



# **AAA COLLEGE OF ENGINEERING & TECHNOLOGY**

(An ISO 9001 : 2015 Certified Institution)

(Approved by AICTE, New Delhi & Affiliated to Anna University, Chennai)

Amathur, Sivakasi – 626 005

## **Procedure for Maintenance**

The campus holds well established standard systems and procedures for maintaining the physical, academic and support facilities that are governed by the supervision of faculty in-charges in college level. They ensure the various aspects of utilization and maintenance of the physical, academic and support facilities such as maintenance of buildings, laboratories, classrooms, library, computers, etc.

The proper function of equipment in all laboratories is ensured in every semester by the lab technicians and minor repairs such as installing replacement parts are carried out by them as and when they are needed. Then it is recorded in service register. When there is a major repair work, the purchase committee handles the service and maintenance request appropriately by placing an order to the corresponding engineering experts during summer vacation. Stock register is maintained in all laboratories and audits are conducted by stock verification committee to check the availability and working of the equipment every year.

First aid kits are kept in all major laboratories and department to meet any eventuality. Fire extinguishers of ISI mark of adequate capacity and numbers are provided in eye catching spots in the college buildings especially in all laboratories. Fire extinguishers are well maintained and checked periodically and refilling is done well before the due date. The general maintenance procedures followed in the laboratories are as follows.

1. Lab stock register is maintained and updated by the lab faculty in-charge and technicians.
2. Stock verification is verified and inspected by the Heads of the Department.
3. Old and outdated equipment, chemicals and instruments are discarded by following the standard procedure.
4. Proper functioning of equipment in all laboratories is ensured in every semester by the lab technicians.
5. Breakage or repair if any, are reported to the Head of the department and Lab faculty in-charge and appropriate measures are to be taken for quick functioning of the equipment.

6. Floor cleaning of labs are done on a daily basis by sweepers.
7. List of the experiments are pasted in the laboratories for the reference of students.
8. Students are given proper instructions to work with the equipment efficiently.
9. Computer Lab assistants under the supervision of the System administrator maintain the efficiency of the college computer and accessories.
10. All the PCs and related equipment like printers, scanners, etc., are backed up by UPS in regular basis.
11. All the computers are installed with required software at the start of every semester and license is renewed periodically.

*The maintenance of laboratories for various departments is furnished below.*

### COMPUTER PROGRAMMING LABORATORIES

1. Set up weekly updates or automatic updates for computer software
2. All the PCs and related equipment like printers, scanners, etc. are backed by UPS
3. Installation of antivirus program on the computers
4. Back up of computers on a regular basis
5. Hard disc clean-up and defragmentation utilities regularly
6. All computers are checked for applications at the start of semester
7. Frequent maintenance of computers, AC, Printer and other equipment for every 6 months or as and when required.
8. Software license renewal is done as per the license period.
9. Turn off all computers by selecting the shutdown option on the desktop.

### ELECTRICAL AND ELECTRONICS ENGINEERING

#### **Daily maintenance:**

1. Lab technician checks the working condition of the equipment/systems on daily basis.

2. 'Apparatus required' form is maintained in each lab to track the breakage and working of equipment's.
3. Everyday cleaning of equipment and work tables are done by the lab technicians.
4. Floor cleaning of labs are done on a daily basis by housekeeping department of the college.

**Weekly maintenance:**

1. Floor mopping of labs are done twice a week by housekeeping department of the college.
2. The proper working of all the equipment is checked in all the laboratories with the help of the lab assistants and corrective measures are carried out.

**Monthly maintenance:**

1. The monthly maintenance report is maintained for all the laboratories by the concerned lab in charges.
2. Once in three months UPS in charge checks the water level, voltage level and backup of the UPS.

**Yearly maintenance:**

1. Scrap items in the laboratories are identified with the concern of the lab in charges, HOD and inspection committee.
2. After decision by the inspection committee members the scrap items are sent to the scrap yard.
3. Maintenance of battery & UPS in all the laboratories is carried out quarterly.
4. All the 5S (Sort, set in order, Shine, Standardize, and Sustain) is conducted by a team of members to verify cleanliness.
5. Calibration of equipment are done and a report is maintained.

**Preventive maintenance:**

1. The working conditions of the equipment are periodically checked.
2. The students are given instruction in handling the equipment before doing the experiments.
3. Laboratory manual is given to the students which include list of experiments and the procedure of doing the experiments.
4. Stock register is maintained in laboratories and audits are conducted by stock verification committee to check the availability and working of the equipment.
5. Suitable thickness of the wire based on current rating is used in the fuses to avoid the malfunctioning.

6. The working condition of passive elements and transistors is checked by using multi-meter and LCR Meter in all laboratories.
7. The working condition of the ICs is checked using IC tester.
8. UPS back up is provided for all system based laboratories.

**Breakdown maintenance:**

1. Minor repairs are carried out by the lab technicians. When a major repair occurs, service report is obtained from industry person. Approval for service of equipment is obtained from concerned in charges.
2. Service register is maintained in each laboratory.
3. Breakdown maintenance of the personal computer is done by concerned in charges.

**Ambience:**

The infrastructure and added facilities in the laboratories create the right ambience for the students to conduct experiments in the laboratories.

