SCHEME FOR MASTER OF ENGINEERING (INDUSTRY ORIENTED AND PRACTICE BASED) PROGRAMME REGULAR AND MODULAR IN INSTRUMENTATION AND CONTROL

AIM

To offer Master of Engineering (industry oriented and practice based) Regular & Modular Programmes in Instrumentation and Control, for technical teachers and professionals working in industries.

RATIONALE

The rapid pace at which changes and advancements are taking place in technology pose a great challenge to training and supplying the right kind and quality of technical manpower. The training of technical personnel is largely influenced by the nature of curriculum, quality of instructional processes, management of instructional system and the role played by industry in their training.

In order to increase the relevance of technical personnel to the world of work, it has all along been felt that the nature of programmes offered by the technical institutes should be oriented towards technology applications and practices. These programmes should focus on learning of industrial practices, practical and generic skills of problem solving, learning to learn skill and entrepreneurship skill.

As per the latest recommendations of the AICTE regarding pay scales and qualifications for technical teachers, the minimum qualification for lecturers is prescribed as degree in Engineering or Technology or equivalent and they have to acquire Master's degree or such higher qualifications for promotions to higher grades. Majority of these teachers are fresh graduates and lack the knowledge of industrial practices and related practical skills, which in turn affects, the quality of technician engineers produced by the Polytechnics/Engineering Colleges. They, therefore, need a strong orientation in technological and field practices in the areas of fabrication, erection, construction, installation, operation, production, testing, maintenance and quality control.

The practice-based M.E. degree programme in Instrumentation and Control will provide the above education and training to the Polytechnic/Engineering College teachers specially to equip them with the necessary knowledge and skills related to industry and field practices. They will be in a position to transfer such knowledge and training to the students of Polytechnics, so that their effective contribution in the world of work is increased.

In order to meet the above long felt need for higher education of polytechnic/Engineering College teachers, it is necessary to offer practice based Masters degree programmes specially designed to incorporate credit based system of evaluation. The system will have all the inbuilt flexibility to allow for self pacing, taking up study of
courses in the sequence and at the time convenient to in-service graduate personnel and obtaining specialization in the areas specific to their profession and carrier development.

In view of the above, NITTTR (earlier known as TTTI) Chandigarh have started offering a practice based M.E programme (Regular) in Instrumentation and Control for technical teachers having a B.E. degree or an A.M.I.E qualification in Electrical/Electronics/Instrumentation & Control Engineering or equivalent, since August, 1998. The course aims to provide an in-depth knowledge of field practices and ability to innovate and conduct research in technology areas. This will not only change the orientation of technician programmes but will also reduce the widening gap between technician courses and field practices and will greatly improve the performance of industries. Limited numbers of seats are also available to professionals working in industries and field organizations.

An acute problem faced by technical institutions both for degree and diploma level is that they are not able to spare their teachers for two long years for higher studies away from their institutes. In order to face the above situation, the institute is also offering another M.E. programme (Modular) in Instrumentation & Control for technical teachers and professionals working in Industries. This programme has been structured modular in nature where the teachers could be relieved from their institute to this institute for attending classes during summer and winter vacations. They will however also have to undertake follow up study when they return to their institutions so as to prepare themselves for University examinations before the beginning of subsequent modules. The contact type ME programme which is of two years duration has been made modular without any dilution with respect to rigour of teaching learning practices as also University examinations. However, the duration of the programme has been increased to 3 years. Classes will begin from first week of June and second week of December having a contact period of 5 weeks each where the students will study two subjects simultaneously.

**Objectives**

The specific objective of this course is Continuing Education and Training and Retraining of:
- in service technical teachers.
- industry personnel
- any other sponsored candidate desirous of pursuing a career in teaching.

**Target Population**

The envisaged target group includes:
- teachers with a B.E. degree or an equivalent qualification such as A.M.I.E. etc, in Electrical/Electronics/Instrumentation and Control Engineering.
- working professionals from Industries and other organizations having a B.E. degree in Electrical/Electronics/Instrumentation and Control Engineering or an equivalent qualification such as A.M.I.E. etc. in Electrical/Electronics/Instrumentation and Control Engineering.
SPECIAL FEATURES OF THE PROGRAMMES

i) Both the programmes are flexible, and allow self-pacing and taking up course of study in the sequence and at times convenient to the students:

ii) The courses focus on the mastery of minimum essential competencies and development of capabilities such as learning to learn, problem solving, human relations and management skills in addition to learning of Instrumentation Control Engineering subjects.

iii) These make use of a combination of instructional techniques such as group discussions, home assignments, individual and group projects, independent study, seminars etc.

iv) Assessment of student’s performance will be based on both continuous evaluation using variety of assessment techniques matching the learning objectives of the different courses of study and end of term University evaluation.

v) Completion of the course work is followed by Thesis work