



NATIONAL INSTITUTE OF TECHNICAL TEACHERS' TRAINING AND RESEARCH, KOLKATA

(An Autonomous Institution under the MHRD, Government of India)
Block – FC, Sector – III, Salt Lake City, Kolkata – 700 106
Website: <http://www.nittrkol.ac.in>

Vacancy Notification

Advertisement No. 02/2019-20

Applications are invited to fill the following posts:

Name of Post	No. of Posts	Level
Professor	7	14
Associate Professor	1	13A1

The intending candidates are advised to visit Institute's website <http://www.nittrkol.ac.in> to get detailed information. Last date of submission of application is 14/08/2019. The Institute website may please be seen from time to time for information.

Date:

DIRECTOR

NATIONAL INSTITUTE OF TECHNICAL TEACHERS' TRAINING & RESEARCH, KOLKATA

(Under Ministry of HRD, Govt. of India)
Block-FC, Sector-III, Salt Lake City, Kolkata-700106
Website: www.nitttrkol.ac.in

Advertisement No. 02/2019-20

NITTTR, Kolkata invites applications from Indian Nationals for the post of Professor/Associate Professor in its various departments of the Institute. Applicants should have an excellent academic record with relevant experience as mentioned in detailed advertisement which is available at <https://www.nitttrkol.ac.in>. Last date of the receipt of the applications is **14/08/2019**.

The National Institutes of Technical Teachers' Training and Research (NITTTRs), formally known as TTTIs, were established between 1964-67 by the then Ministry of Education (now the Ministry of Human Resource Development), Govt. of India in Bhopal, Chandigarh, Chennai and Kolkata to improve the quality of Polytechnic education system in the country. These institutes were regional in character and served the technician education in their respective regions of the country. The institutions train technical teachers in educational pedagogy, institutional management, instructional material development and student evaluation. Activities of these institutes are highlighted in Annexure A.

Applications are invited from Indian nationals including Persons of Indian Origins (PIOs) and Overseas Citizens of India (OCIs) for the posts of Professors and Associate Professors in the various departments of the Institute at Kolkata. Currently the Institute has 5 departments viz. (1) Civil Engineering (CE), (2) Computer Science & Engineering (CSE), (3) Electrical Engineering (EE), (4) Mechanical Engineering (ME) and (5) Education and Management (E & M). On-going activities of the Institute are given in Annexure B. Candidates should have the basic degree in one of these branches and must be interested to work in the field of technical education.

Pay Scale:

Name of Post	No. of Posts	Entry Pay	Level
Professor	7	144200	14
Associate Professor	1	131400	13A1

Minimum Educational, academic qualification and experience:

Name of the Post	No. of Posts	Qualification	Publication	Experience
Professor	7	Ph. D. degree in relevant field and First class or equivalent at either Bachelor's or Master's level in the relevant branch.	At least 6 research publications at the level of Associate Professor in SCI journals / UGC /AICTE approved list of journals and at least 2 successful Ph.D. guided as Supervisor / Cosupervisor till the date of eligibility of promotion. OR At least 10 research publications at the level of Associate Professor in SCI journals / UGC /AICTE approved list of journals till the date of eligibility of promotion.	Minimum of 10 years of experience in teaching / research / industry out of which at least 3 years shall be at a post equivalent to that of an Associate Professor.
Associate Professor	1	Ph.D. degree in the relevant field and First class or equivalent at either Bachelor's or Master's level in the relevant branch	At least total 6 research publications in SCI journals / UGC / AICTE approved list of journals.	Minimum of 8 years of experience in teaching / research / industry out of which at least 2 years shall be Post Ph.D. experience.

Desirable Qualifications and Experience:

- a) Experience in technical teachers' training, in designing curriculum of Engineering and Polytechnic colleges;
- b) Research in the field of Technical Education;
- c) Integration of Information Technology in the specific area of specialization;
- d) Experience of guiding the project work/dissertation of PG/Research (Ph. D) Students or supervising R & D projects in industry;
- e) Capacity to undertake/ lead sponsored R & D consultancy and related activities; and
- f) National/International Projects handling.
- g) Specialization in the field of Mechanical Engineering/Electrical Engineering/Electronics and Communication Engineering/Computer Science and Engineering/Civil Engineering/Education/Management

GENERAL INSTRUCTIONS TO THE CANDIDATES

1. Candidates should read carefully all criteria laid down in the advertisement before applying for these posts. Since all the applications will be screened on the basis of data submitted by the candidate in the application form, the candidates must satisfy themselves of the suitability for the position to which they are applying. If at any stage during the recruitment and selection process, it is found that candidates have furnished false or wrong information, their candidature will be rejected.
2. Application once submitted cannot be altered/ resubmitted, under any circumstances. Further, once the application is submitted, no request with respect to making changes in any data/ particular entered by the candidate in the Application Form will be entertained. Therefore, please keep all data/ details ready before you start filling up the Application Form.
3. The candidate should fill application form available at the Institute's website (www.nitttrkol.ac.in). Note that one has to fill separate form for each post if he/she is interested to apply for more than one post.
4. Any other mode of applications shall be summarily rejected.
5. Persons serving in Govt./ Semi-Govt./ PSUs must submit NOC from their respective employer along with Application Form. Failing which his/ her candidature will summarily be rejected.
6. The prescribed Essential Qualification/Experience indicated are bare minimum and mere possession of same will not entail the candidates to be called for test/interview.
7. Institute is free to restrict/change the criteria to call the eligible candidates for the Seminar and/or Interview.
8. The number of vacancies indicated in the notification is tentative. NITTTR, Kolkata reserves the right to increase or decrease the number of advertised posts at the time of selection. Further, the Institute reserves the right not to fill up the posts, cancel the Advt. in whole or in part without assigning any reason, thereof and its decision in this regard shall be final.
9. The SC/ST/OBC candidates are required to submit a copy of the desired certificate with the application in the format prescribed by the Govt. of India.
10. The EWS candidates are required to submit a copy of the desired certificate with the application in the format available in the Institute website.
11. The Institute follows the reservation norms as per GOI rules for SC/ ST/ EWS/OBC.
12. The Institute reserves the right to assign/ transfer the selected candidates to any Extension Centre situated at Bhubaneswar or Guwahati and appointments will be offered accordingly.
13. All qualifications obtained by the candidates should be from any recognized Board/ University/ Institution. The Institute reserves the right to relax any of the qualifications/ experience in exceptional cases.
14. Note that (a) Interim correspondences/enquiries shall not be entertained or replied to. (b) Canvassing any form shall disqualify candidature.
15. Higher initial basic pay may be given to exceptionally qualified and deserving candidate(s).
16. Selection procedure is completely based on the performance of the candidates in Seminar and/or Interview.

