UDP005 INTRODUCTION TO ELECTRONICS INSTRUMENTATION ENGINEERING

L T P Cr
2 0 0 2

Course Objectives: To introduce the Electronic Instrumentation & Control Engineering in general, Components of instrumentation and its applications in various domains and the latest trends.

Measurement: Concept of measurement, its significance and applications. Generalized scheme of measurements, Concepts of Sensors and transducers and associated signal conditioning. Electrical & Electronic measurements.

Electronic Instrumentation: Introduction to Analog Devices and Circuits, Digital Electronics, Microprocessors, Micro-controllers and Embedded Systems.

Industrial Instrumentation and Control: Concepts of Industrial instrumentation, Industrial Telemetry and Data Acquisition. Introduction to Control systems, Process Dynamics and Control.

Latest Trends: Introduction to Digital Signal Processing, Biomedical instrumentation, Virtual instrumentation, Image Processing, Biometrics, Bio-sensors and MEMS, Robotics.

Course learning Outcomes: After the successful completion of the course the student will be able to explain
- Basic concepts of Electronic Instrumentation & Control Engineering
- Components of Instrumentation like Measurement, Control and Automation
- The applications in the field of Process Industry, Embedded Systems, Signal Processing etc.
- the latest trends in their field for futuristic relevance.

Reference Books
1. *Sawhney, A.K. and Sawhney, puneet, A Course in Electrical and Electronic Measurements and Instrumentation, Dhanpat Rai (2008) 18th ed.*
2. *Ananad, M.M.S., Electronic Instruments and Instrumentation Technology, Prentice–Hall of India Private Limited (2004).*
3. *Johnson, C.D., Process Control Instrumentation Technology, Prentice Hall of India Private Limited (2002).*
4. *Liptak, B.G., Instrument Engineers Handbook, Butterworth, Heinemann (2002).*

Evaluation Scheme:

Sr. No.	Evaluation Elements	Weightage (%)
1	MST	40
2	EST	60
3	Sessionals (May include Assignments/Projects/Tutorials/Quizzes/Lab Evaluations)	40