

**UTTARANCHAL INSTITUTE OF TECHNOLOGY, DEHRADUN**  
**Arcadia Grant, P.O. Chandanwari, Prem Nagar**  
**Dehradun-248007**

**Name of Department:-Electrical & Electronics Engg**

**Name of Lab:-Basic Electrical Engg. (PEE-101)**

S. No	Description of Equipment/accessories/tools	Qty
1	To verify network theorem (i) Superposition (ii) Thevenin (iii) Norton. Details:- Network Theorem kit & connecting lead	2
2	To obtain& study the V-I characteristics of Ge & Si diode Details:- Diode characteristics kit, Voltmeter & Ammeter.	1
3	To Study the phenomena of resonance in RLC. Details:-LCR kit, Function Generator, Voltmeter, Ammeter	2
4	Study the construction & principle of operation of single phase induction type energy meter Details:- Single phase induction type energy meter kit/Panel board, Wattmeter	1
5	To Study OC & SC Test of single phase transformer. Details:- Panel for single phase transformer 230/230 V	1
6	To study Speed control of DC shunt motor Details: Panel for speed control of DC shunt motor	1
7	Measurement of efficiency for single phase transformer by load test. Details:- Panel for single phase transformer	1
8	Three phase induction Motor trainer Details- control panel,Rheostat-2	1

**UTTARANCHAL INSTITUTE OF TECHNOLOGY, DEHRADUN**  
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**Dehradun-248007**

**Name of Department:-Electrical & Electronics Engg**

**Name of Lab:-Networks and Measurement Lab (PEE-353)**

S. No	Description of Equipment/accessories/tools	Qty
1	Measurement of low resistance by Kelvin's double bridge. Details:- Demo model set up for measurement of low resistance -06PL3945, Connecting wires	1
2	Determination of frequency and phase angle using CRO Details:- RC network kit model No-RCN-10,connecting wires, CRO & 1 tool kit for all experiment	1
3	Calibration of ac voltmeter and ac ammeter. Details:- Voltmeter(0-250 V)MI under test 02,Standard voltmeter MI(0-300 V),single phase variac (230-270 V)	1
4	Determination of Transient response of current in RLC Ckt. RLC Demonstration TR-01 , Connecting wires, CRO	1
5	Measurement of Frequency with Lissajous Pattern Details:- R C network demonstration kit model-RCN-10, connecting wires and CRO	1
6	To study the Anderson's Bridge Details:- Anderson's bridge model AB-10, Connecting wires,Inductance for measurement.	2
7	Measurement of Unknown capacitance using Schering Bridge. Details:- Schering bridge model SB-10, Connecting wires,Capacitance for measurement.	1
8	To study the Maxwell's Bridge for measurement of inductance. Details:- Maxwell's bridge model MB-10, Connecting wires,Inductance for measurement	1
9	Measurement of capacitance using Own's Bridge Details:- 2 Own Bridge Demo set up model no OB-10,Connecting wires,Unknown inductor & variable resistor,AF oscillator Model no-712A	1
10	Verification of Tellegen's Theorem Details:- Demo Set up 02 model No.TG-10,Connecting wires	1
11	Determination of frequency response of current in RLC ckt. Details:- LCR model no. LCR-12 & Connecting wires,Audio Frequency oscillator, Millivoltmeter , Milliammeter.	1
12	Determination of Z & H parameters for a two port network & Computation of Y & ABCD parameters. Details:- Demo set up model no. H-01 & true RMS ac Millivoltmeter & AF oscillator	2
13	Determination of frequency response of Twin T notch filter. Details:- Demo set up model no. TTF-10 & Connecting wires Audio Frequency oscillator	2
14	Verification of parameters property in interconnected two port network-Series , parallel & Cascade. Details:-Demo set up model no.TPN-10,Connecting wires, Digital multimeter.	2
15	To study the Hay's Bridge for measurement of inductance. Details:- 1 Hay's bridge model HB-10,Connecting wires,Inductance for measurement(10-100 mH)	2
16	To verify network theorem (i)Superposition (ii)Thevenin(iii)Norton(iv)Maximum Power Transfer Theorem Details:- Network Theorem kit & connecting lead	2

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**Name of Department:-Electrical & Electronics Engg**

