

Dr.J.J.Magdum Trust's
Dr.J.J.Magdum College of Engineering, Jaysingpur

Department of Electronics & Telecommunication Engineering



Student Information Manual (SIM)

Academic Year 2021-22 (T.Y.B.Tech.Sem.-II)

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1. Institute Information

Dr J. J. Magdum College of Engineering was established by Dr J. J. Magdum Trust, Jaysingpur in the year 1992 with an objective to promote the cause of higher education. The institute is approved by All India Council of Technical Education (AICTE), New Delhi and Government of Maharashtra, affiliated to Shivaji University, Kolhapur. The college offers B.Tech program in Mechanical, Civil, Computer Science, Electronics & Tele-Communication, Information Technology and M. Tech program in Civil Engineering-Construction Management.

Our Management extends its fullest support in building the institution as a center of excellence with technically superior, ethically strong and competent engineers. The serene campus vibrant with aesthetic bliss in an exhilarating convenient location, well connected by road, rail and air is easily accessible. The eco-friendly ambience creates and bestows a healthy learning atmosphere.

The institution is meticulous with modern laboratory, workshop facilities and state of art computer center providing an excellent infrastructure.

The institution has spacious library with vast collection of Books, Newspapers, National & International Journals, Magazines, and Reference books, Encyclopedia, World of science, ASM hand books and course materials. E-learning through NPTEL Video course by NIT and IIT Professors are available.

The Teaching and Non-Teaching Staff of the institute is a blend of senior experienced and young dynamic faculty members devoted to the noble cause of education. Qualified, experienced, versatile and efficient faculty members mould the students diligently in ethical, moral and academic aspects.

We imparts technology based experiential learning through industry visits, live projects, expert talks, MOOC's, workshops, case studies, upscale labs, and virtual classroom sessions.

Industry-Institute interaction and real-time projects nurture and craft the budding engineers to bloom and flourish in the field with the prowess guidance in the campus. The college equips the students with the latest skills which make them employable and future ready.

Due to able and proper guidance and motivation, many of our students have topped at University. Our training and placement works meticulously to improve and develop life skills to the students and tries hard to seek good jobs for our students. In addition to the academics, the students are engaged in sports and cultural activities which help them to develop versatile personality. For each department having its own student organization committees. Under these students organizes national level event every year in technical as well as non technical field. Various Club activities are conducted to encourage, motivate and inspire students from diverse culture to harness the talent through their perseverance.

The institute is having spacious ground and the modern facilities for both indoor and outdoor games and ultra-modern Gymnasium. Due to proper guidance and motivation, many of our students have grabbed prizes at University level and different sport events.

We are committed to stakeholders for best results and produced more than 10000+ engineers getting campus placements.

2. VISION OF INSTITUTE

To be a leading academic organization, creating skilled and Ethical Human Resource by leveraging Technical Education for Sustainable Development of Society.

MISSION OF INSTITUTE

- To promote learnability of all among stakeholders.
- To empower rural youth to be competent in technical education and imbibe ethical values.
- To contribute local social and economic context, leading to satisfied stakeholders.

QUALITY POLICY

We strive for continual improvement in our performance through methodical academic monitoring, student participation and use of innovative teaching-learning process.

3. DEPARTMENT VISION

To contribute the sustainable development by providing skilled technical manpower with ethical and moral values.

DEPARTMENT MISSION

To have holistic development of all the courses by following participating management methodology, healthy HR practices, strong industry participation and continuous development in physical resources.

Program Educational Objectives (PEO's)

1. To train students with good of knowledge in core areas of Information Technology and related engineering so as to analyze, design, and synthesize data and technical concepts.
2. To inculcate in students to maintain high professionalism and ethical standards, effective oral and written communication skills, to work as part of teams.
3. To provide our graduates with learning environment awareness of the life-long learning needed for a successful professional career and to introduce them to written ethical codes and guidelines, perform excellence, leadership and demonstrate good citizenship.
4. To provide students with academic environment that is aware of excellence, leadership, entrepreneurship, ethical responsibility and ability to work in multidisciplinary teams.
5. To train students with excellent scientific and engineering knowledge so as to understand, analyze, design and create products and solutions for Software engineering problems.

Program Outcomes (POs)

At the end of successful completion of program, the graduates will be able to,

1. **Engineering Knowledge:** Apply knowledge of mathematics, science, engineering Fundamentals and an engineering specialization to the solution of complex engineering pr
2. **Problem Analysis:** Identify, formulate, research literature and analyse complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences and engineering sciences.
3. **Design/Development of Solutions:** Design solutions for complex engineering problems and design system components or processes that meet specified needs with appropriate consideration for public health and safety, cultural, societal and environmental

4. **Conduct investigations** of complex problems using research-based knowledge and research methods including design of experiments, analysis and interpretation of data and synthesis of information to provide valid
5. **Modern Tool Usage:** Create, select and apply appropriate techniques, resources and modern engineering and IT tools including prediction and modelling to complex engineering activities with an understanding of the limitations.
6. **The Engineer and Society:** Apply reasoning informed by contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to professional engineering
7. **Environment and Sustainability:** Understand and the impact of professional engineering solutions in societal and environmental contexts and demonstrates knowledge of and need for sustainable development.
8. **Ethics:** Apply ethical principles and commit to professional ethics and responsibilities and norms of engineering
9. **Individual and Teamwork:** Function effectively as in visual, and as a member or leader in diverse teams and in multidisciplinary s
10. **Communication:** Communicate effectively on complex engineering activities with the engineering community and with society at large, such as being able to comprehend and write effective reports and design documentation, make effective presentations and give and receive clear
11. **Project Management and Finance:** Demonstrate knowledge and understanding of engineering and management principles and apply these too noels on work, as a member and leader instead, to manage projects and in multidisciplinary environment.
12. **Lifelong Learning:** Recognize the need for and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological

