

National Institute of Technical Teachers' Training and Research, Kolkata

Newsletter



Vol. 12, No. 03

A Quarterly Newsletter

October - December, 2020

Message from Director



I am pleased apprise all of you that that our institute is comping up well in terms of regular activities with new vigour and vitality after a long lull due to petrifying pandemic situation across the globe. Under the dark spell of fear and anxieties due to Pandemic COVIND 19, fortunately, we have taken up these challenges bravely, of course, with initial hiccups but muster courage to go back to the ancient Indian wisdom of Aatmanirbhar (self-reliance) which is still lurking on the inner recess of our mind. The traditional Indian culture was based on basic principle of self-reliance, sustainability and nature centric not man and market centric which we have copied off late from western culture in the name of modernization and globalization. We need to revive and revitalize our ancient village culture which is sustainable and self-reliance as it is innate to the ancient Indian way of life. It is hearting to note that the government of India has formulated requisite policy and programs recently for making Aatmanirbhar Bharat in order to overcome the problems of pandemic situations in future. Some people misinterpret the concept Aatmanirbhar as self-independent and argued to be self-centered. Rather the concept of Aatmanirbhar (self-reliance) can bring up a sense of sustainability, cooperation and eco-friendliness as people can utilize the local materials, skills and crafts for meeting the local needs rather than depending on the others exotic and extraneous resources. That does not mean that we will be getting isolated and estranged from the world around us as our scripture says:

आ नो भद्राः क्रतवो यन्तु विश्वतोऽदब्धासो अपरितासउद्भिदः। Rig Veda, 1-8

Let noble thoughts come to us from every quarter, unchanged, unhindered, undefeated in every way. As an emerging institute in the field of technical teachers training, we need to make our institute self-reliant at least in the field of technology and other services. We have already initiated the process of producing certain products namely masks, leg operated sanitizer dispenser, Institute logo, sanitizer and others. An effort has been made to convert the biodegradable materials into manure that can be used as fertilizers for creating greenery and gardens in the campus. I take this opportunity to call upon all of you to rebuild and rejuvenate our institute by inculcating the true sense of Aatmanirbhar (self-reliant) in most of the aspects at least in expertise of our domain knowledge. Our scripture says that

ॐ शांतिः शांतिः शांतिः

Prof. Debi Prasad Mishra *Director, NITTTR, Kolkata*

NEP 2020: Few Highlights in Higher Education

S.K.Naskar

Associate Professor, Education & Management NITTTR, Kolkata

Introduction

The Indian government replaced the old National Policy on Education, framed in 1986, with the New Education Policy of 2020 on last July 2020. The policy is a comprehensive framework for elementary education to higher education as well as vocational training in both rural and urban India.

It is expected that India should achieve its proper place in the world – both as an economic and 'knowledge' superpower through this policy which is based on firmly rooted in the ethos, culture and values of 'ancient India'. The vision of the Policy clearly states, "The National Education Policy envisions an education system rooted in Indian ethos that contributes directly to transforming India, that is Bharat, sustainably into an equitable and vibrant knowledge society, by providing high-quality education to all, and thereby making India a global knowledge superpower."

Among various changes in India's education policy, major aims of present policy to increase state expenditure on education from around 4% to 6% of the GDP as soon as possible. Policy ensure that no one will be forced to study any particular language and that the medium of instruction will not be shifted from English to any regional language it is up to the states, institutions, and schools to decide on the implementation. Policy highlights importance of mother tongue and regional languages; medium of instruction until class 5 and preferably beyond should be in these languages. Sanskrit and foreign languages will also be given emphasis. A comprehensive language strategy would expected to be released through National Curriculum Framework in near future keeping in view that 60 years ago there were institutions which had implemented this reform of language such as Sardar Patel Vidyalaya. The policy proposes new language institutions such as the Indian Institute of Translation and Interpretation and the National Institute/ Institutes for Pali, Persian and Prakrit along with establishment of other bodies proposed include the National Mission for Mentoring, National Book Promotion Policy, National Mission on Foundational Literacy and Numeracy.

Highlights in Higher Education

In respect of higher education, policy suggests establishment of Higher Education Commission of India (HECI) as a single overarching umbrella body for entire higher education, excluding medical and legal education. Public and private higher education institutions will be governed by the same set of norms for regulation, accreditation and academic standards. Government will phase out the affiliation of colleges in fifteen years and granting graded autonomy to be given the colleges by developing a stage-wise mechanism.

Few structural changes in higher education such as a 4year multi-disciplinary bachelor's degree in an undergraduate programme with multiple exit options which will emphasise the introducing flexibility in education in line proper pace of students, overcoming the barrier of traditional rigid system. Government will establish an Academic Bank of Credit (ABC) for digitally storing academic credits earned from different Higher Educational Institutes (HEIs) so that these can be transferred and counted towards final degree earned. This mechanism will include professional and vocational areas also and will be implemented in the following manner:

- A certificate after completing 1 year of study
- A diploma after completing 2 years of study
- A Bachelor's degree after completion of a 3-year programme
- A 4-year multidisciplinary Bachelor's degree (the preferred option)

Policy also suggests that all HEIs will have the flexibility to offer different Master's programmes for example a 2-year programme with the second year devoted entirely to research for those who have completed the 3-year Bachelor's programme; for students completing a 4-year Bachelor's programme with Research, there could be a 1-year Master's programme; and there may be an integrated 5-year Bachelor's/Master's programme.

As mentioned above, a Higher Education Council of India (HECI) will be set up to regulate higher education. The council's goal will be to increase gross enrolment ratio. The HECI will have 4 verticals:

- National Higher Education Regulatory Council (NHERC), to regulate higher education, including teacher education, while excluding medical and legal education.
- 2. National Accreditation Council (NAC), a "metaaccrediting body".
- 3. Higher Education Grants Council (HEGC), for funding and financing of universities and colleges.

