



**SURESH ANGADI EDUCATION FOUNDATION'S
ANGADI INSTITUTE OF TECHNOLOGY AND MANAGEMENT**

Savagaon Road, Belagavi – 590 009.

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DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING



6. FACILITIES AND TECHNICAL SUPPORT

(80)

6.1 Adequate and Well-Equipped Laboratories and Technical Manpower

(30)

S. No	Name of the laboratory	No. of students Per Setup (Batch size)	Name of the important equipment	Weekly utilization status (all courses for which lab is utilized)	Technical Manpower Support		
					Name of Technical Staff	Designation	Qualification
1	Electrical machines laboratory-1	15	Rectifier unit, DC shunt motor	4 Hours	Mrs. Mayuri Patil	Instructor	B.E EEE
			DC compound motor				
			DC series motor coupled to DC series generator				
			DC shunt motor coupled to DC compound generator				
			Ammeters, Voltmeters, Rheostats, Tachometers.				



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					Name of Technical Staff	Designation	Qualification
2	Electronics laboratory	15	Regulated power supply, DC voltmeters, DC ammeters, Multimeters, Transformers, CRO's, Function Generators, Breadboards, Decade Resistance Box	4hours	Miss.Roopali Mandloi	Instructor	B.E EEE
3	Electrical machines laboratory-2	15	1- ϕ Transformers, 3- ϕ Transformers, 3- ϕ Induction motor with mechanical load, DC shunt motor coupled to 3- ϕ alternator, 3- ϕ Synchronous motor, 1- ϕ Induction motor, 1- ϕ and 3- ϕ Auto Transformer, Rheostats, Wattmeter's.	4hours	Mrs. Mayuri Patil	Instructor	B.E EEE
4	Power Electronics Laboratory	15	SCR, IGBT & MOSFET study kit, Gate firing circuits for SCR		Mrs. Mayuri Patil	Instructor	B.E EEE

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			Bridge converter, DC Jones chopper, 1- ϕ Parallel inverter, 1- ϕ Series inverter, 1- ϕ Cyclo converter, 1- ϕ Half controlled converter CRO's				
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					Name of Technical Staff	Designation	Qualification
5	Control System Laboratory	15	Time Response of Second order system	4 Hours	Miss.Roopali Mandloi	Instructor	B.E EEE
			Transfer Function of DC motor Kit				
			DC servo motor, Ac servo motor				
			Programmable Logic Controller				
6	Circuit Lab using P-Spice	15	Intel Core Processor 2.2 GHz with	4 Hours	Miss.Roopali Mandloi	Instructor	B.E EEE
			8GB Ram, LCD Monitor				
			Open-Source software				
7	Transformers and Generators Lab		Single-phase Transformers (various ratings). Three-phase Transformers (star-delta, delta- star, etc.). Auto-transformers. Instrument. Transformers (CTs & PTs) Variable	4 Hours	Mrs. Mayuri Patil	Instructor	B.E EEE



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			Transformers				
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S. No	Name of the laboratory	No. of students Per Setup (Batch size)	Name of the important equipment	Weekly utilization status (all courses for which lab is utilized)	Technical Manpower Support		
					Name of Technical Staff	Designation	Qualification
8	Electric Motors Lab	15	DC Shunt Motor	4 Hours	Mrs. Mayuri Patil	Instructor	B.E EEE
			DC Series Motor				
			Motor Single- phase Induction Motor				
			Three-phase Squirrel Cage Induction Motor				
			Three-phase Slip Ring Induction Motor				
			Synchronous Motor				



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S. No	Name of the laboratory	No. of students Per Setup (Batch size)	Name of the important equipment	Weekly utilization status (all courses for which lab is utilized)	Technical Manpower Support		
					Name of Technical Staff	Designation	Qualification
9	DSP Laboratory	15	Intel Core Processor 2.2 GHz with 8GB Ram	4 Hours	Miss. Roopali Mandloi	Instructor	B.E
			LCD Monitor, Open-Source software				EEE
10	Microcontroller Laboratory	15	Microcontroller kit, Stepper motor, seven- segment display, Interfacing ADC and DAC kit,	4 Hours	Miss. Roopali Mandloi	Instructor	B.E EEE
11	Op-Amp & LIC Lab	15	Breadboard, Power Supply (Dual/Variable DC Power Supply) $\pm 15V$, $\pm 12V$ commonly used for Op-Amps. Function Generator. Digital/Analog Oscilloscope Digital Multimeter (DMM) CRO	4 Hours	Miss. Roopali Mandloi	Instructor	B.E EEE



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12	MATLAB For EEE	15	Intel Core Processor 2.2 GHz, Open- Source software, Computer systems	4 Hours	Miss. Roopali Mandloi	Instructor	B.E EEE
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The Sample Snap Shots of Laboratories of Department of Electrical and Electronics Engineering is shown in Figures 6.1(a)-(c).

