# National Institute of Technical Teachers' Training & Research, Kolkata

## List of ICT Mode STTPs

## Application Form Link: http://www.nitttrkol.ac.in/download/Application%20Form.pdf
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| Sl. No. | Prog. Code | Programme Title | Programme Co-ordinator | Date: From | Date: To | Duration (Week) | Target Participant / Group | Programme Objectives |
|---|---|---|---|---|---|---|---|---|
| 1. | ICT043 | NBA Accreditation | Rayapati Subbarao | 17/05/2021 | 21/05/2021 | 1 | Faculty of all disciplines | At the end of the programme, the participants will be to:<br>• Identify the Impact of NBA Accreditation<br>• Prepare Vision, Mission, Program Educational Objectives<br>• Prepare Outcomes and Program Outcomes<br>• Learn how to prepare SAR.<br>• Practice Criteria i to x |
| 2. | ICT044 | Machine Learning with Python | Chandan Chakraborty & Kinsuk Giri | 17/05/2021 | 21/05/2021 | 1 | Faculty of IT, CSE, ECE, EE, Biomedical, BCA, MCA Electrical & Computational Sciences | After attending this course, the participants will be accomplished with<br>• The notion of Machine Learning and its impact on future employment<br>• Overview of Python programming<br>• Exposure of supervised and unsupervised ML techniques<br>• Hands-on-practice of ML algorithms implementation using Python<br>• Explore for problem solving. |
| 3. | ICT045 | Management Issues of Laboratory and Workshop Classes | Dipankar Bose | 17/05/2021 | 21/05/2021 | 1 | Faculty members of all technical institutions | After attending the programme the participants will be able<br>• know varoius management issues of conducting laboratory and workshop classes<br>• understand the effective techniques of management of classroom , macines/equipment and manpower<br>• state different safety aspects |
| 4. | ICT046 | Ground Improvement and Soil Stabilisation techniques | Jagat Jyoti Mandal | 17/05/2021 | 21/05/2021 | 1 | Faculty members of Civil & allied disciplines | After attending the programme the participants will be able to<br>• Explain the importance and application of different ground improvement and soil stabilisation techniques in the context of present day infrastructure development<br>• Teach the related topics in more efficient and effective manner through examples |
| 5. | ICT047 | Measurement and Experimentation using Sensors, Transducers & Actuators | Sagarika Pal | 17/05/2021 | 21/05/2021 | 1 | Faculty of Electrical, Mechanical, Electronics & Instrumentation disciplines | After completing the course the participants will be able to<br>• Differentiate sensors, transducers and actuators<br>• Define & classify different sensors, transducers and actuators in industry<br>• Experiment with different types of sensors and actuators<br>• Explain the concept of signal conditioning circuits<br>• Apply transducers and actuators in process Control Systems |
| 6. | ICT048 | Formal Languages and Automata | Samir Roy | 17/05/2021 | 21/05/2021 | 1 | Faculty of any engineering discipline | After successful completion of the program, the participants will be able to<br>• Explain Formal Languages and Automata<br>• Apply Formal Languages and Automata to solve problems |
| 7. | ICT049 | Estimating and Costing of Non-conventional Energies | Sheela Yadav Rai | 17/05/2021 | 21/05/2021 | 1 | All Discipline | After attending the programme the participants will be able to :<br>• Describe various type of Non-conventional Energies Sources<br>• Understand the scope of Solar energy, Solar Thermal Conversion, Solar Collector, Wind Energy<br>• Estimating & costing of various energies |

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| 8. | ICT050 | MATLAB & LABVIEW Applications in Engineering | Soumitra Kumar Mandal | 17/05/2021 | 21/05/2021 | 1 | Faculty & Lab Tech. of EE, ECE, IE, EEE | After attending the programme, the participants will be able to<br>• Explain the different aspect of MATLAB & Simulink<br>• Solve simple problem using MATLAB programming<br>• Develop simple model using Simulink<br>• Design and simulation of Engineering problems<br>• Understand fundamentals of LABVIEW<br>• Implement LABVIEW Applications in Engineering |
| 9. | ICT051 | Development of Laboratory Instruction and Manual | Subrata Mondal | 17/05/2021 | 21/05/2021 | 1 | Faculty of all disciplines and laboratory technicians | After attending this programme, participants would be able to:<br>• explore the role of laboratory in student learning;<br>• explore development of laboratory exercise;<br>• explore writing of laboratory report;<br>• explore standard operating procedure (SoP) in laboratory;<br>• explore safety management in laboratory etc. |
