

Core Departments

Department of Instrumentation



The Department has developed modern research facility and infrastructure to support the teaching and research activities. The department has five major laboratories based on curriculum : Analytical Instrumentation Laboratory supported by a Wet Laboratory, Biomedical Instrumentation Laboratory, Electronics Instrumentation & Electrical Machine Laboratory, Microprocessor Laboratory and Industrial Instrumentation Laboratory. The department established new Process Control Laboratory in the previous session.

The Analytical laboratory is well equipped with HPLC, GLC, Karl Fischer Titrator, pH meter, UV-Vis Spectrophotometer, Photometer, Flame Photometer, FTIR Spectrophotometer, and Rotary Vacuum Evaporator. The Biomedical laboratory has biomedical kits which are used to measure EEG, ECG, EMG, pulse rate, respiration rate etc. The lab also has ELISA reader, Biochemistry Analyzer, Biomedical Scanner, PCR machine, Blood cell counter and ultrasound machine. Electronics Instrumentation and Electrical Machine Laboratory have various equipments like series and shunt DC Motors, induction motors, etc. Micro-processor lab is equipped with 8085 kits to train students for programming and designing new projects. Industrial Instrumentation lab has instruments like orifice meter, DC calibration meter, level transmitter, Ultrasonic flow meter, ratio controller, pressure gauge calibrator, magnetic flow meter, circular chart recorder etc.

The department organised a 7-day short course on PLC and SCADA in May, 2016 and is currently running two innovation projects funded by University of Delhi. It also organised industrial visit to CSIO, Chandigarh in April, 2016 and educational visit to INMAS, Delhi in December, 2015 besides organising various invited lectures wherein eminent people from industry and academia were invited to update students about the latest development in this field.

Department of Instrumentation

B.Sc. (Hons.) Instrumentation

SEMESTER 1	SEMESTER 2
C-I : Basic Electronics and Network Analysis C-II : Applied Physics AECC-I : English/MIL Communication or EVS GE-I	C-III : Analog Devices and Circuits C-IV : Transducers and Sensors AECC-II : EVS or English/MIL Communication GE-II
SEMESTER 3	SEMESTER 4
C-V : Biomedical Instrumentation C-VI : Digital Electronics and Verilog C-VII : Engineering Mathematics SEC-I GE-III	C-VIII : Operational Amplifiers and Applications C-IX : Analytical Instrumentation C-X : Electronic Instrumentation SEC-II GE-IV
SEMESTER 5	SEMESTER 6
C-XI : Measurement Technology C-XII : Microprocessor DSE-I DSE-II	C-XIII : Power Electronics C-XIV : Control Systems DSE-III DSE-IV

C : Core Courses; GE : Generic Elective; AECC : Ability Enhancement Compulsory Course; SEC : Skill Enhancement Courses; DSE : Discipline Specific Elective

Discipline Specific Electives (DSE) (Credit : 06 each) (4 papers to be selected) DSE I-IV

1. Concepts of Chemistry (4+4)
2. Signal and Systems (4+4)
3. Advanced Analytical Instrumentation (4+4)
4. Communication System (4+4)
5. Advanced Biomedical Instrumentation (4+4)
6. Embedded System and Robotics (4+4)
7. Process Control Dynamics (4+4)
8. Reliability and Quality Control Techniques (4+4)
9. Dissertation (4+4)

Skill Enhancement Course (SEC) (Credit : 02 each) (2 papers to be selected) SEC-I & SEC-II

1. Programming in C (4)
2. VLSI Design and Verification (4)
3. Testing and Calibration (4)
4. PLC and SCADA (4)
5. Virtual Instrumentation (4)
6. Programming using MATLAB (4)

Other Discipline GE-I to GE-IV

1. Mathematics
 2. Computer Science
 3. Physics
 4. Biomedical Science
 5. Chemistry
 6. Electronics
 7. Commerce
- Any other discipline of Choice

Generic Elective Papers (GE) (Minor - Instrumentation) (any four) for other Departments/Disciplines (Credit : 06 each)

1. Sensors and Actuators (4+4)
2. Electro-Mechanical Instruments(4+4)
3. Instrumentation & Control (4+4)
4. Analytical Instrumentation (4+4)
5. Nuclear & Biomedical Instrumentation (4+4)
6. Machine Intelligence (4+4)