

I Year B. E. (Modified R 2004)

PC 1X01 PHYSICS & CHEMISTRY LABORATORY

Requirements for a batch of 30 students

Physics Laboratory

S.No.	Description of Equipment	Quantity required	Quantity available	Deficiency %
1.	Torsional Pendulum apparatus (With accessories)	5 No	6 No	
2.	Non-uniform Bending apparatus (With accessories)	5 No	6 No	
3.	Viscosity (Poiseuille's flow) apparatus (With accessories)	5 No	6 No	
4.	Lees' disc apparatus (With accessories)	5 No	6 No	
5.	Air Wedge apparatus (With traveling microscopes and accessories)	5 No	6 No	
6.	Band gap apparatus/ Post office box	5 No	5 No	
7.	Spectrometer (With grating, prism and accessories)	5 No	6 No	
8.	Diode laser (2 mW power) or He-Ne laser (2mW) (Lycopodium powder, Optical fibre Kit and accessories)	5 No	6 No	
9.	Thermo emf – potentiometer apparatus (With accessories)	5 No	6 No	
10.	Ultrasonic interferometer (With accessories)	5 No	5 No	

Chemistry Laboratory

S.No.	Description of Equipment	Quantity required	Quantity available	Deficiency %
1.	Electronic balance	1 No.	1 No.	
2.	pH meter	4 No.	4 No.	
3.	Conductivity bridge	4 No.	4 No.	
4.	Potentiometer	4 No.	4 No.	
5.	Platinum electrodes	4 No.	4 No.	
6.	Calomel electrodes	4 No.	4 No.	
7.	Spectrophotometer	1 No.	1 No.	
8.	Flame photometer	1 No.	1 No.	
9.	Oswald viscometer	10 No.	31 No.	
10.	Glassware	Sufficient Quantity	Available	

I Year B. E. (Modified R 2004)

GE 1X02 COMPUTER PROGRAMMING LABORATORY

Requirements for a batch of 30 students

S. No.	Description of Equipment	Quantity required	Quantity available	Deficiency %
Hardware				
1.	LAN system with 36 nodes (OR) stand alone PCs	36 No.	63 No.	
2.	Printer	1 No.	3 No.	
Software				
1.	Operating System	Windows / Unix Clone	Available	
2.	Compiler	C compiler	Available	
3.	Application package	Office suite	Available	

I Year B. E. (Modified R 2004)
GE 1X03 Engineering Practices Laboratory
Requirements for a batch of 30 students

S.No.	Description of Equipment	Quantity required	Quantity available	Deficiency %
CIVIL				
1.	Assorted components for plumbing consisting of metallic pipes, plastic pipes, flexible pipes, couplings, unions, elbows, plugs and other fittings.	15 sets	15 sets	
2.	Carpentry vice (fitted to work bench)	15 No.	15 No.	
3.	Standard woodworking tools	15 sets	15 sets	
4.	Models of industrial trusses, door joints, furniture joints	5 each	5 each	
MECHANICAL				
1.	Arc welding transformer with cables and holders	5 No.	5 No.	
2.	Welding booth with exhaust facility	5 No.	5 No.	
3.	Welding accessories like welding shield, chipping hammer, wire brush, etc.	5 sets	5 sets	
4.	Oxygen and acetylene gas cylinders, blow pipe and other welding outfit.	2 No.	2 No.	
5.	Centre lathe	2 No.	2 No.	
6.	Hearth furnace, anvil and smithy tools	2 sets	2 sets	
7.	Moulding table, foundry tools	2 sets	2 sets	
8.	Study-purpose items: centrifugal pump, air-conditioner	One Each.	One Each.	

ELECTRICAL				
1.	Assorted electrical components for house wiring	15 sets	15 sets	
2.	Electrical measuring instruments	10 sets	10 sets	
3.	Study purpose items: Iron box, fan and regulator, emergency lamp	One each	One each	
ELECTRONICS				
1.	Soldering guns	10 No.	10 No.	
2.	Assorted electronic components for making circuits	50 No.	50 No.	
3.	Small PCBs	10 No.	10 No.	
4.	Multi Meters	10 No.	11 No.	
5.	Study purpose items: Telephone, FM radio, low-voltage power supply	2 each	2 each	

I Year B.E. (Modified R 2004)

ME 1X01 - MANUFACTURING TECHNOLOGY – 1

Requirement for a batch of 30 students

S.No.	Description of Equipment	Quantity required	Quantity available	Deficiency %
1.	Centre Lathe with accessories (at least four lathes must have tape-turning attachment)	15 No.	15 No.	
2.	Shaping Machine	2 No.	2 No.	
3.	Slotting Machine	1 No.	1 No.	
4.	Radial Drilling Machine	1 No.	1 No.	
5.	Upright Drilling Machine	1 No.	1 No.	
6.	Sheet Metal Work facility			
	a. Hand Shear 300mm	1 No.	1 No.	
	b. Bench vice	3 No.	3 No.	
	c. Standard tools and calipers for sheet metal work	3 Sets	3 Sets	
7.	Moulding Facility			
	a. Moulding Table	3 No.	3 No.	
	b. Moulding boxes, tools and patterns	6 Sets.	6 Sets.	

