

Sree Narayana Gurukulam College of Engineering
Kadayiruppu P O, Ernakulam, Kerala – 682 311

Lab facilities available in Department Mechanical Engg.

All laboratories are well equipped with state of the art equipment and facilities. All the laboratories are established as per University and AICTE norms. These labs are utilized for conducting practical classes as per the requirements of the curriculum.

<i>SL. No.</i>	<i>Name of the laboratory</i>	<i>Carpet area available (sq. m.)</i>
1.	Workshop	349.97
2.	Heat Transfer Lab and Heat Engine Lab	662.49
3.	Measurements Lab	349.97
4.	Machine Tool Lab	351.00
5.	Advanced M.T Lab	351.00
6.	CNC Lab	76.16
Total area		2140.59

Sections in Workshop Practice

<i>SL. No.</i>	<i>Sections</i>	<i>Capable of Accommodating</i>
1.	Foundry	16 Students
2.	Fitting	16 Students
3.	Smithy	16 Students
4.	Carpentry	16 Students

Equipment available in Machine Tools Lab & Advanced Machine Tools Lab

<i>SL. No.</i>	<i>Name of the equipment</i>	<i>Numbers available</i>
1.	Lathe	18
2.	Milling Machine	3
3.	Slotting Machine	12
4.	Shaper	6
5.	CNC Turner	1
6.	Bench Grinder	2
7.	Surface Grinder	1
8.	Tool and Cutter Grinder	1
9.	Radial Drilling Machine	1
10.	CNC vertical machining centre - Bharat Fritz Werner (BFW) Gaurav model BMV35T12	1
11.	Rapid prototyping machine - Mojo 3D printer Pack	1
<i>High precision measuring equipment</i>		
10.	Radial Drilling Machine	1
11.	Lathe Tool Dynamometer	1
12.	Drill Dynamometer	1

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Equipment available in Flow Lab

SL. No.	Name of the equipment	Numbers available
1.	Pipe Friction Apparatus.	1
2.	Venturimeter Test Rig.	1
3.	Orifice Meter and Water Meter Calibration Test Rig.	1
4.	Meta-Centric Height Apparatus.	1
5.	Reynolds Apparatus	1
6.	Notches.	1
7.	Orifices and Mouth Pieces.	1
8.	Open Channel.	1
9.	Cut-Model of Valves, Plumbing Tools and Pipe Fittings.	1

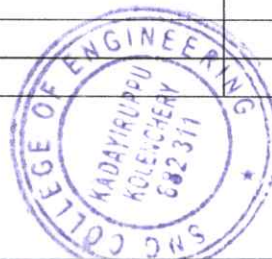
Equipment available in Thermal Lab

SL. No.	Name of the equipment	Numbers available
1.	Steam Power Plant 1kW Capacity	1
2.	Junkers Gas Calorimeter Apparatus	1
3.	Bomb Calorimeter Apparatus	1
4.	Cleveland Flash and Fire Point Apparatus	1
5.	Redwood Viscometer	1
6.	Saybolt Viscometer	1
7.	Penskey Martein Firepoint Apparatus	1

Equipment available in Heat Engines Lab

SL. No.	Name of the equipment	Numbers available
1.	2 Stroke Petrol Engine- 2.5 HP, Brake Drum loading, air cooled	1
2.	4 Stroke Diesel Engine - Vertical – 5 HP, Rheostat Loading, water cooled	1
3.	4 Stroke Diesel Engine – Horizontal – 5 HP , Rope Brake Dynamometer	1
4.	4 Cylinder 4-S Petrol Engine	1
5.	Twin Cylinder Diesel Engine with Computer Data Acquisition System	1
6.	Single Cylinder Slow Speed Diesel Engine	1
7.	Two stage twin cylinder air compressor	1
8.	Rotary air compressor test ring	1
9.	Centrifugal blower test ring	1
10.	Cut Model – 4S Vertical Diesel – To Plot Valve Timing Diagram	1
11.	Cut Model –2 S Petrol Engine	1
12.	Cut Model –Economizer	1
13.	Cut Model –Gear Assembly of Automobile	1
14.	Cut Model –Clutch Assembly of Automobile	1
15.	Cut Model –Differential Unit of Automobile	1
16.	Class room model of 4S Diesel Engine	1
17.	Class room model of 2S Petrol Engine	1
18.	Cut Model of Fuel Filter	1
19.	Cut Model of Fuel Pump	1

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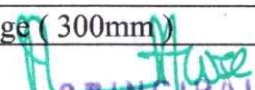
20.	Model of safety valve	1
21.	Steam-trap cut model	1

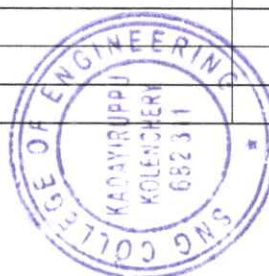
Equipment available in Heat Transfer Lab