Program Specific Outcomes (PSO)

- To design and implement solutions for network security, database security and software quality as per industry standards.
- To design and implement various services for operating system, compiler libraries and programming applications.
- To enhance the management skills and organizational behavior in IT industry

4. Students role and Responsibilities Code of Conduct

- Every student must carry his/her identity card while being present on the College Premises.
- Use of Cell phones is strictly prohibited during class/Labs hour.
- Without the permission of the Principal, Students are not allowed to circulate any printed materials within the college campus.
- Every student is expected to maintain the general cleanliness within the classrooms, laboratories and the campus in general.
- Students should handle the college properties with care. Damage to the furniture or any other materials may lead to penalty or suspension from the college.
- Intoxication or possession of narcotics and other dangerous material is strictly prohibited.
- Playing cards, spitting and loitering are strictly prohibited inside the college campus and shall invite severe punishment/disciplinary action
- Attempted or actual theft of and/or damage to property of the College, or property of a member of the College community, or other personal or public property, on or off campus will be considered as a punishable act.
- Every student will remain answerable to the college authority for his/her activity and conduct on the College Premises.
- Any act which obstructs teaching, research, administrative activity and other proceedings of the college is strictly prohibited.
- Indulging ragging, anti-institutional, anti-national, antisocial, communal, immoral or political expressions and activities within the Campus and hostel are strongly prohibited as well as punishable.
- Students are required to check the Notice Board and also website of the college for important announcements.

5. Computer Lab Instructions

- Students must present a valid ID card before entering the computer lab.
- Remove your shoes/chapels/sandals outside the lab.
- Playing of games on computer in the lab is strictly prohibited.
- Before leaving the lab, students must close all programs positively and keep the desktop blank.
- Students are strictly prohibited from modifying or deleting any important files and install any software or settings in the computer without permission
- Based on the prime priority, users may be requested by the lab in-charge, to leave the workstation any time and the compliance is a must.
- Eating and/or drinking inside the computer lab is strictly prohibited.
- Internet facility is only for educational/ study purpose.
- Silence must be maintained in the lab at all times.
- The lab must be kept clean and tidy at all times.
- If any problem arises, please bring the same to the notice of lab in-charge.
- No bags/ hand bags/ rain coats/ casual wears will be allowed inside the computer lab, however note book may be allowed.
- Lab timing will be as per the academic time table of different classes.
- Every user must make an entry in the Computer Lab Register properly.
- Each student or visitor must take mobile phones in “Switched Off” mode while entering and or working in Computer Lab.
- Conversation, discussion, loud talking & sleeping are strictly prohibited.
- Users must turn-off the computer before leaving the computer lab.
- Maintain silence in lab.
- Computer Lab Assistants are available to assist with BASIC computer and software problems.
- Food and drink are not permitted in the computer lab.
- The use of cell phones is prohibited in the computer lab.
- Please take your calls outside. We also ask that you put your cell phone on vibrate mode.
- Unauthorized copying and/or installing of unauthorized software is not permitted.
- Tampering with the hardware or software settings will not be tolerated.
- Students found Internet surfing or chatting for personal reasons may be asked to leave. Preference is given to students doing course work over those engaged in personal computer use.
- Personal files are not to be stored on the local drive C. Students are responsible for providing their own means of digital storage. All lab computers are set up to remove any data stored or any programs installed by users.

Classroom Instructions

- Students should know and obey rules and regulations of department as well as college.
- Students strive to meet Academic Expectations.
- Students are expected to take all tests at the scheduled times seriously.
- Maintain discipline in the class.
- A student should maintain at least 75% attendance in the Lectures of every subject and 100% overall performance. Otherwise, he or she will be debarred from the University Examination.
- Latecomers will not be entertained to enter into the classroom.
- Participate in the activities organized in the Department as well as in the College.
- While discussion, students should conduct and express themselves in a way that is respectful of all persons.
- Develop positive attitudes
- Be cooperative and considerate.
- Welcome challenges.
- Be helpful to others
- Be kind, polite, and courteous to others.
- Do the assigned work on time.
- Be prepared for classes with all necessary supplies.
- Be Respectful and Punctual.
- Be in the best of behaviors.

