



INDIAN INSTITUTE OF TECHNOLOGY MADRAS

ENGINEERING UNIT

HAND BOOK

**Maintenance of buildings and other facilities:General guidelines for
seeking assistance from the Engineering unit**

AUGUST 2018

1	<u>INTRODUCTION</u>	3
2	<u>ORGANIZATION CHART</u>	4
3	<u>DETAILS OF ENGINEERS IN-CHARGE FOR MAINTENANCE WORKS IN DIFFERENT ZONES</u>	5
4	<u>PROCEDURE FOR REGISTERING A MAINTENANCE REQUEST</u>	8
4.1	ISCMS (INTEGRATED SERVICE CALL MANAGEMENT SYSTEM) AND INTEGRATED VOICE RECOGNITION SYSTEM (IVRS)	8
4.2	USER REGISTRATION	8
4.3	REGISTERING A SERVICE REQUEST ON THE SYSTEM.	8
4.4	HOUSEKEEPING SERVICES (FOR ACADEMIC AND HOSTEL ZONES)	9
4.5	REGISTERING SERVICE REQUESTS THRO' IVRS	9
4.6	CUSTOMER SERVICE	10
5	<u>MINOR ADDITIONS AND ALTERATION WORKS IN THE ACADEMIC ZONE.</u>	10
6	<u>CONSTRUCTION OF NEW STRUCTURES AND PAVEMENTS (FOOTPRINT EXPANSION)</u>	10
7	<u>INSTALLATION OF ANY EQUIPMENT, OR ERECTION OF ANY STRUCTURE, ON A TERRACE</u>	11
7.1	PRECAUTIONS TO BE TAKEN	11
8	<u>POWER SUPPLY CONNECTION TO NEW MACHINERY</u>	11
9	<u>NEW AIR CONDITIONERS IN THE ACADEMIC ZONE</u>	12
10	<u>HOUSEKEEPING SERVICES IN ACADEMIC AND HOSTEL ZONES.</u>	12
11	<u>POSSESSION OF A RESIDENTIAL QUARTER</u>	14
12	<u>HANDING OVER OF A RESIDENTIAL QUARTER</u>	14
13	<u>INSTALLATION OF A CAR SHED</u>	15
14	<u>ADDITIONS AND ALTERATIONS PERMITTED IN RESIDENTIAL QUARTERS</u>	15
14.1	'B' TYPE – TWIN TYPE (GF + FF)	15
14.2	'B' TYPE – LAKE VIEW ROAD	15
14.3	'C' TYPE - TWIN TYPE (GF + FF)	15
14.4	'C' TYPE - 3RD LOOP ROAD	16
14.5	WARDEN QUARTERS	16
14.6	'C1' TYPE	16
14.7	'C2' TYPE (C2-1, C2-2 & C2-3)	17

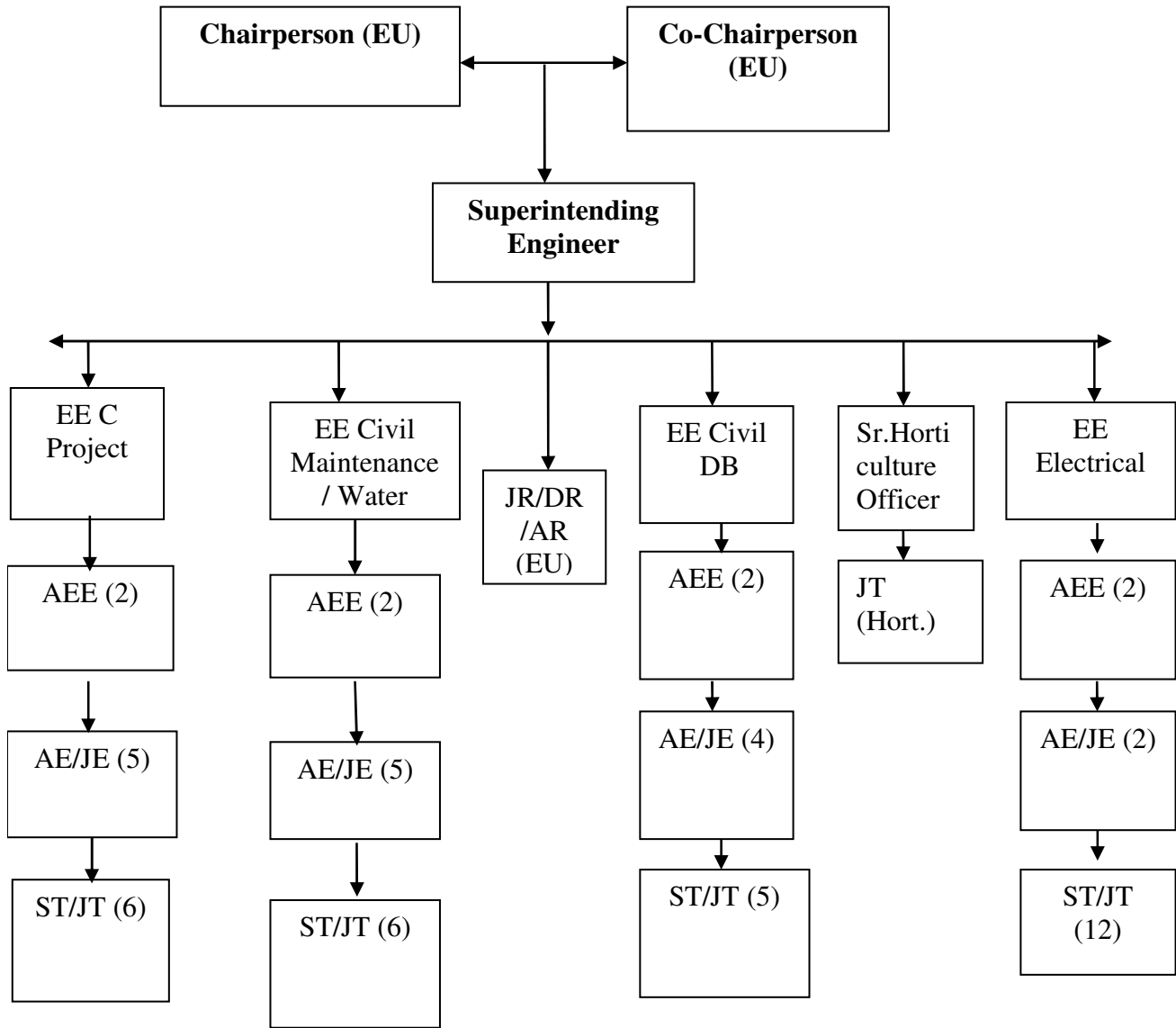
14.8	'C2' TYPE (C2-4, C2-5, C2-6 & C2-7)	17
14.9	D-TYPE	17
14.10	D1 TYPE AND MOH	17
14.11	E TYPE & E1 TYPE	18
14.12	F TYPE (F1 TO F5)	18
14.13	G TYPE	18
14.14	SSQ/MSQ	18
15	WATER SUPPLY	19
16	HORTICULTURE WORK	19
17	WASTE MANAGEMENT	19
17.1	SOLID WASTE	19
17.2	HAZARDOUS WASTE	20
17.3	RADIOACTIVE WASTE	22
17.4	BIOMEDICAL WASTE	22