This will replace the existing <u>National Council for</u> <u>Teacher Education</u>, <u>All India Council for Technical</u> <u>Education</u> and the <u>University Grants Commission</u>.

 General Education Council (GEC), to frame "graduate attributes", namely the learning outcomes expected. It will also be responsible in framing a National Higher Education Qualification Framework (NHEQF). The <u>National Council for</u> <u>Teacher Education</u> will come under the GEC, as a Professional Standard Setting Body (PSSB).

Establishment of other Professional Standard Setting Bodies will include professional councils such Veterinary Council of India, Council of as Indian Architecture, Council of Agricultural **Research** and National Council for Vocational Education and Training to look after the respective domain of education. For conducting entrance examinations for admissions to universities across the country, the National Testing Agency will now be given additional responsibility in addition to conduct JEE Main and NEET. Assessments of educational approaches in undergraduate education will integrate the humanities and arts with Science, Technology, Engineering and Mathematics (STEM).

Model public universities for holistic and multidisciplinary education, at par with IITs, IIMs, etc., called MERUs (Multidisciplinary Education and Research Universities) will be set up and will aim to attain the highest global standards in quality education. HEIs will focus on research and innovation by setting up start-up incubation centres; technology development centres; greater industry-academic linkages; and interdisciplinary research including humanities and social sciences research. Given the scenario of epidemics and pandemics, it is expected that HEIs take the lead role to undertake research in areas of infectious diseases, epidemiology, virology, diagnostics, instrumentation, vaccinology and other relevant areas. In research, one of the major recommendations is that all HEIs will practice high quality interdisciplinary research across fields that must be done in India and cannot simply be imported; the ability to conduct one's own research also enables a country to much more easily import and adapt relevant research from abroad. Establishment of a National Research Foundation (NRF) to this end as suggested by the Government with the following primary activities:

- To fund competitive, peer-reviewed grant proposals of all types and across all disciplines;
- To seed, grow, and facilitate research at academic institutions, particularly at universities and colleges where research is currently in a nascent stage, through mentoring of such institutions;

- To act as a liaison between researchers and relevant branches of government as well as industry, so that research scholars are constantly made aware of the most urgent national research issues, and so that policymakers are constantly made aware of the latest research breakthroughs; so as to allow breakthroughs to be optimally brought into policy and/or implementation; and
- To recognise outstanding research and progress done by HEIs

For effective implementation of new National Policy on Education it is expected all Higher Educational Institutes (HEIs) should:

- Provide more financial assistance and scholarships to socio-economically disadvantaged students.
- Conduct admissions processes more inclusive.
- Make curriculum more inclusive.
- Increase employability potential of higher education programmes.
- Develop more degree courses taught in Indian languages and bilingually.
- Develop bridge courses for students that come from disadvantaged educational backgrounds.
- Provide socio-emotional and academic support and mentoring for all such students through suitable counselling and mentoring programmes.

Conclusion

2020, the year characterized by many uncertainties reminded us how the world changed this year and life came to a standstill. We have witnessed major unprecedented events till now, with one leading to the other. National Education Policy 2020, perhaps the one of the major positive breakthroughs which was not only anticipated but rather necessary. This is a landmark change by the Indian Government, as they have replaced the 34-year-old National Policy on Education, which was framed in 1986, with the New Education Policy of 2020.

The National Education Policy 2020 has been introduced at the right time, to complement the process and vision of creating quality institutions, a culture of innovation, and a highly skilled workforce. It is the proper time that we initiated a process to transform the Educational Institutions in India, and provide them the ability to attain a certain level, that they can be compared to the likes of the best in the world.

Reference:

NEP -2020: <u>https://www.education.gov.in/ sites/upload files/</u> mhrd/files / NEP Final English 0.pdf

https://www.thenewleam.com/2020/09/understanding-thenational-education-policy-2020-nep-the-first-glimpse/ https://www.mindler.com/blog/national-education-policy https://www.livemint.com/education/news/new-education-policyfive-big-changes-in-school-higher-education-explained

Teachers' Training

36.

37.

38.

39.

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41.

42.

Ranjan Dasgupta

Sheela Yadav Rai

Soumitra Kumar Mandal

Dipankar Bose

Subrata Mondal

Mithu Dey

Sagarika Pal

During the period of October to December 2020, a total of 2876 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 88 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.

