Computer, Electrical & Electronics, and Telecommunications Engineering - List of Laboratories & Equipment

Some of the Laboratories and equipment are to be shared.

CE – Computer Engineering

EE – Electrical & Electronics Engineering

TLE – Telecommunications Engineering

List of Laboratories

1. Control and Instrumentation Laboratory - for EE/CE/TLE
2. Electronics and Telecommunication Laboratory - for EE/CE/TLE
3. Microprocessor and Digital System Laboratory - for EE/CE/TLE
4. Signal processing laboratory - for EE/CE/TLE
5. Data communication and Internetworking - for EE/CE/TLE
6. Communication Systems Laboratory - for EE/CE/TLE
7. Energy Laboratory – for EE
8. Electric Power/Machine Laboratory – for EE
9. RF microwave laboratory – for TLE
10. Antenna laboratory - for TLE

Computers and Software Requirements		
S/N	Name of Equipment/Brief Specification	
1.	Computer System (with latest configurations)	
2.	Laptop with latest configurations	
3.	Online UPS (5 KVA) OR 625 VA UPS for each Computer System	
4.	Online UPS(3 KVA)	
5.	Server with latest specifications	
6.	24 Port Switch	
7.	Web camera	
8.	Digital camera	
9.	Scanner	
10.	Laser printer	
11.	Touch screen	
12.	Network printer	
13.	Dot matrix printer	
14.	LCD projector	
	At least 2Mbps Internet facility should be available in Laboratories.	
Software		
15.	Microsoft Windows	
16.	Data backup utility software	
17.	Red Hart Linux	
18.	Oracle academic version (latest version)	
19.	SQL Server	
20.	Turbo C and C++ Compilers (latest versions)	
21.	VB.Net (latest version)	
22.	Visual Studio 6.0 or (latest Version)	

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23.	Javas Compiler (latest version)	
24.	Python compiler (latest version)	
25.	R Compiler (latest version)	
26.	Page Maker Professional (latest version)	
27.	Corel Draw (latest version)	
28.	Adobe Photoshop	
29.	Adobe Creative Suit (latest Version)	
30.	Adobe Flash Professional	
31.	Adobe Flex (latest version)	
32.	Adobe Dreamweaver	
33.	Microsoft Office Suite (latest version)	
34.	Assembler for 8085 programming	
35.	AutoCad	
36.	MatLab	
37.	COMSOL	
38.	Modelsim	
39.	Other engineering design software	
40.	Antivirus Software (licensed for at least 200 users)	
	Equipment	
1.	Add on card to study interfacing of LED display control using 8255	
2.	Add on card to study interfacing of LCD with 8085-based microprocessor	
3.	Add on card to study speed control of stepper motor using 8085-based microprocessor including stepper motor	
4.	Familiarization of ICs trainer (7400),(7402), (7432), (7486), (7408), (7404), (7483), (7485), (74157), (74151), (74138	
5.	EX OR, and EX-NOR Gates realization kit (using NAND OR NOR Gates)	
6.	Realization of Truth Table for OR and AND Gates using NAND Gates and NOR Gate	

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7.	8 bit digital multiplexer	
8.	1:8 line de-multiplexer	
9.	Multiplex two BCD numbers to seven segment display	
10.	Study of Flip Flop or RS, D,J-K and T	
11.	3 bit asynchronous up-counter and 3 bit synchronous down counter	
12.	Universal shift registers having SISO, SIPO, PIPO, PISO	
13.	Study of D-latch and D flip flop trainer	
14.	Encoder/decoder trainer	
15.	Digital IC testers	
16.	Digital Laboratory with modules	
17.	Logic Probe	
18.	Logic Pulser	
19.	Pulse Generator upto (3MHz)	
20.	Digital IC Programmer	
21.	Digital IC power supplies (+/- 5V/1A, +/-12V/1A/+-15V, 1A)	
22.	2 Calliope autonomous robots with camera and robotic arm	
23.	Digital circuit design and microcontroller boards (EasyAVR and BigAVR microprocessor boards. Easy 8501 development boards).	
24.	Raspberry PIs and Arduino Microcontrollers	
25.	Protoboards (BreadBoards).	
26.	8085-based Trainer Kits	
27.	Digital Circuit Design and Microcontroller Boards	
28.	Trainer board to demonstrate assembling and working of multimedia computer system	
29.	Trainer boards to study mother boards with different chipsets and processors	
30.	Hard disk trainer board (SATA and IDE)	
31.	CDROM trainer board	
32.	Mouse trainer board	

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33.	Keyboard trainer board	
34.	Trainer board to study construction and working of colour CRT monitor	
35.	Trainer board to study construction and working of colour LCD Monitor	
36.	Trainer board to study working of dot matrix printer, Inkjet printer and colour printer	
37.	Trainer board to study switch mode power supply	
38.	Trainer board to study working of UPS	
39.	Trainer board to study construction and working of floppy disk drive	
40.	Computer repair and assembly tool kits	
41.	PC tools	
42.	USB hard disk	
43.	19" rack	
44.	Data communication trainer board	
45.	LAN trainer system	
46.	Amplitude modulation/demodulation trainer board	
47.	Frequency modulation/demodulation trainer board	
48.	Pulse code modulation/demodulation trainer board	
49.	Trainer board to study frequency division multiplexing/demultiplexing	
50.	Trainer board to study time division multiplexing/ demultiplexing	
51.	Wireless access points	
52.	Wi-Fi LAN cards	
53.	Network/bandwidth management software (cybernetra or equivalent)	
54.	Trainer board to study the working of MODEM	
55.	LAN cable tester	
56.	Crimping tool	