1 Introduction

Engineering Unit is responsible for the creation and maintenance of physical infrastructure on the campus. Maintaining a vast campus such as ours, with its unique environmental characteristics is a challenge. Cooperation from the entire campus community is sought to ensure a satisfactory level of maintenance even as we conform to the latest building codes and respect the bio-diversity of the IIT Madras campus.

This hand book is brought out to keep the campus community informed about the details of various procedures to be followed in order to facilitate Engineering Unit to perform its duties diligently and efficiently.

2 Organization Chart of Engineering Unit



3 Details of Engineers in-charge for maintenance works in different Zones

In case of urgent requests, the residents may directly contact the Engineers of EU. The details of engineers-in-charge of maintenance are given below. Order of escalation for complaints not attended to in time, is indicated by the arrow.

Name of the zone	Contact PABX for Follow up	Name & Contact Number of the JE/AE	Name & Contact Number of AEE	Name & Contact Number of EE
ACADEMIC ZONE				
Civil Maintenance Plumbing, Carpentry, Board of Infra Structure (BOI) renovation and other civil related works & debris disposal Institute Zone Buildings Workshop zone & workshop type Lab Buildings	8188 8188	Er. S. Ganapathy 9444395485 gana@iitm.ac.in Er. P. Gopu 9444395492 gopu@iitm.ac.in	Er. Ajaykrishnan 8165 / 9444395493 ajaypuli@iitm.ac.in	Er. K. Dharmaraj 8158 / 9444008117 dharmarajk@iitm.ac.in
Electrical Maintenance Maintenance of Academic zone, all substations, street lights etc. and projects in Academic zone	8189	Er. V. Manickavasagam 8169 / 9444008137 mvasagam@iitm.ac.in	Er. K. Viswanath 8164 / 9444008119 viswak@iitm.ac.in	

Name of the zone	Contact PABX for Follow up	Name & Contact Number of the JE/AE	Name & Contact Number of AEE	Name & Contact Number of EE
RESIDENTIAL ZONE				
Civil Maintenance Plumbing, Carpentry, renovation and other civil related works and repairs, debris disposal (a) A, B, C, C1 & C2 type quarters (b) D to Z type quarters	8192 8192	Er. A. Roslin Gilda 9444008230 roslin@iitm.ac.in Er. V. Asaithambi 9444395490 asaiv@iitm.ac.in	Er. K. Rizwan Ali 8171 / 9444008134 rizwank@iitm.ac.in	Er. K. Dharmaraj 8158 / 9444008117 dharmarajk@iitm.ac.in
Electrical Maintenance	8193		Er.M.Murali Prakash 8160 / 9444008140 mmprakas@iitm.ac.in	Er. K. Viswanath 8164 / 9444008119 viswak@iitm.ac.in
HOSTEL ZONE				
Civil Maintenance Plumbing, Carpentry, termite treatment, debris disposal and other civil works	8186		Er.K.Narayanaperumal 8175 / 9444395486 knp@iitm.ac.in	Er. K. Dharmaraj 8158 / 9444008117 dharmarajk@iitm.ac.in
Electrical Maintenance	8187		Er. K. Ravichandran 8170 / 9444008133 ravi66@iitm.ac.in	Er. K. Viswanath 8164 / 9444008119 viswak@iitm.ac.in

ALL ZONES				
Facility	PABX	JE/AE	AEE	EE
Telephones	8141	Er. S. Padmanaban 8146 / 9444008770 pads@iitm.ac.in		Er. K. Viswanath 8164 / 9444008119 viswak@iitm.ac.in
Street Lights & Substations	8185	Er.V.Manickavasagam 8169 / 9444008137 mvasagam@iitm.ac.in		
Air conditioning, Fire Safety Systems and Lifts	8197		Er. K. Ravichandran 8170 / 9444008133 ravi66@iitm.ac.in	
Water supply, Pumping Operations, Drainage, Removal of blockages in sewerage lines	8190	Er. A. Sivakumar 8190 / 9444399154 sivakumara@iitm.ac.in	Er. D. Rajavel 8195 / 9444395487 rajavel@iitm.ac.in	Er.M.Ramachandran 8161 / 9444008123 chandru@iitm.ac.in
Fogging operations for mosquito control, desilting of storm water drains, Lawns and Gardens, Trees and other Horticultural operations in the Campus , Wild life emergencies	8194	Er. V. Seenivasan 8162 / 9444008121 vsrini@iitm.ac.in		
Housekeeping Services (Academic & Hostel Zones) <i>N.B.: All the details of Engineers of EU is available in the IITM website.</i> https://enggunit.iitm.ac.in	8199		Academic Zone Er. Ajaykrishnan 8165 / 9444395493 ajaypuli@iitm.ac.in Hostel Zone Er. K. Narayanaperumal 8175 / 9444395486 knp@iitm.ac.in	Er. K. Dharmaraj 8158 / 9444008117 dharmarajk@iitm.ac.in Er. H. Anandaram 8167 / 9444008120 aram@iitm.ac.in

If the complaints are not attended even after informing the Executive Engineer, the matter may be brought to the notice of Superintending Engineer followed by Chairman /Co-chairman of Engineering Unit.