SL. No.	Name of the equipment	Numbers available
1.	Apparatus for measuring Thermal Conductivity of Metal rod.	1
2.	Apparatus for measuring Thermal Conductivity of Insulating Material.	1
3.	Composite wall Apparatus.	1
4.	Natural Convection Apparatus.	1
5.	Forced Convection Apparatus.	1
6.	Lagged Piped Apparatus.	1
7.	Emissivity measurement apparatus.	1
8.	Heat Exchanger	1
9.	Refrigeration Test Rig.	1
10.	A/C Test Rig.	1

Equipment available in Measurement Lab

SL. No.	Name of the equipment	Numbers available
1.	Force measurement equipment	1
2.	Vibration measurement equipment	1
3.	Speed measurement equipment	
3.a.	Speed measurement using Photoelectric pickup	1
3.b.	Stroboscope	1
3.c.	Anemometer	1
4.	Psychrometer	1
5.	Calibration instrument setup	
5.a.	Pressure measurement	1
5.b.	Temperature measurement	1
5.c.	Flow measurement	1
6.	Gas analyzer	1
7.	Profile projector	1
9.	PH measurement	1
10.	Strain measurement	
10.a.	Strain measurement trainer	1
10.b.	Strain measurement trainer	1
11.	Laser interfero meter	1
12.	Gear tooth micrometer	1
13.	Displacement indicator	1
14.	Micrometer & Calipers	
14.a.	Outside Micrometer (0-25mm)	3
14.b.	Outside Micrometer (25-50mm)	3
14.c.	Inside Micrometer (5-30mm)	3
14.d.	Inside Micrometer (25-50mm)	3
14.e.	Vernier caliper (200mm)	3
15.	Gauges	
15.a.	Vernier height gauge (300mm)	1


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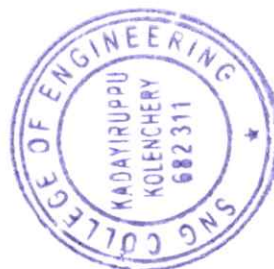


15.b.	Micrometer depth gauge	1
15.c.	Slip gauge block (83 pieces)	1
15.d.	Angle gauge block (10pieces)	
16	Sound measuring systems	1
17	Tool makers microscope	1
18	Bench Micrometer	1
19	Sine bar (0-200mm)	1
20	Combination square set	1
21	Autocollimator	1
22	Vibrometer	1
23	Strain measurement(Linear and lateral)	1
24	Photo elastic bench	1

Equipment available in Mechanical Engineering Lab

SL. No.	Name of the equipment	Numbers available
1.	Universal vibration apparatus	1
2.	Whirling of shafts	1
3.	Static & Dynamic balancing machine	1
4.	Universal Governor	1
5.	Motorized Gyroscope	1
6.	Journal Bearing	1
7.	Metallurgical Microscope	1
8.	Rapid moisture tester	1
9.	Permeability meter	1
10.	Mould Permeability tester	2
11	Universal strength machine	1
12	Fluidized bed	1


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Lab facilities available in Department of Electrical Engg.

SL. No.	Name of the laboratory	Carpet area available (sq. m.)
1.	Electrical Measurements Lab	185.89
2.	Electrical Machines Lab and Control & Simulation Lab	355.84
3.	Electrical Workshop	142.53
4.	Power Electronics Lab and Electronic Circuits Lab	58.3
5.	Integrated Circuits Lab	58.3
6.	Systems Lab (Computer programming Lab, Power Electronic Simulation Lab and Microprocessor and Microcontroller Lab)	127
Total area		927.86

Equipment available in Electrical Machines Lab

SL. No.	Name of the equipment	Remarks
1.	a. c. MACHINES	12 NOS.
2.	d. c. MACHINES	8 NOS.
3.	TRANSFORMERS	23 NOS.
4.	METERS, RHEOSTATS	253 NOS.
5.	RECTIFIER UNIT (100KVA)	1 NO.

Equipment available in Electrical Measurements Lab

SL. No.	Name of the equipment	Remarks
1.	d. c. BRIDGES, d. c. POTENTIOMETERS	4 NOS.
2.	a. c. BRIDGES, a. c. POTENTIOMETERS	6 NOS.
3.	METERS	62 NOS.
4.	CT's, PT's, V.R.BOX, RHEOSTATS	31 NOS.

Equipment available in Power Electronics Lab

SL. No.	Name of the equipment	Remarks
1.	R,RC,UJT firing module	1 No
2.	Ramp comparator firing module	1 No
3.	Single phase full converter device module and triggering module	1 No
4.	Three phase bridge converter and firing unit	1 No
5.	DC chopper power circuit	1 No
6.	DC chopper trigger circuit	1 No
7.	Microprocessor based firing unit and converter module	1 No
8.	Characteristic study unit	1 No
9.	Forced commutation study unit	1 No
10.	1HP motor	1 No
11.	Digital L.C.R meter	1 No
12.	Step down chopper	2 Nos
13.	Digital storage oscilloscope	9 Nos
14.	DC Variable Power Supply	5 Nos
15.	Single phase PWM inverter control module	1 No
16.	Three phase IGBT based power module	1 No



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17	3Phase SCR module(PEC14HV5P)	1 No
18	Three phase advanced power quality&energy analyzer	1 No

