



M. Sc. Electronics and Communication Systems

Electronics

CHECKLIST OF RESOURCES

34-D
 29-2-2008

1. FACULTY RESOURCES

Working Hour Norms:

- Head of the Department : 12 Lecture hours per week
- Other Faculty Members : 16 Lecture hours per week
- 2 hours of Lab is equal to : 1 hour of Lecture hour
- 1 1/2 hours of UG Teaching is equal to : 1 hour of PG Teaching

UG PROGRAMME:

First year : Semester I & II

S. No.	Subject	Instruc-tional Hours	No. of Faculty members required	Faculty Qualification requirements
1.	Language I and II	/		
2.	English I and II			
3.	Core Papers			
4.	Allied Papers - A			
5.	Foundation Course A (General Awareness)			
TOTAL				

Second year : Semester III & IV

S. No.	Subject	Instruc-tional Hours	No. of Faculty members required	Faculty Qualification requirements
1.	Language III and IV	/		
2.	English III and IV			
3.	Core Papers			
4.	Allied Papers - B			
5.	Foundation Course B			
6.	Diploma Courses			
TOTAL				

Third year : Semester V & VI

S. No.	Subject	Instruc - tional Hours	No. of Faculty members required	Faculty Qualification requirements
1.	Core Papers			
2.	Diploma Courses			
TOTAL				

PG PROGRAMMES:

First year : Semester I & II

S. No.	Subject	Instruc - tional Hours	No. of Faculty members required	Faculty Qualification requirements
1.	Core Papers	38+38	2	M.Sc. or PhD in Electronics / M.Sc with SLET/NET
2.	Others	-	-	-
TOTAL		38+38	2	

Second year : Semester III & IV

S. No.	Subject	Instruc - tional Hours	No. of Faculty members required	Faculty Qualification requirements
1.	Core Papers	38+16	2	M.Sc. or PhD in Electronics / M.Sc with SLET/NET
2.	Others	-	-	-
TOTAL		38+16	2	

2. FACULTY ROOM REQUIREMENTS:

S. No.	Requirements	Quantity	Specification
I. HOD's Room / Cabin			
1	Room	1	10 X 15 Sq. Ft.
2	Phone with intercom	1	
3	Computer	1	P4, Dual Core, 80 GB Hard Disk or more
4	Printer	1	Laser Printer
5	Internet Connection		
5	Steel Cupboard	1	6 x 1.5 feet
6	Filing cabinet	1	6 x 1.5 feet
7	Executive Table with Chair	1	6 x 4 feet
8	Visitors Chair	3	'S' type Chair
II. Faculty Members Room			
1	Table with Writing Pad, small cupboard, drawer and locking facility	1 for each faculty	4 x 2 feet
2	Chair	1 for each faculty	S' type Chair
3	Steel Cupboard	1 for each faculty room	6 x 1.5 feet
4	Computer	1 for each faculty room	P4, Dual Core, 80 GB Hard Disk or more
5	Printer	1 for each faculty room	Laser Printer
6	Internet connection		
7	Phone with intercom	1	
12	Typist with Computer knowledge in MS Office	1	

3. TEACHING AIDS (Can be shared with other Departments)

S. No.	Name of the Aid	Required quantity	Specification
1	Public Address System in the Seminar Hall (Amplifier, Mic, Speaker, etc.)	1	
2	Television	1	
3	Video Recorder		
4	Computer with DVD player	1	
5	LCD Projector	1	
6	Over Head Projector	1	
7	Video Camera	-	
8.	Dogmatic Camera	-	
9.	Document Reader	-	
10.	CDs and DVDs of subject related	10	<i>Electronics subject</i>
11.	Audio Video Cassettes		
12.	Video conferencing facility	1	

4. CLASS ROOM REQUIREMENTS:

S. No.	Requirements	Nos. required	Specification as per the Norms
1	Class room Area (Separate for each year)	2	Atleast 10 Sq.ft. per class room. student
2	Black Board or Fibre Glass Board	1	12 x 4'
3	Fan fittings	6	1 for every 125 Sq.ft.
4	Tube Light fittings	8	1 for every 100 Sq.ft.
Furnitures in the Classroom			
5	a. Table & Chair for Faculty	1	One set per classroom
	b. Tables & Chairs for Students	30/40	One set per student
	c. Tables for equipments		
6	15 Amps. Plug Points	2	
7	OHP / LCD Projectors		
8	Screen Facility or Wall space for screening		

5. REQUIREMENTS FOR THE SEMINAR HALL:

(Can be shared with other Departments)

S. No.	Name of the Aid	Quantity	Specification
1	Area		
2	LCD Projector		
3	OHP		
4	Audio Video Equipments		
5	Television		
6	VCR		
7	Public Address System in the Seminar Hall (Amplifier, Mic, Speaker, etc.)		