ACADEMIC CALENDAR FOR YEAR 2021-22 SEMESTER II

March 2022

Sun	Mon	Tue	Wed	Thu	Fri	Sat
		1 <i>Mahashivratri</i>	2	3 <i>Commencement of sem-II for TY and Btech</i>	4	5
6	7 <i>CIE-2 for SY</i>	8 <i>Women's day</i> <i>CIE-2 for SY</i>	9 <i>CIE-2 for SY</i>	10 <i>CIE-2 for SY</i>	11 <i>CIE-2 for SY</i>	12

13	14	15 Proctor meet	16	17	18 <i>Dhulivandan</i>	19 EDC Expert lecture
20	21	22	23	24	25 Commencemen t of Value added course	26
27	28 Commenceme nt of sem-II for SY	29	30 CMC Meeting	31 Proctor meet		

April 2022

Sun	Mon	Tue	Wed	Thu	Fri	Sat
					1	2 <i>Gudhipadwa</i>
3	4	5	6	7	8 Expert lecture	9
10	11	12	13 Proctor meet	14 <i>Mahaveerja yanti Dr.Babasah ebAmbedka rjayanti</i>	15 <i>Good friday</i>	16 Industrial visit for TY
17	18 Student association Activitiy	19	20	21	22 Expert lecture	23
24	25 Alumni Interaction	26	27	28	29 CMC Meeting	30 Proctor meet

May 22

Sun	Mon	Tue	Wed	Thu	Fri	Sat
1	2	3 <i>Ramajan Eid</i>	4	5	6	7 Industrial visit for SY
8	9	10 Student association Activitiy	11	15	13 Industrial visit for Btech	14
15	16 <i>BudhaPornima</i>	17 Proctor meet	18	19	20	21 Advisory board meeting
22	23	24	25 Expert lecture	26	27 Students training	28
29	30 CMC Meeting	31 Proctor meet				

June 22

<i>Sun</i>	<i>Mon</i>	<i>Tue</i>	<i>Wed</i>	<i>Thu</i>	<i>Fri</i>	<i>Sat</i>
			1	2	3	4 <i>Parent meet</i>
5	6	7	8	9	10	11
12	13	14	15 <i>Proctor meet</i>	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30		

7. Departmental TY B.Tech.Time-Table



Dr. J. J. Magdum Trust's (No. E/902)

Dr. J. J. Magdum College of Engineering, Jaysingpur

Department of Electronics & Telecommunication Engineering

□ TIME TABLE □

Academic Year: 2021-22

Department: ETC AND ETRX

Revision:

Class Coordinator: Prof.V.T.Kamble

Semester: II

Class: TY

Class Room No.: 102

W.e.f.: 08/03/2022

TIME	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
09.30 am – 10.30 am	MM(SBP)	MM(SBP)	E1- PE(MUP) E2- AWP(MMK)	MM(SBP)	PE(MUP)	E1-MINI PROJECT
10.30 am – 11.30 am	OE-II(VTK)	AWP(MMK)/ ESD(AAS)		DSP(NSN)	MM(SBP)	
11.30 am – 11.40 am						
11.40 am – 12.40 pm	E1- DSP(NSN) E2- MM(CSP)	PE(MUP)	PE(MUP)	AWP(MMK) / ESD(AAS)	DSP(NSN)	E2-MINI PROJECT
12.40 pm – 01.40 pm		DSP(NSN)	AWP(MMK)/ ESD(AAS)	OE-II(VTK)	E1 E2-MINI PROJECT	
01.40 pm – 02.30 pm						
02.30 pm – 03.30 pm	AWP(MMK)/ ESD(AAS)	E1-AWP(MMK) E2-DSP(NSN)	DSP(NSN)	E1- MM(VTK) E2- PE(MUP)	OE-II(VTK)	
03.30 pm – 04.30 pm	PE(MUP)		E1 E2-MINI PROJECT		OE-II TUT	

Name of Subject	Batches	Name of Faculty Member	NAME OF LAB
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Microprocessor & Microcontroller	-	Dr.S.B.Patil	-
Microprocessor & Microcontroller	E1	Prof.V.T.Kamble	MC/EBD -ETC
Microprocessor & Microcontroller	E2	Prof.C.S.Patil	MC/EBD -ETC
Antena and wave Propagation	E1,E2	Prof.M.M.Kolap	Adavanced comm.-ETC
Electronics System Design	E2	Prof.A.A.Sutar	Design lab
Power Electronics	E1,E2	Prof.M.U.Phutane	IE/POWER-ETRX
MINI PROJECT	E1	Prof.M.U.Phutane	TAM/Analog comm-ETC
MINI PROJECT	E2	Prof.N.S.Nadaf	TAM/Analog comm-ETC
OPEN ELECTIVE-OE-II(TUT)	E1,E2	Prof.V.T.Kamble	-
Digital Signal Processing	E1,E2	Prof.N.S.Nadaf	Programing network-ETC

