

For each laboratory –

- List of major equipment / facilities
- List of experimental setups

Laboratories :

FIRST ENGINEERING DEPARTMENT

Sr.No.	Name of Laboratory	Area (m ²)
1	PHYSICS	70
2	CHEMISTRY	114
3	COMPUTER LAB.	68
4	ENGINEERING MACHANICS	66.7
5	ELECTRICAL ENGINEERING	39.3
6	DRAWING Lab	102
	TOTAL	460

Name of Laboratory:- Applied Physics

Sr.No.	Name of articles	Quantity	Cost
1	Standard Spectrometers	08	35,612 =00
2	e/m Apparatus	04	43,840=00
3	Travelling microscope	2	2300=00
4	C.R.O	06	1,10,583 =00
5	Plane Transmission Grating	06	4500 = 00
6	Kit of Laser light	01	15,100 = 00
7	Drill Machine (electric),Wolfmake	1	2600=00
8	Planck' s constant apparatus (Omega Make)	1	15682=00
9	Diode rectifier kit	1	7250=00
10	Telescope (Besto make)	6	13,000=00
11	Function Generator (Analog.)	02	12,582=00
12	Function Generator (1 Mhz.,digital readout)	05	42,200 = 00
13	Digital multimeter (Micro Make)	1	7652=00
14	Newton ring's apparatus	02	9500 =00
15	Sodium Vapour lamp	03	9000 =00
16	Transistor Charac teristic Kit	04	25,000 = 00
17	Photo cell Characteristic apparatus	01	3500 = 00
	Total		3,81,401=00

List of Experiments: - First Semester

- 1) To plot the characteristic of Junction diode.
- 2) To plot the characteristic of Zener diode.
- 3) To plot the characteristic of transistor in C.B. mode
- 4) To plot the characteristic of transistor in C.E. mode.
- 5) Study of crystal planes
- 6) Study of cubic unit cell.

List of Experiments: - Second Semester

- 1) To determine λ by grating.
- 2) To determine λ by Newton's ring. Newton's
- 3) To determine e/m of an Electron
- 4) To determine resolving power of telescope
- 5) To determine unknown Frequency using Lissajous figures
- 6) Study of C.R.O.

Name of Laboratory:- CHEMISTRY

Sr No	DSR Sr.No	Description	Specification	Quantity	Cost
		Instrument/ Equipments			
1	66,71	Analytical Balance	K-5 "K-ROY" & National Varanasi 200gm sensitivity	5	2570=00
2	35, 164	Balance Single Pan	Capacity 111grTP-2	2	1419=00
3	104	Burette Stand (Iron)	7' x 5' x24	12	2790=00
4	117,118	Burette Stand with clamp	Polythene Tarson Make 22 .;> x 15x75cms	25	3440=62
5	38	Burners		20	475=20
6	35	Weight Box Analytical	1Mg to 100Gm. A Grade	4	490=00
7	177,75, 1 08	Stop Clock	Esal Make Diamond China	7	2652=00
8	27	Abel Flash Point Apparatus	SR.NO. 2167	3	6205=00
9	277,69	Red Wood Viscometer No.I	Electrically Heated Model Sr.No. 596	3	3156=00
10	27,125	Red Wood Viscometer No. II	SR.NO. 3021 Bath Fitted with Cup & S.S. Jet, Stirring System	3	4075=00
11	22	Muffle Furnace	Model No. TI-58 Tempo Max Temp 930 OC with Pyrometer energy Reg. Inner Diameter 25x 13x13	1	4975=00
12	26	Water Still 5 LTR	Toshniwal S.No. 952 Cap. 4.5 Ltr. F	1	1267=35

13	40	pH Meter	CAT NO. CL-49, SR.NO. 760	1	2493=12
14	159	Digital pH Meter	UNI 0-14 Ph with Combine Electrode	1	4900=00
15	104,160	Hot Plate 1000 Watts	Yako make with Energy Reg.	2	4775=00
16	104,173	Water bath 6 Hole Electrically Heater	Yorko make 200 x 150mm Model 4101& Kumar make	3	7425=00
17	163	Conductivity Meter	With Unbrakable cell Systronic type 305	1	2393=71
18	173	Melting Point apparatus		1	700=00
19	168	Midi Flame Photo meter	FPM with Filters Systronic make	1	16136=10
20	173	Balance Cell Calorimeter	3 Filters with type Item No. 102	1	6405=47
21	107	Hot Air Blower	Indian Electrical	1	390=00
22	184	Abbes Refractometer	With Thermometer & Control with Lig. Box Metzer make	1	7420=00
23	34	Laboratory Oven	Tempo Make Cat No. TI-125 A-V 282	1	1981=44
24	54	Ultrasonic Interferome ter	Mittal make no. F81R, Model	1	31080=00
25	185	Fire Extinguisher	Halon Base 1211 spray	1	950
26	189	Refrigrator	105 Lit. Gqolrejjmake	1	10500=00
27	123	Vaccum pump	Vikarant, 1/2 HP Air displacement 75/minutes motor 2. 5 HP	1	3710=00
28	20	Electronic Balance	Contech make capacity 50 gm 0.001 gin Accuracy	1	24200=00
29	20	Electronic Balance	Contech make Capacity 125 gm Accuracy O.Olgm	1	15250=00
			TOTAL AMOUNT RS.		174225.01