Faculty of Mechanical Engineering

III Semester B. E. – Mechanical Engineering (Modified R 2004)

ME1204 – Fluid Mechanics and Machinery Lab

Requirement for a batch of 30 students

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

Faculty of Mechanical Engineering

III Semester B. E. – Mechanical Engineering (Modified R 2004)

ME1205– Manufacturing Technology Lab II

Requirement for a batch of 30 students

S.No.	Description of Equipment	Quantity required	Quantity available	Deficiency %
1.	Centre Lathes	15 No (5 Precision Type)	15 No	
2.	Turret and Capstan Lathes	1 No each	1 No each	
3.	Horizontal Milling Machine	1 No	1 No	
4.	Vertical Milling Machine	1 No	1 No	
5.	Surface Grinding Machine	1 No	1 No	
6.	Tool Dynamometer	1 No	1 No	
7.	Gear Hobbing Machine	1 No		Quotation called for
8.	CNC Lathe (Trainer or Industrial Type)	1 No	2 No	

Faculty of Mechanical Engineering

III Semester B. E. – Mechanical Engineering (Modified R 2004)

EE1214– Electrical Engineering Laboratory

Requirement for a batch of 30 students

S.No.	Description of Equipment	Quantity required	Quantity available	Deficiency %
1.	DC Shunt motor	2	3	
2.	DC Series motor	1	1	
3.	DC shunt motor-DC Shunt Generator set	1	3	
4.	DC Shunt motor-DC Series Generator set	1	1	
5.	Single phase transformer	2	7	
6.	Three phase alternator	2	5	
7.	Three phase synchronous motor	1	1	
8.	Three phase Squirrel cage Induction motor	1	3	
9.	Three phase Slip ring Induction motor	1	1	
10.	Single phase Induction motor	1	3	

Faculty of Mechanical Engineering

IV Semester B. E. – Mechanical Engineering (Modified R 2004)

ME1254– Thermal Engineering Laboratory- I

Requirement for a batch of 30 students

S.No.	Description of Equipment	Quantity required	Quantity available	Deficiency %
1.	I.C Engine – 2 stroke and 4 stroke model	1 set	1 set	
2.	Red Wood Viscometer	1 No.	1 No.	
3.	Apparatus for Flash and Fire Point	1 No.	1 No.	
4.	4-stroke Diesel Engine with mechanical loading	1 No.	1 No.	
5.	4-stroke Diesel Engine with hydraulic loading.	1 No.	1 No.	
6.	4-stroke Diesel Engine with electrical loading	1 No.	1 No.	
7.	Multi-cylinder Petrol Engine	1 No.	1 No.	
8.	Single cylinder Petrol Engine	1 No.	1 No.	
9.	Data Acquisition system with any one of the above engines	1 No.		Quotation called for
10.	Steam Boiler with turbine setup	1 No.	1 No.	

Faculty of Mechanical Engineering

IV Semester B. E. – Mechanical Engineering (Modified R 2004)

CE1263– Strength of Materials Lab

Requirement for a batch of 30 students

S.No.	Description of Equipment	Quantity required	Quantity available	Deficiency %
1	Universal Tensile Testing machine with double shear attachment – 40 Ton Capacity	1	1	
2	Torsion Testing Machine (60 NM Capacity)	1	1	
3	Impact Testing Machine (300 J Capacity)	1	1	
4	Brinell Hardness Testing Machine	1	1	
5	Rockwell Hardness Testing Machine	1	1	
6	Spring Testing Machine for tensile and compressive loads (2500 N)	1	1	
7	Metallurgical Microscopes	3	3	
8	Muffle Furnace (800 °C)	1	1	

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IV Semester B. E. – Mechanical Engineering (Modified R 2004)

EC1265– Electronics and Microprocessors Lab

Requirement for a batch of 30 students

S.No.	Description of Equipment	Quantity required	Quantity available	Deficiency %
1.	Voltmeters	5 No	5 No	
2.	Ammeters	5 No	5 No	
3.	PN Diode, BJT, JFET, Logic Gates, Shift Registers and Counters	1 set.	Above 1 set.	
4.	Digital Logic Trainer Kits	1 No.	8 No.	
5.	Breadboards	1 No.	15 No.	
6.	Microprocessor Kits – 8085	5 No.	8 No.	
7.	D/A Converter Interface	1 No.	5 No.	
8.	Stepper Motor Interface	1 No.	5 No.	
9.	CRO	1 No.	8 No.	
10.	Wavefarm Generator	1 No.	4 No.	
11.	Multimeter	1 No.	6 No.	