4 Procedure for registering a maintenance request

4.1 ISCMS (Integrated Service Call Management System) and Integrated Voice Recognition System (IVRS)

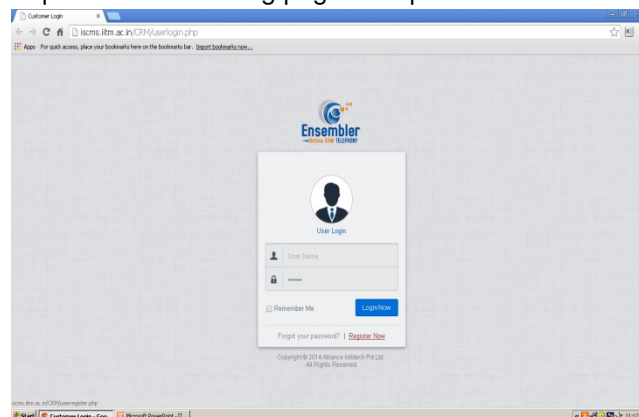
- A web based system for registration and tracking of service requests (complaints) has been introduced by the Engineering Unit.
- All service requests related to Civil, Electrical, Telephone, Horticulture, Housekeeping, and Water Supply are to be registered through this system only.
- Service requests can be placed through the following web portals or through IVRS.
- The system requires one time registration with the cell phone number.
- The complete process of user registration, placing service request, tracing the status of requests and sending the customer response is enumerated in the following pages.

4.2 User Registration

1. Open any one of the following web portal.
<http://iscms.iitm.ac.in/CRM/userlogin.php>
<http://enggunit.iitm.ac.in>
2. In the main page, click 'Register Now' option
3. Furnish the required details and click 'create'
4. Your account will be created and a confirmation mail will be sent to the email address furnished. This completes the user registration process.
5. Regarding requests pertaining to academic and hostel zone buildings, Faculty / student / staff shall use separate email id which is different from the email id which has already been registered for the residential zone use.

4.3 Registering a service request on the system

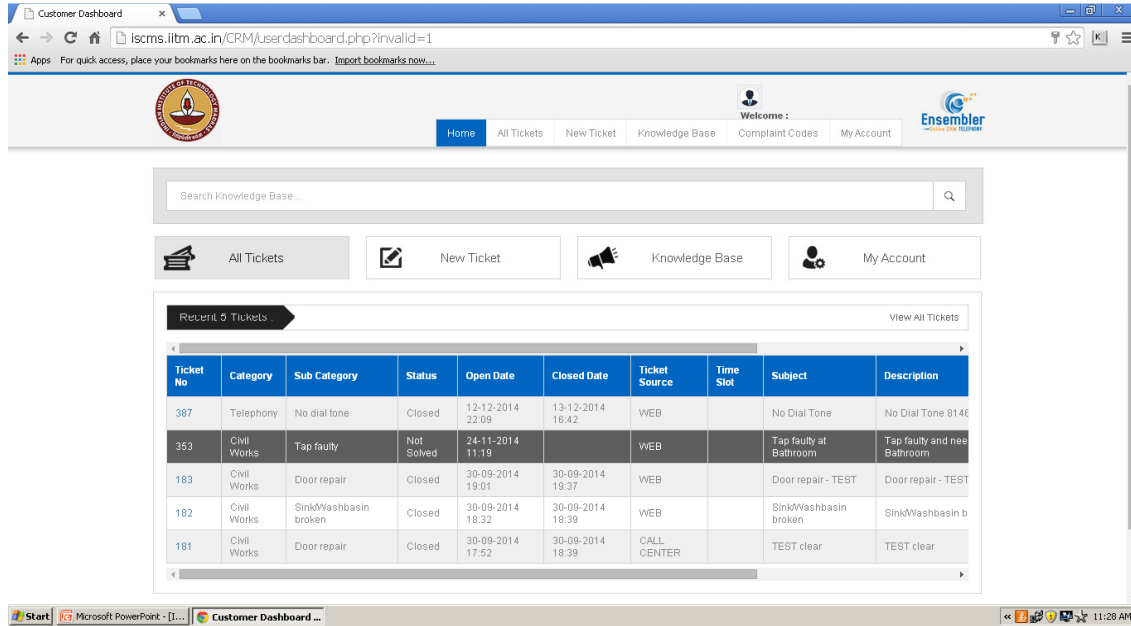
1. Open any one of the following web portals.
<http://iscms.iitm.ac.in/CRM/userlogin.php>
<http://enggunit.iitm.ac.in>
2. Click 'Maintenance Request'. The following page will open.



3. Login with your user name and pass word.
User name: your registered email ID

Password : last 5 digits of the registered mobile number. The password can be changed after first login in 'Settings'

- Once logged in, the following page with multiple options will open.



- Select 'New ticket' to book a complaint and complete your complaint registration by selecting the appropriate complaint from the drop down menu. Once the complaint is registered the system will automatically assign the job to the concerned technician of the contractor of the respective zone or the concerned JE shall assign the job to attend to the complaint.

All minor works as defined in the system shall be completed within stipulated time and major works will be carried out separately based on feasibility,

The minor work list as defines is given below which is only available in the IVRS to be selected by the complainant. However, in certain cases like repairing of vacant quarters, it tends to become major work which will take time.

4.4 Housekeeping services (for Academic and Hostel zones)

- Helpdesk number - 8199 [044-2257-8199]
 - New docket number will be assigned and page will show all records
 - SMS and Email will be sent by the system to users as well as contractor
 - After completion of the work SMS and email will be sent by the system to the user
 - User can provide feedback about the completed work by logging into the system.
- The user can login to track the status of the service request any time.

4.5 Registering service requests through IVRS

For lodging a complaint through IVRS please dial Extn 8899 [044-2257-8899] and follow the instructions.

4.6 Customer Service

In case of any problem in accessing the system or IVRS, please contact the following person:

Shri. S. Padmanaban,
AE/Telephones
(044) 2257-8146
(M) 94440-08770
eu_eeeoffice@iitm.ac.in / pads@iitm.ac.in

5 Minor additions and alteration works in the academic zone

1. Written request for addition/alteration works is to be sent through HoD to the Chairperson / SE.
2. Demolition of partitions is permitted only in exceptional cases.
3. Load bearing walls /structures will not be modified/demolished.
4. While constructing new partition, it will be ensured that ventilation and natural lighting are not obstructed. As an Institute Policy, new partition works are referred to Safety Committee before being taken up.
5. Existing openings and windows will not be closed if the lighting and ventilation to the area is likely to be affected.
6. The partition will be planned conforming to safety norms to ensure emergency exits, and ventilation.
7. Provision of false ceiling is not encouraged. Request for false ceiling has to be approved by Dean (Planning) and the work will be taken up only after approval from him/her.. False ceiling is generally permitted only for rooms directly under the terrace.
8. The open corridors, space below the stair cases, and emergency exits will not be allowed to be converted into rooms, cubicles.
9. Works requiring additional footprint need approval from Dean (Planning) and Director as mentioned in Sec. 6.
10. Request for water lines/wash basin/waste lines can be considered only if water/sewage line is available near the proposed office/lab.
11. **Specialized works such as fume hood, gas lines etc, are to be maintained by the Department concerned and are not under the purview of the EU. Dept may consider entering into AMC for new maintenance.**
12. Procurement of furniture in general / Machineries etc is not under the purview of the EU.
13. Minimum frequency of painting is seven years, subject to availability of funds.
14. Request for air conditioning of any room/area in the academic area is to be routed through Dean (Planning) and prior approval is to be obtained by the Department directly before the proposal can be implemented by the EU.