6. LABORATORY REQUIREMENTS:

Norms: 50 Sq. Feet per student for Core courses

36 Sq. Feet per student for Allied courses.

S. No.	Requirements	Quantity required	Specification / Qualification
1	Lab Area	1500 Sq. ft. to 305 Sq. ft. 2000 Sq. ft. to 405 Sq. ft.	50 Sq.Ft. per Student / 36 Sq.Ft. per Student.
2	Lab Technician	1	B.Sc. in the relevant field.
3	Lab Attender	1	Pass in HSC
4	Stock Register	1 - Capital equipment 1 - Consumables	
5	Table size	6	3 x 1.5 for each student = 12 x 5
6	Chairs / Stools	30/40	8' x 4' = 90
7	Tables / Chairs for Lab Technician	1	

S.No.	Equipments	Quantity required	Specification
8	I year		Check List enclosed
	II year		Check List enclosed
	III year		-
S. No.	Requirements	Quantity required	Specification
9	Racks / Room space for storing consumables	1	10 x 10 ft.
10	Water supply		
11	Fire extinguisher	1	
12	Standby Power supply		
13	Wash room with sink		10 x 10 feet 2 tap connection
14	Preparation Room		12 x 12 feet
15	Instrument Room		20 x 12 feet
16	Store Room		20 x 20 feet
17	Culture Room		20 x 12 feet

7. COMPUTER LAB REQUIREMENTS: *for Embedded Systems, DSP, VLSI*

Computer Student Ratio:

for Embedded Systems, DSP, VLSI

- labs & Diploma courses.*
- Non Computer Courses - 1 : 2
 - Computer Related Courses - 1 : 1
 - Area required - 20 Sq. ft. per student

S. No.	Equipments Required	Quantity Required	Specification as per the Norms
1.	Computer Server	1	Xeon 3 GHz or more
2.	Terminals / Nodes	30/40	P4, Dual Core, 80 GB Hard Disk or more
3.	Tables & Chairs for Terminals	6	3 x 3 per terminal <i>12 x 5 ft.</i>
4.	Air Conditioner	2	1 / 1.5 tons for 200 Sq. Ft.

S. No.	Equipments Required	Quantity Required	Specification as per the Norms
	Softwares		
5.	a. System Softwares: Windows NT / Windows Vista, etc. Office 2007. b. Application Softwares:	1	b. C Compiler, CCS / MATLAB, MPL Software, RDBMS -NET softwares.
6.	UPS		10 KV with one hour backup
7.	Generator		20 KVA
8.	Printer	2	One for every 10 terminals
9.	Scanner	1	
10.	Internet connection (High speed)		512 KB / 1 MB
11.	OHP / LCD Projectors	1	
12.	DVD Writer	2	
13.	System Analyst / Administrator	1	MCA (I Class) / M.E./ M.Tech (in Circuit branches) / M.Sc.(IT) / M.Sc. Computer Science (I Class) with one year experience in System Design / Software Development
14.	Technical Staff	1	First Class in PG of the subject concerned.

8. LANGUAGE LAB:

S. No.	Description	Quantity	Specification
1	Instructor		
2	Computers with Multimedia kit		
3	Relevant Softwares		

9. LIBRARY RESOURCES REQUIRED:

(Please enclose the list of Books and Journals)

List enclosed

a. BOOKS / JOURNALS / MAGAZINES

First Year

S. No.	Subject	Text Books (if any)	Reference Books	No. of Journals / Magazines
1.	Language I and II	5 titles	50 titles	
2.	English I and II	5 titles	50 titles	
3.	Core Papers per Subject	5 titles	50 titles	
4.	Allied Papers	5 titles	50 titles	
5.	Foundation Course A	5 titles	50 titles	

Second Year

S. No.	Subject	Text Books (if any)	Reference Books	No. of Journals / Magazines
1.	Language III and IV	5 titles	50 titles	
2.	English III and IV	5 titles	50 titles	
3.	Core Papers	5 titles	50 titles	
4.	Allied Papers	5 titles	50 titles	
5.	Foundation Course B	5 titles	50 titles	
6.	Diploma Courses	5 titles	50 titles	

