

Name of the faculty : Satpal Singh

Discipline : ECE

Semester : 6th

Subject : EMD

Lesson plan Duration: 15 week (From February 2024 to June 2024)

Week	Lecture Day	Topic (Including Assignment test)
1st	1st	Introduction -Embedded system
	2nd	-Embedded system
	3rd	History of embedded systems
	4th	History of embedded systems
2nd	5th	Embedded system architecture
	6th	Embedded system architecture
	7th	Functional structure of embedded system
	8th	Functional structure of embedded system
3rd	9th	Embedded operating system Real –time operating system
	10th	Real –time operating system
	11th	Factors affecting embedded system
	12th	Factors affecting embedded system
4th	13th	Applications of embedded systems
	14th	Applications of embedded systems
	15th	Embedded systems characteristics and features
	16th	Embedded systems characteristics and features
5th	17th	Reliability of embedded system
	18th	Reliability of embedded system
	19th	Embedded system versus general purpose system
	20th	Embedded system versus general purpose system
6th	21st	Selection criteria of microcontroller

	22nd	Selection criteria of microcontroller -Assignment
	23rd	Test
	24th	Introduction of PIC microcontroller, Block diagram , Function of each block
7th	25th	Introduction of PIC microcontroller, Block diagram , Function of each block
	26th	Introduction of PIC microcontroller, Block diagram , Function of each block
	27th	Introduction of PIC microcontroller, Block diagram , Function of each block
	28th	Introduction of PIC microcontroller, Block diagram , Function of each block
8th	29th	Introduction of PIC microcontroller, Block diagram , Function of each block
	30th	Introduction of PIC microcontroller, Block diagram , Function of each block
	31st	Introduction of AVR microcontroller, Block diagram , Function of each block
	32nd	Introduction of AVR microcontroller, Block diagram , Function of each block
9th	33rd	Introduction of AVR microcontroller, Block diagram , Function of each block
	34th	Introduction of AVR microcontroller, Block diagram , Function of each block
	35th	Introduction of AVR microcontroller, Block diagram , Function of each block
	36th	Introduction of AVR microcontroller, Block diagram , Function of each block
10th	37th	Introduction of AVR microcontroller, Block diagram , Function of each block
	38th	Introduction of AVR microcontroller, Block diagram , Function of each block
	39th	Introduction of AVR microcontroller, Block diagram , Function of each block -Assignment
	40th	Test

11th	41st	Programming concepts of microcontrollers
	42nd	Programming concepts of microcontrollers
	43rd	Programming concepts of microcontrollers
	44th	Basic introduction of software used in microcontrollers
12th	45th	Basic introduction of software used in microcontrollers
	46th	Basic introduction of software used in microcontrollers
	47th	How to transfer C or ASM code in microcontrollers
	48th	How to transfer C or ASM code in microcontrollers
13th	49th	How to transfer C or ASM code in microcontrollers
	50th	How to transfer C or ASM code in microcontrollers
	51st	Comparison between 8051,PIC and AVR, Steps involved in development of a project, Interfacing LED ,7-Segment display, buzzer, relay and sensors
	52nd	Comparison between 8051,PIC and AVR, Steps involved in development of a project, Interfacing LED ,7-Segment display, buzzer, relay and sensors
14th	53rd	Comparison between 8051,PIC and AVR, Steps involved in development of a project, Interfacing LED ,7-Segment display, buzzer, relay and sensors
	54th	Comparison between 8051,PIC and AVR, Steps involved in development of a project, Interfacing LED ,7-Segment display, buzzer, relay and sensors
	55th	Comparison between 8051,PIC and AVR, Steps involved in development of a project, Interfacing LED ,7-Segment display, buzzer, relay and sensors
	56th	Comparison between 8051,PIC and AVR, Steps involved in development of a project, Interfacing LED ,7-Segment display, buzzer, relay and sensors
15th	57th	Comparison between 8051,PIC and AVR, Steps involved in development of a project, Interfacing LED ,7-Segment display, buzzer, relay and sensors
	58th	Comparison between 8051,PIC and AVR, Steps involved in development of a project, Interfacing LED ,7-Segment display, buzzer, relay and sensors
	59th	Comparison between 8051,PIC and AVR, Steps involved in development of a project, Interfacing LED ,7-Segment display, buzzer, relay and sensors -Assignment
	60th	Test

