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Message from Director



I am glad to learn that our newsletter is going to be published again in spite of the second wave of Pandemic COVID that is ravaging the physique of our nation with the propaganda of mindless and market driven media for minting money from the gullible

people. At the same time, Mother Nature is trying to save this beautiful Earth with help of cyclone, landslide, melting of icecap of Himalaya and Antarctica Ocean from the poisonous pool of self-annihilation of modern human beings caused due to market managed materialistic lifestyle of mindless people empowered with deadly demoniac technologies. The shudder of climate change has affected each and every country of our blue and beautiful planet that has disrupted the lives and livelihoods of not only human beings but all living beings. The weather patterns are changing with a bang and sea levels are rising alarmingly which have affected adversely the habitats of all living beings to a greater extent. It is creating havoc across the globe with an increased heat, drought and insect/bacteria/virus outbreaks that has resulted in total disruption of fast moving lives of modern people with advent of Pandemic COVID 19. Of course, there was a sudden drop of human activities, resulting the positive changes in environmental qualities due

to sudden lockdown clamped by government in 2020. Most of Indian cities had registered a drastic reduction in pollutant levels returning back to their natural state of benign level of poisonous gas. Unfortunately, most of the cities of India had also limped back to previous level of pollution level, unsuitable for living a healthy life as per WHO guidelines, indicating that the life style of human being is the cause of environmental pollution that has made the climate change in our beautiful blue planet. Under the dark spell of fear and anxieties due to second deadly wave of Pandemic COVID and spell of natural calamities, we have to rethink and retailor our lifestyle armed with the power of ancient Indian wisdom which is still lurking on the inner recess of our mind. The traditional Indian culture was based on basic principle of save, share, serve and spirituality. We need to design and develop sustainable and durable eco-friendly technologies that can help us to live a simple but high thinking life for experiencing peace and bliss, the ultimate goal of human being.

ॐ सर्वेषां स्वस्तिर्भवतु ।
सर्वेषां शान्तिर्भवतु ।
सर्वेषां पूर्णं भवतु ।
सर्वेषां मङ्गलं भवतु ।
ॐ शान्तिः शान्तिः शान्तिः ॥

Prof. Debi Prasad Mishra
Director, NITTR, Kolkata

Mentoring & its Significance in Empowering Technical Education

Chandan Chakraborty
Professor, CSE

Introduction

With rapidly changing technological scenario in the context of ever-increasing global connectivity as well as competitiveness in modern times, the role of technical education in economic development has become very significant and challenging. Also, as a consequence of intensive technological developments, the concerns of sustainability, environmental degradation, resource depletion and inclusive growth have become more relevant. The need for well-qualified engineers/professionals is more critical with complex problems that affect the quality of life of everyone, everywhere for businesses seeking well-rounded engineers and professionals who face global challenges. Further, the concerns about making the educational curricula and training more conducive to the national needs are becoming a top priority. In our country, we have observed that in the past few decades, there has been a spectacular increase in the number of technical institutions. However, the thrust on improving the quality of education in such a wide spectrum of institutions has been lacking. Mentoring comes to play in augmenting not only the quality of education but also delivery-centric model towards employment generation.

What is mentoring?

It is well understood that the Technical Education has the need to create skilled manpower to enhance industrial productivity and to further improve the quality of life. The bridge from human resource development to economic growth has to be built by well trained teachers. The most important 'agent of change' in 'Knowledge Society' is the teacher. A teacher requires many educational and didactical skills to deal with new situations. In fact, the teachers must be curriculum leaders. Ensuring that teachers are central to the reformation of curriculum will enable the development of pedagogy that provides the most favorable condition of learning and the highest quality learning outcomes for all students. The new role of teachers demands a new way of thinking and understanding of the new vision of the learning process through mentoring.

Today, mentoring is a process in which an experienced individual (mentor) helps another person (mentee) to develop his or her goals and skills through a series of time-limited, confidential, one-on-one conversations and other learning activities. Mentors also draw benefits from the mentoring relationship with mentee. As a mentor, someone will have an opportunity to share his/her wisdom and experiences, evolve own thinking, develop a new relationship, and deepen skills as a mentor. There are many kinds of mentoring relationships, ranging from informal to formal mode.

Mentor's role

An effective mentor has to play significant educative leadership role, dedicated to growing the professional capability of the subordinates and colleagues they support. An effective mentor has a sound domain and pedagogical knowledge and skill base for their role and can establish respectful and effective mentoring relationships. Mentors may be effective if they do mentoring as part of a comprehensive capacity building programme and are well supported by their employer, professional leader and professional learning community. Effective mentors are not only good at providing instruction to students but they are quality teachers who are good at providing personal and instructional support to adult learners. Mentors engage in mentoring activities, such as attending training sessions, preparing mentoring materials, observing, giving constructive feedback and meeting with their mentees. The assumption is that, in the role of mentor he/she is an accomplished teacher with a broad range of tried and tested teaching strategies combined with a well-developed understanding of the subjects he/she teach. It is assumed that he/she now wants to further develop or deepen skills and capacity to mentor a beginning /inductee teacher.

Mentors offer just the right kind of support, well-suited to the emerging needs of the inductee teacher they are mentoring because they deeply understand that inductee teacher has acquired necessary knowledge and understanding in order to demonstrate his/her professional competence in practices/responses in performing role as an effective teacher. Mentors develop co-constructive relationship with inductee teachers and support their professional learning to build their capacity. As a mentor, he/she offers inductee teachers an anchor of support in an often challenging, demanding situations and a smooth transition from inductee teacher to an effective professional teacher. Effective mentoring has a formative influence on the practice of inductee teachers and has a significant impact on the level and depth of learning amongst students whom he/she teaches. Without good mentors

the quality of teaching and learning offered by inductee teachers is demonstrably less effective, and they may experience more stress and anxiety and may leave the profession. Responsibility of performance evaluation, particularly the implementation and practice aspects of learning acquired by inductee teacher lies with the mentor teacher (supervisor).

Need of Mentor Training

A large number of technical institutions exist in the country where a huge number of teachers are employed and are being recruited. It is estimated that at present, around 30,000 teachers are being recruited afresh every year in these institutions. The technical institutions provide the technical manpower needed to meet the requirements of the country. In these institutions, the most important component of the information-knowledge transition is facilitated by the teachers. The teaching professionals or teachers join this profession immediately after the completion of their post graduate or research degrees and then progress in their career. As of now, there is no training, which prepares them to take on the role in the teaching profession. Another important issue worth pondering is that the teaching profession in the technical education domain no longer attracts the best academic performers and many times, it becomes the last choice. There is hardly any mechanism and opportunity to motivate academically brilliant candidates to take up the jobs in the teaching profession and groom them for providing quality education. Needless to emphasize that with such a downside trend, a vicious cycle is created that continues to operate, resulting in further degradation of the quality of education. Given the above scenario, the need for adequately augmenting the quality of technical education and making it more and more appropriate to the present requirements is becoming very acute and requires effort on the part of the monitoring agencies as well as the stakeholders. The AICTE has been seriously concerned over this issue and taken the National Initiative for Technical Teacher's Training [AICTE-NITTT] across the country for improving the quality of technical education with the following broad objectives.

- a) To demarcate the training needs at different levels and for different categories of teachers keeping in mind the present status of the training, the expectation from a good teacher and the ground reality of technical education in the country.
- b) To prescribe the structure and contents of the training programme at different levels.
- c) To propose a feasible mechanism to effectively implement the desired training programme at a large scale throughout the country.

- d) To monitor, facilitate and successively improve the quality of training by preparing to develop suitable resource persons, resource material (both print and electronic) and carrying out action research.
- e) To recognize the salient implications of the proposed policy and the way to appropriately deal with these in order to establish a sustainable system for training of technical teachers.

Mentor Training Organized by NITTTR Kolkata

National Institute of Technical Teachers' Training and Research, Kolkata (NITTTR, Kolkata under MOE, Govt. of India) has successfully organized five Mentor Orientation Training Programmes (MOTP) during last four months via online mode for the following eight modules:

<i>Module</i>	<i>Module Title</i>
Module 1	<i>Orientation Towards Technical Education & Curriculum Aspects</i>
Module 2	<i>Professional Ethics & Sustainability</i>
Module 3	<i>Communication Skills, Modes and Knowledge Dissemination</i>
Module 4	<i>Instructional Planning and Delivery</i>
Module 5	<i>Technology Enabled Learning and Lifelong Self-Learning</i>
Module 6	<i>Student Assessment and Evaluation</i>
Module 7	<i>Problem Solving, Innovation and Meaningful Research & Development</i>
Module 8	<i>Institutional Management and Administrative Procedures</i>

This training programme is, in fact, a part of the National Initiative for Technical Teachers' Training (NITTT) as proposed in the Comprehensive Training Policy for Technical Teachers' 2019 of All India Council of Technical Education (AICTE), Govt. of India [www.nittt.ac.in]. It is hereby to mention that all four NITTTRs (Chennai, Kolkata, Bhopal and Chandigarh) have significantly contributed to develop the above course modules and also engaged in providing such impactful training to the mentors of the all the technical institutes mainly.

Teachers' Training

During the period of January to April 2021, a total of 1538 technical teachers have been trained, through various short-term training programmes, broadly in the areas of content updating, management, pedagogy and professional skill development. A total of 72 training programs were conducted for the teachers of polytechnic colleges and engineering colleges all over

India. Due to lockdown situation these programmes have been conducted primarily in online mode. Details

of the programmes, such as programme title, programme coordinator, date etc. are given below.