17. Candidate should keep their email id & mobile no. provided in the application form active. Institute will not be responsible for non-receipt / delay in receipt of any communication due to deactivation of email id and or mobile number given or due to change in address etc.
18. All information regarding Schedule for Seminar and/or Interview, any corrigendum/ addendum will only be published on Institute's Website. Candidate should check / visit institute website regularly for any update on recruitment process.
19. The duly filled application form must be accompanied by the prescribed fee of Rs. 1,000/- (Rupees One thousand) for UR, OBC EWS and Rs. 500/- (Rupees Five hundred) for SC, ST through NEFT State Bank India, Salt Lake (Sector-I) Branch SB A/C No.10836428657, IFSC: SBIN 0001612 or Demand Draft drawn in favour of "Director, NITTTR, Kolkata" payable at Kolkata. No other mode of payment will be accepted. Challan /Reference No/DD No is to be mentioned in the designated field in the form. Fee once paid will not be refunded in any case.
20. Outstation candidates called for Seminar/ Interview will be paid TA as per Institute norms. The reimbursement of admissible amount will be made through transfer to their Bank Account on submission of RTGS details by the concerned candidate, and no cash will be paid on the spot.
21. Candidates called for Seminar and/or Interview are requested to bring with them all original certificates, testimonials and other relevant documents at the time of Interview.
22. All the above positions require full 24x7 commitment to the Institute. Therefore, candidates willing to stay in the campus and to dedicate themselves fully to the Institute are expected to apply.
23. Steps to be followed to fill and to send the duly filled the application form are as follows:
 - Apply online by clicking [here](#) preferably using your Gmail account or use the URL below.
https://docs.google.com/forms/d/e/1FAIpQLSfYz-pVqcVVhCBCdGNDViMS6_QvOUtSCyE3f9SI0NqrfTmijA/viewform
 - Submit the duly filled-in form as pdf that you received in your mail to recruitment@nitttrkol.ac.in from your same email address.
 - Print, Sign and affix the recent passport size photo on first page of hard copy of the duly filled-in application form.
 - A blank form is provided [here](#) for your ready reference.
24. Send the signed application form through Registered Post or Speed Post along with self-attested copy of testimonials/ certificates duly addressed to the **Director, NITTTR, Kolkata, Block – FC, Sector – III, Salt Lake City, Kolkata – 700106** super scribing on top of the envelop "**APPLICATION FOR THE POST OF _____ AGAINST ADVT. No. 2/2019-20**" so that it reaches on or before the last date of receiving applications i.e. 14/08/19. Note that application received after the due date shall not be considered for any reason what so ever it may be.
25. For any clarification, it is requested to write to recruitment@nitttrkol.ac.in
26. In case of any dispute, decision of the Director, NITTTR, Kolkata, shall be final.
27. Any legal proceedings in respect of any matter of claim or dispute arising out of this advertisement can be instituted in Kolkata and courts/tribunals/forums at Kolkata only shall have sole and exclusive jurisdiction to try any such cause/disputes.

Director

ACTIVITIES OF NATIONAL INSTITUTE OF TECHNICAL TEACHERS TRAINING & RESEARCH

The National Institutes of Technical Teachers' Training and Research (NITTTRs), formally known as TTTIs, were established between **1964-67** by the then Ministry of Education (now the Ministry of Human Resource Development), Govt. of India in **Bhopal, Chandigarh, Chennai and Kolkata** to help improve the **quality of** technician (Polytechnic) education system in the country. Initially, these institutes were regional in character and served the technician education in their respective regions of the country. The institutions trained polytechnic teachers in educational pedagogy, institutional management, instructional material development and student evaluation. The four TTTIs also contributed significantly in the area of research in technical education, curriculum design and revision, and by rendering extension services to polytechnics by way of establishment and maintenance of workshops and laboratories. Recognising the contribution of four TTTIs in the field of technician education and need for similar improvements in other segments of higher technical education, the Government of India in 2003 elevated these institutes from regional to national status. Under the new mandate the geographical area to be catered to and types of technical institutions to be served were enhanced. With enhancement in status, the institutions were assigned the major task of bringing improvement in technical education with special emphasis of education and training, research in technical education and curriculum design and updation. The types of institutions presently catered to include Polytechnics, Engineering Colleges, Pharmacy Colleges, Colleges of Art, Management Institutes, Colleges of Architecture, Institutes of Hotel Management & Catering and AICTE approved institutes in India.