6 Construction of new structures and pavements (footprint expansion)

Construction of any new building / structure and pavements inside the campus requires approval from Dean (Planning) for the additional foot print to be utilized. The procedure to be followed is described below.

1. Request for any additional footprint shall be routed through the HOD of the respective department to Dean (Planning).
2. If required, the Dean (Planning) may forward the request to the Engineering Unit to examine the feasibility.

3. The JE/AEE will inspect the site and send a report to the Executive Engineer. The feasibility study will take into account :1) Conformity to the Master Plan of the Institute, 2) need for Statutory approval,3) any other safety issues, 4) Hindrance to existing facilities etc.
4. Based on the feasibility report and approval of the competent authority of the Institute, final decision will be intimated.
5. In case of eco sensitive projects, the Campus Environment Management Committee will be consulted before approval

7 Installation of any equipment, or erection of any structure, on a terrace

Upkeep of the terrace surface is essential to avoid leakage in the building. The roof is not designed for unlimited loading and it is therefore essential that proper assessment of the requirement is carried out before actual erection/installation

- Proposal to install any equipment or construction of any structure on the terrace should be intimated to the Engineering Unit with the details of equipment with its weight and dimension setc

7.1 Precautions to be taken

1. The installation/structure should not hinder the flow of rain water from the terrace
2. Any installation on the terrace should not hinder access to the staircases.
3. The existing weathering course / water proofing layer should not be damaged during installation of the equipment.
4. Installation of heavy equipment in the middle span of the slab and over the roof slab should be avoided.
5. All relevant drawings with detailed measurements indicating the probable load of the installation, type of foundation / anchoring system proposed / stays are to be submitted for consideration. .
6. For installations on high rise buildings necessary steps should be taken to provide lightning arresters and the installation should be designed for expected wind loads. Where needed expert assessment may be sought from CE Dept.

8 Power supply connection to new machinery

1. Requirements of new power supply should be planned carefully to avoid overloading of the feeders, voltage drop and fire hazard. It is therefore essential to contact the EE (Elect.),EU before any machinery is connected to the existing system. It is advisable, to discuss with the EE(Elec.), before placing orders for machinery requiring special power requirements, if any. Not doing so may lead to unavailability of power for the machinery.
2. The electrical load details of the proposed machinery/equipment and their location should be intimated to the EE (Elec.) at the ordering stage itself so that the existing capacity of the electrical system at the proposed location is checked and if required strengthening of the feeder/substation, is carried out before

the arrival of the machinery/equipment. Such strengthening will require additional funds that may not be budgeted for.

3. Any special earth requirement shall be intimated well in advance before commissioning.
4. If any equipment needs air-conditioned enclosure, prior approval has to be obtained from Dean (Planning).
5. High capacity motors may have to be operated during non-peak hours to keep the maximum demand of electricity of the Institute within the contract load. The operating time can be decided in consultation with the Executive Engineer (Elect.)

9 New air conditioners in the Academic zone

The Institute has a policy of limiting the use of air conditioners in the Academic and Hostel zones. Any new installation, therefore, needs a formal approval from the Dean (Planning) and Director. The following procedure is to be followed for the approval.

1. Request for air conditioners should be routed through the HOD of the Department/Unit/Centre to the Dean (Planning).
2. The request shall preferably contain the details of the area to be air conditioned, the equipment load to be installed inside the room, the temperature and RH required.
3. The request will be referred to the Chairman (Air conditioning Committee) for technical assessment and recommendations.
4. The Chairman (A.C. Committee) will recommend the capacity and type of air conditioners to be installed.
5. Upon receipt of the recommendations from the Chairman (A.C. Committee) the approval for air conditioning will be accorded by Dean (Planning) and Director.

10 Housekeeping services in Academic and Hostel Zones.

The housekeeping service in Academic and Hostel zones is carried out through a contract. The scope of work to be carried out by the agency is listed below for information. The maintenance schedule is also furnished.

- Supplying all men and materials, equipment, consumables etc. for the house keeping work
- Sweeping:- All corridors, common areas, rooms, drive ways..
- Vacuuming:- chairs, furniture, carpet.
- Toilets Cleaning:- Toilets shall be cleaned on all days except Sundays.
- Trash Removal:- collecting, cleaning dust bins, dumping dust / trash at one location.
- Glass Surface Cleaning:- doors and windows.
- Damp & Dry Cleaning:- Boards, furniture.
- Deep Cleaning :- Toilets, staircases, emergency exit
- Sanitizing- Thorough washing of all walls and doors of all toilets with appropriate detergent and disinfectant.
- Cleaning activity during Institute holidays / vacations – Twice in a year. The furniture inside the class room / seminar / meeting / conference rooms shall be deep cleaned.

Minimum frequency of cleaning

S. No	Area	Example	Type of cleaning	Frequency of cleaning – No of time per												Remarks	
				day			week			month			year				
				1	2	3	1	2	3	1	2	3	1	2	3		
1	Common room	Conference room / seminar room / meeting room / Department library / utility room	Sweeping	X													During vacation once in a week
			Mopping				X										
			Deep cleaning											X			
2	Office	Faculty room / Department office / Research scholar room	Sweeping	X													
			Mopping					X									
			Deep cleaning											X			
3	Lecture room	Class room	Sweeping	X											During vacation once in a week		
			Mopping					X									
			Deep cleaning										X				
4	Building internal circulation space	Corridor / staircase	Sweeping			X											
			Mopping	X													
			Deep cleaning														
5	Rest room	Toilets / bathrooms	Sweeping			X											
			Mopping			X											
			Deep cleaning			X											
6	Building Outdoor	Parking and building surroundings	Sweeping				X										
			Litter removal	X													
7	Furniture	Tables / chairs / desks / benches / boards / signage / screens / blinds	Vacuuming / Cleaning with wet cloth				X										
8	Joineries	Glass / louvers / shutters / doors / windows / A/c ducts	Vacuuming / Cleaning with wet cloth									X					
9	Building top	Terrace / lift machine room / gutter	Sweeping / pneumatic vacuuming				X										

Annexure – 4b

In respect of Institute hospital housekeeping services shall be rendered 24x7 as per the following schedule. The cleaning of building premises, joineries, stair cases and parking area, the schedule mentioned in Annexure 4a shall be followed.