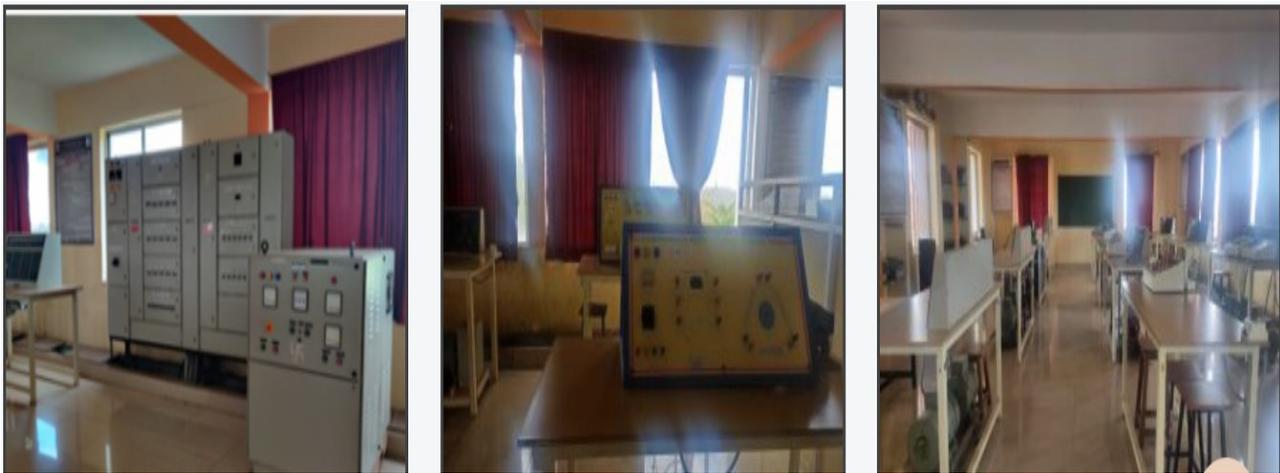


Figure 6.1 (a) Electrical Machin





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Figure 6.1 (b) Electronics laboratories

Figure 6.1 (c) Computer Related laboratories



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6.2 Additional facilities created for improving the quality of learning experience in laboratories (25)

Table 6.2. Additional facilities



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S. No	Facility Name	Details	Reason(s) for create	Utilization ion	Areas in which students are expected to have enhanced learning	Relevance to POs/PSOs
1	Internet Facility	Equipped with Computer Systems, LAN connectivity	To facilitate the students to enhance their knowledge	Faculties and Research Scholars & UG students. It is available throughout the year for utilization	Inculcate self-learning Skills and communication skills	POs- 1,2,5,6,8,9,10
2	Projector	A presentation device installed in a classroom	Computer or Video Source on a large screen in order to benefit easier viewing for a larger number of viewers.	All Semesters	Concepts of experiments	POs-1,2, 3, 5,12
3	Department Library	All semester text books and relevant notes.	Referring for faculties and students.	For all faculties and students	For enhancing their knowledge.	POs-1,2, 3, 5,12



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Justification for Relevance

Beyond the boundaries of university defined curriculum, we at AITM focus on embellishing our students with more practical skills. Students are advised and guided to go beyond university prescribed experiments. In this process, students get an opportunity to unleash their creativity and research skills there by proliferating their practical knowledge. This endeavor helps us achieve more Program Outcomes and Program Specific Outcomes.

6.3 Laboratories: Maintenance and Overall Ambiance

(10)

MAINTENANCE:

1. Servicing of Lab equipment/components/probes are carried out in the beginning of every semester.
2. Stock registers for equipment and consumables are maintained for all the laboratories.
3. Computer maintenance and software installations are carried out by the instructor.
4. Well Technical Staff are available for maintenance of Electrical and Electronic equipment's and software.
5. Backup UPS Power supply is provided for Computer labs.

AMBIANCE:

1. White and Green board is provided in each Lab.
2. Separate work tables are provided in each laboratory.
3. Storage facility is provided to keep laboratory equipment.
4. Sufficient number of windows is available for ventilation and natural light.
5. Labs are equipped with sufficient hardware and software to run program specific.