Third Year

S. No.	Subject	Text Books (if any)	Reference Books	No. of Journals / Magazines
1.	Core Papers	5 titles	50 titles	
2.	Diploma Course	5 titles	50 titles	

b. LIBRARY STAFF REQUIRED:

S. No.	Requirements	Required No.	Qualification
1.	Librarian / Assistant Librarian	1	Any Master Degree with M.Lib.
2.	Library Assistants	1	Any Bachelor Degree with B.Lib.
3.	Supportive Staff		

c. LIBRARY FURNITURE REQUIREMENTS:

S. No.	Requirements	Required quantity
1.	Racks to store books	
2.	Student study Tables	
3.	Student study Chairs	
4.	For Library / Staff	
5.	Tables and Chairs	

10. OTHER EQUIPMENTS REQUIRED:

S. No.	Requirements	Required quantity
1.	Photo copying facility	
2.	Computers with Multimedia Kit to play back DVDs.	
3.	Library Software	
4.	Scanner / Smart Card reader / Bar code reader	
5.	CDs / DVDs rack	
6.	CDs / DVDs facility	

11. HOSTEL FACILITIES:

S. No.	Facilities	Required facilities
1.	Hostel for Boys	
2.	Hostel for Girls	
3.	RCC roofed room	
4.	Cooking and Dining facilities	
5.	Recreational facility	
6.	Fittings	
7.	Furnitures	
8.	Utilities:	
	a. Toilets	
	b. Drinking water	
	c. Water for other use	
	d. Laundry facility	
9.	Medical facilities	

12. AVAILABILITY OF OTHER FACILITIES :

S. No.	Parameter	Requirements
1.	All Weather Approach Road (cemeted / kuchha)	
2.	Potable Water Supply System (own bore well / municipal corporation)	
3.	Drinking Water (One pipe / Drum / Water Purifier for every floor.)	
4.	Electrical Generator (5 kv, 5-10 kv, more than 20 kv)	
5.	Students' Canteen	
6.	Students' Common Room (Boys / Girls)	
7.	If no hostel facility is available, whether arrangements have been made for boarding and lodging of students near to the institution, if yes mode of travel from the place of stay of the institution	
8.	Toilet facilities: (Norms: One wash basin, sink, urinal and toilets for every 25 faculty and for every 25 students separately. For ladies and gents separate facilities must be available) 1. Sink 2. Water Basin 3. Urinal 4. Toilets	
9.	Parking facilities	
10.	Medical facilities (Full time / part time doctor / Dispensary)	
11.	Insurance facilities	
12.	Telephone booth	
13.	Gymnasium / Indoor / Outdoor Games facilities	
14.	Rainwater-harvesting facilities	
15.	Post office facility	
16.	Bank facility	
17.	Transport facility for day scholars	
18.	Reprographic facilities in the Institution	
19.	Barrier free environment for physically challenged	
20.	Others (Please specify)	

BHARATHIAR UNIVERSITY
Coimbatore 641 046

M.Sc. ELECTRONICS AND COMMUNICATION SYSTEMS

CHECK LIST

I. List of Equipments

STRENGTH 30 / 40

I YEAR

1. CRO 20/30 Mhz Dual Trace (1 / 4 Students)	8 / 10
2. Function Generator 3 Mhz (1 / 4 Students)	8 / 10
3. Pulse Generator 20 MHz	2
4. AM / FM Generator	1
5. Digital Multi Meter	5
6. Digital & Analog IC Tester	1
7. DC Power Supply (0-5) V (1 / 4 Students)	8 / 10
8. Dual Variable DC Power Supply (0 – 30) V (1 / 4 Students)	8 / 10
9. Digital Storage Oscilloscope / Mixed Storage Oscilloscope 60/100 Mhz	1
10. 8051 Embedded Trainer Kit (1 / 2 Students) with C Compiler	15 / 20
11. PIC 16f8xx Embedded Trainer Kit (1 / 4 Students)	8 / 10
12. MCOS RTOS add-on CPU board (1 / 4 Students)	8 / 10
13. Resistance Box, Capacitance box, Inductance box	5 each
14. Analog Multi meter	5
15. PIC 16F8XX Programmer	4
16. Universal Programmer	2
17. Traffic Light Controller Interface Card	2
18. ADC Interface Card	2
19. DAC Interface Card	2
20. Matrix Key board Interface Card	2
21. 7 Segment LED Interface Card	2
22. 8255 Interface Card	2
23. Stepper Motor Interface Card	2
24. RTC Interface Card	2