Name of the faculty : Satpal Singh
 Discipline : Electronic & Comm.
 Semester : 6th
 Subject : EDM

Lesson plan Duration: 15 week (From feb2024 to June 2024)

Week	Lecture Day	Topic (Including Assignment test)
1st	1st	<ul style="list-style-type: none"> • Concept /Meaning and its need • Qualities and functions of entrepreneur and barriers in entrepreneurship
	2nd	<ul style="list-style-type: none"> • Sole proprietorship and partnership forms and other forms of business organizations
	3rd	<ul style="list-style-type: none"> • Schemes of assistance by entrepreneurial support agencies at National, State, District –level, organization: NSIC, NRDC, DC, MSME, SIDBI, NABARD, NIESBUD, HARDICON Ltd., Commercial Banks, SFC's TCO, KVIB, DIC, Technology Business Incubators (TBI) and Science and Technology Entrepreneur Parks
2nd	1st	<ul style="list-style-type: none"> • Scanning of the business environment • Salient features of
		National and Haryana State industrial policies and resultant business opportunities
	2nd	<ul style="list-style-type: none"> • Types and conduct of market survey • Assessment of demand and supply in potential areas of growth
	3rd	<ul style="list-style-type: none"> • Identifying business opportunity • Considerations in product selection • Converting an idea into a business opportunity
3rd	1st	<ul style="list-style-type: none"> • Preliminary project report • Detailed project report including technical, economic and market feasibility
	2nd	<ul style="list-style-type: none"> • Common errors in project report preparations • Exercises on preparation of project report • Sample project report
		<ul style="list-style-type: none"> • Revision
		<ul style="list-style-type: none"> • Assignment -1 • Test of 1,2& unit 3

	3rd	<p>importance of management</p> <ul style="list-style-type: none"> • Functions of management: Importance and process of planning, organizing, staffing, directing and controlling
4th	1st	<ul style="list-style-type: none"> • Principles of management (Henri Fayol, F.W. Taylor)
	2nd	<ul style="list-style-type: none"> • Concept and structure of an organization
	3rd	Types of industrial organizations and their advantages
5th	1st	<ul style="list-style-type: none"> • Line organization, staff organization • Line and staff organization
	2nd	Functional Organization
	3rd	<p>a) Leadership</p> <p>Definition and Need</p> <p>Qualities and functions of a leader</p>
6th	1st	Manager Vs leader
	2nd	Types of leadership Case studies of great leaders
	3rd	b) Motivation Definition and characteristics
7th	1st	Importance of self motivation
	2nd	<p>a) Human Resource Management</p> <ul style="list-style-type: none"> • Introduction and objective • Introduction to Man power planning, recruitment and selection
	3rd	<ul style="list-style-type: none"> • Introduction to performance appraisal methods
8th	1st	<p>b) Material and Store Management</p> <ul style="list-style-type: none"> • Introduction functions,
		and objectives ABC Analysis and EOQ
	2nd	<p>C) Marketing and sales</p> <ul style="list-style-type: none"> • Introduction, importance, and its functions • Physical distribution

	3rd	Introduction to promotion mix Sales promotion
9th	1st	d)Financial Management <ul style="list-style-type: none"> • Introductions, importance and its functions
	2nd	<ul style="list-style-type: none"> • knowledge of income tax, sales tax, excise duty, custom duty, VAT, GST
		<ul style="list-style-type: none"> • Revision
		Assignment – 2 nd Test of 4,5 & unit 6
	3rd	Introduction and importance of Healthy Work Culture in organization Components of Culture
10th	1st	Importance of attitude, values and behavior.
	2nd	Behavioral Science – Individual and group behavior.
	3 rd	Professional ethics – Concept and need of Professional Ethics and human values.
11th	1st	Meaning and definition of accounting
	2nd	Double entry system of book keeping Trading account, PLA account and balance sheet of a company
	3 rd	Objectives of Financial Management Profit Maximization v/s Wealth Maximization
12th	1st	a) Total Quality b) Management (TQM) c) Statistical process control
	2nd	Total employees Involvement Just in time (JIT)
	3rd	b)Intellectual Property Right (IPR) <ul style="list-style-type: none"> • Introduction, definition and its importance • Infringement related to patents, copy right, trade mark
		Revision
		Assignment 3 rd Test 7,8 & unit 9