NITTTRs are the unique kind of institutes in India established by the Govt. of India dedicated to bring improvements in the technical education system in the country through in-service training of technical teachers. As distinct from other institutes in the country who are primarily concerned with development of technical manpower at various levels, NITTTRs, on the other hand, are responsible for the development and quality improvement of technical teachers working in higher education through high quality need based training. These institutes were established essentially to bring about qualitative improvement in the technician education system not only by developing and organizing need based faculty and staff development training programs but also undertaking systemic research in the field of technician education, developing various learning resources—including video films, multi-media packages etc., writing books, preparing instructional materials and so on.

By virtue of being in the business of technical teachers training for the last fifty odd years, NITTTRs have first-hand experience of dealing with technical teachers and understand the need and traits of technical teachers like no other institutes in India. The NITTTRs have repository of proven knowledge, experience and expertise of applying educational technology (especially the ICT based teaching- learning) to reach out to the technical teachers located in the remotest corners of the country including the north-eastern states, other border/difficult to reach hill states/UTs and islands of the country.

In view of exponential expansion in technical education in the country, the need to train/educate engineering teachers in pedagogy along with engineering courses has become very important to provide the much needed qualitative thrust to engineering education in the country. The NITTTRs need to realign, in view of the emerging need and willingness of the clientele, thereby providing a high degree of relevance in its activities.

The NITTTRs have been functioning as resource institutions in conceiving and implementing programmes and projects for rendering variety of services for various clientele. The major operational areas are:

- Training and Education: Designing and conducting need based training programmes in technical education, managerial skills, content updating and entrepreneurship development, and offering long term M. Tech. and Ph.D. programmes in engineering & technology.
- Designing Policy Documents and Proposals
- Curriculum Development and Revision
- Instructional Material Design and Development
- Computer Based Multimedia Packages Development
- Resources for online learning and MOOCs
- Research Studies/ Surveys
- Examination Reforms and Developing Measurement & Evaluation System
- Institutional Development
- Designing Project Proposals and Managing Projects on Turn Key Basis
- Enhancing Industry Institute Interaction
- Training of Trainers
- Training Packages Development
- Training Need Analysis
- Community Development

Since inception five decades ago the NITTTRs have been serving the nation by rendering a yeoman service in the field of quality improvement of technical education system through a truly broad spectrum of activities, a glimpse of which is given below:

A) Training & Education

The Training and Education has been the most important function of the four institutes. The training of faculty members has been a primary requirement of the technical institutions and NITTTRs have been offering faculty training programmes suitable for junior, middle level and senior faculty members. The need based training programmes cover a wide range of areas, which have been offered short-term, certificate and diploma levels and conducted throughout the year. The areas covered by training programme include but are not limited to the following:

- engineering and technology (civil engineering, electrical, mechanical, electronics & communication, computer science and engineering, chemical engineering, textile technology and printing technology)
- teaching methodology covering educational psychology, principles of learning educational technology, instructional planning and student evaluation
- induction programme for newly recruited teachers
- media in education, e-content development, technology enabled learning and learning management system
- outcome based education, curriculum development
- educational quality management, intuitional development, strategic planning, management development and industrial liaison
- educational research
- soft skills and communication skills
- entrepreneurship development and
- Appropriate Technology for rural development

The training methodology for these programmes use to a large extent active learning strategies and integrates online resources and evaluation into the class room. Further the NITTTRs are also offering programmes at a specific engineering college for the benefit of its teachers. The timing for the programme will be decided on the specific requirement of the college.

The NITTTRs, in response to the human resource development needs of the technical institutions, have been offering long term programmes since inception. The programmes that have been offered include Diploma in T. T, B. Tech Ed, M. Tech Ed, Master of Engineering Education, PGDTCA and M. Tech (HRD) which have been specifically designed to meet the technical and pedagogical needs of the technical teachers. The teachers were also given industrial training and teaching practice as part of these programmes. In the recent past, responding to the need for programs in core and emerging engineering and technology areas, highly industry oriented and practice based modular M. Tech. programmes are begin offered with great success.

In the past two decades the NITTTRs have been offering Ph. D programmes in the inter- disciplinary area of technical education / engineering education. Through the Ph D programme NITTTRs could investigate problems and carry out research in every area of technical education. A significant clientele for all these programs are the in-service technical teachers in the country.

The expertise of NITTTRs in technical education and engineering and technology can be best utilized by sharing with technical institutions in developing countries. Several training programmes at Advanced Certificate level are offered for participants from Africa, South America, Asia and Southern Europe. Specific training programme are conducted for Bangladesh and Srilanka.

B) Curriculum Review and Development

Developing and revising Curriculum for technical programmes is a challenge in view of the rapidly changes in technology and the requirement of the industry. NITTTRs have evolved effective methods for curriculum development and revision. The major features of curriculum development / revision involve the following:

- Curriculum Development based on Outcome Based Model
- Multipoint Entry and Credit System (MPECS)
- Involving industry through Need Analysis
- Curriculum Evaluation according to the changing needs
- Development of Curriculum in emerging technologies such as wind energy, mechatronics, etc.

Most of the states are going for the Curriculum Development based on Outcome Based Model for the technical programmes, aligning with the requirement of NBA Accreditation and NITTTRs help them in curriculum development and implementation.

The curricula of the polytechnic education system of the states, including those in the north-east, are reviewed on a continual basis maintaining a periodicity. New curricula in the new and emerging fields are also developed. It may be mentioned that such review, development exercises are undertaken following standard scientific models involving industry experts, alumni, and eminent academicians as also the teachers themselves. A significant number of well-crafted curriculum documents have already been made for several client states in many disciplines.

C) Instructional Material Development

NITTTRs not only help Institutes and Universities in development/revision of curriculum but also guide them in development/preparation of Instructional Resources Materials according to the needs of the curricula and students. These learning resources development take into account the theories of learning and concepts of education technology.