| 10. | ICT052 | Student Friendly Methods of Instruction | Uday Chand Kumar | 17/05/2021 | 21/05/2021 | 1 | Faculty and technicians all branches | After attending the programme the participants will be able to<br>• Identify attributes of student friendly instruction<br>• Design instruction<br>• Plan student friendly activities<br>• Demonstrate student friendly instruction |
| 11. | ICT053 | Seismic Analysis of Structures using Software | Mithu Dey | 24/05/2021 | 28/04/2021 | 1 | Faculty from Civil and allied branches | After attending the program, participants are expected to be able to<br>• Understand the earthquake effect on structures.<br>• Know the different methods of analysis using software<br>• Familier with advanced technology to resist the earthquake forces. |
| 12. | ICT054 | Image Processing using MATLAB | Indrajit Saha | 24/05/2021 | 28/05/2021 | 1 | CSE, IT, BCA, MCA ECE, EE, ME, CIVIL | After attending the program, the participants will be able to<br>• describe the fundamentals of image processing (IP)<br>• apply MATLAB commands to do IP<br>• explain image processing in classroom |
| 13. | ICT055 | Concepts of Software Engineering | Ranjan Dasgupta | 24/05/2021 | 28/05/2021 | 1 | Faculty of CSE & IT discipline | After going through this program the participants will be able to:<br>• explain different quality aspects of a software<br>• critically analyse different software development models<br>• explain design theory |
| 14. | ICT056 | ICT Tools for Teaching and Learning 1 | Arpan Kumar Mondal | 24/05/2021 | 28/05/2021 | 1 | Faculty of all disciplines | After going through this program the participants will be able to:<br>• Explain the concept of ICT Mode of teaching-learning,<br>• Understand the use of various ICT tools,<br>• Apply different ICT tools for e-learning |
| 15. | ICT057 | Soft Skills for Teachers | Habiba Hussain | 31/05/2021 | 04/06/2021 | 1 | Teachers from all disciplines | After attending the programme, participants will be able to:<br>• Identify soft skills required for effective teaching<br>• Characterise different soft skills identified<br>• Demonstrate few skills |
| 16. | ICT058 | Introduction to Manufacturing Systems | Nirmal Kumar Mandal | 31/05/2021 | 04/06/2021 | 1 | Mechanical, Production, &Industrial | After attending the programme the participants will be able to<br>• Explain manufacturing systems<br>• Analyse the performance of Automated Manufacturing System |

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| 17. | ICT059 | Philosophy of RC Design – From Prescriptive as per Codes of Practice to Performance Based | Santanu Bhanja | 31/05/2021 | 04/06/2021 | 1 | Faculty of Civil, Architecture & allied disciplines | After attending the course, the participants will be able to<br>• Understand the philosophy of Limit State Method in a comprehensive manner as per IS:456-2000<br>• Understand the importance of ductility in R.C. Design as per IS:13920-2016<br>• Identify the major design and detailing considerations<br>• Differentiate between load and capacity design<br>• Identify the limitations of Limit State Method<br>• Understand Performance based design |
| 18. | ICT060 | Advanced Materials Science and Engineering | Subrata Mondal | 31/05/2021 | 04/06/2021 | 1 | Faculty of Chemical Engg. Mechanical Engg., Science, Textiles Engg., Materials Sci. & Engg., Polymer Engg. and allied disciplines | After attending this program, participants would be able to:<br>• explain the structure sensitive properties of polymers, metals and alloys;<br>• explain the fundamental of nanomaterials, types of nanomaterials, principle methods of nanomaterials preparation, properties and applications;<br>• explain types, manufacturing process, properties and applications of metal matrix, ceramic matrix and polymer matrix composites/nanocomposites;<br>• explain biocompatible and biodegradable materials, characteristics and applications for various biomaterials etc. |
| 19. | ICT061 | Teaching – Learning Process using Instructional Media | Subrata Chattopadhyay | 31/05/2021 | 04/06/2021 | 1 | All Discipline | After attending the course the participants will be able to<br>• Understand the utility of instructional media<br>• Know the types of instructional media and its advantages<br>• Familiar with the computer to be used as instructional media and its advantages and limitations<br>• Understand the courseware<br>• Classify the Different types of courseware<br>• Application of Computer assisted instruction<br>• Know the feathers of CAI<br>• Explanation of different types of CAI<br>• A model class with CAI |