S. No	Area	Example	Type of cleaning	Frequency of cleaning – No of time per												Remarks
				day			week			month			year			
				1	2	3	1	2	3	1	2	3	1	2	3	
10	Hospital	Entire floor area in all floors such as Verandah, doctors rooms, office space, ward room, laboratories,	Sweeping and mopping			X										
		Tables / chairs / desks / benches / boards / signage / screens / blinds	Mopping	X												
		Toilets / bathrooms	Sweeping mopping and deep cleaning			X										

Other than the above mentioned works, the contractor should engage skilled worker for washing cloths used in hospital. The IITM will provide washing machine for the same and all the cleaning and disinfectants required for the above work has to be arranged by the contractor.

In case of any housekeeping service request or complaints, the user can use the following two facilities to avail necessary services.

- Call 8199 to contact Help Desk
- Login to <http://iscms.iitm.ac.in/CRM/userlogin.php> for online service request.

Residential zone

11 Possession of a residential quarters

1. The resident will have to obtain allotment order from estate section of the Institute.
2. After obtaining allotment order from the estate section, the resident will be required to contact the Junior Engineer, Residential Zone with the allotment order and inspect the quarters.
3. On acceptance of the quarters, the resident will be required to sign the Occupancy Register as acknowledgement of taking possession of the quarter as well as the inventory thereof.
4. In case of any minor addition and alterations requested by the resident, the concerned JE/AE will prepare and submit a report along with preliminary estimate to the Executive Engineer.

Note: Minor additions and alterations upto the following approved monetary limit may be considered by the competent authority of the Institute. Cost of additions and alterations over and above this limit will have to be borne by the occupant, provided they are approved by the competent authority.

Approved monetary limit for minor additions and alterations in a quarter declared as 'fit for occupation'

- a. B and C type quarters - Rs.20,000
 - b. D to Z type quarters - Rs.10,000
5. For any installation proposed to be done on the terrace by the occupant, prior approval is to be obtained from Dean (Admin).
 6. For any temporary shed proposed to be erected inside the fencing by the occupant, prior approval is to be obtained from Dean (Admin).
 7. After allotment of quarters, no major work/structural modification is permitted.
 8. Painting of wall with different colour shades is not permitted. .
 9. Changing of IWC into EWC and vice versa is permitted only on medical grounds.
 10. Once the quarters is occupied, the allottee should return the lock & key used by EU to rework the quarters.

12 Handing over of the residential quarters

A resident who wishes to vacate the quarters will be required to intimate the Office of the Civil and Electrical maintenance office well before the date of vacating. The Staff from Engineering Unit/RZ (Civil & Electrical) will visit the quarters and check the inventory items such as fixtures, fittings etc.

1. While handing over the quarter the area inside the quarter as well as the immediate peripheral area should be thoroughly cleaned by the occupant. All the waste materials should be collected in gunny bag/cover and the O&E office should be informed to collect the same. The occupant is responsible for removal of all waste material by O&E.
2. After inspection by the Engineering Unit staff, the occupant shall sign in the Vacation register kept in Civil Maintenance office as acknowledgement for handing over of the quarters.
3. The occupant having servant quarters attached is responsible for vacating the servant quarters along with main quarters. The servant quarters must also be temporarily cleared before vacation.
4. Only the allottee is permitted to sign the vacation register.

13 Installation of a car shed

For constructing a car shed, the occupant will be required to obtain necessary prior permission from Dean (Admin) by submitting a detailed drawing, showing the location, dimension and type of structure.

14 Additions and alterations permitted in residential quarters

14.1 'B' Type - Twin type (GF + FF)

- a) Interior painting to the quarters as per specifications.
- b) Replacing of existing flooring with tiles as per specifications **only if the existing flooring is found badly damaged/worn out/sunken and after approval by Chairman (EU)**
- c) Providing shutters below kitchen counter and for kitchen cupboard upto 7'0" level.
- d) Covering the rear side portion in ground floor with Galvalume sheet & Grill work including providing a caddapa sink and platform.
- e) Changing of IWC to EWC on medical grounds after approval from Chairman, EU.
- f) Providing monkey mesh door for front and rear side doors.
- g) Providing monkey mesh for external windows, as per standard specifications.
- h) Covering of sit out and Balcony opening with MS grill, as per specifications of the Institute.
- i) Replacing damaged entrance steps with Euroconor equivalent step tiles.
- j) Replacing of existing damaged mosquito mesh.
- k) Providing exhaust fan in kitchen based on request

14.2 'B' Type - Lake View road

- a) Interior painting of the quarters as per specifications. Common area such as corridor is not included.
- b) Replacing existing flooring with tiles as per specifications, **only if the existing flooring is found badly damaged/worn out/sunken and after approval by the Chairman (EU),**
- c) Providing shutters below kitchen counter and for kitchen cupboard up to 7'0" level.
- d) Providing weld mesh on the rear side up to 6m long in ground floor Quarters.
- e) Providing weld mesh covering up to 6 m length in the gap between drop and parapet as per specifications of the Institute in sit out of First floor Quarters
- f) Fixing monkey mesh for external windows.
- g) Changing of IWC to EWC on medical grounds after approval from Chairman, EU.
- h) Providing monkey mesh door for front and rear side doors.
- i) Replacing damaged entrance steps with Euroconor equivalent step tiles.
- j) Covering with GI sheet roof at entrance of ground floor quarters and providing GI sunshade for kitchen and bedrooms to avoid splash of rain water.
- k) Replacing of existing damaged mosquito mesh.
- l) Providing exhaust fan in kitchen based on request.

14.3 'C' Type - twin type (GF + FF)

- a) Interior painting to the quarters as per specifications
- b) Replacing existing flooring with tiles as per specifications, **only if the existing flooring is found badly damaged/worn out/sunken and after approval by the Chairman (EU),**
- c) Providing shutters below kitchen counter and for kitchen cupboard upto 7'0" level.
- d) Covering the rear side portion in ground floor with Galvalume sheet & Grill work including providing a caddapa sink and platform.

