## DEPARTMENT OF ELECTRICAL ENGINEERING FACILITIES AND TECHNICAL SUPPORT

Sr. No.	Name of the Laboratory	No. of Student s per setup	Name of the Important equipment	Weekly utilizati on status	Technical m	anpower supj	port
		(Batch size)		(all the courses for which the lab is utilized)	Name of the technical staff	Designatio n	Qualification
1	Basic Electrical Engineering Laboratory EE191, EE 291	Maximu m 5, Batch size 30	<ul> <li>Single phase transformer.</li> <li>Network Theorem Hardware Kit</li> <li>Fluorescent, Tungsten and Carbon filament lamps.</li> <li>R-L-C series circuit.</li> <li>Three-phase Power measurement</li> <li>Three-phase Induction Motor.</li> <li>DC Machine.</li> <li>Single-phase Energy Meter.</li> </ul>	8 classes per week	1. Mr. Dwaipayan Mazumder	Junior Technical Assistant	Diploma in Electrical Engineering
2	Chemistry Laboratory CH191	Maximu m 5, Batch size 30	<ul> <li>Digital Balance</li> <li>Double distilled water plant</li> <li>PH meter</li> <li>Conductivity meter</li> <li>Ostwald visco meter</li> </ul>	2 classes per week	Mr.Chanda n Kumar Bhattacharj ee	Junior Technical Assistant	B.Sc (Chemistry Honours)
3	Engineering Graphics & Design ME191	Maximu m 5, Batch size 30	<ul><li>Computer</li><li>CAD software</li></ul>	2 classes per week	Mr. Ashok Kr. Ghosh	Junior Technical Assistant	Diploma in Mechanical Engineering
4	Physics-I Laboratory PH291	Maximu m 5, Batch size 30	<ul> <li>Slide calipers/ Screw- gauge/travelling microscope</li> </ul>	2 classes per week	Mr. Sushanta Auddy	Junior Technical Assistant	B.Sc.in physics

5	Workshop (Manufactur	Maximu		Carrey Foster Bridge. CRO LCR circuit Photoelectric cell Polarimeter Fitting operations &	2 classes	Mr. Ashok	Junior Technical	Diploma in
	ME292	Batch size 30	•	Welding (arc welding & gas welding), brazing Electrical & Electronics Metal casting CNC machining Plastic molding & Glass Cutting	week	Ghosh	Assistant	Engineering
6	Programmin g for Problem Solving Laboratory CS291		•	Computer Software	2 classes per week	Ms. Sutapa Sarkar	Junior Technical Assistant	Diploma Computer Science and Engineering
7	Basic Electronics Engineering Laboratory EC291	Maximu m 5, Batch size 30	•	Resistors, Inductors, Capacitors, Diodes, Transistors (BJT) and electronic equipment like DC power supplies, Millimeters. OPAMP Logic Gates	2 classes per week	Ms. Dyuti Nandi	Junior Technical Assistant	Diploma in Electronics & Communicatio n Engineering
8	Electrical Circuit Analysis Laboratory EE-391	Maximu m For hardwar e 5/ for software 2, Batch size 30	•	MATLAB/ Simulink R-L and R-C network R-L C series and parallel circuit Network Theorem Hardware Kit	2 classes per week	Mr. Vivekanan da Kumar	Junior Technical Assistant	Diploma in Electrical Engineering
9	Measureme nt and Instrumentat ion Laboratory EE392	Maximu m 5, Batch size 30	•	Instrument transformer. Energy Meter Three phase power measurement Different types of bridge Hardware kit	2 classes per week	Mr. Dwaipayan Mazumdar	Junior Technical Assistant	Diploma in Electrical Engineering,
10	Electrical Machines – I Laboratory	Maximu m 5,	•	Single-phase transformer.	2 classes per week	Mr. Bapi Tarafder	Junior Technical Assistant	Diploma in Electrical Engineering