Equipment available in Integrated Circuits Lab


SL. No.	Name of the equipment	Remarks
1	Digital Storage Oscilloscope	12
2	Signal generator	15
3	Power Supply	15
4	Digital Trainer Kit	15
5	IC Tester	1
6	Multimeter	3

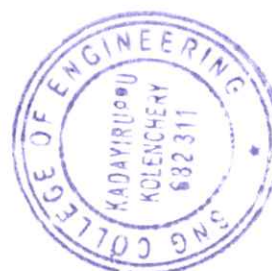
Equipment available in Control & Simulation Lab

SL. No.	Name of the equipment	Remarks
1.	D.C Shunt Motor	1 No
2.	D. C Servo Motor with velocity feedback	1 No
3.	A. C Servo speed-torque demonstration unit	1 No
4.	Temperature process controller	1 No
5	Personal Computer	7 Nos
6	Inverted Pendulum and drive	1 No
7	Amplidyne generator and amplidex unit	1 No

Equipments available in Systems Lab

SL. No.	Name of the equipment	Remarks
1.	8051 advanced trainer board	10 Nos
2.	8085 trainer kit	10 Nos
3.	Stepper Motor and Interfacing card	6 Nos
4.	Computers	30 Nos


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Lab facilities available in Department of Civil Engg.


SL. No.	Name of the laboratory	Carpet area available (sq. m.)
1.	Material Testing Laboratory-I	175.66
2.	Material Testing Laboratory-II	229.31
3.	Transportation Engg. Laboratory	113.82
4.	Geo Technical Engg. Laboratory	113.68
5.	Environmental Engg. Laboratory	112.00
6.	Civil Engg. Workshop (Survey, Masonry & Plumbing Lab.)	215.77
7.	Computer Laboratory	113.12
Total area		1073.36

Equipment available in Material Testing Lab- I (Strength of Materials Laboratory)

Sl. No.	Name of equipment	Quantity (Nos)
1.	Universal Testing Machine(1000 KN)	1
2.	Torsion Testing machine	1
3.	Impact Testing Machine-Izod and Charpy	1
4.	Strut Testing Machine	1
5.	Clerk Maxwell's Reciprocal Theorem Apparatus	1
6.	Torsion Pendulum	1
7.	Spring Testing Machine	1
8.	Rockwell Hardness Tester	1
9.	Brinell Hardness Tester	1
10.	Vicker's Harness Tester	1

Equipment available in Material testing Lab –II)

Sl. No.	Name of equipment	Quantity (Nos)
1.	Compression Testing Machine	1
2.	Flexure Testing Machine	1
3.	Slump Test Apparatus	2
4.	Compaction Factor Apparatus	1
5.	Concrete Penetrometer	1
6.	Bulk Density Measure set	1
7.	Vibration Table	1
8.	Air Permeability Apparatus	1
9.	Vicat Apparatus	3
10.	Le-Chatlier Mould	1


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11.	Le-Chatlier flask	1
12.	Consistometer	1
13.	Flow Table	1
14.	Vibration Machine	1
15.	Sieve Shaker	1
16.	Crushing Value Apparatus	1
17.	Tile Flexure Strength Testing Machine	1
18.	Electronic Platform Balance	1

Equipment available in Transportation Engineering Laboratory

Sl. No.	Name of equipment	Quantity (Nos)
1.	Aggregate impact testing apparatus	1
2.	CBR equipment	1
3.	Marshall testing equipment	1
4.	Centrifuge extractor	1
5.	Film stripping device	1
6.	Oven	1
7.	Waterbath	1
8.	Ring and ball apparatus	1
9.	Penetrometer	1
10.	Ductility testing machine	1
11.	Length gauge and thickness gauge	1
12.	Pycnometer	1
13.	Density basket (wire basket)	1
14.	Los angeles abrasion machine	1
15.	Aggregate crushing apparatus-mould & tamping rod	1
16.	Viscometer	1
17.	Flash and fire point testing equipment	1
18.	Sieve set	1
19.	Electronic balance (600 g capacity)	1

Equipment available in Geotechnical Engg. Laboratory

Sl. No.	Name of equipment	Quantity (Nos)
1.	Electronic weighing balance(30kg)	1
2.	Electronic weighing balance(10kg)	1
3.	Electronic weighing balance (3kg)	1
4.	Liquid limit device	3
5.	Core cutter with dolly and rammer	3

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6.	Sand pouring cylinder apparatus	2
7.	Compaction apparatus	3
8.	Lab hot air oven	1
9.	Pycnometer	4
10.	Soil hydrometer	2
11.	IS sieve set	3
12.	Sieve shaker	1
13.	Anderson pipette stand	1
14.	Shrinkage limit apparatus	2
15.	Direct shear apparatus	1
16.	Consolidation apparatus	2
17.	Lab permeability apparatus	1
18.	Unconfined compression test apparatus	1
19.	Lab vane shear apparatus	1
20.	Over head tank for Permeability Test	1
21.	High speed stirrer	1
22.	Triaxial test apparatus	1
23.	425 micron IS sieve	1
24.	2 mm IS sieve	1
25.	Heavy compaction apparatus	1
26.	Thermometer	2
27.	Desicator	1