8.T.Y.B.Tech Structure of Syllabus

Third Year ELECTRONICS & TELECOMMUNICATION ENGINEERING – CBCS PATTERN

Sr. No		SEMESTER – V																			
		TEACHING SETCME									EXAMINATION SETCME										
		THEORY			TUTORIAL			PRACTICAL			THEORY				PRACTICAL			TERM			
		Credits	No. of Lecture	Hours	Credits	No. of Lecture	Hours	Credits	No. of Lecture	Hours	Hours	Mode	Marks	Total Marks	Min	Hours	Max	Min	Hours	Max	Min
1	PCC-ETC501	4	4	4	1	1	1	-	-	-	CIE 30 ESE 70	100	12 28	-	-	-	2	25	10		
2	PCC-ETC502	3	3	3	1	1	1	-	-	-	CIE 30 ESE 70	100	12 28	-	-	-	2	25	10		
3	PCC-ETC503	4	4	4	-	-	-	1	2	2	CIE 30 ESE 70	100	12 28	50	20	2	25	10			
4	PCC-ETC504	4	4	4	-	-	-	1	2	2	CIE 30 ESE 70	100	12 28	50	20	2	25	10			
5	OEC-ETC501	3	3	3	1	1	1	-	-	-	CIE 30 ESE 70	100	12 28	-	-	-	2	25	10		
6	PCC-ETC505	1	1	1	-	-	-	1	2	2				50	20	2	25	10			
TOTAL		19	19	19	3	3	3	3	6	6		500			150			150			
Sr. No		SEMESTER – VI																			
		TEACHING SETCME									EXAMINATION SETCME										
		THEORY			TUTORIAL			PRACTICAL			THEORY				PRACTICAL			TERM			
		Credits	No. of Lecture	Hours	Credits	No. of Lecture	Hours	Credits	No. of Lecture	Hours	Hours	Mode	Marks	Total Marks	Min	Hours	Max	Min	Hours	Max	Min
1	PCC-ETC601	4	4	4	-	-	-	1	2	2	CIE 30 ESE 70	100	12 28	-	-	-	2	25	10		
2	PCC-ETC602	4	4	4	-	-	-	1	2	2	CIE 30 ESE 70	100	12 28	50	20	2	25	10			
3	PCC-ETC603	4	4	4	-	-	-	1	2	2	CIE 30 ESE 70	100	12 28	-	-	-	2	25	10		
4	PCC-ETC604	4	4	4	-	-	-	1	2	2	CIE 30 ESE 70	100	12 28	50	20	2	25	10			
5	OEC-ETC601	3	3	3	1	1	1	-	-	-	CIE 30 ESE 70	100	12 28	-	-	-	2	25	10		
6	PCC-ETC605	-	-	-	-	-	-	1	2	2				50	20	2	25	10			
TOTAL		19	19	19	1	1	1	5	10	10		500			150			150			
TOTAL		38	38	38	4	4	4	8	16	16		1000			300			300			

CIE- Continuous Internal Evaluation
ESE – End Semester Examination

Note:

1. PCC-ETC: Professional Core course –Electronics & Telecommunication Engineering are compulsory.
2. OCE-ETC: Open Elective Course – Electronics & Telecommunication Engineering:
3. Winter/Summer Internship/Industrial Training of minimum 15 day's compulsory and evaluation of the same will be carried out in Final year Project Phase internal assessment by respective Guide

<ul style="list-style-type: none"> • Candidate contact hours per week : 30 Hours (Minimum) • Theory and Practical Lectures : 60 Minutes • There shall be separate passing for theory and practical (term work) courses. 	<ul style="list-style-type: none"> • Total Marks for T.Y. Sem V& VI: 1600 • Total Credits for T.Y. Sem V & VI : 50
<p>(A) Non-Credit Self Study Course : Compulsory Civic Courses (CCC) For Sem I: CCC – I : Democracy, Elections and Good Governance</p> <p>(B) Non-Credit Self Study Course : Skill Development Courses (SDC) For Sem II: SDC – I : Any one from following (i) to (v) i) Business Communication & Presentation ii) Event management iii) Personality Development, iv) Yoga & Physical Management v) Resume, Report & proposal writing</p>	

SUBJECT NAME: Digital Signal Processing

TEACHING PLAN

Lecture No	Content
Chapter 1 - Discrete Fourier Transform & FFT Algorithms	
1	Computational Complexity of DFT
2	Fast Fourier transform algorithms – Radix -2 DIT for DFT and IDFT computations
3	Fast Fourier transform algorithms – Radix -2 DIT for DFT and IDFT computations
4	Fast Fourier transform algorithms – Radix -2 DIF for DFT and IDFT computations
5	Fast Fourier transform algorithms – Radix -2 DIF for DFT and IDFT computations
6	Circular convolution
7	Fast Convolution : Overlap-Add
8	Fast Convolution : Overlap-Save
9	Numerical
10	Numerical
Chapter: - 2 FIR Filter Design	
11	Characteristic of FIR filter
12	Properties of FIR filter
13	Type of FIR filter Fourier series method
14	Frequency sampling
15	Fourier series
16	Windowing method
17	Numerical
18	Numerical
Chapter: - 3 IIR Filter Design	
19	Analog filters approximations
20	Mapping of S-plane to Z-plane
21	Design of IIR using Impulse Invariance Method
22	Bilinear Transformation method
23	Frequency Transformation
24	Filter design methods: Butterworth filters
25	Chebyshev filters and its conversion to digital filter
26	Numerical
Chapter: - 4 Realization of Digital filters	
27	FIR and IIR filter realization in cascade form and parallel form
28	Effect of finite word length on realization
29	Introduction to DSP processors: TMS320C67XX
30	Architecture, Functional Units
31	Pipelining

32	Registers
33	Addressing modes
34	Numerical
Chapter: - 5 Multirate digital signal processing	
35	Need of Multirate digital signal processing
36	Decimation by factor D, two stage decimator
37	Interpolation by factor I , two stage Interpolator
38	Sampling rate conversion by rational factor I/D, applications of multirate signal processing
Chapter: - 6 Wavelet Transform	
39	Fourier Transform and its limitations
40	Short time Fourier transform, continuous wavelet Transform
41	Discretization of the continuous wavelet Transform
42	Multi-resolution Approximations ; mother wavelet and Scaling functions
43	Haar wavelets and Daubechies wavelets
44	Applications of wavelet transform

TEXT BOOKS:

1	John G Prokis, Manolakis, “Digital Signal Processing Principles, Algorithms and Application”, Pearson Education publication
2	Salivahanam, A Vallavaraj, C. Guanapriya, “Digital Signal Processing”, Tata McGraw Hill Publication.
3	A. Anand Kumar, “ Digital Signal Processing”, PHI Publications

REFERENCE BOOKS:

1	P. Ramesh Babu, “Digital Signal Processing” , SciTech Publication
2	SanjeetMitra, “ Digital Signal Processing”, Tata McGraw Hill Publication.
3	Alan Oppenheim, Schafer, “Digital Signal Processing ”, PHI Publication

LIST OF EXPERIMENTS: (ANY 8 EXPERIMENTS)

1	Generation of DT signals a) Study of Unit impulse sequence b) Study of Unit step sequence c) Study of Exponential sequence
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	d) Study of Sinusoidal sequence
2	Convolution and correlation of signals
3	Computation of DFT & IDFT using standard formula
4	Computation of DFT using FFT algorithms
5	Computation of circular convolution
6	Design of FIR LPF, HPF, BPF, BRF filter using Kaiser window
7	Design of FIR filter using frequency sampling method
8	Design of IIR LPF, HPF, BPF, BRF filter using impulse invariance method
9	Design of IIR LPF, HPF, BPF, BRF filter using bilinear transformation method
10	Computation of DCT
11	Computation of DWT
12	To implement FIR & IIR filter using TMS320C67XX processor

Assignments No.1

1. Find DFT of given sequence for $N=4$ using conventional method.

$$x(n) = \{1, 2, 3\}$$

2. Find Linear convolution using Overlap save method.

$$x(n) = \{1, 2, 3, 4, 5, 6, 7, 8, 9, 1, 1\}$$

3. Find IDFT using DIT FFT algorithm.

$$X(K) = \{11, -j, -1-2j, j, -1, -j, -1+2j, j\}$$

Assignments No.2

1. Explain in detail Radix 2, DIF FFT Algorithm
2. Compare Overlap Save method & Overlap add method of sectioned Convolution
3. Compare various types of window functions used in design of FIR Filters
4. Explain in detail step by design if FIR file using Kaiser window
5. Explain characteristic of FIR filter

Assignments No.3

1. Explain in detail Bilinear Transformation method
2. Write the procedure for the design of low pass digital Butterworth IIR Filter
3. Explain in detail FIR & IIR Filter Realization Schemes
4. Write a note on architecture of TMS320C67XX

Assignments No.4

1. Explain need of Multirate digital signal processing
2. Explain decimation & Interpolation process with example.
3. Explain in detail two stage Interpolator
4. Explain various applications of wavelet transform
5. Explain properties of wavelet transform

Sub:- Power Electronics

Lecture No.	Content Of Lecture
UNIT 1:- Semiconductor Power Devices	
1.	Construction and V-I Characteristics
2.	Dynamic Characteristics during turn on, turn off
3.	SCR Turn off methods: Class A, Class B, Class C,
4.	Class D, Class E, & Class F
5.	dv/dt & di/dt protection circuits.
6.	Construction, working, & V-I Characteristics of Diac
7.	Triac, GTO
8.	Power MOSFET and IGBT
UNIT 2:- Firing Circuits of SCR	
9.	Turn On methods of SCR
10.	UJT triggering circuits with design
11.	PUT, Diac and Triac triggering circuits
12.	Cosine based firing for bridge controlled converter
13.	Need of Isolation. Pulse transformer
14.	Opto-coupler based isolation techniques.
UNIT 3:- Controlled Rectifiers	
15.	Single Phase Half controlled and converters with R & RL Load
16.	Full wave controlled converters with R & RL Load
17.	Half wave controlled converters with R & RL Load
18.	Full controlled converters with R & RL Load
19.	effect of Freewheeling Diode.
20.	Calculations of performance parameters
21.	Numerical
UNIT 4:- Inverters using MOSFET/IGBT's	
22.	Principle and operation of Single phase half bridge inverters
23.	Principle and operation of full bridge inverters
24.	Harmonic reduction techniques of inverter: Quasi square Wave
25.	Multiple PWM
26.	sine wave PWM
UNIT 5:- Choppers and its Applications	

27.	Basic principles of choppers, time ratio control
28.	current limit control techniques
29.	voltage commutated chopper circuit
30.	Jones chopper, Morgan's chopper
31.	step-up chopper
32.	AC chopper.
33.	Speed control of DC series motors using chopper
34.	speed control of DC shunt motor using phase controlled rectifiers.
UNIT 6:- Industrial Applications	
35.	Static circuit breakers, over voltage protectors
36.	zero voltage switch, integral cycle triggering
37.	time delay method, soft start method.
38.	Non-drive applications using induction heating and Dielectric heating
39.	Switched mode power supply (SMPS)
40.	Uninterrupted power supply (UPS) Battery charger
41.	light dimmer using triac and diac,
42.	A.C. voltage stabilizer –Relay type, Servo type

TEXT BOOKS

1.	P. S. Bhimbra , “Power Electronics”, Khanna Publication.
2.	P. C. Sen, “Power Electronics”, Tata McGraw Hill Publication.
3.	M. D. Singh & Khan Chandani, “Power Electronics”, Tata McGraw Hill Publication

REFERENCE BOOKS

1.	Ned Mohan: Power Electronics; Wiley pub.
2.	M. H. Rashid, “Power Electronics”, Pearson Education.
3.	V. R. Moorthi, “Power Electronics: Devices, Circuits and Industrial Applications”, Oxford University Press