- e) Fixing monkey mesh for external windows.
- f) Changing of IWC to EWC on medical grounds after approval from the Chairman (EU)
- g) Providing monkey mesh door for front and rear side doors.
- h) Covering of sit out and balcony opening with MS grill, as per specifications.
- i) Replacing damaged entrance steps with Euroconor equivalent step tiles.
- j) Replacing of existing damaged mosquito mesh.
- k) Providing exhaust fan, in kitchen only, based on request

14.4 'C' Type - 3rd Loop Road

- a) Interior painting to the quarters as per specifications. Common area such as corridor is not included.
- b) Replacing existing flooring with tiles as per specifications, **only if the existing flooring is found badly damaged/worn out/sunken and after approval by the Chairman (EU).**
- c) Providing shutters below kitchen counter and for kitchen cupboard upto 7'0" level.
- d) Providing weld mesh in the rear side upto 6m long for ground floor flats if feasible.
- e) Fixing monkey mesh for external windows.
- f) Providing weld mesh covering up to 6 m length in between the gap between drop and parapet as per specifications of the Institute in sit out of First floor
- g) Changing of IWC to EWC on medical grounds after approval from Chairman, EU.
- h) Providing monkey mesh door for front and rear side doors.
- i) Replacing damaged entrance steps with Euroconor or equivalent step tiles.
- j) Covering with GI sheet roof at entrance of ground floor quarters and providing GI sunshade for kitchen and bedrooms to avoid splash of rain water.
- k) Replacing of existing damaged mosquito mesh.
- l) Providing exhaust fan, in kitchen only, based on request

14.5 Warden Quarters

- a) Interior painting to the quarters as per specifications.
- b) Replacing existing flooring with tiles as per specifications, **only if the existing flooring is found badly damaged/worn out/sunken and after approval by the Chairman (EU).**
- c) Providing shutters below kitchen counter and for kitchen cupboard upto 7'0" level.
- d) Fix monkey mesh for external windows.
- e) Covering the rear side portion in ground floor with Galvalume sheet & Grill work including providing cuddapah sink and platform.
- f) Changing of IWC to EWC on medical grounds after approval from Chairman, EU.
- g) Providing monkey mesh door for front and rear side doors.
- h) Covering of sit out and balcony opening with MS grill, as per specifications.
- i) Replacing damaged entrance steps with Euroconor equivalent step tiles.
- j) Replacing of existing damaged mosquito mesh.
- k) Providing exhaust fan, in kitchen only, based on request

14.6 'C1' Type

- a) Interior painting to the quarters as per specifications. Common areas such as staircase and corridor are not included.
- b) Replacing existing flooring with tiles as per specifications, **only if the existing flooring is found badly damaged/worn out/sunken and after approval by the Chairman (EU).**
- c) Providing shutters below kitchen counter and for kitchen cupboard up to 7'0" level.
- d) Fixing monkey mesh for external windows.

- e) Covering the rear side portion in ground floor with Galvalume sheet & Grill work including providing cuddapa sink and platform in ground floor flats.
- f) Changing of IWC to EWC on medical grounds and after approval from Chairman EU.
- g) Providing monkey mesh door for front and rear side doors.
- h) Covering of balcony opening with MS grill.
- i) Replacing the existing damaged mosquito mesh
- j) Providing exhaust fan, in kitchen only, based on request

14.7 'C2' Type (C2-1, C2-2 & C2-3)

- a) Painting the interior of the quarters as per specifications.
- b) Replacing existing flooring with tiles as per specifications, **only if the existing flooring is found badly damaged/worn out/sunken and after approval by the Chairman (EU).**
- c) Providing shutters below kitchen counter and for kitchen cupboard upto 7'0" level.
- d) Providing monkey mesh for external windows.
- e) Changing of IWC to EWC on medical grounds and after approval from Chairman EU.
- f) Providing monkey mesh door for front door.
- g) Covering of the sit out and balcony opening with MS grill.
- h) Providing common shed for car parking for C2-2 block as done in C2-1 block.
- i) Replacing the existing damaged mosquito nets
- j) Providing exhaust fan, in kitchen only, based on request

14.8 'C2' Type (C2-4, C2-5, C2-6 & C2-7)

- a) Interior painting to the quarters as per specifications.
- b) Changing of damaged SS mesh with new SS mesh for windows.

14.9 D-Type

- a) Interior painting to the quarters as per specifications.
- b) Replacing existing flooring with tiles as per specifications, **only if the existing flooring is found badly damaged/worn out/sunken and after approval by the Chairman (EU).**
- c) Providing shutters below kitchen counter and for kitchen cupboard upto 7'0" level.
- d) Replacing existing kitchen counter top cuddapa slab and sink with granite slab, and SS sink with single drain board during repair.
- e) Changing of IWC to EWC on medical grounds and after approval from Chairman EU.
- f) Providing monkey mesh door for front and rear side doors.
- g) Fixing monkey proof mesh for all the external windows
- h) Providing exhaust fan, in kitchen only, based on request
- i) Providing openable mesh shutter on the existing wooden paneled shutter of the window on the request of occupant.
- j) Providing cupboard shutters to Dining Hall.

14.10D1 Type and MOH

- a) Interior painting to the quarters as per specifications.
- b) Replacing existing flooring with tiles as per specifications, **only if the existing flooring is found badly damaged/worn out/sunken and after approval by the Chairman (EU).**
- c) Providing shutters below kitchen counter and for kitchen cupboard upto 7'0" level.
- d) Replacing kitchen counter top slab cuddapa with granite slab and SS sink with single drain board during repair.

- e) Changing of IWC to EWC on medical grounds and after approval from Chairman EU.
- f) Providing monkey mesh door for front and rear side doors.
- g) Providing exhaust fan, in kitchen only, based on request
- h) Providing cupboard shutters to Dining Hall if not done already**
- i) Renovation of chute portion

14.11E Type & E1 type

- a) Interior painting to the quarters as per specifications.
- b) Existing flooring will be replaced with tiles as per specifications **only if the existing flooring found badly damaged/worn out/sunken and after approval by Chairman (EU).**
- c) Providing shutters below kitchen counter and for kitchen cupboard upto 7'0" level.
- d) Replacing existing kitchen counter top cuddapa slab and sink into granite slab with SS sink with single drain board during repair.
- e) Changing of IWC to EWC under medical grounds after approval from Chairman, EU.
- f) Monkey mesh door for front and rear side doors.
- g) Provision of exhaust fan, in kitchen only, based on request
- h) Fix type monkey proof mesh for all the external windows.
- i) Existing wooden paneled shutter of the window will be provided with mesh shutter based on the request of occupant.
- j) Provide cupboard shutters to Dining Hall if not done already.