Equipment available in Environmental Engg. Laboratory

Sl. No.	Name of equipment	Quantity (Nos)
1.	Spectrophotometer	1
2.	Water analyser	1
3.	Incubator	1
4.	Jar test apparatus	1
5.	Hot plate	2
6.	Water bath	1
7.	Water distilating unit	1
8.	Electronic weighing balance (2 Kg capacity, 0.01 g accuracy)	1
9.	Electronic weighing balance (220 g capacity, 0.1 mg accuracy)	1
10.	Hot air oven	1
11.	BOD incubator	1
12.	Muffale furnace	1
13.	pH meter	1
14.	Nephlo turbidity meter	1
15.	Digital conductivity meter	1
16.	Auto clave	1
17.	Magnetic stirrer	1


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Equipment available in Civil Engg. Workshop (Survey, Masonry & Plumbing Lab)

Sl. No.	Name of equipment	Quantity (Nos)
1.	Total Station	1
2.	Complete Equipments in Chain Surveying	10
3.	Prismatic Compass with Tripod	14
4.	Dumpy Level and levelling Staves	14
5.	Plane Table set with all accessories	14
6.	Transit theodolite	12
7.	Automatic Level	5



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Lab facilities available in Department Electronics Engg.


Sl. No.	Name of the laboratory	Carpet area available (sq. m.)
1.	Electronics Circuits Lab	81.08
2.	Digital Lab	81.03
3.	Communication Lab	98.92
4.	Advanced Software Lab & M. Tech (VLSI) lab.	138.52
5.	Communication II Lab.	35.77
6.	PCB Lab	23.40
7.	Workshop	48.45
8.	M. Tech. Comm. Lab.	75.21
9.	Research Laboratory	161.05
Total area		743.43

Equipment available in Electronics Circuits Lab

Sl. No.	Name of equipment	Number of Items
1	DSO	15
2	Function Generator	15
3	Power supply Fixed	8
4	Power supply (Variable), dual power supply	24
5	Capacitance box, Inductance box	11
6	Ammeter	33
7	Voltmeter	31
8	Computer	4
9	Rheostat	17
10	Multimeter	3
11	Universal IC Tester	1

Equipment available in Digital Lab

Sl. No.	Name of equipment	Number of items
1	CRO	9
2	Function Generator	12
3	Power supply Fixed	8
4	Power supply (Variable), dual power supply	28
5	Dual Function Generator	10
6	Digital IC trainer kit	30
7	DSO	15
8	Universal IC Tester	1
9	Ammeter	33
10	Voltmeter	19
11	Analog I C Tester	1


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Equipment available in Communication Lab

Sl. No.	Name of equipment	Number of Items
1	CRO	12
2	Function Generator	33
3	Dual Function Generator	7
4	Power supply Fixed	20
5	Power supply Variable, Dual power supply	24
6	Capacitance box, Inductance box	35
7	Computer	6
8	Multimeter	4
9	DSO	15
10	Universal IC Tester	1
11	Antena Trainer Kit	1
12	Microwave Bench	4
13	Digital Communication Trainer Kit	5
14	LCR Meter	1
15	Fiber Optic Trainer Kit	1
16	Satellite Communication Trainer Kit	1

List of Hardware Equipment – Adv. Software Lab & M.Tech Lab

Sl. No.	Name of equipment	Number of Items
1	Computer	50
2	Laptop	2
3	Keil mcb arm 7	3
4	KEIL MCB ARM 9	6
5	KEIL ULINK Programmer/debugger	9
6	SPARTEN 3 E	3
7	SPARTEN 6	6
8	VIRTEX 5 H/W	3
9	LCD Projector	2
10	Printer	4
11	Printer - Colour	1
12	DSP Kit	1
13	PAL Trainer Module	1
14	VLSI Trainer Kit	1
15	Universal Programmer	1
16	UV Eraser	1
17	8085 MP Trainer Kit	20
18	8086 MP Trainer Kit	10

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19	8051 MC Trainer Kit	5
20	Stepper Motor Card	10
21	Seven Segment Card	10
22	ADC Card	26
23	DAC Card	10
24	Traffic Light Card	10
25	Stepper Motor	10
26	89c51 MC Trainer Kit	3
27	Hexa Decimal Keyboard Card	1
28	IR Transceiver Card	1
29	89C51 CPU Card	1
30	LCD Card	1
31	DSP & PAL KIT	1
32	89C51 KIT	3
33	PIC PROGRAMER	3
34	89C51 USB PROGRAMER	6
35	RFID	4
36	ZIGBEE	2
37	TACHO METER SENSOR	2
38	GSM MODULE	2
39	GPS MODULE	1
40	89C51 DB	10
41	PIC DB	5
42	KB & SM DRIVER	16
43	RTC & SEVEN SEGMENT	16
44	LCD MODULE	16
45	PRESSURE SENSOR	1
46	FPGA KIT	1


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Lab Facilities available in Department of NASB