**Name of Lab:-Control Lab (PEE-552)(EEE & ECE-V Sem)**

S.No	Description of Equipment/accessories/tools	Qty
1	Study of behavior of separately excited dc motor in open & close loop. Details:- Kit for study of behavior of separately excited dc motor in open & close loop	1
2	Study of performance of servo voltage stabilizer at various loads. Details:- Servo voltage stabilizer, Single phase lamp load, Ammeter 0-10 amps, Analog multimeter	1
3	Study of PID controller Details:- Kit of Study of PID controller	1
4	Study of speed torque characteristics of an ac servomotor Details:- Kit for Study of speed torque characteristics of an ac servomotor	1
5	Study of DC position control system Details:- Kit for Study of DC position control system	1
6	Study of synchro transmitter & receiver pair Details:- Kit for Study of synchro transmitter & receiver pair	1
7	Study of potentiometric error detector. Details:- Kit for Study of potentiometric error detector	1
8	Study of speed control of universal motor using phase control system Details:- Kit for Study of speed control of universal motor using phase control system	1
9	Study of speed control of single phase induction motor using triac. Details: - Kit for Study of speed control of single phase induction motor using triac.	2

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**Name of Department:-Electrical & Electronics Engg**

**Name of Lab:-EMEC-I lab (PEE-352)(EEE-III & ME-IV Sem)**

S.No	Description of Equipment/accessories/tools	Qty
1	To obtain Magnetization characteristics of dc shunt generator. Details:- DC Shunt motor 2HP,DC shunt generator 1KW,Rheostat 1.4 amps.260 Ohms, Rheostat 1.1 amps 800 ohms, control panel.	1
2	To obtain load characteristics of dc series generator Details:- DC Shunt motor 2HP,DC series generator 1KW,Rheostat 1.4 amps.260 Ohms, 800 ohms, control panel, contact type digital tachometer.	1
3	To obtain load characteristics of dc shunt generator Details:- DC Shunt motor 2HP,DC shunt generator 1KW,Rheostat 1.4 amps.260 Ohms, Rheostat 1.1 amps 800 ohms, control panel	
4	Determination of efficiency of DC shunt motor by swinburne's test. Details:- DC Shunt motor 2HP, Rheostat 1.4 amps.260 Ohms ,control panel, Single phase lamp load.	1
5	To obtain losses & efficiency of DC machine by Hopkinson's test. Details:- DC machine 1.5 KW-2 NOs, Rheostat 1.4 amps.260 Ohms, on contact type digital tachometer, control panel	1
6	Study of 3 phase to two phase conversion by Scott connection of transformers Details:- 1 phase transformer-2 nos,3 phase variac-415 V,Single phase lamp load, control panel	1
7	AC to dc power supply rectifier,250 V,50 amps	1

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**Name of Department:-Electrical & Electronics Engg**

**Name of Lab:-EMEC-II lab(PEE-551)(EEE- V Sem)**

S.No	Description of Equipment/accessories/tools	Qty
1	No load & Blocked rotor test on a 3 phase induction motor Details:- 3 phase ac induction motor-2HP,3 phase variac 415V, wattmeter 600V,10 amps-2 nos, control panel	1
2	No load & Blocked rotor test on a singlephase induction motor Details:- Single phase ac induction motor-2HP,Single phase variac- 230V,wattmeter 300V,10 amps, control panel	1
3	To plot V curves of a 3 phase synchronous motor. Details:- 3 phase synchronous motor-3HP,DC shunt generator-1.5 KW, Rheostat 1.4 amps.260 Ohms, control panel	1
4	To perform No load & short ckt test on a 3 phase alternator Details:- DC Shunt motor 3HP,3 phase ac generator,3 phase resistive load,3 phase capacitive load,3 phase inductive load, Rheostat 1.4 amps.260 Ohms, control panel, >screw driver set,wire cutter & plier for all experiments.	1
5	To perform load test on a three phase induction motor and draw:(i)Torque-speed characteristics (ii) Power factor-line current characteristics  Details:- 3 phase ac induction motor-2HP,3 phase variac-415 V, wattmeter 600V,10 amps-2 nos, control panel	1
6	To study speed control of three phase induction motor by varying supply voltage.  Details:- 3 phase ac induction motor-2HP,3 phase variac-415 V, wattmeter 600V,10 amps-2 nos, control panel	1