14.12F Type (F1 to F5)

- a) Interior painting to the quarters as per specifications.
- b) Replacing existing flooring with tiles as per specifications, **only if the existing flooring is found badly damaged/worn out/sunken and after approval by the Chairman (EU).**
- c) Providing shutters below kitchen counter.
- d) Replacing existing kitchen counter topcuddapa slab and sink with granite slab and SS sink with single drain board during repair.
- e) Changing of IWC to EWC under medical grounds after approval from Chairman EU.
- f) Providing monkey mesh door for front and rear side doors.
- g) Providing fixed type monkey-proof mesh for all the external windows
- h) Providing exhaust fan, in kitchen only, based on request
- i) Providing cupboard shutters in Dining Hall

14.13G Type

- a) Interior painting to the quarters as per specifications
- b) Providing exhaust fan in kitchen only
- c) Changing of IWC to EWC on medical ground and after approval from chairperson EU.
- d) Providing fixed type monkey proof mesh for all the external windows
- e) Providing shutters below kitchen counter and for kitchen cupboard upto 7'0" level

14.14SSQ/MSQ

- a) Interior painting to the quarters as per specifications.
- b) Replacing existing flooring with tiles as per specifications, **only if the existing flooring is found badly damaged/worn out/sunken and after approval by the Chairman (EU).**
- c) Replacing existing kitchen counter top cuddapa slab and sink with granite slab and SS sink with single drain board during repair.

- d) Providing shutters below kitchen counter and for kitchen cupboard upto 7'0"level
- e) Providing exhaust fan, in kitchen onlybased on request.
- f) Changing of IWC to EWC onmedical ground after approval from chairperson EU.
- g) Fixing of fixed type monkey proof mesh for all the external windows.

15 Water supply

- h) Water is supplied to residential quarters once in two days. The residents are therefore requested to use the drinking water carefully/judiciously and not to use the water for gardening.
- i) In case of emergency when thereis nowater in the quarters, request can be made for supply of water through tractor tanker.

At least one hour notice is to be given for arranging the tanker and the water through tanker will be supplied at the ground floor only.

- Cooperation of the residents is sought in the following cases;
- The occupants are expected to store minimum quantity of water for their use till the tank is refilled.
- Whenever periodical cleaning of the terrace tanks is carried out with prior intimation to the residents expected not to tamper with the control valves on the terrace tanks.
- The residents are expected not to open the tank covers or leave the cover open or partially closed.

16 Horticulture Works

- The potted plants will be displayed based on written request for official seminars, conferences and workshops held in the IITM campus.
- Tree branches that are protruding into the windows of the buildings will be trimmed by the skilled labour from Horticulture Sub-division, on request.(Contact – Extn 8194 or 9444008121)

17 Waste management

17.1 Solid waste

Source segregation shall be done by the residents and further door to door collection, segregation and disposal will be taken care by Owzone.For any other specific / special requirement and enquiries office of the Owzone (PABX - 9450) can be contacted.

Other waste materials and junk generated from the departments shall be disposed off by the respective departmentsas per Institute norms.

Construction waste generated from the site will be disposed-off by the respective contractors engaged by the Engineering unit.

Non-hazardous Waste from Campus is dealt with as per table below.

S.No	Description	Method of Treatment / Disposal	Coordinator for all waste disposal
1	Bio degradable kitchen waste from Residential and Hostel zone	Compositing & Dome type Bio digester	Er. V. Seenivasan 8162 / 9444008121 vsrini@iitm.ac.in
2	Non Bio degradable waste	Chennai City Corporation	
3	Recycle waste	Authorized Dealers	
4	STP Sludge	Manure for gardening	
5	E-waste (Computer, Printer, Regulator, Projector, Processors, UPS, Stabilizers, Electronics)	Authorized Dealers	

- The garbage is being segregated at source as bio-degradable waste, non bio degradable waste and recyclable waste using different color coded bins.
- The organic waste/bio degradable waste generated is composted using composting facility and part of it is treated in the dome type bio-digester. The compost generated is used as a soil conditioner for landscaping.
- Non bio degradable waste is sent to Chennai City Corporation.
- The recyclable solid waste is sold to recyclers and local vendors.
- Dewatered STP sludge is used as manure for gardening within the institute.

17.2 Hazardous waste

The following types of hazardous waste are generated within the campus. The details of the Hazardous waste generation, Storage and Method of disposal are detailed in the table below.

S.No	Waste Description	Waste Category	Source of generation	Mode of storage	Method of disposal
1	Used / Spent oil	5.1	Research laboratories	Stored in Container / drums under covered shed	To be sent to authorized recyclers
2	Wastes /residues containing oil (Oil Contaminated cotton/cloth)	5.2	Research laboratories	Stored in Container / drums under covered shed	To be sent to TSDF, Gummidipoondi
3	Discarded containers (Contaminated bottles and vials)	33.3	Research laboratories	Stored in Container / drums under covered shed	To be sent to authorized recyclers
4	Flammable (Non-Halogenated Organic Solvent)	E1	Research laboratories	Stored in Container / drums under covered shed	To be sent to TSDF, Gummidipoondi
5	Flammable (Halogenated Organic Solvent)	E1	Research laboratories	Stored in Container / drums under covered shed	To be sent to TSDF, Gummidipoondi
6	Corrosive (Acid Waste)	E3	Research laboratories	Stored in Container / drums under covered shed	To be sent to TSDF, Gummidipoondi
7	Corrosive (Base Waste)	E3	Research laboratories	Stored in Container / drums under covered shed	To be sent to TSDF, Gummidipoondi
8	Process wastes / residues and sludges (Bitumen)	21.1	Research laboratories	Stored in Container / drums under covered shed	To be sent to TSDF, Gummidipoondi
9	Filters and filter materials which have organic materials in them, eg mineral oil, synthetic oil and organic chlorine compounds (Silica Gel Waste)	35.1	Research laboratories	Stored in Container / drums under covered shed	To be sent to TSDF, Gummidipoondi

17.3 Radioactive waste

- The radioactive compounds are to be kept for six half-lives and discarded as per AERB (Atomic Energy Regulatory Board) Norms.
- Professor-in-charge for radioactive waste disposal is Prof. Rama Shanker Verma, Dept. of Biotechnology (PABX: 4109, email Id: vermars@iitm.ac.in)

17.4 Biomedical waste

The following types of biomedical wastes are generated in the campus hospital and some Laboratories which are properly collected, stored and disposed off to the authorized vendors. The details of the Biomedical waste segregation, storage and method of disposal are detailed in the table below.