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25. LCD Interface Card	2
26. Flow measurement Module	1
27. Temperature measurement Module	1
28. Water Level Controller Module	1
29. LVDT	1
30. Load Cell	1
31. Angular measurement Module	1
32. Inductive & Capacitive pick up module	1
33. Fiber Optic Trainer	2
34. PAM, PWM & PCM Trainer Kit	2
35. ASK & FSK Trainer Kit	2
36. PSK, QPSK & DPSK Trainer Kit	2
37. Delta & Adaptive delta Trainer Kit	2
38. Antenna Trainer Kit	1
39. DTH, Color TV & DVD player	1
40. Micro wave Bench for Reflex Klystron, Horn Antenna & GUNN Diode	1
41. Individual Personal Computers For Embedded Systems, RTOS, DSP, VLSI LAB & Diploma Courses with minimum configuration of 1 GHz CPU, 512 MB RAM & UPS	30 / 40
42. DOT Matrix printer	1
43. Laser printer	1
44. Scanner	1
45. Web Camera	1
46. MIC, Speakers & Head phone for signal processing	2

II YEAR

- | | |
|--|--------|
| 1. DSP Trainer Kit TMS320C5X/TMS320C54XX/TMS320C67XX with CCS / MATLAB | 8 / 10 |
| 2. FPGA -- VLSI Trainer Kit with CCS / HDL Software | 8 / 10 |

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MSC – ELECTRONICS AND COMMUNICATION SYSTEMS

LIST OF BOOKS

EACH 5 COPIES

I YEAR

1. “Modern Control Engineering” Katsuhiko. Ogata. Pearson Education Asia, Fourth edition, 2002
2. “Automatic Control Systems” BENJAMIN C.KUO, PHI. 1995
3. “Automatic Control Systems” S.N.VERMA, Khanna Publisher. 1999
4. “Electronic Instrumentation “ H.S.KALSI, TMH - 2nd Edition, 2002.
5. “ A Course in Electrical and Electronic Measurements & Instrumentation “ A.K.SAWHNEY, Dhanpat Rai Publication
6. “MEMS & Micro Systems Design and Manufacture” – Tai-Ran-Hsu, TMH, 2002 Edition.
7. “Power Electronics, Circuits, devices and Applications”. MUHAMMED RASHID, Prentice Hall Edition, 2nd Edition, 1999.
8. “Power Electronics” by Bimbra, Anna University –Reference book.
9. “THE 8051 MICROCONTROLLER AND EMBEDDED SYSTEMS USING ASSEMBLY AND C ” by Muhammad Ali Mazidi, Janice Gillispie Mazidi and Rolin D. McKinlay, PHI, 2nd edition 2006
10. “Telecommunication Switching and Networks” by P. Gnanasivam, PHI, 2004
11. Robert J Schoenbeck “ELECTRONIC COMMUNICATIONS MODULATION AND TRANSMISSION”, PHI, 1999
12. Achyat.S.Godbole and Atul Kahate, “Web Technologies”, Tata McGraw Hill Pub. Co, Delhi, 2006.
13. Ellote Rusty Harold. “Java Network Programming”, O’Reilly Publications, 1997.
14. Jason Hunter, William Crawford, “Java Servlet Programming”, O’Reilly Publications, 1998.
15. Alen V Oppenheim Alen S. Wilsky and Hamid Nawab S “Signals and Systems”. second Edition, PHI, New Delhi, 1997
16. Michael J Roberts, “ Signals and Systems Analysis using transform methods and MATLAB”. Tata McGraw- Hill, 2003
17. Haykin.S and Barry Van Veen, “Signals and Systems”, John willy and Sons Inc., 2002
18. Samir S Soliman and Srinath MD, “ Continuous and discrete signals and systems” Second Edition. PHI, 2003
19. Lathi B.P., “Linear Systems and Signals”. Oxford University Press Inc., 2003
20. “WIRELESS COMMUNICATIONS AND NETWORKS” by WILLIAM STALLINGS – 2002 – PEARSON EDUCATION ASIA
21. Rajkamal, Embedded Systems Architecture. Programming and Design, TATA McGraw-Hill, First reprint, 2003.

