

Faculty of Mechanical Engineering
B.E. Mechanical Engineering (Sandwich)
(R 2017) Semester – III
CE8481 STRENGTH OF MATERIALS LABORATORY
Requirements for a batch of 30 students

Sl. No.	Description of Equipment	Quantity required (R)	Quantity available (A)	Deficiency (R - A)
1.	UTM of minimum 400 kN capacity	1		
2.	Torsion testing machine	1		
3.	Izod impact testing machine	1		
4.	Hardness testing machine Rockwell	1		
5.	Vicker's / Brinell	1		
6.	Beam deflection test apparatus	1		
7.	Extensometer	1		
8.	Compressometer	1		
9.	Dial gauges	1		
10.	Le Chatelier's apparatus	2		
11.	Vicat's apparatus	2		
12.	Mortar cube moulds	10		

Faculty of Mechanical Engineering
B.E. Mechanical Engineering (Sandwich)
(R 2017) Semester – III
ME8361 MANUFACTURING TECHNOLOGY LABORATORY – I
Requirements for a batch of 30 students

Sl. No.	Description of Equipment	Quantity required (R)	Quantity available (A)	Deficiency (R - A)
1.	Centre Lathes	7		
2.	Horizontal Milling Machine	1		
3.	Vertical Milling Machine	1		
4.	Shaper	1		
5.	Arc welding transformer with cables and holders	2		
6.	Oxygen and acetylene gas cylinders, blow pipe and other welding outfit	1		
7.	Moulding table , Moulding equipments	2		
8.	Sheet metal forming tools and equipments	2		

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B.E. Mechanical Engineering (Sandwich)
(R 2017) Semester – IV
CE8462 FLUID MECHANICS AND MACHINERY LABORATORY
Requirements for a batch of 30 students

Sl. No.	Description of Equipment	Quantity required (R)	Quantity available (A)	Deficiency (R - A)
1.	Orifice meter setup	1		
2.	Venturi meter setup	1		
3.	Rotameter setup	1		
4.	Pipe Flow analysis setup	1		
5.	Centrifugal pump/ submergible pump setup	1		
6.	Reciprocating pump setup	1		
7.	Gear pump setup	1		
8.	Pelton wheel setup	1		
9.	Francis turbine setup	1		
10.	Kaplan turbine setup	1		

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(R 2017) Semester – IV
ME8481 DYNAMICS LABORATORY

Requirements for a batch of 30 students

Sl. No.	Description of Equipment	Quantity required (R)	Quantity available (A)	Deficiency (R - A)
1.	Cam follower setup.	1		
2.	Motorised gyroscope.	1		
3.	Governor apparatus - Watt, Porter, Proell and Hartnell governors.	1		
4.	Whirling of shaft apparatus.	1		
5.	Dynamic balancing machine.	1		
6.	Two rotor vibration setup.	1		
7.	Spring mass vibration system.	1		
8.	Torsional Vibration of single rotor system setup.	1		
9.	Gear Models	1		
10.	Kinematic Models to study various mechanisms.	1		
11.	Turn table apparatus.	1		
12.	transverse vibration setup either one or all of a) cantilever	1		
	b) Free-Free beam	1		
	c) Simply supported beam	1		

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B.E. Mechanical Engineering (Sandwich)
(R 2017) Semester – IV
ME8462 MANUFACTURING TECHNOLOGY LABORATORY - II
Requirements for a batch of 30 students

Sl. No.	Description of Equipment	Quantity required (R)	Quantity available (A)	Deficiency (R - A)
1.	Turret and Capstan Lathes	1		
2.	Horizontal Milling Machine	2		
3.	Vertical Milling Machine	1		
4.	Surface Grinding Machine	1		
5.	Cylindrical Grinding Machine	1		
6.	Radial Drilling Machine	1		
7.	lathe Tool Dynamometer	1		
8.	Milling Tool Dynamometer	1		
9.	Gear Hobbing Machine	1		
10.	Tool Makers Microscope	1		
11.	CNC Lathe	1		
12.	CNC Milling machine	1		
13.	Gear Shaping machine	1		
14.	Centerless grinding machine	1		
15.	Tool and cutter grinder	1		

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B.E. Mechanical Engineering (Sandwich)
(R 2017) Semester – V
PR8481 METALLURGY LABORATORY
Requirements for a batch of 30 students

Sl. No.	Description of Equipment	Quantity required (R)	Quantity available (A)	Deficiency (R - A)
1.	Jominy End Quench Test	1		
2.	Specimen Mounting Test with Digital Measurements	1		
3.	Trinocular Microscopes with Objective Lens	2		
4.	Disc Polishing Machine	2		
5.	Muffle Furnace	1		
6.	Optical Microscope with Image Analyzing Software	1		
7.	Micro Vicker Hardness Tester	1		
8.	Printer to print the Microstructure	1		
9.	Hardness Tester (Brinell or Rockwell)	1		

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B.E. Mechanical Engineering (Sandwich)
(R 2017) Semester – V
PR8561 METROLOGY LABORATORY
Requirements for a batch of 30 students

Sl. No.	Description of Equipment	Quantity required (R)	Quantity available (A)	Deficiency (R - A)
1.	Vernier Calipers 0-150 mm	5		
2.	Vernier Calipers 0-300 mm	2		
3.	Micrometer 0-25 mm	5		
4.	Micrometer 25-50 mm	2		
5.	Micrometer 50-75 mm	2		
6.	Dial gauges LC 10micrometer	3		
7.	Dial gauge L.C. 2micrometer	12		
8.	Height gauge Analog	1		
9.	Height gauge Digital	1		
10.	Slip gauge set	2		
11.	Sine Bar 100 mm	1		
12.	Sine Bar 200 mm	2		
13.	Toolmakers microscope	1		
14.	Profile Projector	1		
15.	Gear tooth verniers	2		
16.	Flangernic 0-25	1		
17.	Flangemic 25-50	1		