SI. Programme Co-ordinator(s) Prog. **Programme Title** From То No. Code 1. Dipankar Bose ICT142 Engineering Metrology 05/10/2020 09/10/2020 09/10/2020 2. Habiba Hussain ICT143 Teaching Skill Development 05/10/2020 3. Mithu Dey ICT144 Organizational Behaviour 05/10/2020 09/10/2020 4. Sagarika Pal ICT145 Measurement and Control for Industrial Automation 05/10/2020 09/10/2020 5. Samiran Mandal ICT146 Introduction to Robotics 05/10/2020 09/10/2020 6. Subrata Mondal ICT147 Development of Laboratory Instruction and Manual 05/10/2020 09/10/2020 7. Arpan Kumar Mondal ICT148 ICT Tools for Teaching and Learning 05/10/2020 16/10/2020 Rajeev Chatterjee & Ranjan ICT149 Design and Development of content for e-Learning 05/10/2020 16/10/2020 8. Dasgupta 9. Urmila Kar ICT150 Induction Training (Phase I and Phase II) 05/10/2020 16/10/2020 ICT151 10. Chandan Chakraborty Introduction to Data Science and Machine Learning 12/10/2020 16/10/2020 11. Indrajit Saha ICT152 Image Processing using MATLAB 12/10/2020 16/10/2020 12. Jagat Jyoti Mandal ICT153 Structural Design Aspects of Shallow Foundation 12/10/2020 16/10/2020 13. ICT154 12/10/2020 16/10/2020 Prasanta Sarkar Engineering Capstone Course 14 ICT155 16/10/2020 Rayapati Subbarao **NBA** Accreditation 12/10/2020 ICT156 15. Sheela Yadav Rai 12/10/2020 16/10/2020 Induction Training Subrata Chattopadhyay ICT157 Utilization of Instructional Media and CAI in Effective 16. 12/10/2020 16/10/2020 Teaching 17. Uday Chand Kumar ICT158 Occupational Health and Safety 12/10/2020 16/10/2020 18. Subrata Mondal ICT159 Advanced Materials Science and Engineering 12/10/2020 16/10/2020 19. Nirmal Kumar Mandal ICT160 CAD/CAM 19/10/2020 23/10/2020 20. Soumitra Kumar Mandal ICT161 Power Electronics & Power System Using MATLAB 19/10/2020 23/10/2020 21. Sukanta Kumar Naskar ICT162 Modern Office Management 19/10/2020 23/10/2020 22. Mithu Dey ICT163 Professional Ethics and Sustainable Development 26/10/2020 31/10/2020 23. Arpan Kr. Mondal, Indrajit Saha, ICT164 Hybrid Pedagogy 02/11/2020 06/11/2020 Sagarika Pal, Kinsuk Giri 24. Jagat Jyoti Mandal ICT165 Analysis and Design of Reinforced Concrete Combined 02/11/2020 06/11/2020 footings 25. Nirmal Kumar Mandal ICT166 Development of Laboratory Instruction and Manual 02/11/2020 06/11/2020 26. Habiba Hussain ICT167 Student Mentorship 02/11/2020 06/11/2020 27. Sukanta Kumar Naskar ICT168 Institutional Development 02/11/2020 06/11/2020 Uday Chand Kumar ICT169 02/11/2020 06/11/2020 28. Induction Training ICT170 02/11/2020 06/11/2020 29. Samiran Mandal Introduction to Automobile Engineering 02/11/2020 NBA Accreditation and SAR Preparation (for the State of 06/11/2020 30. Rayapati Subbarao ICTSPL Tripura) Sailendra Nath Mandal Testing of Drinking Water and Ambient Air 02/11/2020 13/11/2020 31. ICT171 32. Santanu Bhanja ICT172 Structural Design of Lateral Load Resisting Elements and 09/11/2020 13/11/2020 their Foundations 33. Chandan Chakraborty ICT173 Creative Problem Solving, Innovation and Meaningful R & 09/11/2020 13/11/2020 D 34. Prasanta Sarkar ICT174 Control System Analysis and Design with MATLAB 09/11/2020 13/11/2020 35. Rajeev Chatterjee ICT175 Mobile and Wireless Network 09/11/2020 13/11/2020

List of Training Programmes (October to December 2020)

Newsletter, National Institute of Technical Teachers' Training and Research, Kolkata, Block-FC, Sector-III, Salt Lake City, Kolkata-700106