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22. PIC 16F87X data book, Microchip Technology Inc., 2001
23. "DATA COMMUNICATION AND NETWORKING" BEHROUS. A.FOROUZAN, 2ND EDITION, TATA MCGRAW HILL, 2000.
24. "ISDN -- Concepts, Facilities and Services" GARY C. KESSLAR and PETER SOUTHWICK, MCGRAW HILL, 3RD EDITION, 1997.
25. "Data and computer communication" by William Stallings, 6th edition, Pearson education, 2000
26. "Computer Networks" ANDREW S.TANENBAUM, 3rd edition, PRENTICE HALL OF INDIA, 1996.
27. Abraham Silberschatz, Henry F.Korth,S.Sudharson, "Database Concepts", Tata McGraw Hill International Editions-1997.
28. Alexis Leon and Mathews Leon,"Database Management Systems"Vikas pub
29. Elmasri Navathw,"Fundamentals of Database Systems". Pearson Education pub. 3rd Edition 2001

II YEAR

- ~~1. Abraham Silberschatz, Henry F.Korth,S.Sudharson, "Database Concepts", Tata McGraw Hill International Editions-1997.~~
- ~~2. Alexis Leon and Mathews Leon,"Database Management Systems"Vikas pub~~
- ~~3. Elmasri Navathw,"Fundamentals of Database Systems". Pearson Education pub. 3rd Edition 2001~~
4. Rafael C. Gonzalez, Paul Wintz, "Digital Image Processing", Addison-Westley Publishing Company, 1987
5. Rafael C. Gonzalez, Richard E Woods "Digital Image Processing", Pearson, 2001
6. Neil H.E. Westw kamaran eshraghin, " PRINCIPLES OF CMOS VLSI DESIGN"
7. J.Bhasker,"VHDL PRIMER", Low price Edition. 2001 PHI 3.Charles H.Roth, Jr."DIGITAL SYSTEM DESIGN USING VHDL", Brooks/Cole Thomson Learning PWS Publishing.ISBN-981-240-052-4
8. Mobile Computing -- Asoke K Talukder and Roopa R Yavagal, Tata McGra-Hill Publishing Company Ltd, New Delhi-2005
9. Michael Halvorson, "Microsoft Visual Basic.NET step by step", PHI Ltd, 2003.
10. Dave Mercer, "ASP.Net: A Beginner's Guide", Tata McGraw Hill Publishing Company Ltd, Edition 2002.
11. A J Williams, Kim Barber, "ASP Solutions", Cream Tech Press. 2000.

Journals

Electronics for you , circuit maker.
 Electr Electronics , chip . P.13/14
 Computer today

ELIGIBILITY CONDITIONS FOR STUDENTS

THE ELIGIBILITY CONDITIONS FOR ADMISSION TO M.Sc APPLIED ELECTRONICS / M.Sc., ELECTRONICS AND COMMUNICATION SYSTEMS SHALL BE AS FOLLOWS:

1. A PASS IN B.Sc ELECTRONICS INDUSTRIAL ELECTRONICS/
ELECTRONIC SCIENCE / ELECTRONICS AND COMMUNICATION
SYSTEMS/ PHYSICS / APPLIED SCIENCE / COMPUTER SCIENCE /
BCA/ B.Sc HONS/ B.Sc ELECTRICAL EQUIPMENT MAINTENANCE,
INSTRUMENTATION / B.E.S.
2. A PASS IN TRIPLE MAJOR (MATHS, PHYSICS & ELECTRONICS) OR (MATHS,
ELECTRONICS & COMPUTER SCIENCE).
3. A PASS IN B.Sc ELECTRONICS WITH COMPUTER HARDWARE, TECHNOLOGY OF
APPLIED SCIENCE, B.SC COMPUTER TECHNOLOGY, B.SC INFORMATION TECHNOLOGY,
B.E WITH ECE, EEE, EIE, CSE, IT AND A.M.I.E IN RESPECTIVE BRANCHES IS ALSO
ELIGIBLE FOR JOINING THE ABOVE SAID COURSES.

ALL THE ABOVE CHANGES SHALL TAKE EFFECT FOR THE STUDENTS ADMITTED DURING THE
ACADEMIC YEAR 2007-2008 AND ONWARDS.

ELIGIBILITY CONDITIONS FOR APPOINTMENT OF LECTURERS

THE ELIGIBILITY CONDITIONS FOR APPOINTMENT OF LECTURER IN ELECTRONICS BE NET /
SLET WITH

- M.Sc APPLIED ELECTRONICS
- M.Sc., ELECTRONICS AND COMMUNICATION SYSTEMS
- M.Sc., ADVANCED COMMUNICATION SYSTEMS
(WITH A SUBJECT OF STUDY IN ELECTRONICS AT THE UG LEVEL)
- M.Sc., ELECTRONIC SCIENCE
- M.Sc., INDUSTRIAL ELECTRONICS

ALSO M.PHIL IN ELECTRONICS BEFORE DECEMBER 1993

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