Developing such need based instructional materials related to training programs in a plethora of

disciplines, themes, and topics is one of the outstanding contribution of NITTTRs towards development of technical education in the country as a whole. The educational video films thus developed are regularly shown on Gyandarshan Channel. In addition to telecast of educational video films on Gyandarshan Channel, a large number of video films and video lectures are made available on Youtube and NITTTR Chandigarh Technology Enabled Learning Portal. The video films and lectures are accessed by technical teachers and students not only from India but also from abroad. The available data shows that a good number of video films/lectures have had more than one lakh hits.

Another set of material is the manuals, experiment sheets for different laboratories, workshops of different engineering disciplines that are prepared by these institutes for the benefits of the teachers of the technical institutions.

The learning resources developed include the following:

- Programmed instruction on various technical topics
- Laboratory Manuals
- Study materials for short term training programmes
- Self-learning modules
- Packages for Continuing Education for ISTE
- LRs for Competency Based Continuing Education
- Modules for Vocational Education
- Monographs
- Text Books on engineering and technology and English language (published by Tata McGraw Hill, Oxford University Press, Orient Black Swan and other publishers)
- Video Lectures-cum-demonstration (telecast on Gyandarshan Channel)
- Educational Video Programmes on technical subjects with the collaboration of industry
- Multimedia training packages in collaboration with industries

D) Reforms in Students' Assessment & Examination System

The teaching learning process is greatly affected by the quality of examination system. NITTTRs therefore have always strove to improve the student's assessment both at formative as well as summative level. Apart from educating teachers about the techniques and methods of assessment, following projects have been carried out to improve the existing assessment system.

- Development of ITEM Bank
- Comprehensive Scheme of Assessment
- Laboratory and practical assessment
- Assessment strategies for outcome based curriculum implementation.

E) Educational Research

Since NITTTRs guide the concerned states in policy formation, it is imperative to conduct research on different aspects of technical education such as implementation of curriculum, effectiveness of different teaching methods and media, employability of pass outs, techniques and methods of a student assessment, management of institutes, impact of various innovations, etc. Some of these researches are conducted as initiative of the institute's faculty, whereas many researches are sponsored researches funded by the NPIU, states and other agencies. In the last 3 decades particularly since the days of World Bank assisted technician education project (1991-2007) importance of research in the technical education system, the teaching-learning process etc. was

realised. NITTTRs ever since have been contributing in a significant way by undertaking research including action research in various fields of technical education. Important researches viz. tracing career growth of diploma pass outs, Social Assessment Studies (2005-06) among the tribal, rural folks of the country including the **north-eastern states** as also research in institutional activities etc. have been successfully completed. Academically strong faculty of the NITTTRs have also been contributing in engineering/ technology researches in a significant way. Mention may be made of research in the areas of environmental science and technology, computer science and technology, mechatronics, welding technology, reliability, construction technology and the likes. Industrial consultancy activities are also undertaken in a significant way.

F) Contributions in Various Missions & Projects

NITTTRs provide consultancy in the area of technical education to institutions, states, and technical education system. NITTTRs provided consultancy for SWOT analysis, Visioning Exercise and project preparation to Goa state, number of regional engineering colleges, engineering colleges and polytechnics for the Technical Education Quality Improvement Project (TEQIP) of Govt. of India. The institutes have taken up consultancy for establishing Diploma in Civil, Mechanical, and Electrical engineering through Distance Learning Mode for the state of Gujarat, which is running very successfully to day. NITTTRs worked as academic consultant to the state of Nagaland, Arunachal Pradesh and several others for the Third Technician education Project of Govt. of India.

NITTTRs have also been providing support in the policy formulation to the Ministry of Human Resource Development, Planning Commission, AICTE and other National and International bodies. They also assist the State Authorities in their respective regions in technical educational project formulations and implementation from time to time. Over the period of its fruitful existence NITTTRs have likewise established strong linkages with international agencies such as UNESCO, UNDP, British Council, World Bank, ILO, ADB, CPSC, Manila etc. It is happily noted that recently a two-week international competency based training program was jointly organized under the aegis of UNEVOC, Germany in which the participants from several Asia-pacific countries joined and took the field based training in sustainable agriculture.

Besides NITTTRs are contributing in a significant way in the missions such as Digital India, Unnat Bharat, National Skill Development Mission and have already started developing and disseminating massive on-line open source courses (MOOCS). It is pertinent to mention here that for operationalization of MOOCS, NITTTRs have already been placed at par with the IITs, NITs IISCs and other Central Universities. Mention may also be made of the more than a hundred competency based curriculum and training materials developed by NITTTRs in various identified industrial growth sectors under the National Skill Development Mission.'

G) Services to Industry

NITTTRs strives to work for the industry specially to assist them in their training needs. This has two main benefits; first it helps the institute to understand the changing needs of the industry, which in turn helps in developing the relevant curricula at degree and diploma level. Secondly, it helps in revenue generation. Following projects have been undertaken in past for this purpose.

- Conference and Symposium organized jointly with industry
- Development of Computer Based Multimedia training packages
- Training of Trainers and Curriculum Development for specific needs
- Training Need Analysis for specific industry
- Competency Based Training Programmes for specific needs

H) Research & Consultancy

Besides the significant contributions already mentioned, another strong point of the NITTTRs have always been systemic research. In the last 2 decades particularly since the days of World Bank assisted technician education project (1991-2007) importance of research in the technical education system, the teaching-learning process etc. was realised. NITTTRs ever since have been contributing in a significant way by undertaking research including action research in various fields of technical education. Important researches e.g. tracing career growth of diploma pass outs, Tracer Study of World Bank Assisted Tech-Ed. I and Tech –Ed. II Projects, Social Assessment Studies (2005-06) among the tribal, rural folks of the country including the extreme north and north-eastern states as also research in institutional activities etc. have been successfully completed. Academically strong faculty of the NITTTRs have also been contributing in engineering/ technology researches in a significant way. Mention may be made of research in the areas of environmental science & technology, computer science & technology, mechatronics, welding technology, reliability, construction technology and the likes. Industrial consultancy and testing activities are also undertaken in a significant way.