Lesson Plan (Major Project)

Name of the Faculty: Satpal Singh/Yeshpal
 Discipline: Electronics and Communication Engg.
 Semester: 6th
 Subject: Major Project
 Lesson Plan Duration: (From feb, 2024 to june 2024)

Week	Theory		Practical	
	Lecture Day	Topic(including assignment/Test)	Practical Day	Topic
1 st	NA	NA	1	Discussion & Concept of Major Project Work
	NA	NA	2	Making the group of students.
	NA	NA	3	Analyzing the importance of testing & basic engineering principles.
2 nd	NA	NA	4	Analyzing the aptitudes and Interest of students and submission of synopsis of project.
	NA	NA	5	Analyzing the usefulness and scope of the project
	NA	NA	6	Discussion on Possibilities, Pros and Cons of the different projects
3 rd	NA	NA	7	Discussions on nature and scope of the selected project assignment
	NA	NA	8	Assessing the boundaries of the project assignment
			9	Planning of the Project- selecting the tools and software and hardware to be used; and Finalizing of Projects.
4 th	NA	NA	10	Working on projects/Designing and making of PCBs; layout etc
	NA	NA	11	Working on projects/Designing

				and making of PCBs; layout etc
	NA	NA	12	Working on projects/Designing and making of PCBs; layout etc

5 th	NA	NA	13	Working on projects/Designing and making of PCBs; layout etc
	NA	NA	14	Working on projects/Designing and making of PCBs; layout etc
	NA	NA	15	Working on projects/Designing and making of PCBs; layout etc
6 th	NA	NA	16	Component Mounting/ assembling and testing.
	NA	NA	17	Component Mounting/ assembling and testing.
	NA	NA	18	Component Mounting/ assembling and testing.
7 th	NA	NA	19	Component Mounting/ assembling and testing.
	NA	NA	20	Component Mounting/ assembling and testing.
	NA	NA	21	Component Mounting/ assembling and testing.
8 th	NA	NA	22	Component Mounting/ assembling and testing.
	NA	NA	23	Component Mounting/ assembling and testing.
	NA	NA	24	Component Mounting/ assembling and testing.
9 th	NA	NA	25	Checking the chances for improvements.
	NA	NA	26	Checking the chances for improvements.
	NA	NA	27	Checking the chances for improvements.
10 th	NA	NA	28	Checking the chances for improvements.
	NA	NA	29	Complete execution & presentation by the students
	NA	NA	30	Complete execution & presentation by the students
11 th	NA	NA	31	Complete execution & presentation by the students

	NA	NA	32	Complete execution & presentation by the students
--	----	----	----	---

	NA	NA	33	Complete execution & presentation by the students
12th	NA	NA	34	Complete execution/ application of projects.
	NA	NA	35	Complete execution/ application of projects
	NA	NA	36	Complete execution/ application of projects
13th	NA	NA	37	Project Report Writing: Deciding the format and Report layout designing.
	NA	NA	38	Writing the report as per the decided scheme
	NA	NA	39	Writing the report as per the decided scheme
14th	NA	NA	40	Submission & Evaluation of the final project work including its report and viva
	NA	NA	41	Submission & Evaluation of the final project work including its report and viva
	NA	NA	42	Submission & Evaluation of the final project work including its report and viva
15th	NA	NA	43	Final evaluation after rework, if needed
	NA	NA	44	Final evaluation after rework, if needed
	NA	NA	45	Final evaluation after rework, if needed

Lesson Plan

Name of the Faculty : -Ms.Vineet

Discipline : - ECE

Semester : - Sixth

Subject : - Microwave and Radar Engineering.