LIST OF EXPERIMENTS: (Minimum 08 experiment)

Sr. No.	Title of Experiment
1	Study of V-I Characteristics of SCR TRIAC, DIAC.
2	Study of V-I Characteristics of MOSFET/IGBT/GTO

3	Study of Firing circuits using UJT as relaxation oscillator/RAMP- Pedestal Circuit
4	Study of Firing circuits using TRIAC, DIAC
5	Study of Half controlled Bridge rectifier
6	Study of Fully controlled Bridge rectifier
7	Study of AC voltage Regulator
8	Study of Jones chopper and Morgan's chopper
9	Study of Single phase Inverter
10	Study of SMPS/UPS
11	Study of Light dimmer using Diac/Triac
12	Study of A.C. Voltage stabilizer

Subject: Microprocessor and Microcontroller

Chapter No.	Lect No.	Details of syllabus planned
Ch.1	Introduction to 8085 Microprocessor	
	01	Functional Pin out,
	02	CPU Architecture
	03	Register Organization
	04	Reset Circuit, Clock Circuit,
	05	De- multiplexing of Address/Data bus,
	06	Generation of control signals,
	07	Addressing Modes,
	08	Instruction set and programming, Timing diagrams.
	09	Instruction set and programming, Timing diagrams.
Ch.2	8085 Stack, Interrupts and Interfacing	
	10	Stack & Subroutines
	11	Interrupts structure of 8085
	12	Memory mapped I/O

	13	I/O mapped I/O,
	14	Memory interfacing with 8085,
	15	Study of 8255 PPI : Block diagram, I/O
	16	BSR Mode and Interfacing to 8085
Ch.3	Introduction to MCS51	
	16	Introduction to MCS51 Family
	17	Functional Pin out diagram, ,
	18	Architecture
	19	Register Organization,
	20	Memory Organization, Reset Circuit, Machine Cycle, Oscillator Circuit,
	21	Addressing Modes,
	22	Instruction Set,
	23	Assembly Language Programming
	24	Assembly Language Programming
Ch.4	Hardware overview	
	25	Input / Output Ports,
	26	Interrupts
	27	Timers
	28	Counters,
	29	Serial Communication (Mode-1),
	30	Structure, Related S.F.R and Programming
	31	Structure, Related S.F.R and Programming
Ch.5	Interfacing & Assembly Language Programming with 8051 Microcontroller	
	32	Keyboard
	33	Seven Segment display

	34	Seven Segment display
	35	ADC
	36	DAC,
	37	stepper motor .
Ch.6	Embedded 'C' Programming for 8051	
	38	Data types, Programs on Arithmetic & Logical operations,
	39	Input / Output Ports, Timer/Counter,
	40	Serial communication,
	41	Serial communication,,
	42	ADC
	43	LCD
	44	LCD

Experiment List

1. Arithmetic & Logical operations using 8085
2. Data transfer & Exchange using 8085
3. Data conversions using 8085
4. Interrupt"s Programming for 8085
5. Arithmetic & Logical operations using 8051
6. Ascending/ Descending order sorting using 8051
7. Interface ADC using 8051
8. Interface DAC using 8051
9. Interface Stepper motor using 8051
10. Use of Timer & counter operation in 8051 using Embedded C
11. Serial Communication with 8051 using Embedded C
Interface LCD to 8051 using Embedded C

Recommended Books:

TEXT BOOKS:

1. Ramesh Gaonkar “ Microprocessor Architecture Programming and Applications with the 8085”, , 5 th Edition , Penram International Publication
2. Muhammad Ali Mazidi, Janice Gillispie, Rolin D. McKinlay “The 8051 Microcontroller & Embedded Systems Using Assemble and C”, 2 nd Edition, Pearson Education,
3. Kenneth Ayala, “The 8051 Microcontroller” , 3 rd Edition , Cengage Learning India Private Limited

REFERENCE BOOKS:

1. Douglas V Hall, “Microprocessors and Digital Systems”
2. I.Scott Mackenzie, Raphael C.W.Phan, “The 8051 Microcontroller” , 4 th Edition, Pearson
3. Ajay V. Deshmukh, “Microcontrollers [Theory and Applications]”, Tata McGraw Hill Publication.

Lecture plan

Subject :- Antenna & Wave Propagation

Lec . no	Delivery contents
1	Basic antenna radiation mechanism (single & double wire),
2	parameters- radiation resistance, pattern , beam area, radiation intensity
3	beam efficiency, directivity, gain and resolution
4	antenna aperture, effective height, radio communication link, field from oscillating dipole
5	field zones, shape impedance consideration.
6	Front to back ratio Antenna impedance
7	Array of two isotropic point sources, non-isotropic but similar point source and the principle of pattern multiplication, examples of pattern synthesis by pattern multiplication
8	non-isotropic and dissimilar point sources,
9	linear array of isotropic point source of equal amplitude and spacing
10	Broadband basics, frequency independent concept: Rumsey’s principle,
11	the frequency independent planner log-spiral antenna, frequency independent conical-spiral antenna,