List of Training Programmes (January to April 2021)

Sl. No.	Programme Co-ordinator(s)	Prog. Code	Programme Title	From	To
1.	Indrajit Saha	ICT231	Technology Enabled Learning	04/01/2021	08/01/2021
2.	Urmila Kar	ICT232	Outcome Based Curriculum – Design and Implementation	04/01/2021	08/01/2021
3.	Chandan Chakraborty	ICT233	Choice Based Credit System (CBCS) and Student’s Performance Evaluation	04/01/2021	08/01/2021
4.	Dipankar Bose	ICT234	Development of Laboratory Instruction Sheet	04/01/2021	08/01/2021
5.	Habiba Hussain	ICT235	Effective Teaching	04/01/2021	08/01/2021
6.	Jagat Jyoti Mandal	ICT236	Refresher Course in Strength of Material	04/01/2021	08/01/2021
7.	Nirmal Kumar Mandal	ICT237	Three Dimensional Modelling with AUTOCAD and SOLID WORKS	04/01/2021	08/01/2021
8.	Prasanta Sarkar	ICT238	Control System analysis and Design with MATLAB	04/01/2021	08/01/2021
9.	Santanu Bhanja	ICT239	Analysis and Design of RC Structures using Software as per the latest Indian Standards	04/01/2021	08/01/2021
10.	Subrata Mondal	ICT240	Induction Training	04/01/2021	08/01/2021
11.	Uday Chand Kumar	ICT241	Rural Development	04/01/2021	08/01/2021
12.	Sagarika Pal	ICT242	Measurement and Experimentation on Sensors, Transducers & Actuators	04/01/2021	08/01/2021
13.	Soumitra Kumar Mandal	ICT243	Digital Logic Design using VHDL and Verilog	04/01/2021	09/01/2021
14.	Kinsuk Giri	ICT244	Discrete Mathematics	11/01/2021	15/01/2021
15.	Rajeev Chatterjee	ICT245	Introduction to Software-Defined Networking (SDN)	11/01/2021	15/01/2021
16.	Ranjan Dasgupta & Samir Roy	ICT246	Topics in Algorithms	11/01/2021	15/01/2021
17.	Samiran Mandal	ICT247	Development of Mechanical Engineering Laboratory Experiments and Instruction Sheets	11/01/2021	15/01/2021
18.	Sheela Yadav Rai	ICT248	Power Generation from Energy Resources	11/01/2021	15/01/2021
19.	Arpan Kumar Mondal	ICT249	Introduction to Welding Processes	11/01/2021	15/01/2021
20.	Sagarika Pal	ICT250	Applications of MATLAB in Control System, Image Processing, Fuzzy Logic and GUI	18/01/2021	22/01/2021
21.	Dipankar Bose	ICT251	Hydraulic Machines	18/01/2021	22/01/2021
22.	Rayapati Subbarao	ICT252	Engineering Thermodynamics	18/01/2021	22/01/2021
23.	Subrata Chattopadhyay	ICT253	Theory, Operation and Experimentation on Sensors, Transducers & Actuators	18/01/2021	22/01/2021
24.	Sukanta Kumar Naskar	ICT254	Essentials of Strategic Management	18/01/2021	22/01/2021
25.	Uday Chand Kumar	ICT255	Occupational Health and Safety	18/01/2021	22/01/2021
26.	Urmila Kar	ICT256	Designing Teaching under Outcome Based Education	25/01/2021	29/01/2021
27.	Indrajit Saha	ICT257	Data Analysis using MATLAB	25/01/2021	29/01/2021
28.	Mithu Dey	ICT258	Seismic Analysis of Structures as per latest code	25/01/2021	29/01/2021
29.	Sheela Yadav Rai	ICT259	Role of Technical Institutions in Community Development	25/01/2021	29/01/2021
30.	Soumitra Kumar Mandal	ICT260	LABVIEW & MATLAB Applications in Electrical & Electronics Engineering	25/01/2021	29/01/2021
31.	Sailendra Nath Mandal	ICT261	Environmental Pollution Analysis and Health	25/01/2021	05/02/2021
32.	Samiran Mandal	ICT262	Introduction to Automobile Engineering	01/02/2021	05/02/2020
33.	Chandan Chakraborty	ICT263	Statistics and Data Mining with SPSS	01/02/2021	05/02/2021
34.	Jagat Jyoti Mandal	ICT264	Geotechnical Aspects of Deep Foundations	01/02/2021	05/02/2021
35.	Sagarika Pal	ICT265	Programming and Automation using PLC	01/02/2021	05/02/2021
36.	Sukanta Kumar Naskar	ICT266	Problem Solving and Decision Making	01/02/2021	05/02/2021
37.	Rayapati Subbarao	ICT268	NBA Accreditation and SAR preparation	08/02/2021	12/02/2021

Sl. No.	Programme Co-ordinator(s)	Prog. Code	Programme Title	From	To
38.	Dipankar Bose	ICT269	Advanced Welding Processes	08/02/2021	12/02/2021
39.	Habiba Hussain	ICT270	Behavioural Aspects in Teaching-Learning	08/02/2021	12/02/2021
40.	Prasanta Sarkar	ICT272	Electricity Rules and Code of Practices	08/02/2021	12/02/2021
41.	Santanu Bhanja	ICT273	Advanced Course on Analysis and Design of RC Buildings as per IS 1893 Part 1 2016 and IS 13920 2016 with application of Software	08/02/2021	12/02/2021
42.	Sheela Yadav Rai	ICT274	Estimating & Costing of Non-conventional Energies	08/02/2021	12/02/2021
43.	Subrata Chattopadhyay	ICT275	Induction Training	08/02/2021	12/02/2021
44.	Subrata Mondal	ICT276	Development of Laboratory Instruction and Manual	08/02/2021	12/02/2021
45.	Uday Chand Kumar	ICT277	Technology Transfer to the Community through Polytechnic	08/02/2021	12/02/2021
46.	Ranjan Dasgupta	ICT278	Introduction to Advanced Databases	08/02/2021	12/02/2021
47.	Arpan Kumar Mondal	ICT279	Teaching Methodologies	08/02/2021	12/02/2021
48.	Soumitra Kumar Mandal	ICT280	8086 Microprocessor & 8051 Microcontroller	15/02/2021	19/02/2021
49.	Urmila Kar	ICT281	Quality Assurance through Accreditation (NBA Guidelines)	15/02/2021	19/02/2021
50.	Sailendra Nath Mandal	ICT282	Pollution Testing	15/02/2021	26/02/2021
51.	Arpan Kumar Mondal & Ranjan Dasgupta	ICT283	NBA Accreditation Issues	22/02/2021	26/02/2021
52.	Habiba Hussain	ICT284	Designing Question Papers	22/02/2021	26/02/2021
53.	Jagat Jyoti Mandal	ICT286	Concept Teaching in Engineering Statics	22/02/2021	26/02/2021
54.	Nirmal Kumar Mandal	ICT288	Automated Design and Manufacturing	22/02/2021	26/02/2021
55.	Sagarika Pal	ICT289	Skill Assessment in Laboratory and Guiding Students' Project	22/02/2021	26/02/2021
56.	Sheela Yadav Rai	ICT291	Community Development through Technical Institutes	22/02/2021	26/02/2021
57.	Subrata Mondal	ICT293	Entrepreneurship Development	22/02/2021	26/02/2021
58.	Samir Roy & Kinsuk Giri	ICT295	Mathematical foundation of Computer Science	22/02/2021	05/03/2021
59.	Rayapati Subbarao	ICT297	How to Write Thesis and Research Paper	01/03/2021	05/03/2021
60.	Santanu Bhanja	ICT298	Course on Commentary for Code on Ductility Design and Detailing of RC structures subjected to Seismic Forces - IS 13920 2016	01/03/2021	05/03/2021
61.	Uday Chand Kumar	ICT299	Rural Engineering	08/03/2021	12/03/2021
62.	Indrajit Saha	ICT285	Image Processing using MATLAB	08/03/2021	12/03/2021
63.	Chandan Chakraborty	ICT300	Data Science with R programming	08/03/2021	12/03/2021
64.	Prasanta Sarkar	ICT301	Engineering Capstone Project	08/03/2021	12/03/2021
65.	Samiran Mandal	ICT302	Research Methodology	08/03/2021	12/03/2021
66.	Sheela Yadav Rai	ICT303	Renewable Energy Sources and Emerging Technologies	08/03/2021	12/03/2021
67.	Soumitra Kumar Mandal	ICT304	Photo Voltaic System: Operation & Control	08/03/2021	12/03/2021
68.	Dipankar Bose	ICT306	Guiding Innovative Student Project Work	15/03/2021	19/03/2021
69.	Habiba Hussain	ICT307	Effective Teaching	15/03/2021	19/03/2021
70.	Jagat Jyoti Mandal	ICT308	Elements of Vibration Analysis	15/03/2021	19/03/2021
71.	Rayapati Subbarao	ICT311	NBA Accreditation and SAR preparation	22/03/2021	26/03/2021
72.	Sailendra Nath Mandal	ICT013	Water Analysis and Test Method	05/04/2021	16/04/2021

CONFERENCES/ SEMINARS/ WORKSHOPS etc.