Faculty of Mechanical Engineering
V Semester B. E. – Mechanical Engineering (Modified R 2004)
ME1306 – Dynamics Laboratory
Requirement for a batch of 30 students

S.No.	Description of Equipment	Quantity required	Quantity available	Deficiency %
1.	Various mechanism such as Slider Crank mechanism, Double crank, Crank-Rocker mechanism and double rocker mechanism for study of kinematic study.	Each 1 No.	Each 1 No.	
2.	Single & Double Universal joint models	Each 1 No.	Each 1 No.	
3.	Toothed Gear (spur, Helical, Bevel, Worm) to study Gear parameters	Each 1 No.	Each 1 No.	
4.	Gear trains models to study velocity ratios (Simple, Compound, Epicyclic and differential epicyclic gear train)	Each 1 No.	Each 1 No.	
5.	Turn table apparatus for determination of moment of inertia of bodies about axis of symmetric	Each 1 No.	Each 1 No.	
6.	Flywheel and Axle system for determination of moment of inertia	Each 1 No.	Each 1 No.	
7.	Bifilar suspension system for determination of moment of inertia	Each 1 No.	Each 1 No.	
8.	Compound pendulum for determination of moment of inertia	Each 1 No.	Each 1 No.	
9.	Motorized Gyroscope apparatus setup	Each 1 No.	Each 1 No.	
10.	Governors (Watt,Porter,Proell,Hartnell) to study performance characteristic	Each 1 No.	Each 1 No.	
11.	Cam & Follower setup for determination of motion curves & Jump speed	Each 1 No.	Each 1 No.	
12.	SDF Set up. Spring Mass System	Each 1 No.	Each 1 No.	
13.	Torsion Vibration setup- Single rotor and two rotor system	Each 1 No.	Each 1 No.	
14.	Vibration table setup for determination of transmissibility ratio	Each 1 No.	Each 1 No.	
15.	Whirling of shaft apparatus	Each 1 No.	Each 1 No.	
16.	Cantilever vibration setup	Each 1 No.	Each 1 No.	
17.	Transverse vibration for various end condition such as Free-Free, Fixed-Free for determination of natural frequency by free and forced vibration test	Each 1 No.	Each 1 No.	
18.	Balancing of rotating masses setup	Each 1 No.	Each 1 No.	

Faculty of Mechanical Engineering
V Semester B. E. – Mechanical Engineering (Modified R 2004)
ME1307 – Metrology and Measurement Lab
Requirement for a batch of 30 students

S.No.	Description of Equipment	Quantity required	Quantity available	Deficiency %
1.	Micrometer	5	5	
2.	Vernier Caliper	5	5	
3.	Vernier Height Gauge	2	2	
4.	Vernier Depth Gauge	2	2	
5.	Slip Gauge Set	1	1	
6.	Gear Tooth Vernier	1	1	
7.	Sine Bar	2	2	
8.	Bevel Protractor	1	1	
9.	Floating Carriage Micrometer	1	1	
10.	Profile Projector	1	1	
11.	Mechanical / Electrical / Pneumatic Comparator	1	1	
12.	Temperature Measuring Setup	1	1	
13.	Displacement Measuring Setup	1	1	
14.	Force Measuring Setup	1	1	
15.	Torque Measuring Setup	1	1	
16.	Vibration / Shock Measuring Setup	1	1	
Optional Equipment				
17.	Autocollimator	1		
18.	Coordinate Measuring Machine	1		
19.	Tool Makers Microscope	1		
20.	Dial Gauge Calibration	1		

Faculty of Mechanical Engineering

V Semester B. E. – Mechanical Engineering (Modified R 2004)

ME1308 – Computer Aided Machine Drawing Practice

Requirement for a batch of 30 students

S.No.	Description of Equipment	Quantity required	Quantity available	Deficiency %
1	Computer System VGA Color Monitor Pentium IV Processor 20 GB HDD 256 MB RAM	30	30	
2	Laser Printer	1	1	
3	Plotter (A2 size)	1	1	
4	Software AutoCAD or Mechanical Desktop or Pro / E or CATIA or IDEAS or Solid works	30 Licenses	30 Licenses	

Faculty of Mechanical Engineering
V Semester B.E. Mechanical Engineering (Modified R 2004)
Communication Skills Laboratory
Requirement for a batch of 60 students