Sl. No.	Name of the laboratory	Carpet area available (sq. m.)
1.	Advanced Welding Lab	57.6
2.	Hydraulics Lab	356.98
Total area		414.58

Equipment available in Advanced welding lab

Sl.No	Name of equipment	Quantity (Nos)
1.	Manual Metal Arc Welding equipment	1
2.	Metal Inert Gas Welding Equipment	1
3.	Tungsten Inert Gas Welding Equipment	1
4.	Submerged Arc Welding Equipment	1
5.	Gas Cutter	1
6.	CO ₂ Cylinder	1
7.	Argon Cylinder	1

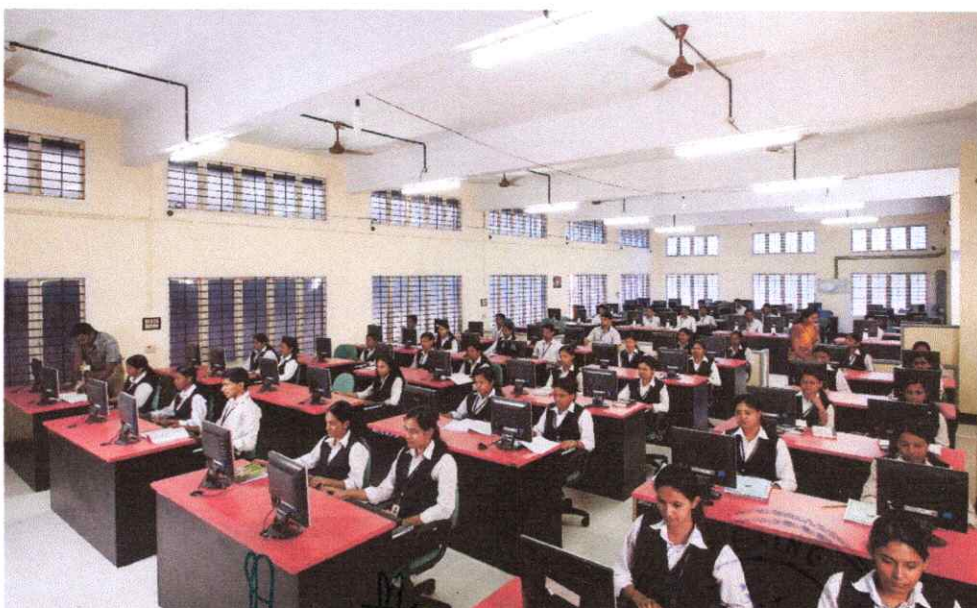
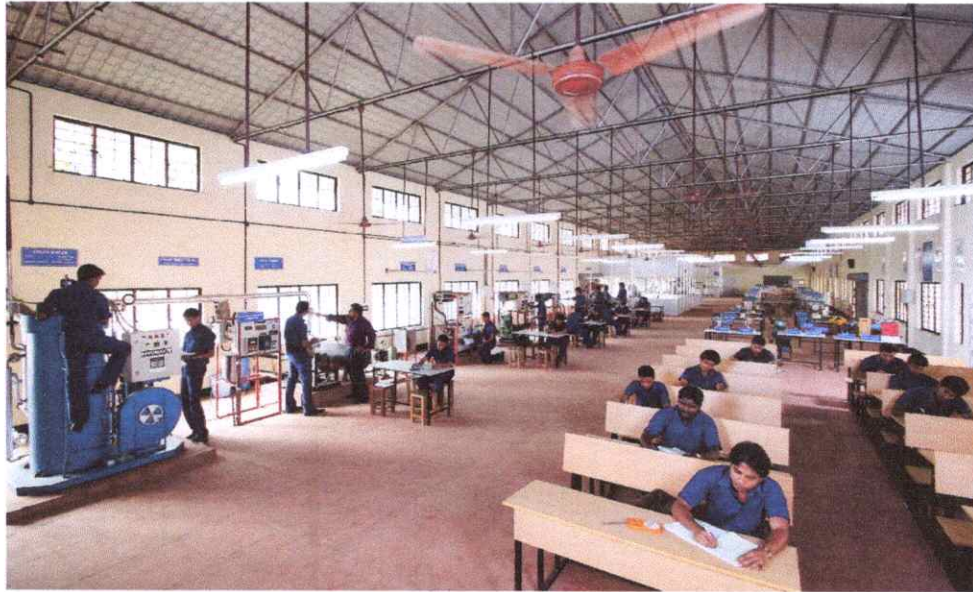
Equipment available in Hydraulics Lab

SL. No.	Name of the equipment	Numbers available
1.	Open Circuit Kaplan Turbine.	1
2.	Open Circuit Francis Turbine.	1
3.	Open Circuit Pelton Wheel Turbine.	1
4.	Closed CircuitHydraulic Ram.	1
5.	Open Circuit Centrifugal Pump.	1
6.	Open Circuit Reciprocating Pump.	1
7.	Open Circuit Self-Priming Pump.	1
8.	Gear Pump.	1
9.	Screw Pump.	1
10.	Impact of Jet on Vanes.	1
11.	Cut Model of Pumps.	1
12.	Cut Model of Impellers and Runners.	1
13.	Cut modal of multi-stage constant speed centrifugal pump	1