LIST OF EXPERIMENTS:-

First Semester

1. Estimation of sodium carbonate and sodium hydroxide from given mixture of Alkalies.
2. Determination of total hardness of given water sample by complex metric method.
3. Determination of chloride content of water sample.
4. Determination of dissolved oxygen in water sample.
5. Determination of percentage of calcium oxide in cement sample.
6. Determine of free chlorine in water sample.
7. Determination of pH of given Solution.
8. To find percentage purity of common salt.

List Of Experiment:-

Second Semester

1. Preparation of urea formaldehyde resin.
2. Preparation of phenol formaldehyde resin.
3. To determine the molecular wt. of high polymer (Polystyrene) by Ostwald's viscometer.
4. Determination of Viscosity of lubricating oil by Viscometer No.1
5. Determination of Viscosity of lubricating oil by Redwood Viscometer No.2
6. Determination of flash point of lubricating oil by Abel's apparatus
7. To find percentage of moisture in given coal sample by proximate analysis
8. Determination of Fe^{2+} and Fe^{3+} ions in given sample solution.

Name of Laboratory:- Computer science.

S.No.	Name of Articles	Quantity	Cost
1	Intel Celeron ; 902 MHz, 128 MB of RAM; 2.1 GB/ 1.44 MB Fdd; Color Monitor, Keyboard Mouse with Printer & UPS	01	28,000 = 00
2	Intel celeron 1.7 Ghz, 256 MB DDR RAM, 40GB,HDD,1.44FDD,monitor(samtron)KB,mouse	20	4,20,00 = 00
3	Intel 2.8 GHz Precesr 256 MB DDR Ram, 80 GB HDD, Keyboard, Optical Mouse, 15 inch TFT	01	22,700 = 00
4	Vaccuum Cleaner (Eureka Forbes)	01	5,200 = 00
5	Scanner (Umax Ultra 5600)	01	
6	LCD 3 Lcd Sony (SVGA VPL- E53)	01	49,990 = 00
7	UPS (Make IND 600A)	01	
8	UPS (Make OKAYA 12 V 7.2Ah Double Power 800 VA. UPS	01	
9	UPS (Make Microteck – 600)	01	1,750 = 00
10	Printer-Epson make printer 80color-Epson-LX-300	01	
11	Printer Epson make printer 132 col Epson FX1170	01	
12	Printer make Laser jet 1018	01	5,600 = 00
13	Printer Lexmark make printer Lexmark z600 series	01	
		Total	5,33,240 = 00

List Of Experiment:-

First Semester

1.Introduction to dos.

2. Introduction to window.

3. Introduction to ms-word.

4. Introduction to power point.

5.Introduction to internet.

6.Introduction to c-language .

***Write a program for printing even nos. upto range.

***Write a program for calculating the factorial of nos.

***Write a program for printing asterisks graph.

***Write a program for printing result of the student.

List Of Experiment:-

Second Semester

1. WAP to print addition of rows of a matrix
2. s1,s2,s3 are the three string variables write a program to read two string constants into s1 and s2 and compare whether they are equal or not if they are not,join them together .Then copy the constant of s1 to variable s3,at the end the program should print the contents of all three variables and their lengths
- 3.WAP that uses a function to sort an array of integer
- 4.WAP to multiply two matrices and store the result in third matrix.
- 5.WAP to study the concept of pointers operator and pointer variables
- 6.WAP to find the biggest and lowest number using pointer
- 7.WAP that uses function pointer as a function argument
- 8.WAP to concatenation of two string into third string using pointer
- 9.WAP to calculate the subject wise and student wise totals store them as a part of the structure
- 10.To study the use of structure within the structure that is nested structure
- 11.WAP to illustrate the method of sending an entire structure as a parameter to a function
- 12.WAP to open a file and store in it the item name, no. of that item, price and quantity