NITTTRs have also been providing support in the policy formulation to the Ministry of Human Resource Development, Planning Commission, UGC, AICTE and other National and International bodies. They also assist the State Boards of Technical Education and State Directorates of Technical Education in their respective regions in technical educational project formulations and implementation from time to time. Over the period of their fruitful existence NITTTRs have likewise established strong linkages with international agencies such as UNESCO-UNDP, British Council, World Bank, CPSC, Manila etc. It is pertinent to mention here that as recent as in December 2016 a two-week international competency based training program was jointly organized under the aegis of UNIVOC, Germany and one of the NITTTRs in which the participants from several Asia-pacific Countries joined and took the field based training in sustainable agriculture. The four NITTTRs also organised collaborative International programmes with CPSC, Manila on regular basis.

I) Rural development and out-reach programs

One of the major contributions being made by the NITTTRs in the field of rural development has been monitoring and mentoring the scheme of Community Development Through Polytechnics (CDTP) (previously known as community polytechnic scheme) sponsored by MHRD, Government of India. The scheme commenced in 1978, provides large scale need-based vocational training to youth to help them prepare themselves for employment opportunities in vast informal sector of Indian economy. Another centrally sponsored scheme titled Mainstreaming persons with Disabilities in Technical and Vocational Education (launched by MHRD, Government of India) is also being monitored by the institutes in their respective regions. This scheme has empowered thousands of persons with disabilities through formal and non-formal programmes. The schemes named above are being implemented through the polytechnic institutions of the country under the supervision of NITTTRs all over the country.

Mention may also be made that these institutes are contributing significantly in operationalizing projects such as Massive Online Open Courses (MOOCs), National Skill Qualification Framework (NSQF) and the scheme of Community Colleges etc. NITTTRs are also actively involved in Skill Development initiatives in the country in a significant way – having been entrusted the responsibility of evolving a concept of ‘On-line Skill University’ in the country. A proposal for establishing an Online Skill University has already been submitted to Government of India by the NITTTRs.

J) Internal Strength of NITTTRs

By functioning as a change agent in technical education for the past five decades NITTTRs have evolved into institutions with the following strengths:

- Demonstrated and documented capabilities, over the past five decades in planning, developing, implementing and evaluating programmes and activities in different areas of technical education for different levels of human resource.
- Demonstrated expertise in curricula development, instructional material development and institution development.
- Development and sustaining of working linkages with various national organizations (such as Directorate of Technical Education, State Boards of Technical Education and Training, Ministry of Human Resource Development, Ministry of External Affairs, Ministry of Finance, Ministry of Industries, Ministry of Environment and Forests, Indian Council for Forestry Research and Education, All India Council for Technical Education.
- Development of professional linkages with international organization such as Colombo Staff College for Technician Education, World Bank, Asian Development Bank, UNESCO etc to collaborate in planning and implementing development projects, faculty development programmes, research and development activities.
- Established capabilities to provide professional services to industry and related organizations.
- Established capability to undertake research and development projects and guide doctoral candidate in relevant areas of technical education and publication of international journal and conduct national and international seminars and conferences
- Development of technical education programmes for the community development and physically challenged persons and facilitating their implementation through the polytechnics in the southern region.
- Expert and committed faculty with research contribution and International exposure who have been called for to provide leadership in several other institutions.
- Excellent infrastructure in terms of laboratories, workshops, classroom and hostel facilities

NATIONAL INSTITUTE OF TECHNICAL TEACHERS TRAINING & RESEARCH, KOLKATA

The National Institute of Technical Teachers' Training & Research (NITTTR), Kolkata, (formerly known as Technical Teachers' Training Institute, Eastern Region, Calcutta) was established in 1965 by the then Ministry of Education, Govt. of India. Its primary focus is to provide in-service training to the teachers and staff of Polytechnic Institutions. In 2003, Ministry of Human Resource Development, Govt. of India, accorded national status to this Institute in recognition to its expert services for overall improvement of the quality of Technical Education System. NITTTR, Kolkata's other focal activities include staff development programmes, development of learning resource materials, curriculum development, research, educational management, and rendering extension services to various academic bodies. At present NITTTR, Kolkata is also offering four AICTE approved regular Postgraduate Programmes. The Institute has two Extension Centers, one at Guwahati and another at Bhubaneswar to cater the training need of the respective regions.

The Institute has 5 academic departments and they are Civil Engineering, Computer Science & Engineering, Electrical Engineering, Mechanical Engineering, and Education & Management. All these departments are well established and are equipped with the start-of-art machines in the laboratories. It is a wifi- based and fully green campus. The institute is currently having 25 faculty members with basic qualification in one of the branches such as Civil Engineering, Chemical Engineering, Computer Science & Engineering, Electrical Engineering, Instrumentation & Electronics Engineering, Mechanical Engineering, Management, Production Engineering, Textile Engineering, Biotechnology, Mathematics, Physics and Education. All faculty members are fully dedicated towards the improvement of technical education system in the country and working on various activities of the Institute.