S.No.	Description of Equipment	Quantity required	Quantity available	Deficiency %
1.	Server	1 No.	1 No.	
	o PIV system			
	o 1 GB RAM / 40 GB HDD			
	o OS: Win 2000 server			
	o Audio card with headphones (with mike)			
	o JRE 1.3			
2.	Client Systems	60 No.	60 No.	
	o PIII or above			
	o 256 or 512 MB RAM /40 GB HDD			
	o OS: Win 2000			
	o Audio card with headphones (with mike)			
	o JRE 1.3			
3.	Softwares			
	a) Interactive Teacher Control Software	Available		
	b) English Language Lab Software	Available		
	c) Career Lab software	Available		
4.	Handicam Video Camera (with video lights and mic input)	1 No.	1 No.	
5.	Television - 29"	1 No.	1 No.	
6.	Collar mike	1 No.	1 No.	
7.	Cordless mikes	1 No.	1 No.	
8.	Audio Mixer	1 No.	1 No.	
9.	DVD Recorder / Player	1 No.	1 No.	
10.	LCD Projector with MP3 /CD /DVD provision for audio / video facility - Desirable	1 No.	Available	

Faculty of Mechanical Engineering

VI Semester B.E. – Mechanical Engineering (Modified R 2004)

ME1355 – Thermal Engineering Laboratory II

Requirement for a batch of 30 students

S.No.	Description of Equipment	Quantity required	Quantity available	Deficiency %
1	Guarded plate apparatus	1 No.	1 No.	
2	Lagged pipe apparatus	1 No.	1 No.	
3	Natural convection-vertical cylinder apparatus	1 No.	1 No. (Horizontal)	
4	Forced convection inside tube apparatus	1 No.	1 No.	
5	Pinfin apparatus	1 No.	1 No.	
6	Stefan-Boltzmann apparatus	1 No.	1 No.	
7	Emissivity measurement apparatus	1 No.	1 No.	
8	Parallel/counter flow heat exchanger apparatus	1 No.	1 No.	
9	Single / two stage reciprocating air compressor	1 No.	1 No.	
10	Refrigeration test rig	1 No.	1 No.	
11	Air-conditioning test rig	1 No.	1 No.	

Faculty of Mechanical Engineering

VI Semester B.E. – Mechanical Engineering (Modified R 2004)

ME1356 – CAD/CAM Lab

Requirement for a batch of 30 students

S.No.	Description of Equipment	Quantity required	Quantity available	Deficiency %
I	HARDWARES			
	1. Computer server	1 No.	1 No.	
	2. Computer nodes or systems (Pentium IV with 256MB RAM) networked to the server	30 Nos.	30 Nos.	
	3. A3 size plotter	2 Nos.	2 Nos.	
	4. Laser Printer	2 Nos.	2 Nos.	
	5. Trainer CNC lathe	2 Nos.	2 Nos.	
	6. Trainer CNC milling	2 Nos.	2 Nos.	
II	SOFTWARES			
	1. CAD/CAM software (Pro-E or IDEAS or Unigraphics or CATIA)	15 Licenses	15 Licenses	
	2. CAM software (CNC programming and tool path simulation for FANUC, Cinumeric and Heiden controller)	15 Licenses	15 Licenses	

Faculty of Mechanical Engineering

VII Semester B.E. – Mechanical Engineering (R 2004)

ME1404 – Computer Aided Simulation and Analysis Laboratory

Requirement for a batch of 30 students

S. No.	Description of Equipment	Quantity required	Quantity available	Deficiency %
1.	Computer System 17" VGA Color Monitor Pentium IV Processor 40 GB HDD 256 MB RAM	30	30	
2.	Color Desk Jet Printer	1	1	
3.	Software			
	ANSYS Version 7 or latest	15 licenses	MSDN 10 MAT Lab C - 40	
	C/MATLAB	15 licenses		

Faculty of Mechanical Engineering

VII Semester B.E. – Mechanical Engineering (R 2004)

ME1405 – Mechatronics Laboratory

Requirement for a batch of 30 students

S. No.	Description of Equipment	Quantity required	Quantity available	Deficiency %
1.	Basic Pneumatic Trainer Kit with manual and electrical controls	1 each	1 each	
2.	Basic Pneumatic Trainer Kit with PLC control	1 No.	1 No.	
3.	HYDROSIM & PNEUMOSIM software / Automation studio	10 sets	10 sets	
4.	8051 – Microcontroller kit with stepper motor and drive circuit LABVIEW software	2 sets	2 sets	
5.	LAB VIEW software with Sensors to measure Pressure, Flow rate, direction, speed, velocity and force.	2 sets.	2 sets.	