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**Name Of Department:-Electrical & Electronics Engg**

**Name Of Lab:-Power Electronics Lab(PEE-651)(EEE-VI Sem)**

S.No	Description of Equipment/accessories/tools	Qty
1	Study of V-I characteristics of SCR Details:- Kit for Study of V-I characteristics of SCR	1
2	Study of UJT triggering ckt. Details:- Kit for Study of UJT triggering ckt	2
3	Study of single phase full control bridge converter Details:- Kit for Study of single phase full control bridge converter	1
4	Study of single phase half control bridge converter. Details:- Kit for Study of single phase half control bridge converter.	1
5	Study of single phase ac voltage regulator. Details:- Kit for Study of single phase ac voltage regulator	1
6	Study of triggering of IGBT, MOSFET & Power transistor. Details:- Kit for Study of triggering of IGBT, MOSFET & Power transistor.	2
7	Study of operation of IGBT chopper circuit. Details:- Kit for Study of operation of IGBT chopper circuit.	1
8	Study of IGBT based single phase bridge inverter Details:- Kit for Study of IGBT based single phase bridge inverter.	1

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**Name of Department:-Electical & Electronics Engg**

**Name of Lab:-Transducers Lab (PEE-655)(EEE-VI Sem)**

S.No	Description of Equipment/accessories/tools	Qty
1	Characteristics of RTD Details:- RTD demonstration set using PT-100 type transducer model T-10B, connecting wires, and digital multimeter.	1
2	Characteristics of Thermocouple Details:- Thermocouple demonstration set model-T-10A, Beaker, heating element, connecting wires and digital multimeter	1
3	Characteristics of LVDT Details:- LVDT demonstration set model-LVDT-10A, connecting wires and CRO	1
4	Characteristics of Strain Gauge Details:- Strain Gauge demonstration set model-SG-10, connecting wires and CRO	1
5	Characteristics of Thermistor Details:- Thermistor demonstration set model-T-106, connecting wires, Beaker, heating element, Thermometer-2 nos	1
6	Measurement of Frequency with Lissajous Pattern Details:- R C network demonstration kit model-RCN-10, connecting wires and CRO	1
7	Characteristics of LDR & Opto coupler Details:- Demonstration setup of LDR model-LDR-10 and connecting wires	1
8	Study of Instrumentation Amplifier using Op-Amp Details:- Demonstration model of Instrumentation Amplifier using Op-Amp model-IA-12, connecting wires and digital multimeter	1

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**Name Of Department:-Electrical & Electronics Engg)**

**Name of Lab:-Power System (PEE-752)(EEE-VII sem)**

S.No	Description of Equipment/accessories/tools	Qty
1	Study of Oil testing set. Details:- Oil testing set manually operated.	1
2	Study of IDMT over current Relay. Details:- Kit for study of IDMT over current Relay	1
3	To observe the Ferranti effect in a Transmission Line. Details:- Model of Transmission Line, Digital Earth Tester and Kit for digital Earth Tester.	1
4	To measure negative sequence & zero sequence reactance of a synchronous machine. Details:- DC shunt motor-1.5 KW,3 phase AC generator-2KVA,Rheostat 1.4 amps 260 ohms,AC voltmeter-600V,AC voltmeter 300 V,DC voltmeter-300 V,DC ammeter-2 amps,AC ammeter-5 amps.UPF wattmeter 300 V 5 amps,Single phase variac 6 amps,Panel board	1
5	To determine fault current for,LG,LL,LLG &LLL Faults at the terminal of 3 phase alternator. Details:- DC shunt motor-1.5 KW,3 phase AC generator 2KVA,Rheostat 1.4 amps 260 ohms AC voltmeter-600V,AC voltmeter 300 V,DC voltmeter-300 V,DC ammeter-2 amps, Digital Clamp meter	1
6	AC to Dc power supply rectifier 250V 3330 amps,Screw driver set & cutting plier	1

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Dehradun – 248007

Name of Department : **ME**

Name of Lab: **BASIC MECHANICAL ENGG LAB**

S. No.	Description of Equipment /Accessories/Tools	Qty.
1	Cut section of 2-stroke diesel and petrol engine	02.
2	Cut section of 4-stroke diesel and petrol engine	02.
3.	FIAT petrol engine model.	01.
4.	IZOD and CHARPY impact testing machine.	01.
5.	Universal testing machine	01.
6.	FIAT petrol engine model.	01.
7.	Vapour compression refrigerator model.	01.
8.	Air conditioner model	01.
9.	Locomotive boiler	01.