On-line Course Materials Development

NITTTR, Kolkata is actively engaged in design and development of various MOOCs of different durations for more than one year in the area of pedagogy. The proposed programme lays emphasis on the following:

1. Skill: Pedagogy, Communication, Psychomotor
2. STEM Education
3. Research and Development
4. Self-empowerment

Out of the above, the Institute is at present in the process of developing MOOCs related to teaching skills, research and development and self-empowerment. In due course of time other MOOCs will be designed and developed. NITTTRs shall offer the proposed programme in such a way that MOOC courses would be an integral part of delivery system following AICTE guidelines.

The Institute has a well-equipped studio with acoustically treated and up-to-date lighting facilities. The studio has multi-camera full HD recording facility with Sony's XDCAM Video Camera and other professional production equipment i.e. Vision Mixer, Audio Mixer, Light controller etc. with trained technical manpower in the areas of photography and video production. The facilities are under modernization as per latest trends in digital video. The studio has produced a large number of broadcast grade video films and lecture series. The studio also contributed for development of resources for satellite based education.

National Resource Centre

The Ministry of Human Resource Development (MHRD) has launched an initiative of online professional development of 1.5 million higher education faculty using the Massive Open Online Courses (MOOCs) platform SWAYAM. In the first phase, 75 discipline-specific National Resource Centres (NRCs) have been identified which are tasked to prepare online training material with focus on latest developments in the discipline, new and emerging trends, pedagogical improvements and methodologies for transacting revised curriculum. This Institute has been chosen by the Ministry of Human Resource and Development (MHRD), Government of India, as the NRC (Mechanical Engineering). Under this initiative, all in-service teachers, irrespective of their subject and seniority will have an enabling opportunity to keep abreast of the latest developments in their disciplines through the technology based online refresher course. The NRCs will develop the Refresher Module which will include the latest trends in their earmarked discipline by June 15 each year.

Strength of each department of the Institute which is given below may help one to understand more about the Institute.

Civil Engineering

Major departmental activities include, conducting short term training programme (STTP), regular M. Tech programme, Research and others (curriculum development, workshop etc.). Department has offered nearly 200 short term training programme in last two and current academic years in various areas of Civil Engineering, Earthquake Engineering, Civil Engineering Lab, Environmental Science & Engineering and Education Technology. Department also engaged with Curriculum Development of Polytechnic institutes for Eastern and North Eastern region of the country and had organized seminars and workshop in the national level. Department was actively involved in Tech Ed I and Tech Ed II of World Bank project. Department has organized number of workshops on specialized areas of civil engineering for academic and practicing engineers.

Apart from these, department also offers M. Tech in Structural Engineering approved by AICTE and affiliated by MaulanaAbulKalam Azad University of Technology (MAKAUT), West Bengal. Total sanctioned intake for the M Tech programme is 9. Since it's inception of M. Tech programme (i.e. 2011-12) till date, total number of M. Tech students pass out is 33. After attaining higher degrees, some of the M. Tech pass out from the department are working as research scholar at IITs, some of them are working as a faculty members at reputed educational institutes, some of them are absorbed in organizations like Indian Railways, PWD, Bentley Systems India etc.

Faculty members in the department are actively engaged in *research* in core and interdisciplinary areas of Civil Engineering, Environmental Science and Engineering as well as in Education Technology. Currently, department has more than 100 reputed national and international journal papers. The department has well equipped Geotechnical Engineering, Transportation Engineering, Structural Engineering, Concrete Technology Earthquake Engineering, Departmental Computer Laboratory and Environmental Pollution Monitoring Laboratories and undertake research and consultancy activities in the specialized areas. The major equipment of Civil engineering lab include Electro-dynamic Shake Table, Universal testing machine, compressive testing machine, and different non-destructive and semi-destructive testing instruments like USPV tester, Rebound Hammer, core cutter, CAPOTEST etc. Some of the major equipment in Environmental Pollution Monitoring Laboratory are Atomic Absorption Spectrophotometer, UV-VIS Spectrophotometer, Auto Titrator, pH, Conductivity, Turbidity, DO Meter, BOD Reactor, COD Digester, Programmable Jar Tester, Multi-gas Analyzer, Smoke Meter, Stack Monitoring Kit, PM10/2.5 Analyzer, Sound level meter etc.

The department has sophisticated computer laboratory with number of renowned and widely used software to perform modelling, analysis and design of civil engineering structures such as AUTOCAD, STAADPRO, ANSYS with Civil FEM, ETABS etc.

Computer Science & Engineering

Since the establishment, the department is engaged in various academic activities including conducting of Short Term Training Program, International and National Seminar, offering advanced level programmes, infrastructural development, research activities etc. The department is actively involved in organizing Short Term Training Program in collaboration with different International and National agencies and institutes. In recent past, Department has organized one TVET program with UNESCO-UNEVOC and four regional programs in collaboration with Colombo Plan Staff College, Manila, Philippines an Inter-Governmental organization involving various countries of Asia and Pacific region. The department has also organized ISTE Summer School for faculties of engineering colleges and polytechnic system regularly. The department has offered various advanced level programme in the area of Machine Learning, Artificial Intelligence, Soft Computing, DBMS, Networking, Software Engineering, Computer Architecture, Multimedia, Internet technology etc. since its inception.