Programming and Automation using PLC

PLC & LABVIEW Applications in Engineering

Fundamental and Applications of Nanomaterials

Community Development through Technical Institutes

Advanced structural analysis and introduction to FEM

Topics on DBMS

Instructional Planning

ICT176

ICT177

ICT178

ICT179

ICT180

ICT181

ICT182

09/11/2020

09/11/2020

09/11/2020

09/11/2020

09/11/2020

09/11/2020

16/11/2020

13/11/2020

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20/11/2020

40	Kin ault Cini	ICT104	Interduction to DVTHON Decomposition	10/11/2020	20/11/2020
43.	Kinsuk Giri	ICT184	Introduction to PYTHON Programming	16/11/2020	20/11/2020
44.	Nirmal Kumar Mandal	ICT185	Engineering System Modelling	16/11/2020	20/11/2020
45.	Samir Roy	ICT186	Artificial Intelligence	16/11/2020	20/11/2020
46.	Dipankar Bose	ICT187	Non-conventional Machining Processes	23/11/2020	27/11/2020
47.	Indrajit Saha	ICT188	Machine Learning and It's Applications	23/11/2020	27/11/2020
48.	Jagat Jyoti Mandal	ICT189	An Introductory Course on Geotechnical Engineering	23/11/2020	27/11/2020
49.	Mithu Dey	ICT190	Structural Analysis using Software	23/11/2020	27/11/2020
50.	Nimal Kumar Mandal & Sukanta	ICT191	Problem Solving and Decision Making	23/11/2020	27/11/2020
51.	Kumar Naskar Rayapati Subbarao	ICT193	How to Write Thesis and Research Paper	23/11/2020	27/11/2020
51.	Sagarika Pal	ICT193	Induction Training	23/11/2020	27/11/2020
52.	Sheela Yaday Rai	ICT 194	Estimating & Costing of Non-conventional Energies	23/11/2020	
					27/11/2020
54.	Soumitra Kumar Mandal	ICT196	Solar PV System: Operation & Control	23/11/2020	27/11/2020
55.	Subrata Chattopadhyay	ICT197	Power Plant Instrumentation	23/11/2020	27/11/2020
56.	Urmila Kar	ICT199	National Education Policy (NEP) 2020 – Reforms in Higher Education	23/11/2020	27/11/2020
57.	Chandan Chakraborty	ICT200	Statistics and Data Analysis using SPSS	23/11/2020	27/11/2020
58.	Subrata Mondal	ICT201	Entrepreneurship Development	23/11/2020	27/11/2020
59.	Uday Chand Kumar	ICT202	Fundamentals of Surveying	23/11/2020	27/11/2020
60.	Santanu Bhanja	ICT203	Design of Earthquake Resistant RC Buildings as per IS:1893 Part 1–2016 and IS:13920-2016	30/11/2020	04/12/2020
61.	Rajeev Chatterjee & Samir Roy	ICT204	Object Oriented Design & Programming in C++	30/11/2020	11/12/2020
62.	Arpan Kumar Mondal, Indrajit	ICT205	Problem Based Learning	07/12/2020	11/12/2020
	Saha, Sagarika Pal, Kinsuk Giri		Ŭ		
63.	Chandan Chakraborty	ICT206	Research Methodology and its Data Analysis using SPSS	07/12/2020	11/12/2020
64.	Prasanta Sarkar	ICT207	Application of MATLAB in Engineering	07/12/2020	11/12/2020
65.	Rayapati Subbarao	ICT208	NBA Accreditation	07/12/2020	11/12/2020
66.	Samiran Mandal	ICT209	Assessment and Evaluation of student's Performance	07/12/2020	11/12/2020
67.	Sukanta Kumar Naskar	ICT210	Essentials of HRM	07/12/2020	11/12/2020
68.	Urmila Kar	ICT211	Research Methodology	07/12/2020	11/12/2020
69.	Sheela Yadav Rai	ICT212	Renewable Energy Sources and Emerging Technologies	07/12/2020	11/12/2020
70.	Urmila Kar	SPL02	Outcome Based Education in the context of Online Teaching	15/12/2020	17/12/2020
71.	Dipankar Bose	ICT213	Hydraulics and Pneumatics	14/12/2020	18/12/2020
72.	Habiba Hussain	ICT214	Pedagogical Communication	14/12/2020	18/12/2020
73.	Jagat Jyoti Mandal	ICT215	An Introductory course on Soil Structure Interaction	14/12/2020	18/12/2020
74.	Nirmal Kumar Mandal	ICT216	Optimization with MATLAB	14/12/2020	18/12/2020
75.	Sagarika Pal	ICT217	Process Control and Automation	14/12/2020	18/12/2020
76.	Sailendra Nath Mandal	ICT218	Wastewater Characterisation and Management	14/12/2020	18/12/2020
77.	Santanu Bhanja	ICT219	Course on Commentary for Code on Plain and Reinforced	14/12/2020	18/12/2020
		101210	Concrete - IS:456-2000 with Amendments	1 1/ 12/ 2020	10/12/2020
78.	Soumitra Kumar Mandal	ICT220	Refresher course on Microprocessors & Microcontrollers	14/12/2020	18/12/2020
79.	Subrata Mondal	ICT221	Laboratory Safety Management	14/12/2020	18/12/2020
80.	Sukanta Kumar Naskar	ICT222	HRD through Training and Development	14/12/2020	18/12/2020
81.	Uday Chand Kumar	ICT223	Disaster Management	14/12/2020	18/12/2020
82.	Arpan Kumar Mondal & Ranjan	ICT224	NBA accreditation issues	14/12/2020	18/12/2020
	Dasgupta				·
83.	Rajeev Chatterjee	ICT225	Network Infrastructure Management	21/12/2020	01/01/2021
84.	Rayapati Subbarao	ICT226	Thesis and Research paper writing	28/12/2020	01/01/2021
85.	Samiran Mandal	ICT227	Concept Mapping in Teaching Learning	28/12/2020	01/01/2021
86.	Mithu Dey	ICT228	AutoCAD for Engineers	28/12/2020	01/01/2021
87.	Subrata Chattopadhyay	ICT229	Utilization of Instructional Media and CAI in Effective	28/12/2020	01/01/2021
			Teaching		
88.	Sheela Yadav Rai	ICT230	Induction Training	28/12/2020	01/01/2021

Seminars

6th Regional (online) Workshop on Technical Education System of Polytechnics Focusing on North Eastern States on 5th Oct, 2020, at NITTTR, Kolkata

NITTTR, Kolkata has been organising Regional Workshop on Technical Education for the states of North-Eastern Region of India since 2015 and five such workshops have already been conducted in different parts of North Eastern Regions.



The 6th Regional Workshop on Technical Education System was scheduled to be held at Agartala, Tripura during April 2020 which could not be materialised due to prevailing pandemic of COVID-19 environment. However, the said workshop was conducted through online mode on 5th October 2020.

Around 90 participants from different Polytechnics and Directorates of the North Eastern Region were participated in the said workshop. In the inaugural session, Honourable Director of NITTTR, Kolkata, welcomed the Chief Guest and Guest of Honour and the participants of the workshop. In his welcome address, he highlighted some specific issues of Technician Education System of North Eastern Region. He suggested that by rejuvenating its own culture and heritage of North Eastern States may take the leading role in Technical Education System of the Country. He also highlighted the importance of Humanistic Entrepreneurship a new concept developed by him which is based on rich Indian Culture and Heritage.

During the inaugural speech by the Honourable Chief Guest of the Workshop, Sri Saju Vaheed A.- I.A.S, Director of Higher Education, Govt. of Tripura mentioned strong bondage between states with NITTTR.. He also mentioned people of N.E. Region are happy and satisfied with small things with positive attitude. In terms of utilising ICT tools for Teaching Learning purposes Tripura is doing well compare to other states. He suggested that diploma institutions should focus on developing Soft Skills along with development of Professional skills.

The Guest of Honour of the Workshop Shri Amit Halder a Senior Consultant of Tata Consultancy Services (TCS) focused on Digital Transformation and its integration to the Technical Educations System. He also stressed upon the development and use of Appropriate Technology for the rural people and Polytechnic Education System may be considered as an important agent to this endeavour.

Prof. U. C. Kumar and Dr. R. SubbaRao of NITTTR, Kolkata made presentations on achievement of NITTTR, Kolkata for the last academic year and importance of NBA for diploma courses respectively.

At last during the Panel Discussion, panellist from NITTTR, Kolkata discussed at length the use of Information and Communication Technology (ICT) at Polytechnics of N.E. States. They have mentioned lack of internet facility is not the only problem to implement ICT enabled learning in Polytechnics. Some others issues are their particularly Positive Attitudes of Teachers and Students to use ICT tools appropriately. All the panellists agreed that physical mode can never be replaced with ICT mode in Teaching Learning purpose.