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Name of Department : **ME**

Name of Lab: **WORKSHOP PRACTICE**

<b>S. No.</b>	<b>Description of Equipment /Accessories/Tools</b>	<b>Qty.</b>
1	TIG WELDING m/c	01
2	MIG WELDING m/c	01
3	GAS WELDING m/c	01
4	LATHE M/C	02
5	MILLING M/C	02
6	DRILL M/C	03
7	TOOL-GRINDER	02
6	SHAPER	02
7	SURFACE GRINDER	01
8	ARC WELDING M/C	01
9	FITTING SHOP TABLES	03
10	CARPENTARY SHOP TABLES	04
11.	POWER HACKSAW	01.
12.	WOOD-LATHE	01.
13.	MUFFLE FURNACE	01.
14.	WORKSHOP TOOLS	

Contd.

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Name of Department : **ME**

Name of Lab: **MATERIAL TESTING LAB**

<b>S. No.</b>	<b>Description of Equipment /Accessories/Tools</b>	<b>Qty.</b>
1	MICROSCOPE	01
2	MUFFLE FURNACE	01
3	UNIVERSAL TESTING MACHINE	01
4	IMPACT TEST MACHINE	02
5	ROCKWELL HARDNESS TESTING M/C.	02

Contd.

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Dehradun – 248007

Name of Department : ME

Name of Lab: **FLUID MECHANICS LAB**

S. No.	Description of Equipment /Accessories/Tools	Qty.
1	VENTURIMETER	01
2	ORIFICEMETER	01
3	CAPILLARY TUBE	01
4	METACENTRIC HEIGHT APPARATUS	01
5	IMPACT JET APPARATUS	01
6	PITOT TUBE APPARATUS	01
7	REYNOLDS APPARATUS	01
8	BERNOULLI'S APPARATUS	01
9	CRO	01
10	LAMINAR AND TURBULENT FLOW APPARATUS	01
11	DARCY LAW APPARATUS	01

Contd.

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Name of Department : **ME**

Name of Lab: **THERMODYNAMICS LAB**

<b>S. No.</b>	<b>Description of Equipment /Accessories/Tools</b>	<b>Qty.</b>
1	LANCASHIRE BOILER	01
2	LOCOMOTIVE BOILER	01
3	BABCOCK-WILLCOX BOILER	01
4	STEAM ENGINE FACTORY MODEL	01
5	AIR OR STEAM PRESSURE TURBINE	01
6	MORSE TEST RIG	01

Contd.

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Dehradun – 248007

Name of Department : ME

Name of Lab: MEASUREMENT & METROLOGY LAB

S. No.	Description of Equipment /Accessories/Tools	Qty.
1	Vernier calipers	01
2	Micrometer	01
3	Tachometer.	01
4	3 wire methods M/C	01
5	Sine bar	01
6	slip gauges	01
7	limit gauges	01
8	level protector	01
9	feeler gauge	01
10	dial indicator	01
11	Dynamometer	01

Contd.

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Name of Department : **ME**

Name of Lab: **DYNAMICS OF MACHINE LAB**

<b>S. No.</b>	<b>Description of Equipment /Accessories/Tools</b>	<b>Qty.</b>
1	GYROSCOPE	01
2	GOVERNOR	01
3	WHIRLING OF SHAFT APPARATUS	01
4.	MODELS OF KINEMATIC PAIRS	01
5.	GEAR SETS	01

Contd.

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Name of Department : **ME**

Name of Lab: **HEAT AND MASS TRANSFER LAB**

<b>S. No.</b>	<b>Description of Equipment /Accessories/Tools</b>	<b>Qty.</b>
1	PIN FIN APPARATUS	01
2	NATURAL AND FORCED CONVECTION APPARATUS	01
3	PARALLEL FLOW APPARATUS	01
4	COUNTER FLOW APPARATUS	01
5	STEFAN AND BOLTZMANN APPARATUS	01

Contd.