18.	Floating carriage micrometer	1		
19.	Thread plug gauges m24 x 3	1		
20.	Thread plug gauges m20 x 2.5	1		
21.	3 wire set box	1		
22.	Surface roughness measuring Instrument	1		
23.	Precision spheres different dia	1		
24.	Dial Guage Calibrator	1		
25.	Precision level	1		
26.	Digital Micrometer	1		
27.	Digital Vernier 0-150 mm	1		
28.	Digital Ht. Guage	1		
29.	Bevel Protractor	1		
30.	CMM	1		
31.	Vision measuring system	1		
32.	Boredial gauge 16-35, 35-60	1		
33.	Depth Vernier 0-150mm	1		
34.	Depth micrometer with 6 rods	1		
35.	Internal micrometer with Extn sleeves	1		
36.	Precision Rollers 8	2		
37.	Surface plate	1		
38.	Bench centre	1		

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(R 2017) Semester – VI
ME8681 CAD/CAM LABORATORY

Requirements for a batch of 30 students

Sl. No.	Description of Equipment	Quantity required (R)	Quantity available (A)	Deficiency (R - A)
1.	Computer Server	1		
2.	Computer nodes or systems (High end CPU with atleast 1 GB main memory) networked to the server	30		
3.	A3 size plotter	1		
4.	Laser Printer	1		
5.	CNC Lathe	1		
6.	CNC milling machine	1		
7.	Any High end integrated modeling and manufacturing CAD / CAM software	15		
8.	CAM Software for machining centre and turning centre (CNC Programming and tool path simulation for FANUC / Sinumeric and Heidenhain controller)	15		
9.	Licensed operating system	1		
10.	Support for CAPP	1		

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(R 2017) Semester – VI
MS8611 THERMAL ENGINEERING LABORATORY-I
Requirements for a batch of 30 students

Sl. No.	Description of Equipment	Quantity required (R)	Quantity available (A)	Deficiency (R - A)
1.	I.C Engine – 2 stroke and 4 stroke model	1		
2.	Apparatus for Flash and Fire Point	1		
3.	4-stroke Diesel Engine with mechanical loading	1		
4.	4-stroke Diesel Engine with hydraulic loading	1		
5.	4-stroke Diesel Engine with electrical loading	1		
6.	Multi-cylinder Petrol Engine	1		
7.	Single cylinder Petrol Engine	1		
8.	Data Acquisition system with any one of the above engines	1		
9.	Steam Boiler with turbine setup	1		

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B.E. Mechanical Engineering (Sandwich)
(R 2017) Semester – VII
ME8781 MECHATRONICS LABORATORY
Requirements for a batch of 30 students

Sl. No.	Description of Equipment	Quantity required (R)	Quantity available (A)	Deficiency (R - A)
1.	Basic Pneumatic Trainer Kit with manual and electrical controls/ PLC Control each	1		
2.	Basic Hydraulic Trainer Kit	1		
3.	Hydraulics and Pneumatics Systems Simulation Software	10		
4.	8051 - Microcontroller kit with stepper motor and drive circuit sets	2		
5.	Image processing system with hardware & software	1		

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(R 2017) Semester – VII
MS8711 COMPUTER AIDED ENGINEERING LABORATORY
Requirements for a batch of 30 students

Sl. No.	Description of Equipment	Quantity required (R)	Quantity available (A)	Deficiency (R - A)
1.	Computer	30		
2.	CAD Modelling Software	30		
3.	FEA Analysis Software	30		
4.	CFD Analysis Software	30		

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(R 2017) Semester – VII
MS8712 THERMAL ENGINEERING LABORATORY – II
Requirements for a batch of 30 students

Sl. No.	Description of Equipment	Quantity required (R)	Quantity available (A)	Deficiency (R - A)
1.	Guarded plate apparatus	1		
2.	Lagged pipe apparatus	1		
3.	Natural convection-vertical cylinder apparatus	1		
4.	Forced convection inside tube apparatus	1		
5.	Composite wall apparatus	1		
6.	Thermal conductivity of insulating powder apparatus	1		
7.	Pin-fin apparatus	1		
8.	Stefan-Boltzmann apparatus	1		
9.	Emissivity measurement apparatus	1		
10.	Parallel/counter flow heat exchanger apparatus	1		
11.	Single/two stage reciprocating air compressor	1		
12.	Refrigeration test rig	1		
13.	Air-conditioning test rig	1		

Faculty of Mechanical Engineering
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(R 2017) Semester – VIII
MS8811 HEAT AND MASS TRANSFER LABORATORY
Requirements for a batch of 30 students

Sl. No.	Description of Equipment	Quantity required (R)	Quantity available (A)	Deficiency (R - A)
1.	Guarded plate apparatus	1		
2.	Lagged pipe apparatus	1		
3.	Natural convection-vertical cylinder apparatus	1		
4.	Forced convection inside tube apparatus	1		
5.	Pin-fin apparatus	1		
6.	Stefan-Boltzmann apparatus	1		
7.	Emissivity measurement apparatus	1		
8.	Parallel/counter flow heat exchanger apparatus	1		
9.	Finite element thermal loading analysis softwares licenses	5		