National Conference (Virtual Mode) on Ancient Indian Science, Technology, Engineering & Mathematics (AISTEM 2020- 21) held during 19-20 March 2021

The National Conference (Virtual Mode) on Ancient Indian Science, Technology, Engineering & Mathematics (AISTEM 2020-21) was held at NITTR, Kolkata on 19-20 March 2021, jointly organized by National Institute of Technical Teachers' Training and Research Kolkata (NITTR-Kolkata) & State Project Implementation Unit (SPIU) Uttar Pradesh as knowledge partner.



In the inaugural programme of the conference following dignitaries were there along with participants and paper presenters throughout the country. At the beginning, Dr. Kinsuk Giri of NITTR, Kolkata and convener of the conference mentioned the objectives of the conference. Prof. Debi Prasad Mishra, Director of NITTR, Kolkata and conference chair welcomed all the dignitaries and participants of the conference and mentioned first ever type of such conference organised by NITTR, Kolkata in this area and highlighted the important issues about the conference. While addressing by Dr Anil Kumar of SPIU Uttar Pradesh and Co-chair of the conference, he pointed out various issues of AISTEM and its applications even in modern times. Prof. Rajeev Kumar the honourable Member Secretary of AICTE and chief guest of the conference appreciated the initiatives taken by NITTR, Kolkata and SPIU Uttar Pradesh for organizing such unique types of conference.

In the first key note speech Prof. Debi Prasad Mishra honourable director of NITTR Kolkata has expressed his concern about the degradation of human mind civilization in present times, he stressed that we should acknowledge that India being a lighthouse of knowledge of the entire world. While suggesting solutions of we are creating problems, which is an

alarming situation and need to address it immediately. World is dominated by many people called "Ravana" having only negative thoughts. We should protect our mother nature at any cost he pointed out. He also mentioned we should relook the importance of "Veda" and which should be integrated in our day-to-day life in congruent manner.

Second day of the conference started with an interesting keynote speech given by honourable Prof. Vasant Shinde on: Genesis of Indian Knowledge System: Archaeological Perspective. Prof. Vasant Shinde, former Professor and Vice-Chancellor at the Deccan College, Post-Graduate and Research Institute, Deemed University, Pune and Founding Director General, National Maritime Heritage Complex, Gandhinagar. He started his speech with appropriate appreciation of NEP 2021, according to him which is a proper blending of Ancient Indian traditional knowledge system and modern Indian knowledge system. High quality and attractive design of ornaments In the last key note speech of the conference, Prof. Khedkar Mohan Krishna Rao, spoke on Sanskrit for Ancient Indian Technical Knowledge. While speaking about Sanskrit and its importance in Ancient Indian Technical Knowledge, he clearly mentioned the meaning of word "Sanskrit" as pure, prepared, refine & perfect and in other way to it is the language of "God". He also highlighted the contributions of Aryabhatta, Lilavati by Bhaskaracharya in ancient mathematics.

Finally, the conferences ended with a vote of thanks proposed by Dr. Arpan Kr. Mandal, co-convener of the conference.

Online Workshop on Industry Academia Interaction (I-A-I)

An online workshop on Industry Academia Interaction (I-A-I) was organized by NITTR, Kolkata on 17th April 2021. Dr. S. K. Naskar was the coordinator of the workshop and the speakers were:

- Mr. Deb Kumar Ghosh, Engineering Consultant
- Dr. Tapati Bandopadhyay, Vice President AISWITCH, Bangalore, India
- Mr. Jayana Chaudhuri, Director Operations Project at Burning Glass Technologies Inc.
- Dr. Madan Mohan Mahato, MD Office Technology, Jamipol Limited Jamshedpur, a Tata Steel Group Company
- Shri Nabajyoti Lahkar, GM, Oil India Ltd. Assam
- Shri B. P. Lenka, Chief Manager (HR), Hindustan Aeronautics Ltd. Odisha

The above workshop was graced by the Honorable Vice Chancellor of Maulana Abul Kalam Azad University of Technology, West Bengal Prof. Saikat Maitra as Chief Guest. In his inaugural speech Prof. Maitra mentioned the importance of Industry Academia Interaction in present context where every thing is changing very rapidly. While explaining the transformation from Industry 1.0 to Industry 4.0, he also stressed transformation of education system from its phase 1.0 to 4.0.



Existing curricula and academic activities undertaken by different institutes need to align properly as per the changes of the industry in general and technology in particular. In his speech he mentioned that statutory organizations like AICTE and UGC have undertaken many initiatives to strengthen the academic and industries interaction in various dimensions. In our society there is a tremendous shortage of trained and skilled professionals who will in turn impart training for existing employees. Some important areas like health care, agriculture, digital electronics, automobiles, additive manufacturing along with others there is a great demand of technological applications and here academia need to play a vital role. He anticipated that in near future industry 5.0 will be in place, both industries and academia should prepare themselves according to overcome the crisis situation.

Project based learning and problem based learning (PBL) are the demand of the day and its effective implementation is possible when industries and academia should work in hand in hand mode according to him. In his concluding remark he appreciated the workshop being organized by NITTTR, Kolkata and appreciated many such initiatives undertaken by the institute.

Prof. Debi Prasad Mishra the honorable director of NITTTR, Kolkata, in his welcome address mentioned that most of the time industries and academic institutions are working in isolation, which is not

desirable. To undertake proper initiatives and to foster the Industry Institute Interaction and its related activities, NITTTR, Kolkata being a premium technical teacher training institute is having a significant role.

There is no way out rather than to integrate in academics while getting benefits of some emerging and advanced technologies like, Artificial Intelligence (AI), Machine Learning, Data Analytics, Automation etc. and we need to do it now.

According to him technologies may be categorized in two categories: Demonic and Divine. All technological advent may be considered for the divine purpose, to enrich our society.

Opinion of the speakers:

In recent times it has been observed that most of technical students are having the fundamental engineering knowledge and its applications for example use of vernier caliper and its working principles are not known by the technical passouts which are the saddest part of our academics.

Proper attitude, aptitude and communication preferably in English are some essential qualities of the pass out students apart from subject matter knowledge to become employable. Students, teachers and teaching learning, curriculum, pedagogical issues etc. should acknowledge need to align accordingly.

Training in three dimensions is very essential: Technical, Ethical and Behavioral to become more suitable from industry point of view according to Shri B P Lenka, Chief Manager-HR, Hindustan Aeronautics Ltd. Odisha.

According to Mr. Jayana Chaudhuri: Director Operations Project at Burning Glass Technologies Inc., ability to work without supervisor assistance is expected but students are not capable while working in industries most of the times. Example of professionals like Michelangelo and Leonardo da Vinci are the example of professionals who become successful in their profession without any supervisory assistance.

Dr. Tapati Bandopadhyay: Vice President AISWITCH, Bangalore, India said that most of the technical institutes are very much reluctant to incorporate latest technologies in existing syllabus, teaching learning methodologies etc. as per the demand of the industries. According to her, most of the time institute fails to put applications questions in the terminal and intermediate examinations.

The workshop was ended with vote of thanks proposed by Prof. Sailendra Nath Mandal of NITTTR, Kolkata.

Mentor Orientation Training Program

Prof. Chandan Chakraborty (as Coordinator) and Dr. Indrajit Saha (as Co-Coordinator) with their team successfully organized total four online mentor orientation training programmes under AICTE-NITTT during January 2021 to April 2021 (from 09/02/2021-13/02/2021, 15/03/2021-19/03/2021, 05/04/2021-09/04/2021 and 19/04/2021-23/04/2021) and ONE mentor training programme for higher educational institutions during 27-Jan to 04-Feb 2021.



Inaugural session of the 2nd AICTE-NITTT Mentor Orientation Training Program on 27.01.2021

National Institute of Technical Teachers' Training & Research (NITTTR) Kolkata, being a prestigious higher educational institute of national importance under Ministry of Education, Govt. of India, has been continuously engaged in providing the innovations in teaching, training and research. Under National Monitoring Mission (MoE) regulated from the perspective of NEP 2020, several initiatives have been undertaken by the institute for providing Orientation Training Programme (OTP) to the mentors of the technical institutions across the country under the Comprehensive Training Policy for Technical Teachers 2019 of All India Council of Technical Education (AICTE), Govt. of India. In order to cater the such mentoring skill development for the senior faculty members of the university and college faculty members as prospective mentors, NITTTR Kolkata successfully organized an online Mentor Orientation Training Programme (MOTP) for the mentors of the higher educational institutions across the country from 27th January to 4th February 2021. A total of 70 mentors from various higher educational institutions have participated and successfully completed this 8-days training programme.

The inauguration programme was held dated on 27th January 2021 in presence of all the esteemed dignitaries: Prof. Sabita Acharya, Vice Chancellor of Utkal University as the chief guest; Prof. S.N.Panda, Director of NITTTR Chennai as the Guest of honour

along with Prof. Debi Prasad Mishra, Director NITTTR Kolkata. In the welcome address, Prof. Debi Prasad Mishra Director of NITTTR, Kolkata mentioned the importance of quality of higher education and the appreciated initiatives by the government with a perspective of NEP 2020. He reiterated that mentoring process of ancient period, particularly in Vedic Period where all-round development of mentees was the pivotal point along with enhancement of subject matter knowledge. Prof. Acharya, the chief guest of the inaugural programme mentioned the true meaning of mentor and engagement of mentors and its importance. She appropriately acknowledged the initiatives by the government for example conducting FDP, Mentor orientation training programme. Transformation of entire educational system from the perspective of NEP 2020 is the right step to bring ourselves into the global position. She also through some lights in the use digital technology, developing digital infrastructure and digital repository system, which are the demand of the day. Prof. S. N. Panda, Director of NITTTR, Chennai shared his experience in implementing mentor orientation training programme. In this context, he appreciated and acknowledged the NITTTRs for developing eight-modules MOOC based induction training programme for the teachers those who are very new in teaching profession. The programme has been appreciated by the participating mentors and expressed their interests during the valedictory session held on 4th February 2021.