1. Spacious and well-furnished laboratories with good ventilation and lighting facilities are available.
2. All laboratories are equipped with essential equipment to meet the requirements of the curriculum.
3. For maintaining the overall good ambience, weekly cleaning of equipment and 5S audits are carried out with regular inspection by teams.
4. Equipment specification for all machines is displayed.
5. Identification Number for each equipment is marked on the devices/Equipment/furniture's/tables.
6. Working models and devices in the form of charts are displayed in the laboratories.
7. Do's and Don'ts are displayed in all the laboratories.
8. List of experiments are displayed in all the laboratories.
9. The laboratory manuals prepared are available in both soft and hard copies.
10. Laboratories are utilized beyond the college hours for the convenience of the students and the faculties.

## **MECHANICAL ENGINEERING**

All the labs in the department are very well equipped with all the equipment/instruments/ machines required to conduct every experiment given in the curriculum and beyond.

All the labs are equipped with good technical support staff available during working hours and beyond (as and when required).

1. All electrical equipment's and installations are checked at start of semester
2. All mechanical & electrical machines are inspected at start & mid semester
3. Fire extinguishers are recharged after expiry date.
4. All computers are checked for applications at start of semester in CADD lab.
5. License renewal is done for the software as per the license period in CADD lab.
6. Water sump is cleaned at the regular interval in Thermal Lab.
7. All measuring instruments are inspected at start & mid semester.
8. Calibration of equipment is done every academic year.

## **AMBIENCE**

1. Proper Flooring.
2. Proper Ventilation.
3. Proper lighting and Ceiling fan provided for easy working.
4. High quality machines and equipment are used.

## **CIVIL ENGINEERING**

All the labs in the department are very well equipped with all the equipment /instruments/ machines required to conduct every experiment given in the curriculum and beyond.

All the labs are equipped with good technical support staff available during working hours and beyond (as and when required).

1. All computers are checked for application at start of semester in CADD lab.
2. License renewal is done for the software's as per the license period in CADD lab.
3. Calibrations of dial gauges are done for every academic year.
4. The Equipment's are tested for its working condition in starting and mid of the academic year.
5. Fire Extinguishers are recharged after expiry date.
6. The equipment's are periodically serviced and maintained in every semester.
7. All the equipment is tested before going to work in field.
8. Machines are inspected at start and mid semester
9. The painting to the equipment done to prevent from corrosion.
10. The machines were run frequently to check the working condition.
11. Expiry dates for Chemicals were checked periodically.

### **ELECTRONICS AND COMMUNICATION ENGINEERING**

Students are given instruction in handling the equipment/system/component before the conduct of experiment during their lab sessions so as to maintain equipment/system/component in good condition and the maintenance of labs is depicted as follows

1. Regular checking of Meters, Cathode Ray Oscilloscope (CRO) and Function Generator (FG) are being carried out and calibration is also done for every month.
2. Components are tested using Digital Multi Meter (DMM) and faulty components are replaced.
3. Regular checking of Dual Power Supply, Digital Storage Oscilloscope (DSO) and FG are done for every month.
4. Linear & Digital ICs are checked using IC Testers and faulty components are replaced.
5. Regular checking of Digital Trainer Kit, Linear and Digital Power Supply will be done for every month.
6. Regular checking of ICs in trainer kits 8085, 8086 and 8051 are done for every two weeks. Then faulty ICs are replaced.
7. All the PCs are backed by UPS in DSP lab.
8. Hard disc clean-up and defragmentation utilities are done regularly in DSP lab.
9. Maintenance of computers, AC and DSP kits are done for every month.
10. Back up of computers on a regular basis in DSP lab.

11. Turning off all computers by selecting the shutdown option on the desktop.
12. Maintenance of computers, AC, Printer and FPGA trainer kits are done for every 6 months.

### Library usage guidelines

General maintenance is carried out by 2 Library Assistants.

1. The maintenance of the library is done by the Library staff.
2. A utilization register is used for maintaining the library usage
3. The library staff will make the entry of the issue, return, renewal of books in library using ROVAN software.
4. The library stock is periodically maintained.
5. The library staff will list down the new books to be installed in the library and on the permission from Principal and approval from management it is updated in the library.
6. As per the Head of the Department's recommendation, the new technical books are also updated in the library periodically.
7. Due dates are monitored regularly.
8. Any discrepancy in the return of book, fine amount is collected from the students and faculties.
9. After reading newspapers, journals or special reports, they are kept in appropriate places.
10. Library staff provides the login for access to DELNET or any e-journals.

### RO Water Maintenance

1. The plumber replaces all filters every 6-9 months or a maximum of 12 months.
2. Replace RO membrane is done every 24-36 months.
3. Sanitization of the water tanks is done every year.
4. The plumber cleanses and re-assemble the plumbing pipes every 2 years.
5. The plumber replaces and buy new parts whenever necessary.
6. The pressure nozzle is checked at regular intervals.

### **Bus Maintenance**

1. The driver checks the tire pressure at the start.
2. The driver inspects the lightbulbs throughout the vehicle.
3. The cleaner wipes and clean the seats with a damp rag or cloth.
4. The driver checks the fuel level of the bus at the start.

### **Sports Maintenance**

Sports complex Indoor and Outdoor Games Equipment, Courts, Playground and Gym are maintained by Physical Education Director and the Sweepers of the college. The damaged Sports materials are immediately replaced with new ones.

1. The grounds are maintained at regular intervals by the rollers.
2. The grounds are marked periodically.
3. The gym equipment is cleaned and lubricated properly.
4. The sports equipment is checked and serviced at regular intervals by physical education director.