National Seminar on Ancient Indian Education System on 11^{th} and 12^{th} November 2020 at NITTTR Kolkata

A two-day national seminar on Ancient Indian Education System was organised by NITTTR, Kolkata and held online on 11th & 12th November 2020.

On 11th November, 2020, Hon'ble Minister of Education, Govt. of India, Shri Ramesh Pokhriyal 'Nishank' inaugurated the seminar on 11th November.



Shri Ramesh Pokhriyal 'Nishank', Hon'ble Minister of Education, Govt. of India, addressing the seminar

Professor Debi Prasad Mishra, the Director of the Institute, welcomed the honourable Minister and other dignitaries, academicians and all participants. He explained the background and purpose of the seminar. Eminent industrialist and Chairman, Board of Governors of NITTTR, Kolkata, Mr. Harshavardhan Neotia, delivered his welcome address.



Professor Debi Prasad Mishra, the Director of the Institute giving the welcome address



Padma Shree Harshavardhan Neotia, delivering his address



The Guest of Honour, Dr. Bhushan Patwardhan, Vice-Chairman, UGC, New Delhi making his deliberation

The Guest of Honour, Dr. Bhushan Patwardhan, Vice-Chairman, UGC, New Delhi, talked about 14 Vidyas and 64 Kalas of ancient Indian education. He referred to the terms "Gurukul" and "Kulguru" and explained that the objective of education has three components, academic, moral / spiritual and social sensibility. He highly appreciated the role of NEP 2020 in building "Naya Bharat" as "Atmanirbhar Bharat" is possible only when we will have "Liberal Education" which is mentioned in NEP 2020.

Hon'ble Minister of Education, GOI, Shri Ramesh Pokhriyal 'Nishank', in his 50 minutes speech, emphasised on all-round development of a person, including the development of body, mind and soul, as the very purpose of education. He said that holistic development of human beings, inspired by the spirit of 'tamso ma jyotirgamaya', was the essence of ancient Indian education system which is lost due to British colonialism. He remembered the great Indian Gurus like Aryabhatta, Baudhayana, Bhaskaracharya, Charaka, Sushruta and their contribution to the world at large. He stressed upon Swami Vivekananda's invaluable insights in education that are still relevant. Unfortunately, he said, due to industrial revolution, advancement in technology, globalisation and privatisation, education has reduced to a foothold to enter into the world of work. In fact, "Manush" becomes "Machine" and most of 21st century learners look up to education as a means to getting a salaried job. Now it is high time to rediscover our glorious past especially in the education sector, so that India can produce true human beings and set examples for others to follow. In this context, he shared that the rich heritage of ancient and eternal Indian knowledge and thought is the guiding light for NEP 2020. He remembered world-class institutions of ancient India such as Takshashila, Nalanda and Vikramshila, that set the highest standards of multidisciplinary teaching and hosted students from the whole world.

He explained "shiksha" to be the linkage of "Tan", "Man" and "Atma" to "Paramatma" and for that, the teachers need to prepare themselves. He told, together we need to build "Shrestha Bharat".

In the two days of the seminar, invited speakers from reputed Institutions deliberated on interesting and relevant topics, like, Education in the Vedic period, Indian education during post-Vedic period, Vocational education in ancient India, Moral & value education in ancient India, Teaching methods in ancient education system, University & higher education in ancient India, Teacher-pupil relationship in ancient Indian education system and so on.

A panel discussion was also held on the second day of the seminar where it was reiterated that teachers should work together with the background of ancient Indian education system to implement the new education system. It was recommended that for educating students, teachers should have moral character and spiritual base otherwise they cannot have influence on the students in overall development of the students. So for implementation of NEP 2020, the correct history of India should be rewritten. Mother tongue should be the medium of education, Sanskrit based Hindi should be the national language to work as a link language. There should be wholehearted effort to gradual modification from western to Indian education system: The new education system should be implemented in phases. The implementation strategy should be based on inputs from continuous research on the education system. We, the practitioners, can take good ideas and practices from ancient Indian education system and western education system.

Mentor Orientation Training Programme

NITTTR Kolkata Organized 1st Mentor Orientation Training Programme of AICTE-NITTT during 30-11-2020 to 04-12-2020 (Coordinator: Prof. Chandan Chakraborty & Co-coordinator: Dr. Indrajit Saha, Computer Science and Engineering)



National Institute of Technical Teachers Training and Research, Kolkata (NITTTR, Kolkata under MoE, Govt. of India) has conducted the first online Mentor Orientation Training Programme (MOTP) for the prospective mentors during 30th November to 4th December 2020. This training programme is in fact a part of the National Initiative for Teacher Technical Training (NITTT) as proposed in the Comprehensive Training Policy for Technical Teachers 2019 of All India Council of Technical Education (AICTE), Govt. of India. The AICTE-NITTT prescribed eight modules developed by NITTTRs for the inductee teachers of technical institutions through faculty induction programme (FIP). The said MOOC based training modules are presently available on the SWAYAM platform and are mandatory for newly inductee teachers who have joined AICTE approved institutes across the country. During faculty induction programme (FIP), inductee teachers are

expected to work under trained mentors; under this backdrop MOTP for the prospective mentors has been arranged by NITTTR Kolkata for 5-days programme.

On 30th Nov 2020, the academic programmes were started with an inauguration function in presence of the Chief Guest of the programme Prof. Virendra Kumar Tewari, Director IIT, Kharagpur and the esteemed dignitaries Prof. Debi Prasad Mishra, Director-NITTR Kolkata, Prof. S N Panda, Director-NITTR Chennai, Prof. S S Pattnaik, Director-NITTR Chandigarh and Prof. C Thangaraj, Director-NITTR Bhopal. Prof. Mishra, the Director of NITTR, Kolkata, welcomed all and addressed to the august gathering by highlighting the importance of such Orientation Training Programme for mentors as well as appreciating the initiatives taken by Ministry of Education (MOE) particularly for developing NEP 2020 which needs a vigorous way to implement it.