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**Name of Department :** ME

**Name of Lab:** FLUID MACHINERY LAB

<b>S. No.</b>	<b>Description of Equipment /Accessories/Tools</b>	<b>Qty.</b>
1	IMPACT OF JETS APPARATUS	01
2	FRANCIS TURBINE	01
3	PELTON WHEEL TURBINE	01
4	RECIPROCATING PUMP	01
5	CENTRIFUGAL PUMP	01

Contd.

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Name of Department : **ME**

Name of Lab: **REFRIGERATION AND AIR  
CONDITIONING LAB**

<b>S. No.</b>	<b>Description of Equipment /Accessories/Tools</b>	<b>Qty.</b>
1	VAPOR COMPRESSION REFRIGERATION TEST RIG	01
2	WINDOW AIR CONDITIONER	01
3	SHELL AND COIL TYPE EVAPORATOR	01
4	EXPANSION DEVICES	01

Contd.

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Dehradun – 248007

Name of Department : **ME**

Name of Lab: **CAD-CAM LAB**

<b>S. No.</b>	<b>Description of Equipment /Accessories/Tools</b>	<b>Qty.</b>
1	PRO-E SOFTWARE SYSTEMS	20
2	AUTOCAD SOFTWARE SYSTEMS	20

Name of Lab: **AUTOMOBILE LAB**

<b>S. No.</b>	<b>Description of Equipment /Accessories/Tools</b>	<b>Qty.</b>
1	GEAR BOX WITH CLUTCH	01
2	STEERING SYSTEM	01
3	FUEL SUPPLY MODEL OF DIESEL ENGINE	01
4	FUEL SUPPLY MODEL OF PETROL ENGINE	01
5	IGNITION SYSTEM	01
6	M.P.F.I SYSTEM	01
7	SUSPENSION SYSTEM	01
8	BRAKING SYSTEM	01

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Dehradun – 248007

Name of Department : \_\_\_ECE\_\_\_

Name of Lab: \_\_\_Digital Signal Processing LAB\_\_\_

S. No.	Description of Equipment /Accessories/Tools	Qty.
1	DSP KIT MODEL NO 6713 DSK WITH SOFTWARE	05
2	MIKE,CABELS ETC	04

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Arcadia Grant, P.O. Chandanwari, Prem Nagar  
Dehradun – 248007

Name of Department : \_\_ECE\_\_

Name of Lab: \_\_BASIC ELECTRONICS LAB\_\_

S. No.	Description of Equipment /Accessories/Tools	Qty.
1	DIODE CHARACTERISTICS KIT	04
2	RECTIFIERS &FILTERS KIT	03
3	ZENER DIODE CHARACTERISTICS KIT	04
4	CLIPPING,CLAMPING CKTS KIT	02
5	TRANSITOR CHARACTERISTICS	03
6	FET CHARACTERISTICS	02
7	STUDY OF LOGIC GATES	03
6	FUNCTION GENERATOR	02
7	CRO	04
8	PROJECT BREAD BOARD	02
9	LOOSE COMPONENTS,IC,DIODES,TRANSFORMERS,ZENER,TRANSITORS,ETC	
10	MULTIMETERS	04

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Dehradun – 248007

Name of Department : ECE

Name of Lab: **Electronics Device Circuit LAB**

S. No.	Description of Equipment /Accessories/Tools	Qty.
1	STUDY OF EMITTER & DARLINGTON PAIR AMP	01
2	STUDY OF RC PHASE SHIFT OSCILLATOR	01
3	D TO A CONVERT USING OP AMP	01
4	TRANSISTOR CHARACTERISTICS	02
5	SOLID STATE POWER SUPPLY	02
6	FET CHARACTERISTICS	02
7	TRANSISTOR AMP RC COUPLED	01
8	OP AMP MATHEMATICS CKT	01
9	FUNCTION GENERATOR	02
10	DECADE RESISTANCE BOX	02
11	DECADE INDUCTOR BOX	04
12	TRUE RMS MILLIVOLT METER	01
13	DIGITAL MULTIMETER	02
14	CRO	02
15	BREADBOARD	02