	EE491	Batch size 30	<ul> <li>Three-phase transformer.</li> <li>Three-phase Induction Motor.</li> <li>V/f Control Three phase Induction motor</li> <li>DC Motor</li> <li>DC Generator</li> <li>Three Phase and single phase variac</li> </ul>				
11	Power Electronics Laboratory EE 492	Maximu m 5, Batch size 30	<ul> <li>Trainer kit for characteristics of an SCR.</li> <li>Trainer kit to Study characteristics of a TRIAC</li> <li>Different triggering Circuits of an SCR.</li> <li>Trainer kit to study of the operation of a single phase full controlled bridge converter with R and R-L load.</li> <li>Trainer kit to study of performance of single phase half controlled symmetrical and asymmetrical bridge Converters.</li> <li>Trainer kit to study the performance of step Down chopper.</li> <li>Trainer kit to study the performance of step Down chopper.</li> </ul>	2 classes per week	Mrs. Subhra Sen	Junior Technical Assistant	Diploma in Electrical Engineering,

Chonner
• I rainer kit to study
the
performance of
single-
phase inverter with
180°
conduction mode of
Operation
Trojner kit to study
• Hamer Kit to study
performance of
SPWM
controlled single-
phase
Inverter.
• Trainer kit to study
the
performance of
single
phase controlled
converter with and
without source
in ductor of
• Trainer kit to study
the
performance of step
up
and step down
chopper
with MOSFET,
IGBT
and GTO as switch
• Train kit to study the
performance of
single
phase half controlled
symmetrical and
symmetrical and
asymmetrical bridge
converter
Trainer kit to study
performance of three
phase controlled

			<ul> <li>converter with R &amp; amp; R-L load</li> <li>Desktop Computers</li> <li>Cathode Ray Oscilloscope (CRO)</li> <li>Digital Storage</li> <li>Oscilloscope (DSO)</li> <li>Multimeters</li> <li>MATLAB Software</li> </ul>				
12	Electrical Machines – II Laboratory EE591	Maximu m 5, Batch size 30	<ul> <li>Three-phase alternator</li> <li>Synchronization of alternators.</li> <li>Single-phase Induction motor.</li> <li>Three-Phase Induction generator.</li> <li>Single &amp; Three phase variac</li> <li>V/F Control</li> <li>DOL Starter</li> </ul>	2 classes per week	Mr. Bapi Tarafder	Junior Technical Assistant	Diploma in Electrical Engineering
13	Power System – I Laboratory EE592	Maximu m 5, Batch size 30	<ul> <li>Simulation of DC distribution by Network analyzer.</li> <li>Measurement of earth resistance by Earth tester.</li> <li>Dielectric strength test of insulating oil, solid Insulating Material.</li> <li>Different parameter calculation by power circle Diagram.</li> <li>Study of different Types of insulator.</li> <li>Determination of the generalized constants A, B, C, D of long transmission</li> </ul>	2 classes per week	Mr. Arnab Kumar Roy	Junior Technical Assistant	Diploma in Electrical Engineering

			•	Line. Active and reactive power control of Alternator. Study and analysis of an electrical transmission line circuit with the help of software. Dielectric constant, tan delta, resistivity test of transformer oil.				
14	Control System – I Laboratory EE593	Maximu m 2(softwa re),5 for hardwar e), Batch size 30	•	MATLAB/ Simulink PSpice Multisim CRO PI, PD and PID controller	2 classes per week	Mr. Vivekanan da Kumar	Junior Technical Assistant	Diploma in Electrical Engineering
15	Power System – II Laboratory EE 692	Maximu m 2(softwa re) 5(for hard ware) Batch size 30	•	Relay ETAP MI-Power	2 classes per week	Mr. Arnab Kumar Roy	Junior Technical Assistant	Diploma, in Electrical Engineering
16	Control System – II Laboratory EE693	Maximu m 2(softwa re) 5(for hard ware) Batch size 30	•	MATLAB/ Simulink CRO PI, PD and PID controller	2 classes per week	Mr. Vivekanan da Kumar	Junior Technical Assistant	Diploma in Electrical Engineering
17	Electrical Drives Laboratory EE 791	Maximu m 5, batch size30	•	Chopper fed DC Drive. Single-phase fully controlled DC Drive. TRIAC. Three-phase Induction Motor	3 classes per week	Mrs. Subhra Sen	Junior Technical Assistant	Diploma in Electrical Engineering