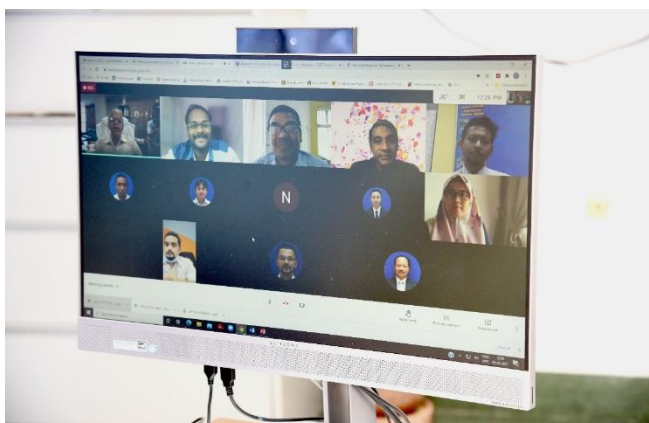
3rd AICTE-NITTT Mentor Orientation Training Program inaugural session on 01.02.2021

Outreach activities of our Institute

**Report submitted by Training Cell,
Academic Affairs Section**

Our latest endeavour to augment outreach activities, the following Memorandum of Understanding (MOU) with the following academia(s) have been executed:

1. Gandhi Institute for Technology, Bhubaneswar, Odisha
2. Gurukula Kangri Vishwavidyalaya, Haridwar
3. Indian Institute of Information Technology, Allahabad, UP
4. State Project Implementation Unit, Lucknow, UP
5. Veer Surendra Sai University of Technology, Burla, Sambalpur. Odisha
6. Inter-Governmental International Organization, Colombo Plan Staff College (CPSC), for Human Resource Development in Asia and Pacific Region



Exploring Collaboration activities with Foreign University/Institute

Primary objective(s) of these MOU are: -

- Recognize the mutual interest in the field of joint teaching, training and other related activities and dissemination of knowledge.
- Recognize the importance of other institutions role in creating placement opportunity, Faculty Development Programme, Staff Development Programme and other activities.

An outreach program creates a partnership between the communities and the educational institutions. As such, apart from the focal activities of imparting training program offline and online mode, the outreach programme on the part of NITTR Kolkata amidst the new surge pandemic environment shall add a new

flavour and aroma in the context of development of Technical education system of India.

In the above backdrop, it is strongly felt that our members of faculty with their proven track record will augment these outreach program by exploring the above mentioned Memorandum of Understanding between Academic Institutions. This may also yield better outcome when our Institute will be transformed in to a University under de-novo category.

Further new education policy promulgated by the Government of India paves the way for making the self-sustained new education system in India wherein our Institute can play pivotal role by entering into MOU with academia(s) in developing quality teaching-learning process in Undergraduate, Post-Graduate (including doctoral) level of teaching programmes in various engineering and allied disciplines.

It is expected that active cooperation of members of faculty is the need of today to make this endeavour a success to usher a new aura in the field of technician education system in tune with New Education Policy - 2020 of the Government of India.

List of Talks Delivered by Prof. Debi Prasad Mishra, Director, NITTR, Kolkata

In programmes organized by NITTR, Kolkata

1. 57th Foundation Day celebrations of the Institute, to be conducted in hybrid mode on Monday, the 11th January 2021 by Pratap Chandra Sarangi, Habiba Hussain and her team
2. Meeting with UGC team on 13-01-2021 on 12:00 noon
3. Online Birth Anniversary of Netaji Subhas Chandra Bose on 23-01-2021 at 10:30 am by Soumitra Kumar Mondal
4. The Republic day celebration on 26th January 2021 will begin with the hoisting of the National flag at 9.30am in the Institute premises by Habiba Hussain
5. Orientation Training Programme (OTP) for Mentors of Higher Educational Institutions from 27-01-2021 to 04-02-2021 by Chandan Chakraborty
6. 2nd AICTE – NITTR Orientation Training Programme (OTP) 09-02-2021 to 13-02-2021 by Chandan Chakraborty
7. Programme for Pledge of Road Safety on 15-02-2021 at 5:00 pm by Administration
8. Celebrate "Matribhasa Diwas" (Mother Language Day), to be conducted through Virtual Mode on

Monday, the 22nd February 2021 at 5:00PM by Avijit Kundu

9. Meeting with CPSC, Manila and NITTTR, Kolkata on 08-03-2021 at 10:30AM.
10. Online Seminar, on 'India's freedom struggle', on 12-03-2021 at 11AM by R Subba Rao
11. 3rd AICTE NITTT MOTP from March 15-19, 2021 Organized by NITTTR Kolkata
12. National Conference (Virtual) on Ancient Indian Science, Technology, Engineering and Mathematics (AISTEM-2021) on 19-20 March 2021 by Dr. Kinsuk Giri
13. Bharatiya Shikshan Mandal (Dakshinbanga Prant) along with NITI Aayog in collaboration with NITTTR, Kolkata Teacher's Role in National Education Policy (NEP) 2020 Implementation: Awareness, Orientation, Challenges and Responses on 03-04-2021
14. Geeta Class on 04-04-2021 at 10AM by Prof. Debi Prasad Mishra
15. 4th AICTE – NITTT for Online Orientation Training Programme (OTP) for Mentors April 05-09, 2021 Organized by NITTTR Kolkata

Invited lecture by Prof. Debi Prasad Mishra, Director, NITTTR, Kolkata

1. Two days Virtual International Conference Power, (IN) Equality and Cultures of Resistance An Interdisciplinary Approach to Humanities and Social Science on 28-29 January, 2021 organized by Sharda University
2. National Education Policy 2020 on 16-02-2021 at 10:30AM organized by SPIU and Rajkiya Engineering College, Bijnor
3. Reforming and Rejuvenating Teaching Learning in H.E. Institutions for the 21st Century on 20-02-2021 at 10:30AM organized by SPIU and Kamla Nehru Institute of Technology, Sultanpur
4. Chief Guest of Book Krishnamurthy paddhatite Astrology on 22-02-2021 at 9:30AM organized by ARIKP, Kolkata
5. Meeting with Uneversiti Tun Hussein Onn Malaysia: (UTHM) on 08-03-2021 at 12.20PM
6. Chief Guest of Bharatiya Kal Ganana Ki Vaigyanika on 16-03-2021 at 11:00AM organized by SPIU, Uttar Pradesh
7. Formation of the Consortium of HEIs in collaboration with RFRF of Bharatiya Sikshan Mandal and holding of an international conference, Topic: 'Synergy' A RFRF Meeting of Academic Leaders on 2nd April 2021

Invited Lectures by Faculty Members

- Prof.Dipanakar Bose delivered a talk on "Use of Bloom's Taxonomy and Assessment Criteria" in FDP on Examination Reforms organized by NIT Mizoram on 15.02.2021
- Dr. Habiba Hussain delivered invited lectures on 16th & 18th February 2021, in a ATAL-FDP on "CAPACITY BUILDING" organised by Rajiv Gandhi Govt. Polytechnic, Department of Education, Govt. of Arunachal Pradesh
- Dr. Habiba Hussain delivered invited lectures on 25th & 26th February 2021, in a Faculty Development Programme on Heutagogy: "Pedagogy training to faculty especially with regard to addressing the needs of weak students" sponsored by AICTE and ISTE, organized by Dibrugarh University Institute of Engineering and Technology (DUIET), Dibrugarh, Assam
- Dr. Habiba Hussain delivered an invited talk on 27th February 2021, in the One Week online "AICTE-ISTE INDUCTION/REFRESHER PROGRAM" on "Outcome-Based Pedagogical principles for teaching-learning in Engineering Education" Phase-II, organized by Nowgong Polytechnic, Nagaon
- Dr. Habiba Hussain delivered invited lectures on 7th & 8th April 2021, in AICTE-ISTE Sponsored Faculty Development Programme on Training on Preparation for NBA – Phase I, organized by Women's Polytechnic, Aizawl
- Dr.Habiba Hussain delivered an invited talk on 9th April 2021, in the AICTE-ISTE Sponsored Induction/Refresher Program on NBA Accreditation- Its opportunity and Challenges for Polytechnic organised by Dhalai District Polytechnic, Tripura.
- Dr. Habiba Hussain delivered an invited lecture on 26th April 2021, in AICTE-ISTE Sponsored Faculty Development Programme on Training on Preparation for NBA – Phase II, organized by Women's Polytechnic, Aizawl
- Dr. Habiba Hussain delivered invited lectures on 28th & 29th April 2021, in a AICTE-ISTE sponsored One Week Induction/Refresher Programme on "NBA Accreditation, Phase-I" organised by Advanced Technical Training Centre (ATTC), Sikkim
- Dr. Kinsuk Giri delivered a talk on "Tools and Techniques Used for Thesis Writing", at Five Days Workshop on "Academic and Research Writing", March 25, 2021, ATME College of Engineering, Mysuru, Karnataka, India
- Dr. Kinsuk Giri delivered a talk on "Uses of Open Source Academic Software", at Albertian