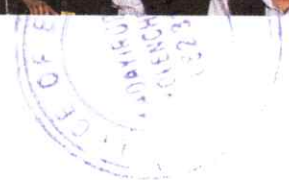
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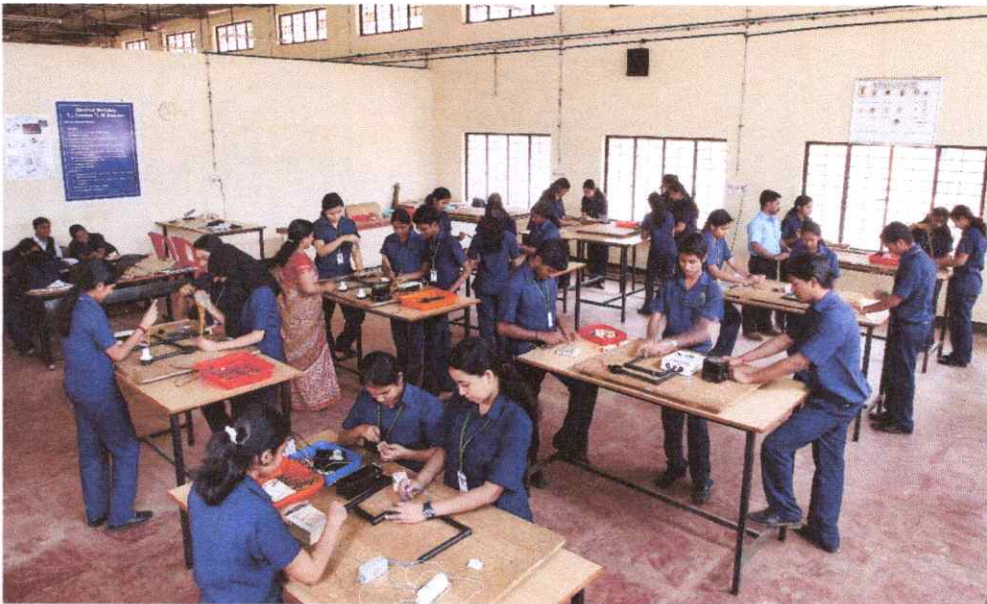
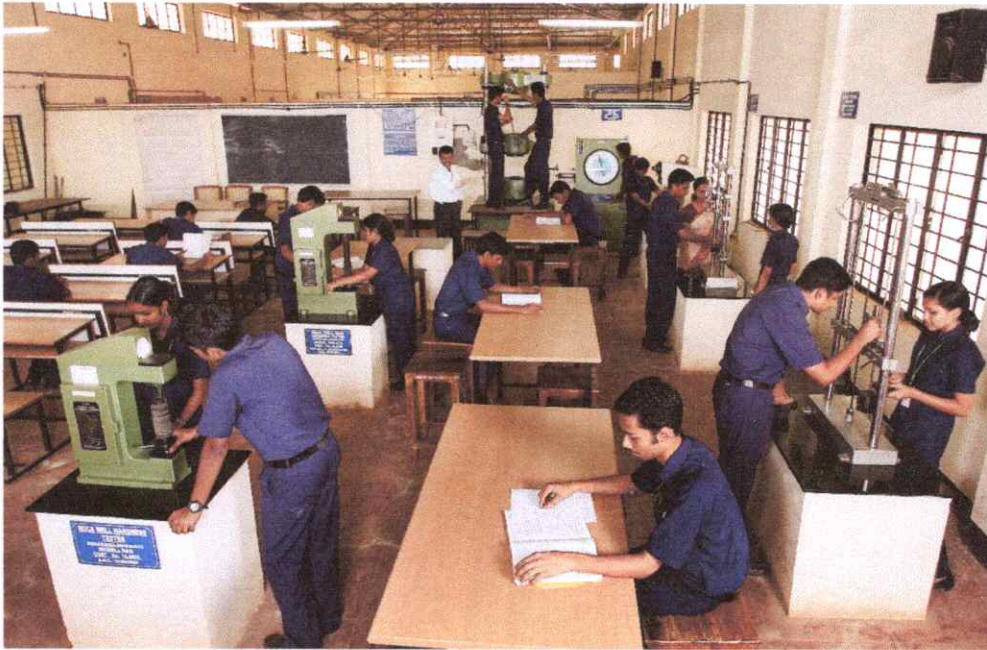