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57.	Display boards of various types of cables and connectors used in computer networks	
58.	Tool kits	
59.	Digitised Oscillisopes with Spectrum Analysers	
60.	Digitised Power Supplies	

Intermediate Network Laboratory

S/n	Description of Equipment
1	D3000 Virtual Instrument Platform (VIP2)
2	D3000 9.0 Experimental Master PCB
3	D3000 21.1 AM Communications PCB
4	D3000 21.2 Superhet Receiver PCB
5	D3000 21.4 Digital Communications PCB
6	D3000 21.5 PAM PCB
7	D3000 21.8 PCM PCB

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Transmission Laboratory

S/N	Description of Equipment
1	Ctl Modicom 1 "Signal sampling and reconstruction module"
2	02 Modicom 2 "Time division multiplexer PAM Module"
3	CT3/1 and CT3/2 Modicom 3 "pulse code modulation Transmitter/Receiver
4	CT4 Modicom 4 " Delta modulation Module"
5	CT5/1 and CT5/2 Modicom 5 " Data conditioning and carrier modulation
6	CT7 Audio Input Module
7	CT8 Audio Output Module

8	CT20 Anacom 1/1 and V2 "Introductory Analogue Communication Module"
9	CT21 Anacom 2"Introductory Analogue Communication Module"
10	CT30 Transmission Line Trainer
11	Digital Communication System Trainer
12	Analog Communication System Trainer
13	PS20 Power Supply
14	FG2 Function Generators
15	OSC1 Oscilloscopes

Fiber Optic Laboratory		
S/N	**Description of Equipment**	
1	06 Modicom 6 "Fiber-Optic Transmitter/Receiver system"	
2	NTC-1 03.000 "Fiber-Optic Communication" Training stand	
3	Pulse Semi-conductor Laser	
4	Photodiode Current Meter	
5	Continuous Semiconductor Laser	
6	Current Generator	
7	Fast Photo detector	
8	Stand to study photo detector operation	
9	Optical Fiber Coupler	
Microwave Laboratory		
S/N	**Description of Equipment**	
1	CT60 Microwave Communications Trainer: Receiver Transmitter Probe	
2	Spectrum Analyzer " 9kHz -3GHz	
3	Indoor TV Antenna	
4	NTC-1 04 " Radio Engineering & Telecommunication with MPMS"	
5	Microwave Trainer MST 532	
6	Microstrip Trainer MNT 530	
7	18GHz Spectrum Analyzer	

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8	18GHz Network Analyzer
Networking Laboratory	
S/N	**Description of Equipment**
1	NTC-1 42.000 "Global, Local, Wired & Wireless Networks" Training stand
2	D-Link Switch
3	Cisco 1 900 Router
4	D-Link Router

Basic Electronic Equipment

1. Frequency meter.
2. Digital energy meter.
3. Digital wattmeter, single phase.
4. Digital wattmeter, 3-phase.
5. Semiconductor curve tracer.
6. Digital transistor tester.
7. Decade resistance box.
8. Decade capacitance box.
9. Decade inductance box.
10. Digital multifunction documenting calibrators.
11. Digital function generator (different frequency ranges).
12. Electrical tools box.
13. Digital stroboscope.
14. Digital DC ammeters multi-range.
15. Digital AC voltmeters multi range.
16. Digital DC volt meters multi range.
17. Digital damp meter.
18. Standard digital earth loop/PSC/tester.
19. Photo/contact tachometer.
20. LCD Display 3-phase rotation tester.
21. Rheostat (different ranges).
22. Wheatstone bridge.
23. Portable DC potentiometer.
24. Signal trace/lnjector.
25. Digital RF signal generators.
26. Klystron microwave trainer complete set.

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27. Antenna laboratory trainer complete set.
28. PCB Fabrication equipment complete set.
29. Standard analog multimeters.
30. AVO meters.
31. Digital logic analyzer.
32. Smart logic design experimental Kit.
33. Digital logic circuit design experiment kit microcomputer trainer.
34. GSM/GPS experimental trainer.
35. Programmable logic controller system trainer.
36. Digital 3 phase power analyzer with SD card real time data recorder.
37. Digital storage color display 2/4-channel oscilloscope.
38. Instrumentation trainer using transducers complete set.
39. Solar power system training kit.
40. Electrical and electronic system trainer.
41. Power electronic training system.
42. Programmable dual output DC power upply units (different ranges).
43. Variable transformer.
44. Portable wind power generator training kit universal EPROM programmable (48 Pins).
45. Bench digital multi-meter digit (various digit ranges).
46. AM/FM Transmitters and Receivers System Trainer.
47. Fiber-optic Transmission Training System.
48. Single Phase Transformer System Trainer.
49. 3- Phase Transformer System Trainer.
50. Colour TV Trainer.
51. PA (Public Address) System Trainer.
52. Portable Machine Training Kit.
53. Portable Electric Power Training Kit.
54. Universal EPROM Programmable (48 Pins) Bench.
55. High voltage Insulation tester variable digital type up 10kV Power factor meter.
56. Advanced frequency modulation and demodulation trainer.
57. 3-phase variable inductance load.
58. 3-phase variable capacitance load.
59. 3-phase variable resistance load.
60. Electric power transmission training kit

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