Knowledge Summit (AKS 2021), *March 21, 2021, St. Alberts College, Kochi, Kerala, India*

- Dr. Kinsuk Giri delivered a talk on "Online Teaching-Learning and Assessment during COVID-19 Pandemic: Strength, Weakness, Opportunity and Challenges to the Institution and System", at One-Day State Level Webinar, *Feb 26, 2021, Bajkul Milani Mahavidyalaya, Kismat Bajkul, West Bengal, India*
- Dr. Kinsuk Giri delivered a talk on "Understanding The Concepts of UG Level Mathematics through Graphical Demonstration using SCILAB", at One-Day E-workshop, *January 30, 2021, Krishna Chandra College, Birbhum, West Bengal, India*
- Prof. Prasanta Sarkar delivered invited talk in the AICTE sponsored online 2 weeks FDP on Trends and Challenges in Power Converters and Control - Slot I on the topic "A unified approach in systems and control, dated 15.2.2021 organised by the College of Engineering, Guindy, Anna University, Chennai
- Prof. Prasanta Sarkar delivered invited talk in the National Seminar (virtual mode) on Techno-Entrepreneurship - issues and challenges on the topic Intellectual property Rights (IPR), dated 10.4.2021 organised by NITTTR, Kolkata
- Dr. Samir Roy, Professor and Head, CSE Dept. delivered an invited talk on the topic "Philosophical and Ethical issues of Artificial Intelligence" on 24th February 2021 in the Faculty Development Programme on Artificial Intelligence organized by Sikkim Manipal Institute of Technology (SMIT)."
- Dr. S. Chattopadhyay Delivered a Webinar Lecture on 18th Feb 2021 as a resource person in TEQIP-III sponsored 5 Days Online Workshop on "Power System Instrumentation in Electrical Engineering" during February 14th – 18th, 2021 at NIT Nagaland, India.
- Dr. Sukanta Kumar Naskar delivered an invited talk on 16.2.21 at Govt. Polytechnic Lunglei, Mizoram on "OBE accreditation requirement for NBA"
- Dr. Sukanta Kumar Naskar delivered an invited talk on 17.2.21 on "NEP 2020 in higher education" at RGP Itanagar
- Dr. Sukanta Kumar Naskar delivered an invited talk on 18.2.21 on "Time management" at RGP Itanagar,
- Dr. Sukanta Kumar Naskar delivered an invited talk on 18.2.21 on "Quality assurance in Technical Education" at Govt. Polytechnic Lunglei
- Dr. Sukanta Kumar Naskar delivered an invited talk on 18.3.21 on "Managerial skills of Technical Teachers" at Govt. Polytechnic Hingoli, Maharashtra
- Dr. Sukanta Kumar Naskar delivered an invited talk on 5.4.21 on "NBA impact and importance" at Women Polytechnic, Aizawl

- Dr. Urmila Kar acted as Resource Person in AICTE and ISTE sponsored online Programme (Phase I) on "Outcome-Based Pedagogical Principles for Teaching-Learning in Engineering Education" at Nowgong Polytechnic, Nagaon, Assam, during 6th – 12th January 2021
- Dr. Urmila Kar acted as Resource Person in AICTE and ISTE sponsored online Programme (Phase II) on " Outcome-Based Pedagogical Principles for Teaching-Learning in Engineering Education" at Nowgong Polytechnic, Nagaon, Assam, during 22nd – 27th February 2021
- Dr. Urmila Kar acted as Resource Person in AICTE and ISTE sponsored online Programme on "Training on Preparation for NBA" phase I at Women's Polytechnic, Aizawl, Mizoram during 5th – 10th April 2021
- Dr. Urmila Kar acted as Resource Person in AICTE and ISTE sponsored online Programme on "Training on Preparation for NBA" phase 2 at Women's Polytechnic, Aizawl, Mizoram during 5th – 10th April 2021
- Dr. Urmila Kar acted as Resource Person in AICTE and ISTE sponsored online refresher program on "Engineering Applications of Optimization" Phase-2, During 19 –24 April 2021 at Rajiv Gandhi Govt. Polytechnic, Itanagar, Arunachal Pradesh.

Publications

Journal

1. Vishnu Hariharan and **Debi Prasad Mishra**, "Characterization of a Novel Elliptical Air-port Inverse Jet Flame", *Combustion Science and Technology*, 1-19, 2021. <https://doi.org/10.1080/00102202.2021.1886092>
2. Manisha B Padwal, Benveniste Natan, **Debi Prasad Mishra**, "Gel propellants", *Progress in Energy and Combustion Science*, 83, 100885, 2021. <https://doi.org/10.1016/j.pecs.2020.100885>
3. Vishnu Hariharan and **Debi Prasad Mishra**, "Dynamic flame stability diagnosis of inverse jet flame using CH* Chemiluminescence", *Fuel*, 285, 119277, 2021. <https://doi.org/10.1016/j.fuel.2020.119277>
4. Ashis Kumar Dutta, **Jagat Jyoti Mandal** & Debashish Bandopadhyay (2021), "Analysis of Beams on Pasternak Foundation Using Quintic Displacement Functions", *Journal of Geotechnical and Geological Engineering* (Springer), Online publication, 12-03.21, <https://doi.org/10.1007/s10706-021-01752-9>
5. Bijoy Kumar Jha and **Santanu Bhanja**, "Optimum Design of Reinforced Concrete Section & Shortcoming of Prescriptive Method of Design",

- Asian Journal of Civil Engineering (Springer), Volume 22, Issue 4, pp 769 – 787, ISSN: 10.1007/s42107-020-00346-9, 08.02.2021. <https://doi.org/10.1007/s42107-020-00346-9>
6. **Indrajit Saha**, N. Ghosh, A. Pradhan, N. Sharma, D. Maity and K. Mitra, “Whole Genome Analysis of more than 10000 SARS-CoV-2 Virus Unveils Global Genetic Diversity and Target region of NSP6”, Briefings in Bioinformatics, Vol. 22, pp. 1106-1121, 2021. [Impact Factor: 8.99]. <https://doi.org/10.1093/bib/bbab025>
 7. **Indrajit Saha**, N. Ghosh, D. Maity, A. Seal and D. Plewczynski, “COVID-DeepPredictor: Recurrent Neural Network to Predict SARS-CoV-2 and Other Pathogenic Viruses”, Frontiers in Genetics, Vol. 12, pp. 569120, 2021. [Impact Factor: 3.26]. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7906283/>
 8. J. P. Sarkar, **Indrajit Saha**, D. Maity, A. Seal and U. Maulik, “Topological Analysis for Sequence Variability: Case Study on more than 2K SARS-CoV-2 sequences of 54 countries in comparison with SARS-CoV-1 and MERS-CoV”, Infection, Genetics and Evolution, Vol. 88, pp. 104708, 2020. [Impact Factor: 2.77]. <https://pubmed.ncbi.nlm.nih.gov/33421654/>
 9. J. P. Sarkar, **Indrajit Saha**, A. Sarkar and U. Maulik, “Machine Learning Integrated Ensemble of Feature Selection Methods followed by Survival Analysis for Predicting Breast Cancer Subtype specific miRNA Biomarkers”, Computers in Biology and Medicine, Vol. 131, pp. 104244, 2021. [Impact Factor: 3.43]. <https://doi.org/10.1016/j.combiomed.2021.104244>
 10. M. Bandyopadhyay, S. C. Kolay, **S. Chattopadhyay** and N. Mandal, “Modification of De’ Sauty Bridge Network for Accurate Measurement of Process Variables by Variable Parameter Transducers” – IEEE - “Transaction on Instrumentation and Measurement”, USA, vol. 70, no.4, pp. 01- 10, March 2021, ISSN Information: 0018-9456, DOI: 10.1109/TIM.2021.3060580. [SCI]. <https://ieeexplore.ieee.org/document/9360659>
 11. **Kinsuk Giri**, Sujay Pal, Tuhin K Biswas and S. K. Midya, “Simulation of Diurnal Variation of Sub-Ionospheric VLF Transmitter Signals Using Machine Learning Approach”, Romanian Journal of Physics, European Physics Society, Volume - 66, Page - 807, 2021. <https://www.essoar.org/doi/10.1002/essoar.10506412.1>
 12. Sayan Kundu & **Kinsuk Giri**, “Higher Order Stability Analysis for Astrophysical Accretion Processes”, by Springer Proceedings in Mathematics & Statistics, 342, 73-79, DOI: https://doi.org/10.1007/978-981-15-9708-4_6, March, 2021
 13. Samonto, S., Kar, S., **Pal, S.**, Sekh, A.A. and Sarkar, B, “Fuzzy Based Algorithm for Stage- I of Cascaded Intelligent Relaying”, International Journal of Intelligence Science, Scientific Research Publishing, January 04, 2021, Vol.11, No.1, pp.31-43 [DOI: 10.4236/ijis.2021.111003]. https://www.scirp.org/html/3-1680302_106367.htm
 14. Samonto, S., Kar, S., **Pal, S.**, Sekh, A.A., Castillo, O. and Park, G.K., “Best Fit Membership Function for Designing Fuzzy Logic Controller Aided Intelligent Overcurrent Fault Protection Scheme”, International Transactions on Electrical energy Systems, John Wiley & Sons. Online ISSN: 2050-7038, 22 March 2021, Impact Factor: 1.692, DOI: <https://doi.org/10.1002/2050-7038.12875>.
 15. **S.K.Naskar**, Amit Rakshit and S. Chatterjee, “Multi Criteria Decision Making Methods Applied in Waste Water Treatment: A Review”, International Journal of Research Publication and Reviews Vol (2) Issue (1) (2021) Page 32-41, ISSN 2582-7421, January 2021. <https://www.ijpr.com/uploads/V2ISSUE1/IJRPR114.pdf>
 16. **Subrata Mondal**, “Nanomaterials for UV protective textiles, Journal of Industrial Textiles”, <https://doi.org/10.1177/1528083721988949>, Published online: 16 February 2021, SCI, Impact factor: 2.010.
 17. **Rayapati Subba Rao**, “Gas turbine blade failure scenario due to thermal loads in case of Nickel based super alloys”, <https://doi.org/10.1016/j.matpr.2021.03.063>, Materials Today: Proceedings, 2021.
 18. Kumar, J., Verma, R. & **Mondal, A. K.**, “Taguchi- Grey Theory Based Harmony Search Algorithm (GR-HSA) for Predictive Modelling and Multi-Objective Optimization in Drilling of Polymer Composites”, **Experimental Techniques**, 7th January 2021, <https://link.springer.com/article/10.1007/s40799-020-00428-y>
 19. **Arpan Kumar Mondal**, Bikash Kumar, Swarup Bag, Yadaiah Nirsanametla and Pankaj Biswas, “Development of avocado shape heat source model for finite element based heat transfer analysis of high-velocity arc welding process”, International Journal of Thermal Sciences, Volume 166, 4th April 2021, <https://doi.org/10.1016/j.ijthermalsci.2021.107005>