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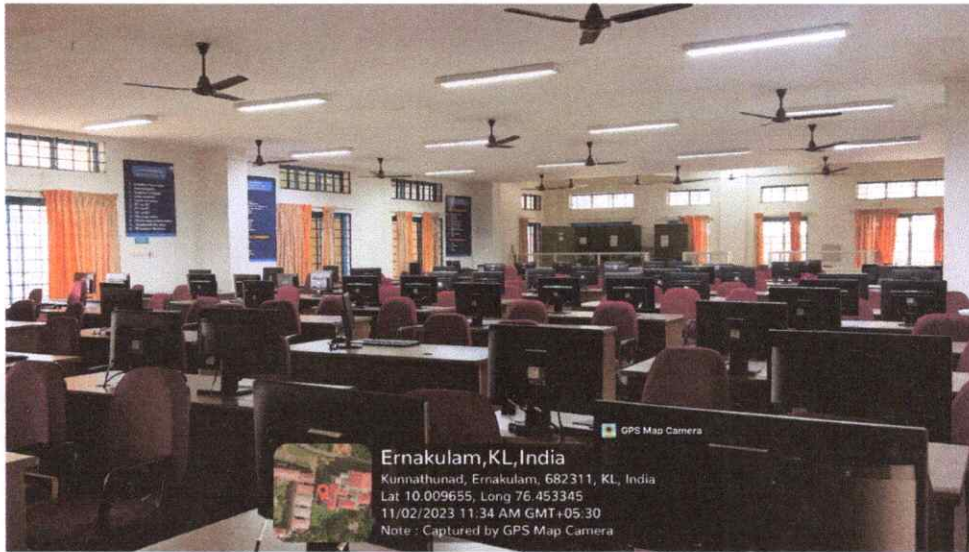
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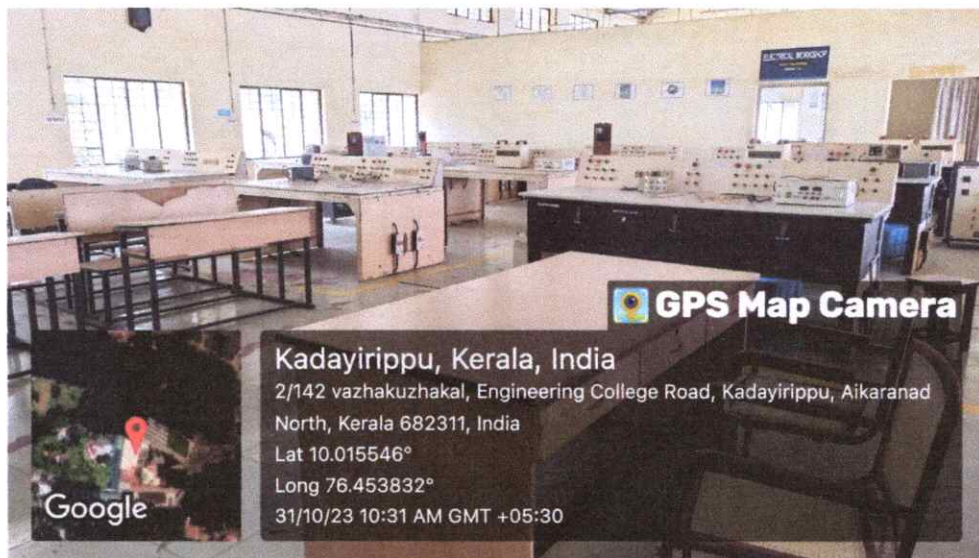
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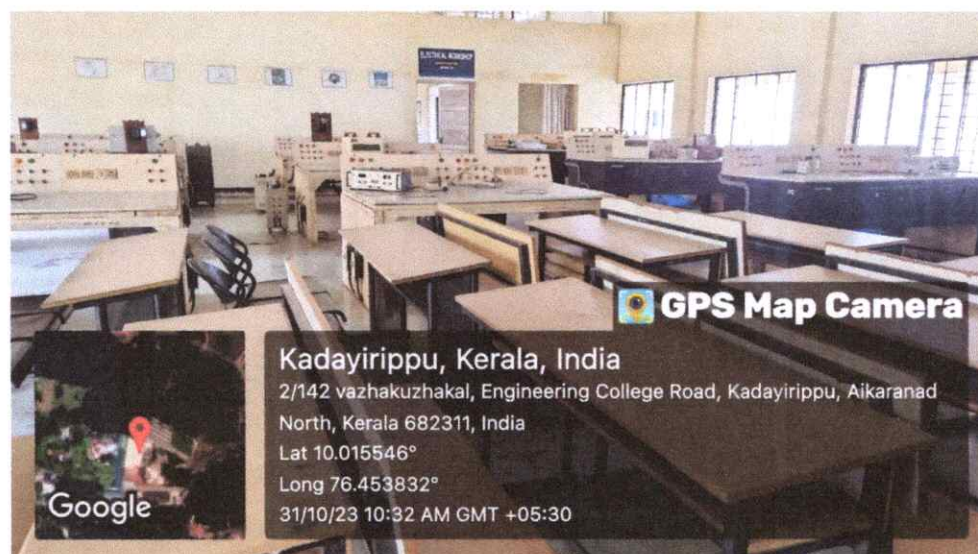