12	the log periodic antenna, the composite yagi-uda corner-log periodic array
13	Antenna measurement: Antenna ranges, Radiation pattern,
14	Gain measurements ,Directivity measurements
15	Radiation efficiency, Impedance measurements
16	MICROSTRIP Antenna - Introduction, Basic characteristics
17	Feeding methods
18	basic types – rectangular, Circular line model
19	Potential Functions and the Electromagnetic Field, Potential Functions for sinusoidal oscillations,,
20	Plane earth reflection, space wave and the surface wave, ,
21	elevated dipole antennas above a plane earth
22	wave tilt of the surface wave
23	spherical earth propagation
24	troposphere wave.
25	The ionosphere, effective permittivity of an ionized gas
26	conductivity of an ionized gas
27	reflection and refraction of the waves by the ionosphere
28	regular and irregular variations of ionosphere
29	attenuation factor
30	sky wave transmission calculations
31	effect of earth magnetic field, wave propagation in ionosphere
32	Faraday rotation and measurement of total electron content Other ionosphere phenomena
33	Fundamentals, RADAR performance factors
34	basic pulsed radar system, antennas and scanning
35	display methods, pulsed radar systems
36	moving target indication, radar beacons, CW Doppler radar
37	frequency modulated CW radar
38	phase array radars ,planar array radars

Text Books

John D Kraus, “Antenna for all Application”, 3 rd edition, TMH publication
Constantine A. Balanis, “Antenna Theory”, 3 rd edition, Wiley Publication
Jordan and Balmain, “Electromagnetic Waves and Radiation Systems”, 2 nd edition, PHI publication
Kennedy Davis, “Electronics Communication System”, 5 th edition, TMH publication

Reference Books

G. S. N. Raju, "Antennas and Wave Propagation", 4 th edition, Pearson publication
K.D. Prasad, "Antennas and Wave Propagation", 3 rd edition, Satya prakashan publication

Subject: Mobile Technology (OE-II)

Chapter No.	Lect No.	Details of syllabus planned
Ch.1	Introduction to Mobile Communication & Multiple Access Technique	
	01	Mobile and Personal Communication,
	02	mobile and wireless devices, Specialized packet
	03	mobile radio networks, circuit switched data services on cellular networks,
	04	packet switched data services on cellular networks
	05	Multiple Access Technique- FDMA,
	06	TDMA, SDMA, and CDMA.
Ch 2	Cellular Concept	
	1	Introduction to cellular telephone system: Expansion of mobile system capacity through frequency reuse
	2	Cell geometry, Selection of cluster size, Cell splitting and sectoring,
	3	Coverage and capacity in cellular system and Handoff strategies.
	4	Propagation Mechanism: Free space and two ray propagation model
	5	Basic propagation mechanism. Hata outdoor propagation mode
	6	Small Scale Fading and Multipath: Types of Small-scale fading, Small scale multipath propagation
	7	Impulse response model of multipath channel and Smallscale multipath measurements.
	8	Impulse response model of multipath channel and Smallscale multipath measurements.
Ch3	Introduction to GSM	
	1	Introduction, Architecture of GSM,

	2	characteristics of GSM standards, services
	3	Radio transmission parameters in GSM System
	4	Radio transmission parameters in GSM System
Ch 4	GSM Services and Channels	
	1	Traffic and Logical Channels in GSM
	2	GSM time hierarchy, Description of call setup procedure,
	3	GSM time hierarchy, Description of call setup procedure,
	4	Handover mechanism in GSM, Security in GSM
	5	Data transmission in GSM: Data Services,
	6	SMS, HSCSD
	7	GPRS, EDGE
Ch 5	Routing Protocols	
	1	Design issues, goals and classification.
	2	Proactive Vs reactive routing
	3	Unicast routing algorithms
	4	Multicast routing algorithms
	5	hybrid routing algorithm.
Ch6	Evolution of Mobile Technologies	
	1	Evolution of Mobile Generation and its comparison (GSM & CDMA)
	2	LTE basics, LTE frame structure
	3	LTE Design parameters with Standardization and Architecture of LTE
	4	Overview of 5 G Networks, Comparison of 4G and 5G technology
	5	Opportunities and requirements in 5G network,
	6	Open Wireless Architecture of 5G network.

Tutorial List

Tut No.	Name of Tutorial
01	Chapter no 1
02	Chapter no 2
03	Chapter no 3
04	Chapter no 4
05	Chapter no 5
06	Chapter no 6

Recommended Books:

TEXT BOOKS:

- 1)Jachen Schiller, "Mobile Communications", Pearson Education.
- 2)Theodore Rappaport, "Wireless Communications Principles and Practicel", Pearson Education.
- 3)Savo Glisic, "Advanced Wireless Networks", Wily India

REFERENCE BOOKS:

1. William Stallings , "Wireless Communication & Networks", Pearson Education
2. 2 Manvi , "Wireless and Mobile Network", Wiley India
3. 3 Sudip Misra, Sumit Goswami, "Network Routing: Fundamentals, Applications, and Emerging Technologies", Wiley India

10. B.TECH PROJECT/SEMINAR REVIEW FORMS

Seminar Evaluation Sheet

Name of Student:-

Class:

Roll No.:

Name of Seminar Topic:

Name of Guide:

Academic Year:

Semester:

Marking Scheme:

Sr. No.	Details	Max. Marks		Valuated Marks
		For 25 Marks	For 50 Marks	
1.	Selection of Seminar Topic (Scope, Relevance)	2	5	
2.	Literature Survey	3	10	
3.	Presentation	5	10	
4.	Understanding of Subject	3	5	
5.	Seminar Report	4	5	
6.	Question Answer	3	5	
7.	Interaction with Guide	5	10	

