

ELECTRONICS - UG

B.SC., ELECTRONICS / ELECTRONICS AND COMMUNICATION SYSTEMS

1. FACULTY RESOURCES

Working Hour Norms :

Head of the Department	:	12 Lecture hours per week
Other faculty Members	:	16 Lecture hours per week
One hour of Lab is equal to	:	1 hour of Lecture hour

STAFF REQUIREMENTS :

FIRST YEAR : SEMESTER I & II

FOR 30 STUDENTS

S.No	Subject	Instruct ional Hrs	No. of Faculty members required	Faculty Qualification requirements
1.	Language I and II	6+6	1	As per existing norms
2.	English I and II	6+6	1	
3.	Core Papers	17+17	1	
4.	Allied Papers – A	5+5	1	
5.	Foundation Course A	2+2	-	
	TOTAL	36+36	4	

SECOND YEAR : SEMESTER III& IV

FOR 30 STUDENTS

S.No	Subject	Instruct ional Hrs	No. of Faculty members required	Faculty Qualification requirements
1.	Language III and IV	-	-	As per existing norms
2.	English III and IV	-	-	
3.	Core Papers	24+24	2	
4.	Allied Papers – B	10+10	1	
5.	Foundation Course B	2+2	-	
6.	Diploma Courses	3+3	-	
	TOTAL	39+39	3	

THIRD YEAR : SEMESTER V & VI**FOR 30 STUDENTS**

S.No	Subject	Instruct ional Hrs	No. of Faculty members required	Faculty Qualification requirements
1.	Core Papers	36+36	3	As per existing norms
2.	Diploma Courses	3+6	-	
	TOTAL	39+42	3	

2. **FACULTY ROOM REQUIREMENTS : (As per University Existing Norms)**
3. **TEACHING AIDS (Can be shared with other Departments)**
4. **CLASS ROOMS REQUIREMENTS : (As per University Existing Norms)**
5. **REQUIREMENTS FOR THE SEMINAR HALL (Can be shared with other Department) – As per University Existing Norms**

CLASS ROOMS : 1200 sq.ft (I Year)
1200 sq.ft (II Year)
1200 sq.ft (III Year)

INFRASTRUCTURE

Lab Area : 1500 sq.ft (24 Students)
: 2500 sq.ft (40 Students)
Table Size : 8' x 4' = 8 nos (30 Students)
: 8' x 4' = 12 nos (50 Students)
Steel Cab Board : 4 Nos

BSc Electronics

REQUIRED NO OF EQUIPMENTS / COMPONENTS FOR LAB.

Ist Year

S.No.	Components / Apparatus	No of	No of
		Students	Students
		30	50
1.	Regulator Power supply DC 5V/1A	6	10
2.	Regulator Power supply DC 9V/1A	6	10
3.	Regulator Power supply DC 15-0-15/1A	5	8
4.	Regulator Power supply DC 0-30V / 2A Variable	3	6
5.	Regulator Power supply DC 0-300V/ 2A Variable	2	2
6.	Function Generator	4	6
7.	Multimeter Analog	3	5
8.	Multimeter Digital	6	10
9.	Audio Frequency Oscillator	2	2
10.	Rheostat (2 Amps)	15	25
11.	CRO (Single Trace)	6	8
12.	CRO (Dual Trace)	3	5
13.	Decade Resistance Box	10	15
14.	Decade Capacitance Box	10	15
15.	Decade Inductance Box	4	6
16.	Inductance coil (Multi Tap)	4	6
17.	Ammeter (D.C) 0-500 micro amps	6	10
18.	Ammeter (D.C) 0-1 ma	6	10
19.	Ammeter (D.C) 0-10 ma	6	10
20.	Ammeter (D.C) 0 -25ma	6	10
21.	Ammeter (D.C) 0-100 ma	6	10
22.	Ammeter (D.C) 0 -500 ma	6	10
23.	Ammeter (D.C) 0-2 A	3	6
24.	Ammeter (A.C) 0-500 ma	6	10
25.	Ammeter (A.C) 0 – 100 ma	6	10
26.	Voltmeter (D.C) 0-3 V	6	10
27.	Voltmeter (D.C) 0-10 V	6	10
28.	Voltmeter (D.C) 0-100 V	6	10
29.	Voltmeter (D.C) 0 -300 V	6	10
30.	Galvanometer	3	5
31.	Transformer (6-0-6 /1A	6	10
32.	Transformer (9-0-9)/ 1A	6	10
33.	Transformer (12-0-12) / 1A	6	10
34.	Transformer (24-0-24)/2A	6	10
35.	Transformer (1.5 -12V) / 1 A multi tap	6	10
36.	LDR	10	15
37.	IR Transmitter / Receiver	10	15
38.	Thermistor	6	8
39.	Opto Coupler	10	10

40.	Solar Cell	3	5
41.	Thermometer (300°C/ 100°C)	6	12
42.	Electric Heater	3	4
43.	Transistors (BJJ) All types	200	300
44.	UJT, SCR, TRIAC, FET, DIAC	50	60
45.	Zener Diodes	20	30
46.	Power Diodes	100	200
47.	Photo Diodes / Transistors	10	15
48.	Resistors All values	400	600
49.	Capacitors All values	300	400
50.	Seven Segment Display	10	15
51.	LED	200	300
52.	Relay 6V / 9V	10	15
53.	Soldering Iron with stand	3	4
54.	Bread Board	3	4
55.	Strip Board	3	4
56.	Beaker	4	6
57.	Tripod stand	4	6
58.	Bulb	10	15

REQUIRED NO OF EQUIPMENTS / COMPONENTS FOR LAB.