Name of Laboratory:- Engineering Mechanics

Sr.No	Equipments	Quantity	Cost Rs.
1	Bar Pendulum or Compound Pendulum	02	940
2	Coil Friction Apparatus	1	1833
3	Differential Wheel and Axle	1	3384
4	M.I. of Flywheel Apparatus	2	
5	Single Purchase Winch Crad	1	6016
6	Double Purchase Winch Crad	1	7050
7	Simple jib Crane Apparatus	2	3572
8	Polygon of Forces Apparatus		
9	Parallelogram of forces apparatus	2	4324
10	Screw jack	1	2820
11	Inclined plane	2	2632
12	Parallel force apparatus – Simply supported beam type	1	3572
13	Fletcher Frolley	1	3243

List of Experiments:

First Semester

- 1) To verify the law of polygon of forces by Universal force board.
- 2) Determination of mechanical advantage, velocity ratio, efficiency, and law of machine for differential Axle and wheel machine.
- 3) Determination of Mechanical Advantage, Velocity Ratio, Efficiency, and law of machine for single purchase winch Crab
- 4) Determination of mechanical advantage, velocity ratio efficiency, and law of machine for screw jack
- 5) 1-To verify the Principle of parallel forces and
2- To find Reaction at Supports of a simply supported Beam.
- 6) Determination of Coefficient of Friction using an inclined plane
- 7) Determination of Coefficient of Friction between the Belt and the Drum.
- 8) To determine the forces in the members of jib crane
- 9) To determine the Acceleration due to Gravity, using Compound pendulum.
- 10) To determine Mass Moment of Inertia of Fly Wheel about its own Axis of Revolution.
- 11) To determine the acceleration due to gravity using Feathers Trolley

Name of Laboratory :- ELECTRICAL ENGG.

Sr. No.	Acc.No. as per dead stock	Equipment / instrument	Specifications	Cost Of Equipment
1	2	Ammeter	(0-25) mA 1365/1 DC	Rs.1132=35
2	8	Ammeter	(0-50) mA 1301/1 DC	Rs.1132=35
3	28	Voltmeter	(0-25) V1334/1 DC	Rs.1132=35
4	27	Voltmeter	(0-25) V 1335/1 DC	Rs.1132=00
5	30	Voltmeter	(0-25) V 1337/1 DC	Rs.1132=00
6	31	Voltmeter	(0-25) V 1467/1 DC	Rs.1132=00
7	50	Power supply	(0-30V) 1A 0385/20	Rs.1500=00
8	51	Power supply	(0-30V) 1A 0385/19	Rs.1500=00
9	52	Power supply	0385/20	
10	54	Power supply	0385/57.	
11	57	Dimmerstat	(1.08KVA, 4-A270v), 587/7605	753=00
12	59	Transformer	(1KVA, 230/115,50Hz, 1Ph)	3300=00
13	60	Transformer	(1KVA, 230/115,50Hz, 1Ph)	3300=00
14	62	Decade Condenser	18022(DC-150pf)	1119=00
15	63	Decade Condenser	18023(DC-150pf)	1119=00
16	64	Decade Resistance	(DRBC-115J) 29213	1203=00
16	65	Decade Resistance	(DRBC-115J) 29214	1203=00
18	67	Fix inductance box	501-Q, 16325 (100mh, 642 ? 20mA)	1526=00
19	71	Thevenin theorem(kit)		
20	72	KCL (Kit)		
21	73	Super position Theorem (Kit)		
22	74	KVL (Kit)		
23	77	R.L.series circuit		
24	78	RL-C.parallel		