| 20. | ICT062 | Applied Machine Learning in Engineering | Nirmal Kumar Mandal | 07/06/2021 | 11/06/2021 | 1 | All Disciplines | After attending the programme the participants will be able to<br>• Explain supervised and unsupervised learning<br>• Apply Multinomial Logistic Regressions, Monte Carlo Simulation (MCS), Markov Chains in engineering problems |
| 21. | ICT063 | NBA Accreditation and SAR Preparation | Rayapati Subbarao | 07/06/2021 | 11/06/2021 | 1 | Any faculty | At the end of the programme, the participants will be to:<br>• Identify the Impact of NBA Accreditation<br>• Prepare Vision, Mission, Program Educational Objectives<br>• Prepare Outcomes and Program Outcomes<br>• Learn how to prepare SAR.<br>• Practice Criteria i to x |

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| 22. | ICT064 | Skill Assessment in Laboratory and Workshop Classes | Dipankar Bose | 07/06/2021 | 11/06/2021 | 1 | Faculty members of all technical institutions | After attending the programme the participants will be able to<br>• define different types of skills<br>• distingush between product and process in evaluating students performance in laboratory and workshop classes<br>• know various assesment techniques of skills in the laboratory and workshop classes |
| 23. | ICT065 | Engineering Capstone Project | Prasanta Sarkar | 07/06/2021 | 11/06/2021 | 1 | Faculty and Technical Staff of all disciplines | After attending the programme, the participants will be able to<br>• Form Capstone Project Team<br>• Identify Capstone Project topic<br>• Prepare Capstone Project proposal<br>• Develop Capstone Project<br>• Assess Capstone Project |
| 24. | ICT066 | Development of Mechanical Engineering Laboratory Experiments and Instruction Sheets | Samiran Mandal | 07/06/2021 | 11/06/2021 | 1 | Faculty members of Mechanical , Automobile and Production Engineering | After attending the programme the participants will be able to<br>• Classify the laboratory experiments<br>• Develop laboratory experiments<br>• Plan laboratory instruction<br>• Prepare laboratory instruction sheets<br>• Evaluate laboratory skills |
| 25. | ICT067 | Renewable Energy Sources and Emerging Technologies | Sheela Yadav Rai | 07/06/2021 | 11/06/2021 | 1 | All Discipline | After attending the programme the participants will be able to:<br>• Understand Energy Sources and their utilization<br>• Explain Environmental aspects of electric energies generation<br>• Understand the scope of Solar Thermal Conversion and Solar Photovoltaic system<br>• Describe about wind energy, Geothermal energy and Biomass<br>• Apply Non-conventional energies through various agencies<br>• viz.WBREDA |
| 26. | ICT068 | Induction Training | Sukanta Kumar Naskar | 07/06/2021 | 18/06/2021 | 2 | Faculty members of technical instituites | After attending the programme participants will be able to:<br>• Develop concept of curriculum development<br>• Managege the classroom effectively<br>• Develop lesson plan<br>• Identify quality parameters of Technical Education<br>• Identify managerial roles of a tecaher |
| 27. | ICT069 | Fundamental of Surveying | Uday Chand Kumar | 07/06/2021 | 11/06/2021 | 1 | Faculty/Instructor/ Technician of Civil Engineering and allied brahcnes | After attending this programme, participants would be able to:<br>• Describe Surveying<br>• Practice different types of Surveying (Chain, Plain Table, Compus, Leveling, Theodolote)<br>• Solve the different type of problems |
| 28. | ICT070 | Capstone Project | Urmila Kar | 14/06/2021 | 18/06/2021 | 1 | Faculty members from all technical institutes, | |

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| 29. | ICT071 | Machine Learning with R Programming | Chandan Chakraborty | 14/06/2021 | 18/06/2021 | 1 | Faculty of Engineering & Science, Allied disciplines | On successful completion of the course the participants will be able to<br>• Develop knowledge and understanding of the most common types of machine learning problems for Engineering applications,<br>• Explore the overview and learning skill with R Studio,<br>• Expose with the design and development of Supervised Machine Learning Algorithms with R programming<br>• Also Develop Unsupervised machine learning models with R programming<br>• Deploy ML algorithms for engineering problem solution through project based learning. |