II YEAR

S.No.	Components / Apparatus	No of	No of
		Students	Students
		24	40
1.	Regulator Power supply DC 5V/1A	15	20
2.	Regulator Power supply DC 9V/1A	6	8
3.	Regulator Power supply DC 15-0-15/1A	8	14
4.	Function Generator	8	10
5.	Digital Multimeter	10	15
6.	Resistance Box	5	10
7.	CRO (Single Trace)	8	14
8.	CRO (Dual Trace)	5	8
9.	Transformer (6-0-6 /1A	10	15
10.	Transformer (9-0-9)/ 1A	10	15
11.	Transformer (12-0-12) / 1A	10	15
12.	Transformer (24-0-24)/2A	10	15
13.	Transformer (1.5 -12V) / 1 A multi tap	10	15
14.	IFT	30	40
15.	Linear ICs	100	200
16.	Digital ICs	300	400
17.	PIN diode	5	8
18.	Gunniod	2	2
19.	Pattern Generator	1	1
20.	LED	200	300

21.	Temperature Sensors	10	15
22.	ECG	1	1
23.	Stethoscope	2	2

COMPUTER LAB

II B.Sc.

Personal Computers with 1 Laser Printer

30 50

With required software

REQUIRED NO OF EQUIPMENTS / COMPONENTS FOR LAB.

IIIrd Year

S.No.	Components / Apparatus	No of	No of
		Students	Students
		30	50
1.	8085 Trainer Kit	15	25
2	8051 Trainer kit	15	25
3	Interfacing cards :		
	Stepper motor	3	6
	Traffic Light	3	6
	LCD	3	6
	DC Motor	3	6
	Temperature Controller	3	6
	Water Level Indicator	3	6
	8255 I/O Interface	6	10
	key board / Display	3	6
	ADC interface	3	6
	DAC Interface	3	6
4	Linear ICs	100	200
5	15-0-15 power supply DC Regulated	10	15
6	5V Power supply DC Regulated	20	30
8	LOT	5	8
7	High voltage Probe 200: 1	2	3
8	Thyristors	100	200
9	Power Transistors	50	75
10	Tube light 1 feet	4	6
11.	Dish Antenna	2	2
12.	DTH Receiver	2	2
13.	Colour TV	2	2
14	Study kit :		
	Colour TV	1	1
	Tape recorder	1	1
	CD / DVD Player	1	1
	Radio Receiver AM/FM	1	1
15	Pattern Generator	1	1

**LIST OF LIBRARY BOOKS
FOR STUDENTS**

Year	Sl.No	Author & Title	No Required 30 Students	No Required 50 Students
I	1.	S.Salivahanan, N.Suresh Kumar, A.Vallavaraj "ELECTRONIC DEVICES AND CIRCUITS"-Tata McGraw-Hill Publishing Company Limited, New Delhi. 1998.	4	8
	2.	B.V.Narayana Rao "PRINCIPLES OF ELECTRONICS", Wiley Eastern Limited, 1992.	4	8
	3.	B.L.Theraja, "BASIC ELECTRONICS- SOLID STATE DEVICES",S.Chand Company Ltd.2000	4	8
	4.	BernardGrob "BASIC ELECTRONICS"- Tata McGraw-Hill Publishing Company Limited, 9th Edition.	4	8
	5.	S. Salivahanan, N. Suresh Kumar, A. Vallavaraj, "ELECTRONICS DEVICES AND CIRCUITS", Tata McGraw Hill Publishing Company Limited, New Delhi, 8 th edition.	4	8
	6.	S. L. Kakani, K. C. Bhan Dai "A TEXT BOOK OF ELECTRONICS".	4	8
	7.	B. L. Theraja, "BASIC ELECTRONICS – SOLID STATE DEVICES", S.Chand & Company Ltd. 2000.	4	8
	8.	S.K. Sahdev, "Electronic Principles", Dhanpat Rai & Co (P) Ltd, 2 nd Edition, 1998	4	8
	9.	B.L.Theraja, "BASIC ELECTRONICS",S.Chand Company Ltd.2000	4	8
II	10.	BernardGrob "BASIC ELECTRONICS"- Tata McGraw-Hill Publishing Company Limited, 9th Edition.	4	8
	11.	Malvino & Leech, "DIGITAL PRINCIPLES AND APPLICATIONS", Tata McGraw Hill Edition V, 2002.	4	8
	12.	M.Morris Mano "DIGITAL LOGIC AND COMPUTER DESIGN" PHI 2005.	4	8
	13.	M.Morris Mano "DIGITAL DESIGN" PHI 2005.	4	8