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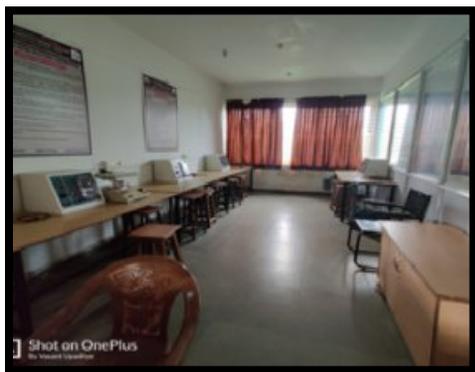
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6.4 Project/Skill laboratories (5)

Students are provided with Project laboratory facilities based on the different streams of Electrical and Electronics Engineering. The Project component has a key role in promoting practical learning experience which enhances student's experiential learning. The project laboratory of the department offers students an opportunity to gain valuable hands-on experience. Students do take up mini projects in earlier semesters to reinforce the fundamentals of Electrical and Electronics Engineering. Capstone projects are carried out in the final year which reflects the theoretical and practical knowledge gained by students in the earlier semesters.

Sl No.	Project Lab	Remarks
1	High voltage and Relay Lab	Faculties UG Students utilize for their mini projects, projects, and research activities.

The Sample Snap Shots of Laboratories of Department of Electrical and Electronics Engineering is shown.





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6.5 Safety Measures in Laboratories

(10)

The following safety measures are used in all the labs:

- Do's and Don't are displayed and instructed for all students.
- First aid boxes are kept in the department.
- Fire extinguishers are kept in each laboratory.
- Backup UPS Power supply is provided for Computer labs.
- Computers should be turned off before leaving lab.
- CCTVs are installed in all the laboratories.

Sl. No	Name of the Laboratory	Safety Measures
1	Electrical Machine Laboratories	<p>The following safety measures are used in all the labs:</p> <ul style="list-style-type: none"> • Do's and Don'ts are displayed and instructed for all students. • First aid box are kept in the department. • Fire extinguishers are kept in each laboratory. • Backup UPS Power supply is provided for Computer labs. • Computers should be turned off before leaving
2	Electronics laboratory	
3	Power Electronics Laboratory	
4	Control System Laboratory	
5	Circuit simulation Laboratory	
6	Transformer and generator Laboratory	
7	Electric Motor Laboratory	



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8	Microcontroller Laboratory	lab. • CCTVs are installed in all the laboratories.
9	Op-amp and LIC Laboratory	



First Aid box



Fire Extinguisher



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LABORATORY UTILIZATION AND MAINTENANCE

Departments have well equipped laboratories.

Procedure for Laboratory utilization.

1. The labs are utilized depending on the requirements of different semesters.
2. The labs are allotted to the students based on the time-table designed by the department.
3. For every lab there are faculty lab in-charge and a lab assistant to take care of all activities in the lab.
4. CO's and POs of the laboratory course are briefed to the students on their very first class.
5. The lab assistant takes care of stock register, maintenance register
6. The lab assistant issues the necessary components to students.
7. The students do the lab experiments under the supervision of concerned lab faculty and lab assistant.
8. Every student maintains observation book and record book. After lab is completed, the student needs to write observation in the observation book. After faculty verification and correction, it will be carried out to lab record.
9. After completion of experiment the lab assistant ensures the submission of all equipment by the students which are issued for the lab.

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Procedure for maintenance of Labs.

1. The HOD sends lab equipment requirements from time to time to the principal for the purchase.
2. The principal follows the usual purchase procedure of the college and purchase the equipment for the department labs.
3. All the equipment in the laboratory are calibrated frequently by internal technicians and external agencies to ensure the accuracy and reliability.
4. The issues of maintenance and repair of equipment is taken care of by the annual maintenance agencies.
5. All labs are regularly cleaned by the cleaning staff.
6. Laboratory waste is disposed of from time to time as per the norms.

DEPARTMENT LIBRARY

Procedure for Department Library Utilization and Maintenance

The library has a collection of 150 volumes with 34 photo copies of text books.

Procedure for Department library utilization

- The library is open on all working days from 9.00 a.m. to 5.00 p.m.
- The students, teaching faculty and staff have to enter the book title and number in the register for borrowing books.
- The departmental libraries are managed by a faculty coordinator nominated by the head of the department concerned.



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- The UG students are allowed to take 2 library books on loan basis for a period of 30 days. It can be renewed for another 30 days. The teaching faculty and staff are allowed to take 4 books per semester.
- In all the libraries registers are maintained to note down the daily user's details.

Maintenance procedure.

- Books in the library are arranged in cupboard subject wise to save the time of the users as well as staff.
- The Journals are renewed for time to time.
- Books maintenance includes dusting and cleaning; shifting and rearrangement is done regularly.