The Department of Computer Science and Engineering, NITTTR, Kolkata is also offering 2-year 4 semester full-time Post Graduate Programme (M. Tech) in the area of Multimedia and Software Systems since 2005. Since 2005, a total of 208 M.Tech theses have been written with more than 35 published articles. A large number of M. Tech pass-outs have opted for academics/ research as career and are now placed in various reputed institutes e.g. NITs, IITs, JU, IIIT as well as abroad. Apart from the routine short-term and long-term programmes, the department has conducted a one year full time Post-Graduate Programme (PGDIM, in collaboration with CMC Ltd.) in the area of Information Management during 1994-2000. The department has a very strong linkage with of IT and allied Industries and Universities and experts from there, are regularly taking part in the multifarious activities of the department like Curriculum Development, organization of Seminar and Workshop, taking lectures in various emerging areas etc. The department was actively involved in World Bank Project on Strengthening Technician Education (Tech Ed - I and Tech Ed - II) Project. Under the Project department has developed a number of IT Curriculum, Instructional Material and facilitated infrastructural and capacity expansion for the polytechnic. The department has acted as resource institution in developing MIS and Satellite Based Instructional Material Program for the World Bank States in Eastern and North Eastern Region.

All the faculty members of the department are actively engaged in research in technical education and different areas of computer science. In this process, more than 500 publications in different National and International Conferences and Journals had been done by the members of faculty in last 3 decades and have represented the Institute in USA, Europe and Asia Pacific region. The total number of 20 PhD scholars awarded, 2 submitted and 3 registered under the guidance of the faculty members of this department. The department is current having DST sponsored bilateral project between India and Poland.

The department is equipped with the state-of-the-art computing resources including more than 250 odd clients with 20 servers in a networked environment. All the servers such as Web Server, DNS, Video Servers, and Application Servers are located in Data Centre. The department also has a NKN leased line for uninterrupted internet connection. The department is equipped with one Integrated Computer Centre and five laboratories viz., (a) Computational Intelligence Laboratory (b) Database Laboratory (c) Cloud Computing Laboratory (d) Multimedia Engineering Laboratory (e) Linux Laboratory. The above five laboratories are equipped with state-of-the-art computing facilities along with relevant software.



Activities



Academic Programmes



Research

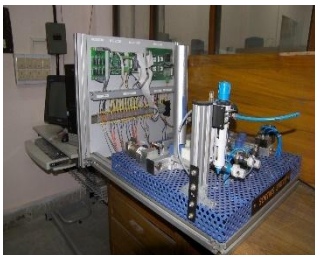


Facilities

Electrical Engineering

The department of Electrical Engineering is one of the core department of the Institute & was established to facilitate long term training to the faculty members of the polytechnic system of the eastern region of the country. The department is also pioneer in imparting short term training programmes in the broad areas of Electrical, Electronics, Instrumentation and Biomedical Engineering mitigating the needs of the Polytechnic, Engineering and Pharmacy College teachers of the Eastern region in particular and the Country in general. It started offering M. Tech Programme in Mechatronics Engineering from 2005. The dedicated faculty members of the Department are actively involved in research both in the emerging area of Technology and pedagogy related to Electrical Technology and Technical Education. It has been declared as Quality Improvement (QIP) Centre by AICTE in 2016 to offer Ph.D programme in Engineering and the programme is affiliated by MaulanaAbulKalam Azad University of Technology (MAKAUT), West Bengal. The Department has a very strong linkage with Industries and Universities. Experts are regularly taking part in the diverse activities of the department like Curriculum Development, participation in various Seminars and Workshops, taking lectures in various emerging areas etc. The members of faculty of the department are also invited very frequently to work as experts in different academic activities of Universities and other bodies.

To keep pace with the development in the frontier areas of Technology especially in the field of system Automation, Control and Cybernetics, the Department has developed well equipped laboratories with state of the art facilities viz. Mechatronics Laboratory, Process Control Laboratory, Measurement & Transducer Laboratory, Electrical Machine Laboratory, Microprocessor Laboratory, Advanced Control Laboratory, Power System Laboratory and Non-Conventional Energy Laboratory etc. to impart appropriate practical skills in Technical Teachers' Training and to support Post Graduate and Research Programmes. Some of the experimental setups are shown below



Automatic Sorting Station in Mechatronics Laboratory



Process Control using DCS



Load Cell in Measurement & Transducer Laboratory



Experimental setup on Electrical Machine



Microprocessor based control system



DC Motor speed & position control system



Experimental setup on Power System Laboratory



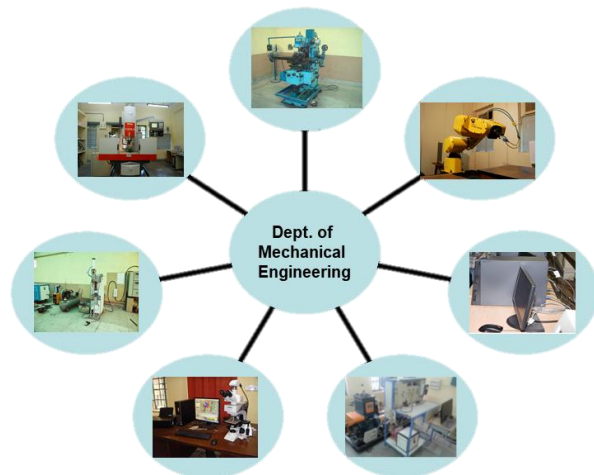
Solar Panel for Non-Conventional Energy sources

Faculty members of the department are actively engaged in research in different areas of interest. In this process, they have already published about more than 100 research papers in different National and International Journals and Conferences and represented the Institute in various International Conferences in different countries.

Mechanical Engineering

Major departmental activities include, conducting short term training programme (STTP), regular M. Tech programme and others (curriculum development, workshop etc.). Department has offered nearly 200 short term training programme in last two and current academic years in various areas of Mechanical Engineering, Advanced Material Engineering and Education Technology. Department also engaged with curriculum development of polytechnic institutes for Eastern and North Eastern region of the country and had organized seminars and workshop in the national level. Department was actively involved in Tech Ed I and Tech Ed II of World Bank project. In recent past, department was actively engaged with 1st National Innovation Talent Contest for Polytechnics (NITCP) in 2015-17. Apart from these, department also offers M. Tech in Manufacturing Technology approved by AICTE and affiliated by MaulanaAbulKalam Azad University of Technology (MAKAUT), West Bengal.