Prof. Tewari, Director, IIT Kharagpur also acknowledged the contributions of NITTTRs for the nation in various ways with limited resources and opined that Government should give due importance. He also mentioned that after a long period of time government has proposed a holistic and inclusive policy through NEP 2020. He acknowledged the initiatives by NITTTRs to be part of national mission for mentoring. Similarly, other Directors of NITTTR system expressed their views in the same direction. In the first academic session, the perspective of mentorship, types of mentorship and systematic way of mentoring etc were discussed initially. Thereafter in each session, eight modules were elaborately presented by the module coordinators from all the NITTTRs. The final academic session ended with the Industrial Training where its importance for the mentee teachers was discussed. The mentors, basically senior professors only at associate and professor levels of various AICTE institutions nominated by their head of the institutions, have participated in all 5-days MOTP where overwhelming feedback have been received about their learning experience and conduct of the programme by NITTTR Kolkata. The mentors were from around 14 states of the country. Finally, in the valedictory function, Prof. M. P. Poonia, Vice Chairman,

AICTE was present as the chief guest along with Prof. Debi Prasad Mishra, Director, NITTTR, Kolkata and Prof. Prasanta Sarkar and Prof. Samir Roy from NITTTR, Kolkata. Director NITTTR Kolkata welcomed the chief guest and discussed the future role of mentor for developing mentee to build a sustainable technical education system. Similarly, the chief guest Prof. Poonia highlighted the requirement of eight modules for mentee teachers and role of mentors. He has given many examples in this regard during his talk in order to explain the character building of mentee teachers. He has also mentioned that this kind of Faculty Induction Program is new in the world. On the other hand, Prof. Prasanta Sarkar and Prof. Samir Soy of NITTTR Kolkata mentioned the structure and presentation of whole program during last five days. The valediction was ended with vote of thanks by Prof. Chandan Chakraborty, Coordinator of the ACITE-NITTT Mentor Training Programme.

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

A. In programmes organized by NITTTR, Kolkata

- 151st birth anniversary celebration of Mahatma Gandhi and 116th birth anniversary celebration of Lal Bahadur Shastri, on 02-10-2020 at 11:30 am (Web)
- 6th Regional online Workshop on TECHNICAL EDUCATION SYSTEM of POLYTECHNICS Focusing on North Eastern States on 5th October 2020 at 8:00 am to 5:30 pm by Dr Sukanta Kumar Naskar and Dr. Indrajit Saha
- 3. Jan Andolan for COVID-19 and pledge taking Ceremony on 9th October, 2020 at 5:00 pm
- (Webinar) National Seminar on Ancient Indian Education System on 11th and 12th November 2020 Dr. Habiba Hussain
- 5. Observance of Constitution Day (Online) on 26th November, 2020 by Dr. Dipankar Bose
- 6. Mentor Training Programme (online) on 30 November to 4 December, 2020 by Dr. Chandan Chakraborty
- 7. Fit India Movement: Activities on 8th, 15th, 18th and 30th December 2020 by Rayapati Subbarao

B. In programmes organized by other institutions

- Vaishwik Bharatiya Vaigyanik Summit (VAIBHAV) 10th Oct. 2020 at 6:30 pm organised by Jawaharlal Nehru University
- Webinar on Ancient Indian Technology on 17th Oct.
 2020 at 4:00 pm Chief Speaker: Prof. Debi Prasad Mishra, organised by B. P. Mandal College of Engineering, Madhepura, Department of Science and Technology Govt. of Bihar
- Two week National webinar on Recent Advancement on Mechanical Engineering Topic on Relevance of Personality Development for Modern Youth on 7th November, 2020 at 6 pm to 7 pm organized by Department of Mechanical Engineering, CGEC in collaboration with Awake Mother India
- Webinar on Rebuilding of Mother India in Modern Time on 5th December, 2020 at 4:00 pm organized by ADINA Group of Institutions Engineering and Pharmacy
- Webinar on Re-Engineering Mother India on 12th December 2020 at 3:00 pm organized by PSIT College of Engineering
- International Webinar on Intellectual Property on 23rd December 2020 at 3:00 PM organized by Chhatrapati Shahu Ji Maharaj University Kanpur

Invited Lectures by Faculty Members

- Prof. Chandan Chakraborty delivered two invited lectures entitled 'Regression Modelling in Machine Learning' and 'Machine Learning in Biomedical Imaging Applications' in the AICTE Sponsored Online Short-Term Training Program (Phase-3) on Research Avenues in Machine Learning Approaches for Pattern Recognition during 02-07 November 2020, organized by Mahatma Gandhi Institute of Technology, Hyderabad.
- 2) **Prof. Chandan Chakraborty** delivered an invited lectures entitled "Machine Learning with R programming" in the AICTE Sponsored Online Short-Term Training Program on Business Analytics during 12-17 October 2020, organized by MCKV Institute of Engineering, West Bengal.
- 3) **Prof. Dipankar Bose** delivered a lecture entitled "Hybrid Machining "on 03.11.2020 for Two-weeks

National Webinar on "Recent Advancements on Mechanical Engineering" organised by the Department of Mechanical Engineering of Cooch Behar Government Engineering College, West Bengal held from 01.11.2020 to 13.11.2020