S.No	Description	Mode of Disposal
1	Human anatomical waste	Incineration
2	Animal waste	Incineration
3	Microbiology & Biotechnology Waste	Incineration
4	Waste Sharps (needles, syringes, scalpels, blades, glass etc)	Auto Clave + Shredding + Landfill
5	Discarded medicines and Cytotoxic drugs (Outdated, contaminated and discarded medicines)	Incineration
6	Soiled waste (cotton, dressings, soiled plasters, casts, liner, beddings and others)	Incineration
7	Solid Waste (Waste generated from disposal items)	Auto Clave + Shredding + Landfill
8	Liquid waste	Effluent Treatment
9	Incineration Ash	-
10	Chemical waste (Chemicals used for disinfection etc.)	Effluent Treatment

Electrical Division /Engineering Unit

The electrical division of Engineering Unit is being maintaining all HT/LT Electrical and Electro mechanical equipment in our campus. The Electricity for our campus is being maintained by this division after receiving the 33 kV power supply from TANGEDCO.

The main 33/11 kV substation (SS) is located nearby Velachery Gate. This SS is availing dual source of power supply from the TANGEDCO to minimize the failure.

The total installed capacity of 33/11 kV Transformer is 15 MVA(1 x 10 MVA+ 1 x 5.0 MVA)

The Permitted Maximum Demand is 6.0 MVA.

The Maximum Demand reached: 7.01 MVA & Minimum Demand recorded is 5.25 MVA. The average unit consumption per day is 90000 kWH.

In addition to the above, 21 Nos. 11kV Substation were located in 21 locations in our campus. There are 3 x 1000 kVA Tranformer with allied VCB panels, 1 No.750 kVA Transformer with allied VCBs, 30 Nos. of 500 kVA Transformers and 3 x250 kVA with allied VCBs. The total installed capacity of the 11/0.415 kV Transformer is 19500 kVA.

The total Installed capacity of the 13 Nos Strand by DG of various capacity is 3596 kVA.

The electrical division of the Engineering Unit is also installing commissioning and testing of all electro mechanical equipment such as air conditioners, Lifts, Fire fighting systems, Fire alarm systems and domestic water & Sewage water pumps.

This division is also maintaining 2214 Nos. of 4815 TR capacity of Air conditioners, 71 Nos. of Lifts, 3 Fire fighting system equipment and 105 Nos.of 625 HP domestic water/sewage water pumps.

SCOPE OF SERVICE:

The electrical Division is to provide service

- 1) by the way of installation, commissioning and maintaining the electrical installations such as light fittings, fans, power sockets, power mains, air conditioners, Lifts and fire fighting systems in all zones.
- 2) Attending the complaints of all electrical/Electromechanical equipment in our campus.
- 3) Provide additional and alteration of electrical installation as per the user requirements.
- 4) Provide new requirements of air conditioners, condemning the old ACs and other equipment as required by the end user as per the procedure.
- 5) Provide 24 x 7 emergency service to all electrical installation in the campus.
- 6) Provide 24 x 7 emergency rescue service in case of person trapped in the lift.

There are 3 zone wise electrical maintenance office is being located in respective zone offices to provide service to the end users. The zone wise details are appended below.

Sl. No	Zone & Location of the office	Engineer in charge & contact Numbers	Responsibility
1.	Academic zone Central Workshop substation- First Floor	Sri.V.Manickavasagam AE(Elect) Landline:8169/8189 Mobile:9444008137 e-mail: mvasagam@iitm.ac.in	Maintaining, processing of addition and alteration and new request of the electrical installations in academic zone building. 24 x 7 electricity in the campus, Street lights & DG sets.
2.	Hostel zone Electrical Maintenance-Behind SFC	Sri.K.Ravichandran AEE (Elect) Landline:8170/8187 Mobile 9444008133 e-mail: ravi66@iitm.ac.in	Maintaining, processing of addition and alteration and new request of the electrical installations in Hostel zone buildings. Air conditioners in the campus, Lifts in the campus, Fire fighting/Fire alarm in the campus.
3.	Residential zone Near Shopping Center- First Floor	Sri.M.Muraliprakash AEE(Elect) Landline:8160/8193 Mobile:9444008140 e-mail: mmprakas@iitm.ac.in	Maintaining, processing of addition and alteration and new request of the electrical installations in Residential zone building, Meter readings in residential & Commercial buildings in all zones.

Sri. K. Viswanath, Executive Engineer(Elect)- Responsible for overall in charge of electrical and electro mechanical maintenance and related construction activities.

The end user can register the complaints in the respective office either by phone or IVRS portal <https://iscms.iitm.ac.in/CRM/Userlogin.php> under the category Electric Works/AC Unit/LIFTS.

The complaints will be attended through the contactor for replacement of accessories in the existing installation. The complaint is also being attended to the students in the Hostels during other than office hours and holidays. The students in the hostels can avail the facilities from 09 hours to 24 hours in all days except National holidays.

In case of additional requirements of power sockets, wirings and additional loads, the end user may send the letter of request after forwarded by the HOD to the Executive Engineer(Elect). After inspecting the site, the work will be undertaken and complete the same as required by the end user.

In case of requirements of new ACs for faculty rooms or Labs, the letter of request may also send to the Executive Engineer(Elect) with full details of equipment need to be installed in the room. After inspecting the site, the Electrical division will generate a note for sanction from the Director through the Chairman(AC Committee) & Dean(Planning) after calculating the heat load, selection of type and capacity of the AC. The EU will arrange to procure and install the same at the respective location.

In case of purchasing the new equipment more than 10 kW, the end user may kindly inform and obtain the feasibility report of availing the power supply from the Executive Engineer(Elect) to take necessary arrangement prior to arrival of the equipment.

PBX Telephone System

The campus telephone facility has been extended to the Office and Residential Quarters of Faculty members, Laboratories of various Departments and Other miscellaneous services from HiPath 4000 ISDN PBX system having 5000 line capacity interfaced with BSNL through ISDN PRA lines.

There are 17 remote telephone systems housed at various buildings in Academic, Hostel and Residential Zones connected to Main PBX system via optical fiber link.

The complaints of campus telephone lines are attended within 2 hours from the time of receipt/registration. (Contact – Extn 8141)

Online Campus Telephone Directory is available in the Institute Website under the Tab Contact >> Telephone Directory. <https://www.iitm.ac.in/telephonedirectory/>