		circuit		
25		Ammeter	(0-3)A S- 12488-88Dc	1132.35
		Ammeter	(0-50)MA 1301 / DC	1132.35
		Ammeter	(0-100)MA 1303/1/DC	1132.35
		Ammeter	(0-22)MA 1310/1/DC	1132.35
		Ammeter	(0-5/10) 1285/16650/20 DC	462.00
		Voltmeter	(0-100)1345/1DC	1132.35
25	79	R.L.C.series circuit		
26	35	Voltmeter AC	(0- 75,150,300)V,9/85/16650 /8.	2640=00
27	40	Voltmeter AC	(0- 75,150,300)V,4/91/11069 /13.	2640=00
28	20	Ammeter AC	(0-3,10,30)A 6/91/11069/7	1340=00
29	15	Ammeter AC	(0-1.5)3A 9/85/16650/4	319=00
30	23	Ammeter AC	(0-3,10,30)A 4/91/11069/10	1340=00
31	24	Ammeter AC	(0-5,30)A 11/80/9839/8	370=00
32	26	Ammeter AC	(0-10,25,50)A 6/84/8620/2	1041=00
33	33	Voltmeter AC	(0- 75,150,300)V,1/84/4890/ 16	462=00
34	34	Voltmeter AC	(0- 75,150,300)V,1/84/4890/ 17	462=00
35	38	Voltmeter AC	(0- 75,150,300)V,4/91/11069 /11	462=00
36	39	Voltmeter AC	(0- 75,150,300)V,4/91/11069 /12	462=00
37	44	Voltmeter AC	(0- 75,150,300,600)1/84/489 0/19	462=00
38	45	Voltmeter AC	(0- 75,150,300,600)6/84/862 0/11	347=00
39	48	Wattmeter AC	(125,250,500v,600w)4/91 /11069/1	2360=00
40	49	Wattmeter AC	(125,250,500v,600w)4/91 /11069/2	2360=00
41	80	Digital Multimeter (Auto power off)	(20010608974)MY -64	1685=00

42	81	Digital Multimeter	(20011022250)M-3900	750=00
43	82	Digital Multimeter	(20011023097)M-3900	750=00
44	83	Digital Multimeter	(20010526611)M-3900	750=00
45	84	Digital Multimeter (DC)	(1020483720) DT-830B	250=00
46	85	Digital Multimeter (DC)	(1020483756) DT-830B	250=00
47	86	Digital Multimeter (DC)	(1020483748) DT-830B	250=00
48	87	Digital Multimeter (DC)	(SOUND) DT-830D	250=00
49	88	Digital Multimeter (DC)	(1020483672) DT-830B	250=00
50	89	Digital Multimeter (DC)	(1020483688) DT-830B	250=00
51	90	Digital Multimeter	(20020946352) M-3900	750=00
52		Wire 1/18	1 Bundle	
53		Lamp 200w	12 No.	

List of Experiments:

First Semester

1. To Verify Kirchoff's voltage law.
2. To Verify Kirchoff's current law.
3. To Verify ohm's law.
4. To Verify the Superposition Theorem.
5. To Verify the Thevenin's Theorem.
6. To Determine the self and mutual inductance of transformer coil.
7. Study of different wiring diagrams.

List of Experiments:

Second Semester

1. To study R-L Series Circuit.
2. To study R-L Series Circuit.
3. to study parallel circuit
4. To study the relation between phase Voltage in 3Φ balanced Star connected load.
5. To study the relation between phase current and line current in 3Φ balanced delta-connected load.
6. To study resonance in R-L-C series circuit.
7. To perform load test on single phase transform and hence to find out maximum efficiency.
8. To study D.C. Motor.
9. To study D.C. Motor Starter.

Name of Laboratory :- ENGINEERING DRAWING

Sr. No.	Acc.No. as per ead stock	Equipment / instrument	Quantity	Cost Of Equipment (Rs.)
01	113	Drawing board 18x23 of MMD wood	36	5612 -/-
02	1126/07	Drawing model size 30x15 cm st of 12 models wooden coloured	12	1674 -/-
03	130/VT/06-07	Engg drawing chart wall mounting	12	2028-/-
04	130/VT/06-07	Engg.Drawing chart wall Mounting	11	2310-/-
05	130/VT/06-07	Demonstration models non-desected	1 Set.	9643-/-
06		Vernier scale demo model	01	100-/-
07		Projection of planes model	10	200-/-
08		Projection of lines model	02	200-/-
09		Orthographic projection models	10	
10		Isometric Projection models	08	
11		Simple link Mechanism demo models	05	500-/-
			Total	22,267 = 00

List of Experiments

First Semester

- 1) Loci of Points on link mechanism.
- 2) Various Curves on conic section
- 3) Projection of Straight lines
- 4) Projections of Planes
- 5) Minimum two problems for orthographic projection (First & Third angle projection)
- 6) Free hand sketches of simple machine elements [Screw threads (ISI thread profiles) Types of studs & set screws, washers , etc]

List of Experiments

Second Semester

- 1) Projection of Solids
- 2) Section of Solids
- 3) Development of surfaces of various solids
- 4) Isometric drawing and Isometric projections
- 5) Free hand sketches of simple machine elements. (Types of bolts, nuts, Locking arrangement of nuts and bolts. Foundation bolts – Rag foundation, Eye foundation, Lewis foundation, etc.)