- 4) Prof. Dipankar Bose delivered a lecture entitled "Non-Conventional Hybrid Machining Processes" on 22.11.2020 for One Day Webinar on "Recent Advances in Mechanical/ Manufacturing Technology" organized by the Department of Mechanical Engineering (NBA accredited), of Haldia Institute of Technology, West Bengal.
- 5) **Prof. Dipankar Bose** has delivered a lecture entitled "Rubric for Evaluation of Laboratory Class Based on Bloom's Taxonomy" on 12.12.2020 for two weeks Interdisciplinary Refresher course on Engineering and Technology organized by UGC HRDC Mizoram University (accredited 'A' grade by NAAC) held from 1st -14th December 2020.
- 6) **Dr. Sukanta Naskar** delivered lecture on Outcome Based Learning and Approaches on 5 days online Faculty Development Programme (FDP) on Capacity Building Programme supported by AICTE on Research Methods and Effective Teaching Methodology held during 14-18 December 2020 conducted by department of HSS of NIT, Patna.
- 7) Dr. Sukanta Naskar delivered lecture on "Indian education during Post-Vedic period" on 12th Nov.'20 in 2-day national seminar (online) on 'Ancient Indian Education System' during 11-12, November 2020
- 8) Dr. Urmila Kar acted as Resource person in AICTE Sponsored STTP on Outcome Based Education for Technical Institutions Phase III: Outcome Based Education & Accreditation, organised by Rajagiri School of Engineering and Technology, Kerala during 10-16, Dec.'20 on "Outcome Based Curriculum (OBC) Development" and "Outcome Based Curriculum (OBC) Implementation".
- 9) Prof. Samir Roy delivered a talk on the topic "Genetic Algorithms to Solve Complex Optimization Problems" on 6th October 2020 in the AICTE sponsored training programme "Optimization Techniques: Recent trends and applications in engineering" organized by MCKV Institute of Engineering.

Lab / Infrastructure Development

Data Analytics Facility Created at CSE

IBM SPSS 26 license version has been procured by CSE Dept. of NITTTR Kolkata for teaching, training and research activities. It is a user friendly data analytics software for exploring various statistical tools and techniques.

Network Laboratory

The Department of Computer Science and Engineering has recently developed a Network Laboratory for carrying out the experiment related to Short Term Training Programme in the field of IP Networking, Networking Principles, Management and Administration, Network Infrastructure Management, Network Security and related areas as well as research in the in the upcoming areas such as SDN and Network Security . The Laboratory is equipped with state-of-theart networking devices such as routers, switches, firewall, Identity Management device, and Wireless LAN components. The Laboratory was set-up in the 1st Floor of ICV Bhavan and at an approximate cost of around 90 Lacs. The supply, installation of the equipment as well as training on the devices were already completed. Two STTP in ICT mode was also conducted entitled "Network Infrastructure Management" during Dec 21 - Jan 01, 2020-21 and "Introduction to Software Defined Networking (SDN)" during Jan 11-15, 2021 using this infrastructure.

Publications

Journal

- 1. A. Das, Indrajit Saha and R. Scherer, "GhoMR: Multi-Receptive Lightweight Residual Modules for Hyperspectral Classification", Sensors, Vol. 20(23), pp. 6823, 2020. [Impact Factor: 3.27]
- N. Ghosh, N. Sharma, Indrajit Saha and S. Saha, "Genome-wide Analysis of Indian SARS-CoV-2 Genomes to Identify T-cell and B-cell Epitopes from Conserved Regions based on Immunogenicity and Antigenicity", International Immunopharmacology, Vol. 91, pp. 107276, 2020. [Impact Factor: 3.94]
- **3.** Joydeep Bhattacharya and **Sailendra Nath Mandal** (2020), "Batch adsorption study on removal of Nitrate from aqueous solution by Darjeeling Tea

Ash": J. Environ. Protection, Vol. 40, No.8, pp. 787-798 (2020).

- N. K. Mandal, N. K. Singh, N. H. Tarafdar and A. Hazra, "Correlating tool wear and surface integrity of a CNC turning process using Naive based classifiers", Part B, Journal of Engineering Manufacture, SAGE Publications, DOI: 10.1177/0954405420972980
- Pritam Sadhukhan and Rayapati Subbarao, "Study of mechanical and tribological properties of hybrid copper metal matrix composite reinforced with graphite and SiC", MATPR-D-20-05400R1, Materials Today: Proceedings, https://doi.org/10.1016/ j.matpr.2020.08.677, 2020.
- 6. Rayapati Subbarao and M.Govardhan, "Axial Gap Studies on the Flow Behavior and Performance of a Counter Rotating Turbine", Journal of Applied Fluid Mechanics, Sept 2020, vol. 13(5), pp. 1515-1525.
- 7. Rayapati Subbarao, "Flow improvement aspect with stagger angle variation of the subsequent rotor in contra- rotating axial flow turbine", Springer Proceedings in Energy, 2020, pp. 1297-1307.
- Rayapati Subbarao and K.Saisarath, "Feasibility of biofuels as a substitute to conventional fuels in IC engines for mass transport and distributed power generation", Distributed Generation & Alternative Energy Journal, 2020, Vol. 35 1, 47–74. doi: 10.13052/dgaej2156-3306.3513.
- 9. Suman Kumar Bhattacharyya, Sagarika Pal, "Dimensional Analysis and Gradation of Rice Grain using Image Processing", International Conference on Emerging Trends in Wireless Communication Technologies and Information Security, 08th - 09th October 2020, held at Amity University Jharkhand, technically cosponsored by IEEE EDS Kolkata Chapter and Springer. Accepted for publication as a book chapter in Springer sponsored proceedings of EWCIS 2020, indexed by Web of Science.

Conference

1. Ashis Kumar Dutta, Debashish Bandopadhay & Jagat Jyoti Mandal (2020), "Static Analysis of Thin Rectangular Pasternak Plate Resting on Foundation". Proceedings of the Indian Geotechnical Conference 2020, organised by IGS Vishakapatnam chapter and Civil Engineering Department, Andhra University College of Engineering, Vishakapatnam, India, December 17 -19, 2020

Miscellaneous

1. Celebration of Constitution Day

National Institute of Technical Teachers' Training & Research, Kolkata observed Constitution Day on 26th November, 2020 through google meet. All Faculty, Staff, Students and Trainees were present on this auspicious day. The programme started with reading the Preamble with the Hon'ble President of India at 11 AM

At 4 PM Director, Dr Devi Prasad Sharma inaugurated the Institutional Programme to observe the day. Started with the speech regarding Indian Constitution, Director stressed on constitutional values. He added "why this celebration, what are written and why so big our constitution". So far Indian Culture is concerned, "we are not in the right path", he said. Constitution should be realised through "Adwoita Vedanta", he pointed out and explained it thoroughly. He opened our eyes in respect of equality of status and opportunity. At the end, he allowed the participants to raise their questions one by one.