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Dehradun – 248007

Name of Department :   ECE  

Name of Lab:   ELECTRONICS LAB II  

S. No.	Description of Equipment /Accessories/Tools	Qty.
1	COMMON EMITTER AMPLIFIER	02
2	RC PHASE SHIFT OSCILATOR	01
3	WEIN BRIDGE OSCILATOR	02
4	INSTRUMENTATION AMPLIFIER	02
5	RC ACTIVE FILTER	02
6	OP AMP BASED ADDER AND INTEGRATOR	02
7	PLL CIRCUIT	02
8	RC COUPLED TWO STAGE AMPLIFIER	02
9	CRO	03
10	MULTIMETER	03
11	FUNCTION GENERATOR	03

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Dehradun – 248007

Name of Department : ECE

Name of Lab: **ANALOG CIRCUITS & COMM. LAB**

S. No.	Description of Equipment /Accessories/Tools	Qty.
1	AMPLITUDE MODULATION/DEMODULATION	02
2	FREQUENCY MODULATION/DEMODULATION	01
3	DSB/SSB TRANSMITTER/RECEIVER	01
4	PCM-PAM-PPM-PWM	01
5	OP AMP PARAMETER	02
6	PRECISION RECTIFIER	02
7	PLL	02
8	ACTIVE FILTER	01
9	CRO	03
10	MULTIMETER	03
11	FUNCTION GENERATOR	03

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Dehradun – 248007

Name of Department : ECE

Name of Lab: **MICROPROCESSOR LAB**

S. No.	Description of Equipment /Accessories/Tools	Qty.
1	8085 MP KITS	08
2	8086 MP KITS	11
3	8051 MICROCONTROLLER	03
4	INTERFACING STEPPER MOTOR	02
5	TRAFFIC LIGHT CONTROLLER	02
6	SEVEN SEGMENT DISPLAY	02
7	TEMPERATURE MEASUREMENT	02
8	8255 STUDY CARD	02
9	8253 STUDY CARD	02
10	RAM STUDY CARD	01
11	DUAL CHANNEL 8 BIT CARD	02

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Dehradun – 248007

Name of Department : ECE

Name of Lab: **Optical Fiber Communication LAB**

<b>S. No.</b>	<b>Description of Equipment /Accessories/Tools</b>	<b>Qty.</b>
1	FIBER OPTIC TRAINER KIT ST2502	05
2	CRO	02
3	OPTICAL CONNECTOR	10

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Dehradun – 248007

Name of Department : ECE

Name of Lab: **PROJECT AND PCB LAB**

S. No.	Description of Equipment /Accessories/Tools	Qty.
1	PCB ART WORK TABLE	01
2	UV EXPOSURE MACHINE	01
3	ITCHING MACHINE	01
4	PCB DRILLING MACHINE	01
5	PCB DIP COATING MACHINE	01
6	PCB ROLLER TINNING MACHINE	01
7	PROTO CONTACT PCB ART WORK FILM MAKER	01
8	TRANSFORMER WINDING MACHINE	01
9	FUNCTION GENERATOR	02
10	SOLDERING KIT	04

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Dehradun – 248007

Name of Department : ECE

Name of Lab: **DIGITAL ELECTRONICS LAB**

S. No.	Description of Equipment /Accessories/Tools	Qty.
1	BREAD BOARD IMPEMENTATION OF VARIOUS FLIP FLOP BB 12V	03
2	STUDY OF DEMUX DECORDER	02
3	MULTIPLEXER KIT	02
4	PRESETTABLE BCD DECADE UP DOWN COUNTER	02
5	BINARY ADDER/SUBTRACTOR	02
6	TTL/SCHMITT TRIGER	02
7	MONOSTABLE MULTIVIBRATOR	02
8	COUNTERS AND SHIFT REGISTERS	02
9	DIFFERENT TYPE OF FLIP FLOP	02
10	CMOS INVERTOR	01
11	FUNCTION GENERATOR	02
12	MULTIMETER	02
13	DIFFERENT GATE IC'S	20

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Dehradun – 248007

Name of Department : ECE

Name of Lab: **Microwave Engg. LAB**

S. No.	Description of Equipment /Accessories/Tools	Qty.
1	VOLATAGE STANDING WAVE RATIO	03
2	KLYSTRON POWER SUPPLY	03
3	KLYSTRON BENCH (COMPLETE)	03
4	CRO	02
5	MICROWAVE COMPONENTS	01
6	DIRECTIONAL COUPLER	03
7	MAGIC TEI	01
8	E & H-PLANE TEE	04
9	CIRCULATOR	02
10	POWER SUPPLY	03

Contd.