Conference

1. Ashis Kumar Dutta & **Jagat Jyoti Mandal** (2021), “Dynamic Analysis of Deep Beams on Vlasov Foundation” , Proceedings of 7th ICRA GEE 2020, Lecture notes in Civil Engineering, Volume 120 pp 287-296, <https://doi.org/10.1007/978-981-33-4005-3>

2. **Rayapati Subba Rao**, "Gas turbine blade failure scenario due to thermal loads in case of Nickel based super alloys", MATPR-D-20-12315, International Conference on Materials Manufacturing and Modelling (ICMMM - 2021), VIT University, Vellore, 2021. [https://doi.org/ 10.1016/j.matpr.2021.03.063](https://doi.org/10.1016/j.matpr.2021.03.063)
3. Geetika K. Salwan, **Rayapati Subbarao, Subrata Mondal**, "Comparison and Selection of Suitable Materials Applicable for Gas Turbine Blades", MATPR-D-21-00006, International Conference on Materials Manufacturing and Modelling (ICMMM - 2021), VIT University, Vellore, 2021. <https://doi.org/10.1016/j.matpr.2021.05.003>
4. Geetika K. Salwan, **Rayapati Subbarao**, "Studies on the selection of cutting parameters of ti-6al-4v alloy turning operation using principal component analysis", MATPR-D-21-02682, International Conference on Materials Manufacturing and Modelling (ICMMM - 2021), VIT University, Vellore, 2021. <https://doi.org/10.1016/j.matpr.2021.03.593>

Book Chapters

1. Sudipto Chaki, **Dipankar Bose**, "Application of Artificial Neural Networks to Estimate Tensile Strength of Austenitic Stainless Steel during Metal Inert Gas Welding Process", Chapter 9, pp 197-221, DOI: 10.4018/978-1-7998-3238-6.ch009, IGI Global.
2. Sibabrata Mondal, **Dipankar Bose**, "Evaluation of Surface Roughness in Wire Electrical Discharge Turning Process, Chapter 8, DOI: 10.4018/978-1-7998-3624-7.ch008 , IGI Global
3. Debal Pramanik, **Dipankar Bose**, "Experimental Evaluation on Corner Accuracy in WEDM for Aluminium 6061 Alloy", Chapter-7, DOI: 10.4018/978-1-7998-3624-7.ch007, IGI Global.
4. Dhiraj Kumar, Sudipta Paitandi, Arunanshu Shekhar Kuar, **Dipankar Bose**, "Experimental Investigation on Laser Transmission Welding of Polycarbonate and Acrylic", Chapter 10, DOI: 10.4018/978-1-7998-3624-7.ch010, IGI Global.
5. K. Mandal, S. Sarkar, S. Mitra, **Dipankar Bose**, "Multi-Objective Optimization in WEDM of Al 7075 Alloy Using TOPSIS and GRA Method", Chapter 6, DOI: 10.4018/978-1-7998-3624-7.ch006 IGI Global
6. Hussain H. (2021), "Quality Issues in Teaching-Learning Process", In: Deyasi A., Mukherjee S., Mukherjee A., Bhattacharjee A.K., Mondal A. (eds) Computational Intelligence in Digital Pedagogy. Intelligent Systems Reference Library, vol. 197.

Springer, Singapore. [https:// doi.org/ 10.1007/978-981-15-8744-3_7](https://doi.org/10.1007/978-981-15-8744-3_7)

Online Celebration of 130th Ambedkar Jayanti

NITTTR, Kolkata, virtually celebrated 130th Ambedkar Jayanti on 14th April 2021 under the coordination of Prof. S. N Mandal to mark the birth anniversary of Dr Bhim Rao Ambedkar, the principal architect of the Constitution of India



The event commenced at 4.00 p.m with a prayer song sung by the M.Tech. students. Then Prof. Kinsuk Giri addressed the gathering by mentioning the impact and significance of Ambedkar Jayanti.

Prof. S. N. Mandal in his address highlighted the life & contributions of Dr. Ambedkar and how he becomes a famous personality through excellent academic achievements with limited resources & challenges. He said, "He is remembered as the father of the Indian Constitution, Ambedkar was multi-faceted, prominent economist & social reformer".

Prof. S. K. Naskar in his speech, mentioned the importance and significance of Dr. Babasaheb Ambedkar's political careers. He also said that "the contribution of Ambedkar towards protection of Dalits is inspiring"

Mr. Pinaki Das, M.Tech Student, highlighted the achievements and contributions of Dr Ambedkar. He

also mentioned contributions of Babasheb to the uplift of lower caste people.

Mr. P. D. Siyodia said “Dr. Ambedkar was instrumental in designing and delivering important socio economic frameworks including the Constitution of India, Finance Commission, Reserve Bank of India and guidelines for equity and inclusive development”.

Prof. Debi Prasad Mishra, honorable director of NITTR, Kolkata, in his speech, mentioned the significance of Baba Saheb’s Ideology. He urged the audience to follow his footsteps and inculcate his values in their lives for uplifting the society.

At the end, a vote of thanks has been given by Prof. S. N Mandal, Coordinator of Dr. B R Ambedkar Jayanti Celebration Committee

Natural Farming at NITTR, Kolkata

A Report submitted by

Desh Deepak Gautam

Teaching Assistant, Department of Mechanical Engineering, NITTR Kolkata

Introduction

Now a day’s natural farming has been widely used for cultivating the soil, growing crops etc. It includes the cultivation of plant, vegetable, food grains for human needs and secure rural economy. Rapid global population growth demands more and more human basic needs such as foods, clean water and garments. Agriculture is the only way to fulfill most of the world’s demands for food and garments. In view of huge demand for food grains, vegetables and fruits, farmers are widely used excessive amount of chemicals in the form of fertilizer, pesticides and plant growth hormones in order to increase the productivity. Excessive use of chemicals can increase the productivity, however, it can create toxicity to the human health directly (e.g. direct consumption of chemicals absorbed by food grain/vegetables) and indirectly (e.g. unabsorbed chemicals can mixed to the ecology and effect the human health).

Natural way of farming is an ecological farming method practiced by our ancestor in ancient period. In this farming technique handmade tools, equipment and natural materials are used to grow crops, vegetable and fruits. Nutrient value of soil and the soil fertility are improved by naturally available materials such as cow dung manure and composting fertilizer. Whereas, produces are preserved by Neemastra which is a liquid mixture processed by using gaumutra (cow’s urine), cow dung, neem leaves extract and water mixture, the mixture left for 48 hours and filtered through a cloth,

finally sprayed on vegetables to protect these from pathogens.

Due to an increasing population and subsequent huge demand for vegetables, fruits and food grains, recently there is a significant use of chemicals to enhance production of agro produces. Extensive use of chemical in farming can pollute the ecology and affect the human health. Natural farming can be solution to increase the productivity of produce at the same time to protect our ecology and save the human health. This article presents the National Institute of Technical Teachers’ Training and Research (NITTR) Kolkata’s approaches for natural farming of agro produces.

NITTR Kolkata’s Activities on Natural Farming

The idea of natural farming is a brain child of Prof. Debi Prasad Mishra, the honorable Director of NITTR Kolkata. The great idea is now implementing at the ground level under the guidance of honorable Director of NITTR Kolkata. The implementation of idea is in progress to make the institute Atmanirbar (self-reliant) in the following areas:



A. Institute takes initiatives in **Training** of horticulture related activities such as cutting, budding, grafting and farming (Figure 1a-b) to its peoples. Various training in conventional techniques by using handmade tools for agriculture have been provided to the peoples to become skilled in the horticulture filed. The unique ways of training makes the peoples skilled in the field of natural farming



Fig1: (a) harvesting of green leafy vegetables, (b) naturally grown beetroot approximate 350 gm per piece

B. **Solid Waste management system** (Figure 2) is in progress for preparation of manure which will be used in NITTTR campus for natural farming as well as surplus will be provided to others. Composting fertilizer by using plant leaves has been prepared by using conventional approach. In the unique method, bio-solid wastes such as plant leaves, small branches are dropped in pit layer by layer with soil. Once the pit has been filled, then, it has been left for 3-4 months, however, provided water in 20 days gap so that the bed kept with consistent moisture for culture of warm habitant.