| 30. | ICT072 | Settlement & Bearing Capacity Analysis of Shallow Foundations | Jagat Jyoti Mandal | 14/06/2021 | 18/06/2021 | 1 | Faculty members of Civil & allied disciplines | After attending the programme the participants will be able to<br>• Explain the conceptual back ground for settlement and bearing capacity of shallow foundations<br>• Determine settlement and bearing capacity of shallow foundations by using<br>✓ Laboratory test data<br>✓ In situ field test data<br>• Teach the related topics in more efficient manner |
| | ICT073 | Programming and Automation using PLC | Sagarika Pal | 14/06/2021 | 18/06/2021 | 1 | Faculty of Electrical, Mechanical, Electronics & Instrumentation disciplines | After completing the course the participant will be able to<br>• Explain working principle of PLC<br>• Describe architecture of PLC system<br>• Develop PLC programmes<br>• Apply PLC in various system automation |
| 31. | ICT074 | Fuzzy and Rough Set Theory | Samir Roy | 14/06/2021 | 18/06/2021 | 1 | Faculty of any engineering discipline | After successful completion of the program, the participants will be able to<br>• Explain Fuzzy and rough set theory<br>• Design systems applying Fuzzy and rough set theory |
| 32. | ICT075 | Solar Photo Voltic System | Soumitra Kumar Mandal | 14/06/2021 | 18/06/2021 | 1 | Faculty & Lab Tech. of EE, ECE, IE, EEE | After attending the programme, the participants will be able to<br>• Describe the principles of Solar Cell<br>• Identify the various parameters of Solar PV system<br>• Develop an in-depth knowledge about Solar PV Module by performing basic experiments & through field visit<br>• Modelling of Solar PV system using MATLAB<br>• Operation and Control of Solar PV system<br>• Understand fundamentals of Smart grid |
| 33. | ICT076 | Fundamental and Applications of Nanomaterials | Subrata Mondal | 14/06/2021 | 18/06/2021 | 1 | Faculty of all disciplines | After attending this program, participants would be able to:<br>• explore the concept of nanotechnology;<br>• describe the fundamental of nanoscale materials' properties;<br>• identify various carbon based nanomaterials;<br>• describe applications of nanomaterials in various fields;<br>• explain the nano toxicology and nano safety etc. |
| 34. | ICT077 | ICT Tools for Teaching and Learning 2 | Arpan Kumar Mondal | 14/06/2021 | 18/06/2021 | 1 | Faculty of all disciplines | After going through this program the participants will be able to:<br>• Explain the concept of ICT Mode of teaching-learning,<br>• Understand the use of various ICT tools,<br>• Apply different ICT tools for e-learning |

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| 35. | ICT078 | Municipal Water and Wastewater Treatment | Sailendra Nath Mandal | 14/06/2021 | 25/06/2021 | 2 | Faculty and Staff of any disciplines | After attending the programme the participants will be able to acquire –<br>1. knowledge of basic concept of drinking water, wastewater, sampling, preservation, analysis, standards, interpretation of result and management of wastewater, impact on human health ,<br>2. skill of handling/demonstrating equipment, performing experiments, interpreting results, preparing test report, providing laboratory instructions to develop inquiring attitude among the student and evaluation of laboratory performance in related to drinking water analysis, wastewater analysis/ treatment laboratory,<br>3. attitude of hand-on working/demonstrating in the laboratory/field (Plant Visit) |
| 36. | ICT079 | Design and Development of content for e-Learning | Rajeev Chatterjee & Ranjan Dasgupta | 14/06/2021 | 25/06/2021 | 2 | Faculty of all disciplines | After going through this program the participants will be able to:<br>• explain the concept of e-learning,<br>• explain synchronous and asynchronous e-learning models,<br>• explain the various standards available for e-learning,<br>• explain the basis terminologies such as Learning Objects, sharable Content Objects, SCO,<br>• explain and demonstrate ADDIE Model of ISD<br>• develop e-content chunks / learning object in their own subject domain, and<br>• exhibit and demonstrate the process of e-content creation for MOOCs based e-content. |
| 37. | ICT080 | Numerical and Statistical Methods with SCILAB | Kinsuk Giri | 21/06/2021 | 25/06/2020 | 1 | Faculty of any Engg. and Science disciplines | On successful completion of the programme the participants will be<br>• able to get an overview on different numerical and statistical methods<br>• get an overview on solution techniques<br>• solve problems using SCILAB |
