



सत्यमेव जयते

**Government of India  
Ministry of Human Resource Development**

**ARPIT**

**Annual Refresher Programme in Teaching  
(ARPIT)  
through**

**National Resource Centres (NRCs)  
under**

**Pandit Madan Mohan Malaviya  
National Mission on Teachers and Teaching  
(PMMMNMTT)**

**November, 2018**



# ARPIT

## **Annual Refresher Programme in Teaching (ARPIT) Under Pandit Madan Mohan Malviya National Mission on Teachers and Teaching (PMMMNTT)**

Teachers are at the core of any education system and empowering them with access to latest developments, familiarizing them on the new & emerging trends, encouraging pedagogical improvements and methodologies is both a significant and critical need. The Ministry of Human Resource Development has launched Annual Refresher Programme in Teaching (ARPIT), a major and unique initiative of online professional development of 1.5 million higher education faculty using the MOOCs platform SWAYAM. For implementing ARPIT, **75 discipline-specific National Resource Centres** (NRCs) have been identified in the first phase, which are tasked to prepare online training material with focus on latest developments in the discipline, new & emerging trends, pedagogical improvements and methodologies for transacting revised curriculum.

In the inaugural year 2018, the NRCs are expected to cater to around 13 lakh faculty of the total 15 lakh faculty in higher education. The courses cover a diverse range of topics such as, *inter alia*, Indian culture & Heritage Studies, Pedagogical Innovations & Research Methodology, Latest Trends in Pedagogy and Assessment, Personal-Emotional Development and Counselling , Neural Networks and Deep Learning & Knowledge discovery, ICT in Science and Maths teaching, Innovation and

Best practices in Educational Skills, Leadership and Governance in Higher Education, Public Policy and Administration, English Language Teaching, Hindi Literature & Linguistics, Methodology of Teaching Sanskrit, Effective Creations and Innovative Researches in Medieval Gujarati Literature, Tribal and Regional languages, Urdu, French Studies, Tools, techniques and experiments in Earth Science, Mathematics, Statistics, Zoology, Chemistry, Physics, Biotechnology, Biomechanics, Marine Science, Calculus, Real Time Power Analysis and Smart Grid, Civil Infrastructure for Smart City Development, Engineering Mechanics, Design Spectrum, DIY Manufacturing Technology, Advanced Concepts in Fluid Mechanics, Energy Systems Engineering, Engineering Mechanics, Physics of Semiconductors and Devices, Internet of Things, Astronomy and Astrophysics, Electrical Engineering, Bio-Medical engineering, Metallurgical Engineering and Materials Sciences, Chemical Engineering, Aerospace Engineering, Tourism and Hospitality Management, Political Science, Economics, Psychology, Development Perspectives in Agriculture, Gender/Women's studies, Contemporary Laws, Disaster Management, Climate change, Library & Information Science, Ethics, Human Rights and Environment, Social and Rural Development, Anthropology etc.

Through ARPIT all in-service teachers, irrespective of their subject and seniority have been given an enabling opportunity to keep abreast of the latest developments in their disciplines through the technology based online refresher courses. The NRCs have initially developed 3 minute video(s) which have been assessed technically by AICTE and after having met the MOOC guidelines; the same have been approved and uploaded on SWAYAM Portal.

The training materials have now been uploaded and made available through SWAYAM to all the teachers from 1<sup>st</sup> November, 2018. Currently, registrations are open for the online refresher courses on SWAYAM platform, India's own indigenous MOOC's education engine and can be accessed <https://swayam.gov.in/courses/public>

The course is a 40 hour module with 20 hours of video content and 20 hours of non-video content. They are offered in a highly flexible format and can be done at one's

own pace and time. There are built-in assessment exercises and activities as part of the academic progression in the course. At the end of the course, they will be a terminal assessment which can be either online or a written examination. All faculties who have successfully completed the online refresher course will be certified. The courses will be open from 1st November, 2018 to 28th February, 2019. All in-service teachers, irrespective of their subject and seniority are requested to register and complete these refresher courses which will help them in career advancement. UGC has recognised them in their latest regulations under Minimum Qualifications For Appointment Of Teachers And Other Academic Staff In Universities And Colleges And Measures For The Maintenance Of Standards In Higher Education 2018.

A varied set of institutions such as, Centres under the Ministry's Pandit Madan Mohan Malviya National Mission on Teachers and Teaching (PMMMNTT) located in Central Universities, IISc, IUCAA, IITs, IISERs, NITs, State Universities; UGC's Human Resource Development Centres( HRDCs), National Institutes for Technical Teachers Training (NITTTRs), IIITs, Open Universities have been notified as NRCs. These NRCs cover wide ranging disciplines of Social Sciences, Sciences, Engineering and Technology, Design & Manufacturing, Humanities, Language Teaching, Commerce, Management, Education Planning and Administration, Public Policy, Leadership & Governance, Library & Information Science, Astronomy & Astrophysics, Assessment and Evaluation, Pedagogy and research methods , cutting edge areas of Nano-sciences, Internet of Things, etc.

Faculty can benefit from this initiative as it is highly flexible and can be done at one's own pace and time. The NRCs will revolutionize professional development of faculty by catering to massive numbers by leveraging ICT and online technology platform of SWAYAM.

**Name & Address:** Tezpur University  
**Course Name:** Online Refresher Course In Communication  
**Discipline:** Mass Communication and Journalism  
**NRC Coordinator:** Prof. Abhijit Bora  
abhijitbora71@rediffmail.com

About the Course: Our NRC aims at providing comprehensive and updated courses on emerging and new areas of Communication and Media. This with an inclusive objective so that each and every relevant area of the greater domain are represented to the most appropriate level. We plan to prepare courses on various frontiers of the subject including Development Journalism, Communication for Development, Science Communication, Corporate Communication, Visual and Electronic Communication, Culture and Communication among others. While the department is endowed with a good resource pool of 10 faculty members representing different areas of expertise within the domain of Communication and Media, we would also rope in experts from other institutions and field practitioners to accord the courses a holistic approach.



**Name & Address:** IIIT Dharwad  
**Course Name:** Applied Machine Learning  
**Discipline:** Information Technology  
**NRC Coordinator:** Dr. Arun Chauhan  
aruntakur@gmail.com  
9412886507



INDIAN INSTITUTE OF  
INFORMATION  
TECHNOLOGY

**About the course:** One of the most significant developments in current technological platform is the availability of huge volume of data. This is possible due to the devices that are enabled to automatically collect and store data. Availability of sufficient amount data brings the power to develop efficient algorithms for very complex tasks that is not possible otherwise. The process of making algorithm better based on data is typically called learning and is the subject matter of this course. Machine Learning as a discipline is devoted to design algorithms that allow itself to learn patterns and concepts from data without being explicitly programmed. This course will introduce some of the principles and foundations of Machine Learning algorithms along with their real world applications. The course would be introductory in nature, and would not assume any prior exposure of its audience towards Machine Learning.

The course will cover the major approaches to learning namely, supervised, unsupervised, and reinforcement leaning. The course emphasizes various techniques, which have become feasible with increased computational power and our ability to produce and capture huge volumes of data. The topics covered in the course include regression, decision trees, support vector machines, artificial neural networks, Bayesian techniques, Hidden Markov models, genetic algorithms etc. Some advanced topics like active and deep learning will also be covered