Total:

Sign of Guide:

Date:

Sr. No.	Details	Max. Marks		Valuated Marks
		For 25 Marks	For 50 Marks	
1.	Selection of Seminar Topic (Scope, Relevance)	2	5	
2.	Literature Survey	3	10	
3.	Presentation	5	10	
4.	Understanding of Subject	3	5	
5.	Seminar Report	4	5	
6.	Question Answer	3	5	

Total:

Name and Sign of Judge:

Sr. No.	Details	Max. Marks		Valuated Marks
		For 25 Marks	For 50 Marks	
1.	Selection of Seminar Topic (Scope, Relevance)	2	5	
2.	Literature Survey	3	10	
3.	Presentation	5	10	
4.	Understanding of Subject	3	5	
5.	Seminar Report	4	5	
6.	Question Answer	3	5	

Total:

Name and Sign of Judge:

Total Marks: Details of sr. no. 7+ Average of sr.no.1 to 6

Total Marks	Details of sr.no. 7	Average of sr.no.1 to 6

Rubrics for Project Work assessment

PROJECT MARKING SCHEME (Semester-I)

Activity	Nature of Activity	Total Marks for Activity	Rubric for Activity			
			Unsatisfactory	Developing	Satisfactory	Excellent
A1	Submission of Project Topic with names of group member	A1= 0.08* TM1	0.00*A1	0.40*A1	0.80*A1	1.00*A1
A2	Presentation of Synopsis in front of DRC	A2= 0.08* TM1	0.00*A2	0.40*A2	0.80*A2	1.00*A2
A3	Introduction and literature Review presentation	A3= 0.24* TM1	0.25*A3	0.60*A3	0.85*A3	1.00*A3
A4	Methodology and future work presentation	A4= 0.30* TM1	0.25*A4	0.60*A4	0.90*A4	1.00*A4
A5	Guide Marks	A5= 0.30* TM1	0.25*A5	0.60*A5	0.90*A5	1.00*A5

PROJECT MARKING SCHEME (Semester-II)

Activity	Nature of Activity	Total Marks for Activity	Rubric for Activity			
			Unsatisfactory	Developing	Satisfactory	Excellent
A6	Progress presentation 1	A6= 0.20* TM2	0.20*A6	0.65*A6	0.90*A6	1.00*A6
A7	Progress presentation 2	A7= 0.20* TM2	0.20*A7	0.65*A7	0.90*A7	1.00*A7
A8	Final presentation in front of DRC along with submission of spiral bound copy	A8= 0.30* TM2	0.25*A8	0.70*A8	0.95*A8	1.00*A8
A9	Guide Marks	A9= 0.30* TM2	0.25*A9	0.70*A9	0.95*A9	1.00*A9

***TM1:- Term Work Marks in Sem-I for Project**
Sem-II for Project

***TM2:- Term Work Marks in**

11. Department Faculty

Sr. No.	Name of Faculty
1	Dr. (Mrs.) S. B. Patil
2	Mr. M. M. Kolap
3	Dr. (Mrs.) S. R. Mahadik
4	Mrs. P. P. Belagali
5	Mrs. T. H. Mohite
6	Mrs. M. U. Phutane
7	Mrs. R. V. Kaulgud
8	Mr. N.S.Nadaf
9	Mr.V.T.kamble
10	Mrs. D. U. Chavan
11	Ms. C. S. Patil
12	Mr. A. S. Sutar
13	Mrs.S.S.Karadge

12. Department Staff

Sr. No.	Name of Faculty
1	Mr. P. K. Upadhye
2	Mr. K. M. Kulkarni
3	Mrs. H. S. Swami

13. ECESA COMMITTEE ACTIVITY

Sr.No.	Name Of Activity	Date Of Activity	Targeted Student
1	Introduction of Electronic Components	25/07/2018	SE
2	Inauguration of ECESA and IOE	01/08/2018	ALL
3	Fresher's Day	01/08/2018	ALL
4	Blood Donation Camp with NSS	14/08/2018	ALL
5	Teachers Day	05/09/2018	ALL
6	Group Discussion	01/10/2018	SE
7	VLSI Back End Programming	18/01/2019	TE
8	Python Programming	18/01/2019 & 19/01/2019	SE
9.	Arts Club Inauguration (Kalavishkar 2k19)	25/01/2019	ALL
10	GD Club Inauguration	05/02/2019	ALL
11	BOX Cricket	01/02/2019 & 02/02/2019	ALL
12	IGNITION 2k19	01/03/2019 & 02/03/2019	All Degree & Diploma Students
13	Color code Activity	18/07/2019	SE
14	English Spelling Activity	26/07/2019	TE
15	Drishhti Online Context By Texas Instrument Banglore.	31/07/2019	ALL
16	Inauguration of ECESA and IOE 2019-20	27/09/2019	ALL
17	Industry 4.0.Workshop	05/10/2019	ALL
18	Fresher's Party	01/10/2019	ALL
19	Vande Matram(video making contest)	05/02/2021	ALL
20	SUBH-AARAMBH(Paper presentation contest)	05/02/2021	ALL
21	NTD 2k21 Quiz contest	11/05/2021	ALL
22	Fairwell Party BE students	06/09/2021	BE
23	Fresher's Party	04/1/2022	ALL
24	Ignition2k22	April2022	ALL