Fig2: Biodegradable waste



Fig3: (a) bamboo structure (b) brinjal plants management for multilayered farming

C. **Agricultural farming** (Figure 3a-b) in conventional way is in progress to use handmade tools, ancient cultivation techniques, for irrigation and harvesting of seeds and vegetables. Conventional technique of natural farming has been implemented and training has been provided to the peoples to use natural resources to cultivate agro produces in the institute campus. Handmade tools, bamboo pipes, cannel irrigations are used for farming of vegetables.

D. **Preservation of seeds** in conventional process is in progress at NITTTR Kolkata. Quality of seeds are very important to enhance the productivity of crops, vegetables and fruits. We know that in ancient period, there were no modern methods available to protect the seeds of vegetables and corps. However, our ancestors preserve the seeds from humidity and warms by using the conventional method. In near future, NITTTR Kolkata will provide training practiced in ancient period to its peoples to protect the seeds from environmental hazards and maintain the quality.

E. **Conversion of solid waste to liquid manure** (Figure 4) is a naturally fermented products which is widely used in the field of agriculture and provide best result as compared to synthesized chemical fertilizers. In this method, sloid biodegradable products has been converted to liquid manure. In order to prepare liquid manure from solid wastes such as food items cooked or uncooked, jiggery and water etc. are kept in open sunlight to ferment for about 15 Days. Making liquid manure from solid bioorganic wastes is in progress at NITTTR Kolkata.



Fig4: Solid waste material conversion into liquid manure

F. **Water purification by Shahjan plants** in another conventional approach, the NITTTR Kolkata is in a progress to implement. The shahjan plant is very useful and it has great importance in Ayurveda medicine. Due to its inherent medicinal ingredients, the Shahjan plant is very helpful for good health and it can be used for water purification. In near future,

NITTTT Kolkata will use *Shajan Fali* for water purification and evaluate its importance in the field of water cleaning.

Conclusions

The use of significant chemicals in modern days farming can affect human health and ecology. Natural farming by using ancient approach can be a solution to enhance productivity and protect human health. NITTTT Kolkata has adopted the ancient natural farming approaches to successfully grow agro produces which have been distributed (Figure 5) to its ECCS employees, security personnel and executive mess in a good quantity. Cost of natural farming is minimal, however, effective to grow the produces which are tastier as compared to chemically grown vegetables which are largely available in the market.



Fig5: Naturally grown vegetables distributed by the Wife of Honorable Director, NITTTT Kolkata

Miscellaneous

- Prof. Chandan Chakraborty has been invited to join as the Statistical Editor in the board of a peer-reviewed journal - "Indian Journal of Dermatology".
- Prof. Chandan Chakraborty (as Coordinator) and Dr. Indrajit Saha (as Co-Coordinator) with their team successfully organized total FIVE online mentor orientation training programmes under AICTE-NITTTT during December 2020 to April 2021 and ONE mentor training programme for higher educational institutions during 27-Jan to 04-Feb 2021.

- Prof. Jagat Jyoti Mandal was the external expert for evaluation of progress of thesis work Mr. Monirul Mallick as a member of Research Advisory Committee online mode, in Civil Engineering Department, Jadavpur University, 700032, held on 15.02.21
- Prof. Jagat Jyoti Mandal was the external expert for upgradation of Junior Research Fellow Ms. Srijani Seth of Civil Engineering Department, IEST, Shibpur to Senior Research Fellow held on 12.03.21
- Dr Santanu Bhanja acted as an External Expert for assessment of Progress Report and finalization of Examiners for PhD theses of a number of PhD scholars of CE Department of IEST, Shibpur.
- Prof. Dipankar Bose has attended as BoG Nominee of the 11th virtual meeting of the Building and Works Committee of Ghani Khan Choudhury Institute of Engineering and Technology (GKCEIT) (A Centrally Funded Technical Institute under Ministry of Education, Govt. of India, Malda, West Bengal) on 25th January 2021.
- Prof. Dipankar Bose has attended the virtual meeting of API Committee of the Department of Printing Engineering, Jadavpur University for verification of CAS Applications of Faculty Members on 04.02.2021 as an External Member.
- Prof. Dipankar Bose has attended a meeting of the Ph.D. Research Committee of Production Engineering Department of Jadavpur University on 20.03.2021 as an External Member.
- Dr Santanu Bhanja acted as an External Expert for assessment of Progress Report and finalization of Examiners for PhD theses of a number of PhD scholars of CE Department of IEST, Shibpur.

Research Highlight: The in silico research of Dr. Indrajit Saha on SARS-CoV-2 virus has been recognized by the funding agency, Science and Engineering Research Board (SERB), Govt. of India and subsequently highlighted in STRIDES, Vol. 1, Issue 12 of DST's newsletter as well as published in newspaper like DNA. <https://www.dnaindia.com/india/report-in-a-first-indian-scientists-prepare-web-based-covid-19-predictor-to-track-viral-sequences-global-genetic-variability-2842774>

Conferences /Training/Programme attended:

1. Dr. Subrata Mondal (nominated by Ministry of Education, Government of India) completed an online regional programme on "Innovation in TVET Management" held from March 22-26, 2021,

organized by the Colombo Plan Staff College for Technical Education, Manila, Philippine.

2. Dr. Rayapati Subba Rao has attended International Conference on Materials Manufacturing and Modelling (ICMMM - 2021), VIT University, Vellore, March 2021.

SWAYAM MOOC

Course Name: Problem Based Learning
Coordinators : Dr. Indrajit Saha, Dr Arpan Kumar Mandal, Dr Kinsuk Giri, Dr Sagarika Pal
Category: Teacher Education
Learners Enrolled : 432
This is an AICTE approved FDP course
Start Date: 31/01/2021,
End Date: 12/04/2021

Course Name: Academic and Research Report writing
Coordinators: Dr Samir Roy, Dr R Subbarao & Dr Kinsuk Giri
Category : Teacher Education
Learners Enrolled : 8146
This is an AICTE approved FDP course
Start Date: 31/01/2021, End Date: 12/04/2021

Faculty Development Programmes (FDPs) conducted

1. Prof. Urmila Kar conducted a special six-day online FDP (Phase 1) on “NBA Awareness” sponsored by AICTE-ISTE from 18-23 January , 2021 for Lunglei Polytechnic, Lunglei, Mizoram.
2. Prof. Urmila Kar conducted a special six-day online FDP (Phase 3) on “NBA Awareness” sponsored by AICTE-ISTE from 15-20 February , 2021 for Lunglei Polytechnic, Lunglei, Mizoram.

List of educational resources developed during the period by LRC

Sixty-two numbers (62) video were prepared for MOOC based program “Essentials of Pedagogy for Technical Teachers, P-I & P-II” (M 9 & M10).

Beside these sixteen numbers (16) lecture based videos were recorded for telecasting on Gyan Darshan Channel during this period.

Observation of NITTTR, Kolkata foundation day on January 11, 2021

The Institute celebrated its 57th Foundation Day on 11th January 2021. The function commenced by the hosting of the National Flag and the singing of the national anthem. Formal inauguration of the programme was done by lighting of lamp in the Netaji

Subhas Chandra Bose Auditorium by the Director and other faculty members. Shri Harshavardhan Neotia, Chairman of the Board of Governors was the Chief Guest at the function. The Director, Prof. Debi Prasad Mishra, in his address to the faculty, staff, ex-employees and students through virtual mode, highlighted the institutional achievement and future aspect of the Institute. A short film on the Institute’s activities was displayed which was prepared by the Learning Resource Centre. The Chairman, Board of Governors appreciated the institutional achievement amid pandemic situation of COVID-19. The Institute also recognized the employees who completed continuous service of 25 years in the Institute. The programme ended with a cultural programme. The entire programme was coordinated by Dr. Habiba Hussain, Associate Professor of the Institute.



Observing Birth anniversary of Netaji Subash Chandra Bose on January 23, 2021

Netaji Subhas Chandra Bose's birth has been declared as 'Parakram Divas' by the Government of India. The Institute celebrated the birth anniversary of Netaji Subhas Chandra Bose on 23rd January 2021. The Director, Prof. Debi Prasad Mishra garlanded the portrait of Netaji Subhas Chandra Bose in presence of the faculty and staff of the Institute. Then the Director addressed through virtual mode all the employees and students to remember Netaji in the true earnest and paid his reach tribute to the martyrs who laid down their lives for the free of India. The entire programme was organized by Prof. Soumitra Kumar Mandal and Shri Anup Kumar Saha.



Observation of Republic Day on January 26, 2021.

The 72nd Republic Day of India was celebrated in the Institute in a grand manner on 26th January 2020 on hybrid mode. The day started with National Flag hoisting by the Director of the Institute, Prof. Debi Prasad Mishra and singing the national anthem in chorus in presence of the faculty members, staff. The Director of the Institute addressed the

gatherings. Faculty members, staff and students participated in the programme actively.