	•	Induction motor		
		Drive		
	•	V/f control		
	•	DC Motor.		
	•	Regenerative/Dyna		
		mic braking		

## Additional facilities created for improving the quality of learning experience in laboratories

Sr. No.	Facility Name	Details	Reason(s) for creating facility	Utilizatio n	Areas in which students' are expected to have enhanced learning	Relevanc e to POs/PSO s
1.	Seminar Hall	A shared AC seminar room that is fully furnished with 100 student desks, smart board, equipped with Wi- Fi, Audio and Video facilities.	Present technical talks, project seminars, research articles, workshops, and presentations on industry engagement. Students' overall development includes things like cultural acvities.	Per Semester 24 hrs	To fill the gap between the curriculum of academia and that of industry. to raise pupils' levels to those of the industry. Sports and cultural events.	PO5, PO12, PSO1, PSO2, PSO3
2.	Smart Class Room	Exclusive AC smart class room with 75 seats, , Smart Seminar rooms are equipped with Smart interactive board facility, Wi-Fi, Audio and Video facilities for effective teaching learning process	In smart classes, we use all interactive modules, such as videos and slideshows, and these aesthetically pleasing teaching techniques appeal to students who are already having trouble with the conventional classroom teaching style. Smart lessons actually resemble watching videos in that they occasionally incorporate animated graphics to illustrate a subject.	Througho ut the semester	Subjects (Real time application oriented subjects) which have design, optimization and fabrication can be easily analyzed and visualized	PO5, PO12, PSO1, PSO2, PSO3

3.	Project Laboratory	Models for both minor and major engineering projects, under the direction of our faculty members.	Motivating students to come up with projects or products is the process of developing unique ideas.	Througho ut the semester	Project results are analyzed and characterized for further Journal Paper Publication	PO2, PO3, PO5, PO9, PO12 PSO1,PS O2 PSO3
4.	Department al Library	Having a library of reference books, CDs, text books, e-books, conference proceeding books and project/seminar reports.	To provide for students' needs To offer reference resources To use as a resource for seminar and laboratory projects	Througho ut the semester	Student learning process	PO1, PO9, PO6, PO2, PSO1
5.	Video's From NPTEL	Displayed in the Lab.	Recognizing the video-oriented Teaching and learning.	Per semester 15 hrs	Better Understanding Of the subject. In depth Knowledge Beyond Lab.	PO5, PO11, PO12, PSO1, PSO2
6.	MOOCS	One course is free from COURSERA from the MOOCS basket.	Knowledge Development of students and Faculty	1 course per semester	New emerging technology	PO5, PO11, PO12, PSO1, PSO2
7.	Beyond syllabus experiment s	Filling in the academic curriculum's gaps	To provide beyond syllabus knowledge	Every semester	Beyond syllabus	PO3, PO4, PO11, PSO3
8	ICT enabled classrooms	Exclusive ICT enabled classrooms with seating Capacity of 60-75	Use of modern teaching tools	Througho ut the semester	Subjects (Real time application oriented subjects) which have design, optimization and fabrication can be easily analyzed and visualized	PO5, PO12, PSO1, PSO2, PSO3
9	Industry Supported laboratory	<ol> <li>DC Adaptor</li> <li>Li-ion Battery Cell</li> <li>Nickel Strip Roll</li> <li>Li-ion Battery Cell</li> <li>Spot Welding Machine for Li- ion Battery pack</li> </ol>	Motivating students and faculty to come up with projects or products in process of developing unique ideas	Througho ut the semester	Project results are analyzed and characterized for further Journal Paper Publication	PO2, PO3, PO5, PO9, PO12 PSO1,PS O2 PSO3

	6. E-Bike (24V,
	250w, 300rpm,
	Chain Drive
	Moor, Bench
	with
	accessories)
E	E-Bike (24V, 250w,
3	300rpm, BLDC Hub
n	motor, Bench with
a	accessories)