The department is well equipped with **major facilities** in traditional and non-traditional Mechanical Engineering and Material Science & Engineering. The department has seven major Research Centres/Laboratories *viz.* Welding Centre, CAD/CAM Centre, Materials Characterization Laboratory, Conventional Machining Laboratory & Workshop, Thermal Engineering Laboratory, Departmental Computer Laboratory and Robotics Laboratory. The major facilities of Welding Centre include TIG welding, MIG welding, submerge Arc welding, pulse TIG welding, spot welding machine, welding simulator, plasma cutting machine. CNC milling machine, CNC turning machine and CNC wire cut EDM are the key facilities of CAD/CAM Centre. Materials Characterization Laboratory is equipped with the state-of-the-art facilities including tool maker's microscope, conventional metallurgical microscope, stereo metallurgical microscope, dish polishing machine, hardness testing machine, impact testing machine, and universal testing machine. All geared high speed lathe, combined universal cum vertical milling machine, high temperature vacuum furnace for powder technology, hydraulic trainer, pneumatic trainer, C-type hydraulic press, shearing machine are the major facilities of Conventional Machining Laboratory and Workshop. Thermal Engineering Laboratory of the department having facilities like computerized variable compression ratio multi-fuel engine test rig, multi cylinder petrol engine test rig, variable compressor ratio (VCR) dual fuel engine test rig. ANSYS, MATLAB, AUTOCAD, EDGE CAM are software resources available for the Departmental Computer Laboratory. Further, industrial robot is the major resource facility in the Robotics Laboratory.



Faculty members in the department are actively engaged in **research** in core and interdisciplinary areas of Mechanical Engineering and Material Engineering as well as in Education Technology. Currently, department has more than 110 reputed national and international journal papers with total SCI impact point of more than 130 (total citation over 2000), 85 national and international conferences, 6 book chapters, 2 books and 2 USA patents. With its strong faculty profiles, excellent infrastructure facilities, having a strong Technical Education and Management Department in the Institute with several well-known faculty members in the domain area of Pedagogy and Education Technology, the experience of the Director as the NPTEL Coordinator of IIT Kanpur and above all the geographical location advantage of Kolkata, Department of Mechanical Engineering of this Institute is a good choice for the National Resource Centre in the domain of Technical Teachers' Training (Mechanical Engineering)

Education & Management

The department is actively involved in training technical teachers since its inception. As a result of merger of three departments and centre stated above, the department of Education & Management has become a veritable forte of expertise in important areas of Pedagogy & Educational management. The department being the foundation of the Institute feels proud in serving & contributing towards conduct of a greater share of training programmes both in the Institute & in-house. The training programmes are designed on the basis of training needs analysis report and therefore, are highly customized as per the need of the clientele. Design / revision and implementation of courses under Diploma & Degree programs is a regular activity of the department. The department has offered various new programmes for teachers in the areas of Pedagogy, Student performance evaluation, NBA, Outcome based education & assessment, Strategic management & planning, Emotional intelligence, Problem solving and decision making, Student mentorship. Besides developing learning resources, this department is constantly contributing towards preparing video programmes for GyanDarshan Channel. The department has coordinated vetting of equipment under upgradation of existing polytechnic scheme, Govt. Of India.

Faculty members of the department were actively involved in World Bank Project on Strengthening Technician Education (Tech Ed –I,–II & -III) System. Under the Project, the department has coordinated the monitoring & implementation of academic components, preparing DPRs etc.

In addition to its pivotal activities of training & research, the faculty members of the department, in their own capacity, are also involved in delivering invited talks/ keynote addresses at national and international forums besides participating in national & international conferences and seminars. Some of them have also been contributing as members of various internal and external committees and academic bodies.

Though the department has contributed in the key areas of training, curriculum revision, research, extension services & learning resource development, its contribution in the last five years is noteworthy. Education & Management has made efforts in designing the UNESCO-UNEVOC supported International Capacity Development Programme on Training of Trainers. Besides contributing in several training & assessment sessions of the said programme, the department has also made academic contribution in the Regional Program on Quality and Sustainability in TVET in collaboration with CPSC, Manilla in the year 2017.

Several need-based workshops related to NBA and Outcome based education have been conducted in different parts of the country. Regional Workshops for improving Technical Education in the North-Eastern states have also been organized by the department. The department has also assisted the states particularly those of the eastern and north-eastern regions in successful conduct of the skill development programmes under TVET. In the recent past Training of Trainers under West Bengal NSDI Pilot training project was successfully conducted.

The department has made sustained endeavours in proposing various research activities in the last three years. To name a few are, ‘Evidence based research to study training impact’, ‘Management of academic quality’, ‘Action research especially at Diploma level of Engineering’, ‘Professional development of teachers in core pedagogical areas’, ‘Technology enabled teaching ‘.

NO OBJECTION CERTIFICATE TO BE FURNISHED BY
THE CANDIDATE FROM THE EMPLOYER

Certified that Mr./Mrs Son/Daughter of Shri.
..... is an employee of the institution/organisation
since..... The Institution/organisation has no objection if he/she is
appointed in National Institute of Technical Teachers' Training & Research, Kolkata
against the post of.....as per advertisement No.
.....

Place:

Date:

SIGNATURE WITH SEAL OF THE
HEAD OF INSTITUTION/ORGANISATION