## **COMPUTER NETWORKS LAB**

1. Implementation of the Data Link Layer framing method such as character stuffing and bit stuffing in C.
2. Implementation of CRC algorithm in C.
3. Implementation of a Hamming (7,4) code to limit the noise. We have to code the 4 bit data in to 7 bit data by adding 3 parity bits. Implementation will be in C.
4. Implementation of LZW compression algorithm in C.
5. Write a socket program in C to implement a listener and a talker.
6. Simulation of a network of 3 nodes and measure the performance on the same network.
7. Write a program in C to encrypt 64-bit text using DES algorithm.

## **ARTIFICIAL INTELLIGENCE LAB**

1. Write a LISP Program to solve the water-jug problem using heuristic function.
2. Create a compound object using Turbo Prolog.
3. Write a Prolog Program to show the advantage and disadvantage of green and red cuts.
4. Write a prolog program to use of BEST-FIRST SEARCH applied to the eight puzzle problem.
5. Implementation of the problem solving strategies: Forward Chaining, Backward Chaining, Problem Reduction.
6. Write a Lisp Program to implement the STEEPEST-ASCENT HILL CLIMBING.
7. Write a Prolog Program to implement COUNTING PROPAGATION NETWORK.

## **OPERATING SYSTEMS LAB**

1. Simulation of the CPU scheduling algorithms a) Round Robin b) SJF c) FCFS d) Priority
2. Simulation of MUTEX and SEMAPHORES.
3. Simulation of Bankers Deadlock Avoidance and Prevention algorithms.
4. Implementation of Process Synchronization (Reader-Writer, Sleeping Barber and Dining Philosopher's Problem)
5. Simulation of page Replacement Algorithms a) FIFO b) LRU c) LFU
6. Simulation of paging techniques of memory management.
7. Simulation of file allocation Strategies a) Sequential b) Indexed c) Linked
8. Simulation of file organization techniques a) Single Level Directory b) Two Level c) Hierarchical d) DAG

## **SOFTWARE PROJECT MANAGEMENT LAB**

Do the exercises based on the following aspects of SPM:

1. Creating Work Breakdown Structure (WBS).
2. Comparing Gantt Chart.
3. Drawing Pert Chart and finding critical paths.
4. Resource Management
5. Time Scheduling and Management.

# Exercises can be on any of the following:

- Intranet
- Library Automation
- Academic Management
- Departmental Store management.

- Hotel management

# All the exercises should be done using MS project or any other case tool.

### **UNIX & Shell Programming Lab**

1. Use Vi editor to create a file called myfile.txt which contain some text. Correct typing errors during creation, Save the file & Logout of the file
2. Open the file created in Exp 1, Add, Change, delete & Save the changes
3. Use the cat command to create a file containing the following data. Call it mutable use tabs to separate the fields 1425 ravi 15.65, 4320 ramu 26.27, 6830 sita 36.15, 1450 raju 21.86
4. Use the cat command to display the file, my table, use vi command to correct any errors in the file, my table, use the sort command to sort the file my table according to the first field. Call the sorted file my table(same name) & print the file my table
5. Use the cut & paste commands to swap fields 2 and 3 my table. Call it mytable(same name) & print the new file, my table
6. Use the date and who commands in sequence (in one line) such that the output of date will display on the screen and the output of who will be redirected to a file called my file2. Use the more command to check the contents of myfile2.
7. Develop an interactive grep script that asks for a word and a file name and then tells how many lines contain that word
8. Write A shell script that takes a command –line argument and reports on whether it is directory, a file, or something else
9. Write a shell script that accepts one or more file name as a arguments and converts all of them to uppercase, provided they exists in the current directory
10. Write a shell script that determines the period for which a specified user is working on the system