| 38. | ICT081 | Fluid Powered Systems | Dipankar Bose | 21/06/2021 | 25/06/2021 | 1 | Faculty of ME, Production, Automobile Engg. | After attending the programme the participants will be able to<br>• know principles and applications of fluid pwered systems<br>• understand the working principles of various fluid pwererd systems<br>• state characteristics of different fluid powered sustems |
| 39. | ICT082 | Machine Learning and it's Applications | Indrajit Saha | 21/06/2021 | 25/06/2021 | 1 | CSE, IT, BCA, MCA ECE, EE, ME, CIVIL | After attending the program, the participants will be able to<br>• describe the fundamentals of Machine Learning (ML)<br>• apply ML for clustering, classification and regression<br>• explain machine learning in classroom |
| 40. | ICT083 | Advanced Structural Analysis and Introduction to FEM | Mithu Dey | 21/06/2021 | 25/06/2021 | 1 | Faculty and technicians of civil and allied branches | After attending the program, participants are expected to be able to<br>• Understand the different methods of structural analysis<br>• Solve the problems<br>• Apply the knowledge of FEM in structural analysis<br>• Enable a good understanding how software operate |
| 41. | ICT084 | Course on Ancient Engineering, Science and Technology | Nirmal Kumar Mandal & Santanu Bhanja | 21/06/2021 | 25/06/2021 | 1 | Faculty of Engineering with preference to Mechanical, Civil, Architecture & allied disciplines | After attending the programme, the participants will be able to<br>• Explore ancient Indian Science, Technology and, Engineering with special emphasis on Civil and Mechanical Engineering<br>• Explain the ancient Indian knowledge system<br>• Introduce the basic features of ancient Science and Technology<br>• Explain how the basic Science and Technology with limited knowledge may result in wonders. |

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| 42. | ICT085 | Induction Training | Sheela Yadav Rai | 21/06/2021 | 25/06/2021 | 1 | Faculty of all disciplines | After attending the programme the participants will be able to<br>• Formulate the lesson plan<br>• Prepare the instructional objectives<br>• Identify the principles of evaluation<br>• Distinguish between types of evaluation |
| 43. | ICT086 | Sensors and Transducers | Subrata Chattopadhyay | 21/06/2021 | 25/06/2021 | 1 | Faculty of Electrical, Mechanical, Electronics & Instrumentation disciplines | After attending the course the participants will be able to<br>• Classify the Different types of Transducers & Actuators used in Industry.<br>• Familiar with the overview of measurement system and selection of instruments<br>• Understand fundamental of pressure, flow, temperature, level, velocity, acceleration, vibration, position, displacement measuring transducers used in process industries.<br>• Apply the Transducers Actuators in process Control Systems.<br>• Know the concept of Intrinsic safety instruments |
| 44. | ICT087 | Online Pedagogy | Habiba Hussain | 28/06/2021 | 02/07/2021 | 1 | Teachers from all disciplines | After attending the programme, participants will be able to:<br>• Explain the need for online pedagogy<br>• Plan online instruction<br>• Incorporate different principles for effective online delivery |
| 45. | ICT088 | Digital Electronics using VHDL | Soumitra Kumar Mandal | 28/06/2021 | 02/07/2021 | 1 | Faculty & Lab Tech. of EE, ECE, IE, EEE | After attending the programme, the participants will be able to<br>• Study the operations and characteristics of Digital devices<br>• Design of Digital Electronics circuits<br>• Implement digital logic circuits using VHDL |
| 46. | ICT089 | Entrepreneurship Development | Subrata Mondal | 28/06/2021 | 02/07/2021 | 1 | Faculty of all disciplines | After attending this programme, participants would be able to:<br>• explore concept of entrepreneurship;<br>• identify internal and external factors for entrepreneurship;<br>• explore characteristics of an entrepreneur;<br>• explore entrepreneurial motivation and barrier;<br>• explore stages in entrepreneur process;<br>• explore research commercialization;<br>• explore technology business incubation Centre etc. |
| 47. | ICT090 | Fundamentals of Modern Office Management | Sukanta Kumar Naskar | 28/06/2021 | 02/07/2021 | 1 | Faculty members & staff of technical instituites | After attending the programme participants will be able to:<br>• Develop fundamental knowledge of management<br>• Apply the purchase procedure effectively<br>• Develop concept of CCS (CCA) rules<br>• Apply basic tools by using computer |