other renowned institutions. The name of the teaching faculties taken our classes is Prof. Munish Chandel, Prof. Nikhil K Kothurkar, Prof. Maya Mahajan, Prof. K.Narayanan, Prof. Ranjan Kumar Panda, Prof. Ranjan Kumar Panda, Prof. D.Parthasarathi, Prof. Harish Phuleria, Prof. Virendra Sethi. This course was oriented on the above topic with example of various real issues happening all over the world regarding environmental awareness enhance our knowledge. Moreover every topic discussed in each session was fruitful for a human being how to perform every day to maintain the nature. So many topics covered in this course like sustainable development, ecology, biodiversity, natural resources, environmental pollution, social issues and environment, ethics, economics, global climate changes. This course is very much essential at this time when world is facing the serious threat regarding climate change and its associate problems. The faculty members of the BME department attended the workshop.

A One week Short term course (TEQIP sponsored) on "Emerging Materials and Devices (EMD-Sept 20-24, 2014), organized by Department of Physics & Department of Electronics & Communication Engineering, at NIT, Durgapur. This program is based on materials and devices mainly on Organic semiconductors, Nano diodes, Solar cell, rectifiers, Organic photodetectors, Nanorods, Advanced hetero structure based Nano scale MOSFETs, Photoluminescence, Emerging electronic materials, Hazardous materials, Semiconductors in Nano electronics, Synthesis and characterization of metal matrix, nano composite, Trends in Nano electronics and photonic devices. The faculty members of the BME department attended the workshop.

An International workshop on Advances in Health care Engineering was organized and hosted by College of Engineering and Management, Kolaghat, WB from 2nd to 4th January, 2014. This workshop was based on some latest innovation on health care engineering .Many new devices were discussed. Nano technology based devices like auto analyzer, new concept of lab on chip were also discussed. The faculty members of the BME department attended the workshop.

### ACADEMIC YEAR: 2013-2014

A two week ISTE workshop on "Introduction to Computer Programming" was held as per following schedule:

One week full time work to be completed online (11<sup>th</sup> May – 15<sup>th</sup> June 2014)

One week Physical participation (16<sup>th</sup> June – 21<sup>st</sup> June 2014).

Netaji Subhash Engineering College was a remote center (ID: 1266) set up under the Dept. of Computer Science & Engineering. Dr. Swapna Roy was Center Coordinator who handled the technology infrastructure and other logistics. Mr. Sumanta Das served the role of Workshop Coordinator for



*J. Datta*  
08/02/2015  
PROF. DR. J. HIRTHANKAR DATTA  
Principal  
Netaji Subhash Engineering College  
Techno City - Garia,  
Kolkata - 700 152

corresponding subjects whose duty was to help in conducting laboratories and tutorials. There were 27 participants including 1 outstation faculties from other universities.

The course was on Computer Programming that is core course for any undergraduate programme in CSE. It covered the basic foundations of designing correct and efficient Computer Programs, complexity analysis and fundamental design technique etc. The participants got audio visual contents and interacted with eminent speakers for clearing doubts. They participated in solving assignments, tutorials, quizzes etc. After the completion of course, all participants got merit certificates. The course was completed successfully.

A Three day workshop 21<sup>st</sup> April 2014 to 23<sup>rd</sup> April 2014 (FEP) jointly conducted by Department of Computer Science and engineering Netaji Subhash Engineering College and Infosys Campus Connect team on "Mobile Application Development using Android". Workshop Coordinator: Dr. Anupam Ghosh, Dept. of CSE, NSEC. Course Coordinator: Bhupesh Deka, Principal, ETA TAFF, Infosys Limited, Bhubaneswar, Sponsor Netaji Subhash Engineering College, Kolkata.

A 2 Week Faculty Development Programme organized by Enterprise Development Institute (EDI), Kolkata in association with Entrepreneurship Development Institute of India (EDII), Ahmedabad Sponsored by DST, Govt. of India under DST-NIMAT Project 2013-14 (Venue: EDI, Kolkata; Duration: 6<sup>th</sup>-17<sup>th</sup> January'2014).The faculty members of the BME department attended the workshop.

A TWO WEEK ISTE MAIN WORKSHOP ON CONTROL SYSTEMS" under National Mission on Education through ICT (MHRD, Govt. of India) in NSEC during 2nd -12th December'2014

A Two week workshop on 'Analog Electronics' under the National Mission on Education through ICT(MHRD) from 4<sup>th</sup> to 14<sup>th</sup> June 2013 offered by IIT Kharagpur. In this course eminent professors of IIT, Kharagpur Prof. Anindya Sundar Dhar, Prof. Pradip Mandal, Prof. Indrajit Chakrabarti, Prof. Achintya Halder deliver their lecture on various topics. The overall program was online and faculties are participated the program in our college which is one of the remote centres of this program. Every day in each session teachers deliver the video lectures. The topic referred above discussed in detail and we get knowledge on analog electronic. We see various application areas of BJTs and op-amps. We understand the functions of oscillators and their applications. Also we get overall ideas regarding the electronic gazettes we use in our daily life.



*J* *su*  
*08/02/2017*  
**PROF.(DR.) TIRTHANKAR DATTA**  
Principal  
Netaji Subhash Engineering College  
Techno City Garia,  
Kolkata - 700 152