



BHASKAR ENGINEERING COLLEGE

(Approved by AICTE & Affiliated to JNTU, Hyderabad)

Yenkapally, Moinabad Mandal, P.O. Himayathnagar, R.R. District, Hyderabad-500075.

Ph.No.: 08413-235024, Principal Mobile No. 8008096774

STANDARD OPERATING PROCEDURE (SOP) FOR LAB IN-CHARGES

Department of Electronics and Communication Engineering (ECE)

1. Objective

To establish guidelines for the effective management, maintenance, utilization, and safety of all laboratories under the Department of Electronics and Communication Engineering (ECE).

2. Scope

This SOP applies to all faculty members, technical staff, laboratory assistants, and students working in or utilizing ECE laboratories, including:

- Electronic Devices and Circuits Laboratory
- Digital Logic Design Laboratory
- Analog and Digital Communication Laboratory
- Electronic Circuit Analysis Laboratory
- Microprocessors and Microcontrollers Laboratory
- Digital Signal Processing Laboratory
- VLSI Design Laboratory
- FPGA-Based System Design Laboratory
- IoT and Embedded Systems Laboratory
- Microwave and Optical Laboratory
- Project and Research Laboratories

3. Responsibilities of Lab In-Charge

The Lab In-Charge shall:

- Ensure the smooth functioning of all laboratory sessions as per the academic timetable.
- Coordinate with the laboratory technician for maintenance of equipment, instruments, and software.
- Maintain laboratory records, stock registers, and equipment logbooks.
- Monitor student discipline and adherence to laboratory safety guidelines.
- Report equipment breakdowns, shortages, and infrastructure requirements to the Head of the Department.
- Ensure proper calibration and servicing of laboratory instruments.
- Maintain and update laboratory manuals and experiment records.
- Ensure availability of a Master Laboratory File containing all relevant documents.
- Maintain and update the laboratory notice board regularly.
- Ensure proper utilization and security of laboratory resources.

4. Responsibilities of Laboratory Technician / Assistant

The Laboratory Technician/Assistant shall:

- Assist the Lab In-Charge in preparing the laboratory for scheduled sessions.
- Ensure all instruments, equipment, and systems are in working condition.

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- Perform preventive maintenance, servicing, and cleaning of laboratory equipment.
- Assist in installation and updating of software tools used in laboratories.
- Maintain records of repairs, servicing, calibration, and replacements.
- Record all maintenance activities in the maintenance register duly verified by the HoD.
- Assist in annual stock verification and inventory management.

5. Laboratory Cleanliness and Infrastructure

- Maintain a clean, organized, and dust-free laboratory environment at all times.
- Ensure proper functioning of lights, fans, power supply systems, and networking facilities.
- Arrange equipment and seating systematically with proper cable management.
- Ensure the availability of fire extinguishers and first-aid kits.
- Display laboratory rules, safety instructions, and operating procedures prominently.
- Ensure safe handling and storage of electronic components and instruments.

6. Documentation and Registers

The following records shall be maintained in each laboratory:

- Laboratory Timetable and Utilization Register
- Equipment Stock Register
- Consumables Register
- Maintenance and Complaint Register
- Equipment Issue and Return Register
- Student Attendance Register
- System Configuration and Software Inventory Register
- Instrument Calibration Register
- Laboratory Asset Register
- Dead Stock Register
- Annual Stock Verification Register
- Disposal/Condemnation Register
- Laboratory Manual File
- Laboratory Inspection and Audit Register

7. Safety and Security

- Ensure all electrical wiring, sockets, plugs, and cables are properly secured.
- Do not overload electrical circuits or use damaged equipment.
- In case of fire or electrical hazards, immediately switch off the main power supply and follow emergency procedures.
- Food, beverages, and water bottles are not permitted inside laboratories.
- Ensure proper handling of electronic devices and sensitive instruments.
- Restrict unauthorized access to laboratory equipment and project work.
- Ensure regular backup of project data and research-related information.
- Follow institutional safety guidelines and emergency protocols.



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8. Student Conduct

Students shall:

- Enter the laboratory in proper uniform and carry valid ID cards.
- Maintain discipline and follow instructions issued by faculty members.
- Handle laboratory equipment carefully and responsibly.
- Use laboratory resources only for academic and research purposes.
- Refrain from damaging, modifying, or tampering with equipment.
- Report equipment malfunction or damage immediately to the faculty or technician.
- Maintain cleanliness and proper decorum within the laboratory premises.

9. Periodic Review and Reporting

- The Lab In-Charge shall conduct monthly reviews of laboratory equipment and infrastructure.
- Submit maintenance and utilization reports to the Head of the Department periodically.
- Complete annual stock verification before the commencement of each academic year.
- Maintain records of equipment servicing, calibration, and repairs.
- Ensure laboratory readiness before practical examinations, inspections, and audits.
- Monitor laboratory utilization and suggest improvements when required.

10. Accountability

- The Lab In-Charge shall be directly responsible for the safety, discipline, and proper functioning of the assigned laboratory.
 - Any negligence, misuse, loss, or damage of laboratory resources shall be reported to the Head of the Department.
 - Non-compliance with laboratory procedures shall be reviewed by the Departmental Academic Committee and appropriate action shall be taken.
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Copy To

- All ECE Laboratory In-Charges
- All Faculty Members and Technical Staff
- Head of the Department – ECE
- Principal
- Director (Academics)
- Management / Secretary

PRINCIPAL