II	14.	Barker A "Improve your communication skills " Kogan Page India Pvt Ltd, New Delhi, 2006.	4	8
	15.	Mohan, Krishna & Meera Banerji "Developing communication skills" Macmillan India Ltd., Delhi, 1998.	4	8
	16.	Pillai G, Radhakrishnan " Spoken English for you – Level II, Emerald Publishers, Chennai, 1998.	4	8
	17.	Govindarajalu.B "Computer Architecture and Organization Design Principles and Applications" Tata McGraw-Hill, 2006	4	8
	18.	Kennedy Davis " ELECTRONIC COMMUNICATION SYSTEMS" Tata McGraw Hill Publishing Company Limited, New Delhi.	4	8
	19.	Dennis Roddy, Hohn Coolen " ELECTRONIC COMMUNICAIONS" Prentice Hall of India Private Limited, New Delhi. 4 th edition, 1995.	4	8
	20.	Ashok raj " MODERN ELECTRONIC COMMUNICATION" Theory & Systems, Umesh Publcation, 2001.	4	8
	21.	Leslie Cromwell, Fred J Weibell, Erich A. Pfeiffer, "BIOMEDICAL INSTRUMENTATION AND MEASURMENTS" PHI second edition.	4	8
	22.	Dr. M. Arumugam "BIO MEDICAL INSTRUMENTATION" Anuradha Agencies second edition.	4	8
	23.	D.Roy Choudhury and Shahil B Jain, "Linear Integrated Circuits", Second Edition New Age International Publishers 2004.	4	8
	24.	K.R.Botkar, "Integrated Circuits", 10 th Edition Khanna Publishers 2006.	4	8
	25.	J.B.GUPTA "A course in electronic and electrical measurements and instrumentation", 12 th Edition, S.K Kataria & sons	4	8

III	26.	Petzold, "Windows Programming", Microsoft Press, 1995.	4	8
	27.	Marion Cottingham, "Visual Basic", Peachpit Press, 1999.	4	8
	28.	Kate Gregory, "Using Visual C++", Prentice Hall of India Pvt. Ltd.	4	8
	29.	Pappas and Murray, "Visual C++: The Complete Reference", Tata McGraw Hill, Delhi, 2000.	4	8
	30.	Brian Siler and Jeff Spotts, "Using Visual Basic 6", Prentice Hall India, Delhi, 2002.	4	8
	31.	Aditya P Mathur, "Introduction to Microprocessors" 3rd edition.	4	8
	32.	Ramesh S Goanker, "Microprocessor Architecture Programming and Application with 8085/8080A.2 nd edition. New Age International (P) Ltd.	4	8
	33.	Govinda Rajulu B, "PC IBM and Clones – Hardware, Troubleshooting and Maintenance", Tata McGraw Hill Publishing Company Ltd., New Delhi, 1991	4	8
	34.	Robert J. Shoernbeck, "Electronic communications modulation and transmission", PHI, 1999	4	8
	35.	2. Anok singh, "Principles of communication Engineering", S.Chand and Company, 2 nd edition	4	8
	36.	3. Sanjeev Gupta, "Electronic Communication system", Kanna publishing company	4	8
	37.	4. William C.Y.Lee, "Mobile Cellular Communication systems", McGraw Hill Publications, 1995	4	8
	38.	5. Subir Kumar Sarkar "Optical Fiber Communication systems", S.Chand and Company	4	8
	39.	Harish C Rai, " Power Electronic Devices, Circuits, Systems and Applications", Gac Gotia Publication Pvt. Ltd., 1 st Edition, 1998	4	8
	40.	Ramamourthy " Thyristor and their applications" East-West Publishers, 2 nd Edition	4	8
	41.	Shamir K Datta " Power Electronics and Controllers" PHI, 3 rd Edition	4	8

III	42.	Harley Hahn, The internet complete reference, Tata McGraw publicity, 2 nd Edition, 1997	4	8
	43.	Patrick Naughton., " Patrick Naughton", Then Java hand book, Tata McGraw, 1997	4	8
	44.	Kenneth J. Ayala, " The 8051 Microcontroller architecture, programming and application" 2 nd Edition, Penram International	4	8
	45.	Mohamed Ali Maszidi & Janice Gillispie Maszidi, " The 8051 Microcontroller and Embedded System", Pearson Publishers	4	8
	46.	R.R. Gulati, "MONOCHROME AND COLOUR TELEVISION", New Age International (P) Limited, Publishers, New Delhi.	4	8
	47.	R.R. Gulati, "MODERN TELEVISION PRACTICE", New Age International (P) Limited, Publishers, New Delhi.	4	8
	48.	R.R. Gulati, "COLOUR TELEVISION PRINCIPLES AND PRACTICE", New Age International (P) Limited, Publishers, New Delhi.	4	8
	49.	SP Bali, "COLOUR TELEVISION THEORY AND PRACTICE", Tata McGraw Hill Publishing Company Limited New Delhi, V edition 2002.	4	8