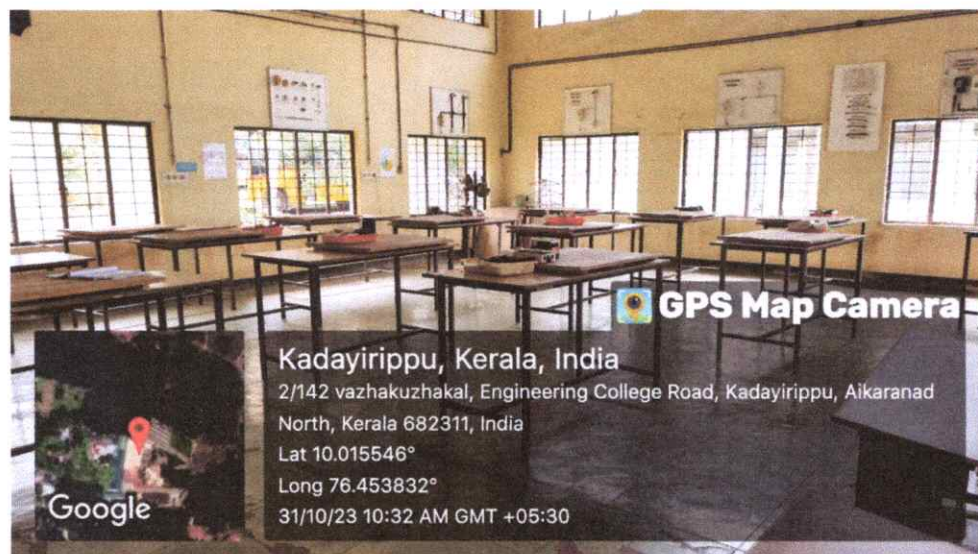
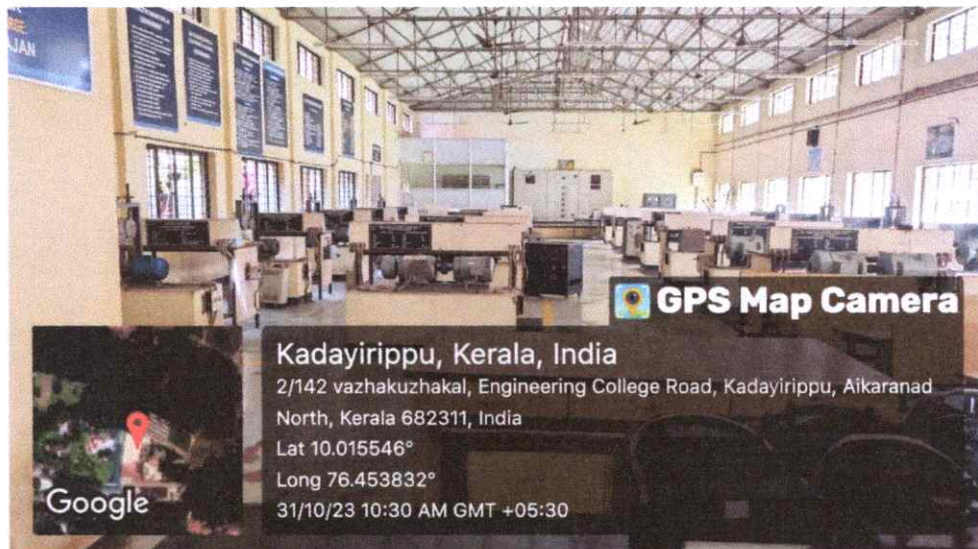
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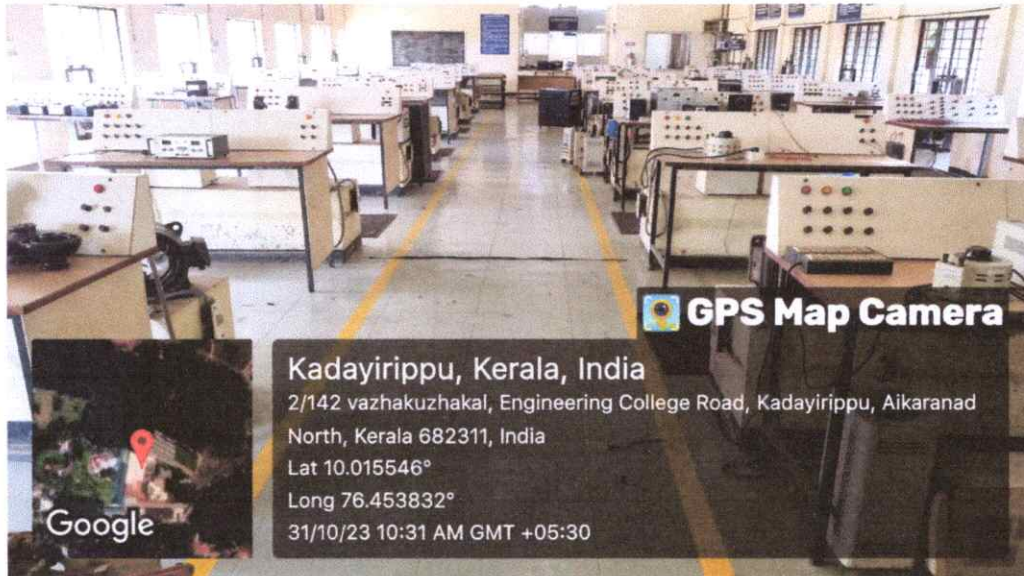
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