Martyrs' Day

As per the directives received from the administrative ministry i.e., Ministry of Education, Department of higher Education, Government of India vide its letter F. No. 4-1/2021-TS.IV dated 27th January 2021, the Institute observed the Martyrs' Day on the scheduled day and time i.e., Saturday, the 30th January 2021 at 11:00 am onwards on virtual mode. 2 Minutes silence from 11:00 am to 11:02 am observed in the memory of Matyar's Day. The Director-in-Charge, Prof. Prasanta Sarkar addressed the gathering by paying his tribute to

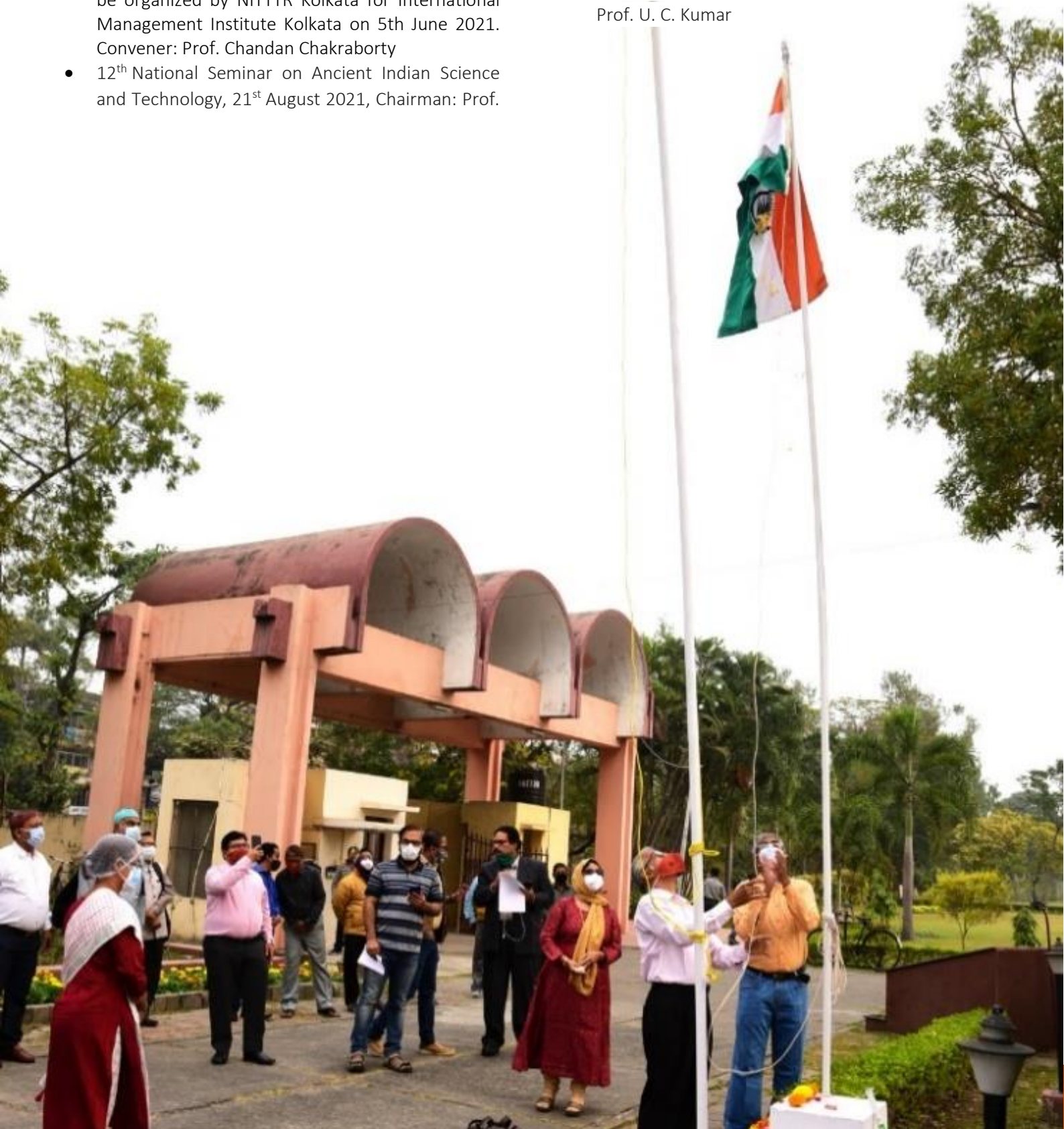
the martyrs who laid down their lives for the freedom struggle. Students, members of staff and faculty also addressed the gatherings with homage to Bapu and those martyrs who laid their lives throughout the prolonged the struggle to free India.

Upcoming Events

- ICT Special (Online) Workshop: “Instructional Strategies for New Teaching-Learning Paradigm”, to be organized by NITTTR Kolkata for International Management Institute Kolkata on 5th June 2021. Convener: Prof. Chandan Chakraborty
- 12th National Seminar on Ancient Indian Science and Technology, 21st August 2021, Chairman: Prof.

Debi Prasad Mishra and Coordinator: Dr. Subrata Mondal

- A 2-day National Conference on Engineering Education (NCEE 2021) will be held on 11th & 12th November 2021, in online mode.
- Online workshop on Talent Search for polytechnic students of North Eastern States. Proposed date: 14th August, 2021
- Webinar on "Construction and Maintenance of Sustainable Rural Roads" to be organized by Department of Civil Engineering, NITTTR, Kolkata on 31st July 2021, Coordinators: Prof. J. J. Mandal & Prof. U. C. Kumar



**“Man is made by his belief.
As he believes, so he is.”**

-- Bhagavad Gita (17.3)

NATIONAL INSTITUTE OF TECHNICAL TEACHERS' TRAINING AND RESEARCH, KOLKATA

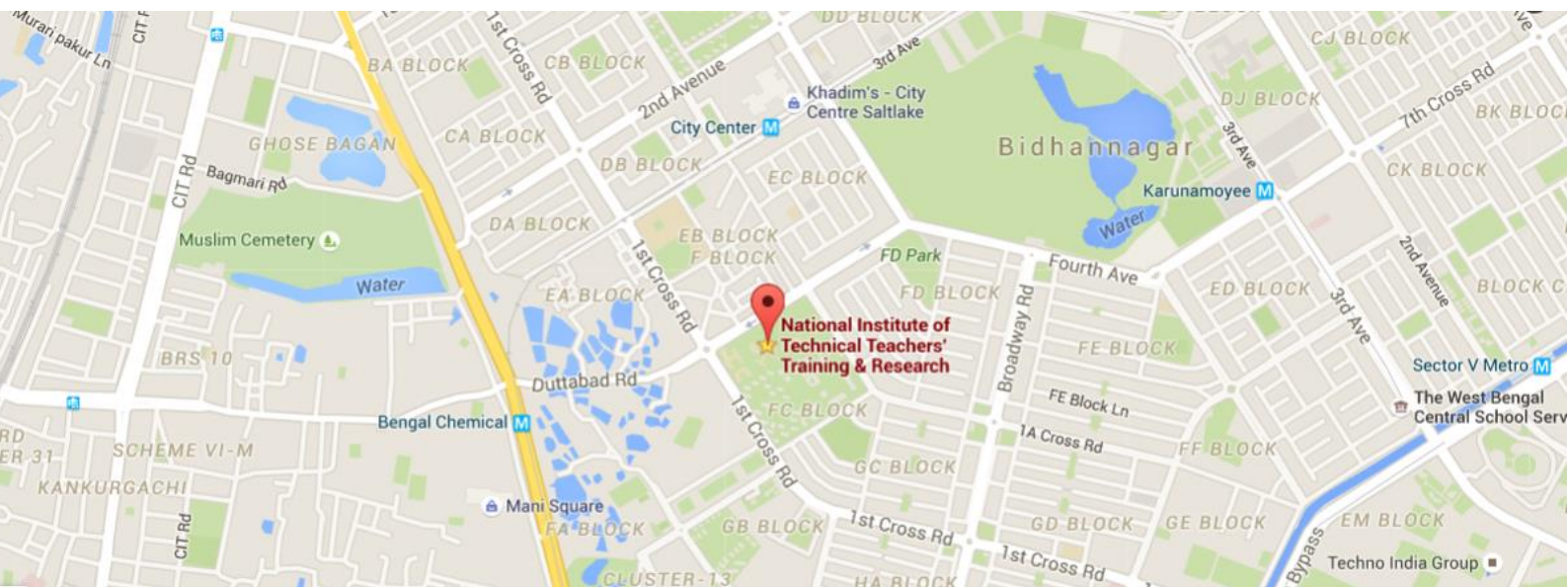
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How to Reach NITTR, Kolkata

The Institute is located near Labony Bus Stand (Sector-III), FC Block in Salt Lake City, Kolkata 700106 and can be reached by taxi from Netaji Subhas Chandra Bose International Airport and also from Howrah, Shalimar, Sealdah and Kolkata Railway Stations.



Distance:

- From Howrah Railway Station: **42 min** (8.1 km) via Maniktala Main Road
- From Sealdah Station: **26 min** (7.4 km) via Beliaghata Main Road and Broadway Road
- From Kolkata Railway Station: **16 min** (4.8 km) via Canal Circular Road
- From Shalimar Station: **38 min** (18.8 km) via Parama Island Flyover
- From Netaji Subhas Chandra Bose International Airport: **27 min** (11.5 km) via Kazi Nazrul Islam Sarani/VIP Road

Google map link: <https://goo.gl/maps/F7gssJoeqxSvffqf9>

NITTR, Newsletter Committee

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