Celebrating the Constitution Day

Most of the participants got clarification with the replies of Director. "Executive is to be responsible to legislature", raised by an M. Tech student, Sougata Barik and the Director satisfied him in a lucid direction.

Next was the power point presentation by Dr. Dipankar Bose, Professor. Mechanical Engineering Department. He pointed out the concept of Basic Structures and Features of Indian Constitution. He enriched us through his elaborating speech.

The session ended with vote of thanks to the Director and all participants conveyed by Dipak Gupta, Conveyer of this programme.

- 6th Regional (online) Workshop on TECHNICAL EDUCATION SYSTEM of POLYTECHNICS focusing on North Eastern States was held on 5th Oct, 2020, at NITTTR, Kolkata Coordinated by Dr. S.K.Naskar with Co-coordinator Dr. I.Saha (detailed report attached herewith).
- Dr. Sukanta Naskar acted as expert panelist during technical lectures in a two-week National Webinar on "Recent Advancements on Mechanical Engineering", organized by the Department of Mechanical Engineering, Cooch Behar Government Engineering College held from 1st to 13th November, 2020.
- Dr. Habiba Hussain coordinated a 2-day national seminar (online) on 'Ancient Indian Education System' on 11th & 12th November 2020.
- Dr. Urmila Kar acted as Chief Speaker in the Webinar on "National Education Policy – 2020" on 29th November 2020, organised by B.P Mandal College of Engineering, Madhepura, under Department of Science and Technology, Govt. of Bihar.
- Dr. Urmila Kar chaired a session on 21st November 2020 in the National Webinar on "Online Teaching and Learning Lessons from the Covid-19 Pandemic" organised by Govt. Women's Polytechnic College, Thrissur, Kerala during 20-21, November 2020.
- Dr. Urmila Kar acted as Panellist (Theme for discussion: Challenge & Issues in using ICT at Polytechnics of North Eastern States) in 6th Regional (online) Workshop on TECHNICAL EDUCATION SYSTEM of POLYTECHNICS focusing on North Eastern States held on 5th Oct, 2020, at NITTTR, Kolkata.
- 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-firstindian-scientists-prepare-web-based-covid-19predictor-to-track-viral-sequences-global-geneticvariability-2842774

• Dr. Subrata Mondal reviewed a research proposal from the "United States of America-Israel Binational Agricultural Research and Development (BARD)" fund, December 2020.

3. Mentor Orientation Training Program under AICTE-NITTT was co-coordinated by Dr. Indrajit Saha from 30/11/2020 to 04/12/2020

4. List of educational resources developed during the period

Twenty-four numbers video lectures of M09 & M10 recorded and One Introductory video lecture (*MOOC* -*Essentials of Pedagogy, Part-II*) has been prepared. Beside this three numbers Institutional videos have also prepared during this time.

5. Seminars/STTPs attended:

- Dr. Rayapati Subbarao attended a National seminar on 'Ancient Indian Education System' conducted by NITTTR Kolkata for 2 days on 11th and 12th November 2020.
- Dr. Rayapati Subbarao successful completed a 2week Faculty Development Programme on 'Indian Knowledge Systems in Contemporary Education & Practices' with 'A' grade, conducted by Sri Sri University, Cuttack with the support of UGC and AICTE, from 5th – 19th November 2020.

6. Any other item

- Prof. Jagat Jyoti Mandal was the external examiner for evaluation of Project thesis and Grand viva of Post-graduate in "Structural Engineering" of Department of Civil Engineering, Jadavpur University, 700032, held on 09.10.2020.
- Prof. Jagat Jyoti Mandal was the external examiner for evaluation of Project thesis and Grand viva of Post-graduate in "Construction Engineering" of Department of Construction Engineering, Jadavpur University, 700032, held on 09.10.2020.
- Prof. Jagat Jyoti Mandal was the external expert for selection of Junior Research Fellow for the research project "Development of Operational Strategies for *E-Rickshaws for improving Air quality on Roads in Urban Areas of West Bengal*", sponsored by DST, Govt. of West Bengal at IIEST, Shibpur on 18.12.2020.
- Prof. Jagat Jyoti Mandal has been nominated by the Hon'ble Vice Chancellor of Jadavpur University as a member of the Screening Committee for the post of Assistant & Associate Professor in Civil Engineering.
- Dr Santanu Bhanja reviewed a technical paper submitted to the Institution of Engineers (India) Series A.
- Dr Santanu Bhanja acted as an external Expert for Pre submission examination of four Ph D students of the CE Department of IIEST, Shibpur in November and December 2020

7. Photographs of events during the period



Handing over first time grown vegetable to a contractual NITTTR-Kolkata staff



A learning –cum-doing exercise to the outsourced staff how to dig in the field



"Fit India Movement" the cyclothon program in the campus



Training on equipment of Network Lab of CSE





Learning by doing: Mr. Ayan Bose and Mr. Rajkumar Biswas, outsourced staff are painting quotations on **the wall**



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How to Reach NITTTR, 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.

"A teacher can never truly teach unless he is still learning himself. A lamp cannot light another lamp unless it continues to burn its own flame" -- R. N. Tagore



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

NITTTR, Newsletter Committee

Dr. Samir Roy, Chairman, Dr. Habiba Hussain, Member, Shri Utpal Chakraborty, Member Layout and cover design and DTP work, Shri Utpal Chakraborty, Photo coverage, IFL, NITTTR, Kolkata