Lesson Plan Duration: - 15 Weeks (From February2024 to June 2024)

Workload (Lecture / Practical) per week (in hours):- Lectures-04, Practicals-03

Week	Theory		Practical	
	Lecture day	Topic(topic including assignment/test)	Practical day	Topic
1st	1st	Introduction to Microwaves and its applications, classification on the basis of its frequency bands(HF, VHF, UHF, L, S, C, X. Ku,Ka, Sub mm)	1st	To measure electronics and mechanical tuning range of a reflex klystron.
	2nd	Introduction to Microwaves and its applications, classification on the basis of its frequency bands(HF, VHF, UHF, L, S, C, X. Ku,Ka, Sub mm)		
	3rd	Introduction to Microwaves and its applications, classification on the basis of its frequency bands(HF, VHF, UHF, L, S, C, X. Ku,Ka, Sub mm)		
	4th	Introduction to Microwaves and its applications, classification on the basis of its frequency bands(HF, VHF, UHF, L, S, C, X. Ku, Ka, Sub mm)		
2nd	5th	Microwave devices Construction, characteristics, operating principles and typical applications of the following devices(No mathematical treatment) -Multi cavity klystron -Reflex klystron -Traveling wave tube -Gunn diode and	2nd	To measure VSWR of a given load

		-Impatt diode		
	6th	Microwave devices Construction, characteristics, operating principles and typical applications of the following devices(No mathematical treatment) -Multi cavity klystron -Reflex klystron -Traveling wave tube -Gunn diode and - Impatt diode		
	7th	Microwave devices Construction, characteristics, operating principles and typical applications of the following devices(No mathematical treatment) -Multi cavity klystron -Reflex klystron -Traveling wave tube -Gunn diode and - Impatt diode		
	8th	Microwave devices Construction, characteristics, operating principles and typical applications of the following devices(No mathematical treatment) -Multi cavity klystron -Reflex klystron -Traveling wave tube -Gunn diode and - Impatt diode		
3rd	9th	Microwave devices Construction, characteristics, operating principles and typical applications of the following devices(No mathematical treatment) -Multi cavity klystron -Reflex klystron -Traveling wave tube -Gunn diode and - Impatt diode	3rd	To measure the klystron frequency by slotted section method
	10th	Microwave devices Construction, characteristics, operating principles and typical applications of the following devices(No mathematical		

		<p>treatment)</p> <ul style="list-style-type: none"> -Multi cavity klystron -Reflex klystron -Traveling wave tube -Gunn diode and - Impatt diode 		
	11th	<p>Microwave devices Construction, characteristics, operating principles and typical applications of the following devices(No mathematical treatment)</p> <ul style="list-style-type: none"> -Multi cavity klystron -Reflex klystron -Traveling wave tube -Gunn diode and - Impatt diode 		
	12th	<p>Microwave devices Construction, characteristics, operating principles and typical applications of the following devices(No mathematical treatment)</p> <ul style="list-style-type: none"> -Multi cavity klystron -Reflex klystron -Traveling wave tube -Gunn diode and - Impatt diode 		
4th	13th	<p>Microwave devices Construction, characteristics, operating principles and typical applications of the following devices(No mathematical treatment)</p> <ul style="list-style-type: none"> -Multi cavity klystron -Reflex klystron -Traveling wave tube -Gunn diode and - Impatt diode 	4th	To measure the directivity and coupling of a directional coupler.
	14th	<p>Microwave devices Construction, characteristics, operating principles and typical applications of the following devices(No mathematical treatment)</p> <ul style="list-style-type: none"> -Multi cavity klystron -Reflex klystron -Traveling wave tube -Gunn diode and - Impatt diode 		

	15th	<p>Microwave devices Construction, characteristics, operating principles and typical applications of the following devices(No mathematical treatment)</p> <ul style="list-style-type: none"> -Multi cavity klystron -Reflex klystron -Traveling wave tube -Gunn diode and - Impatt diode -Assignment 		
	16th	Test		
5th	17th	<p>Waveguides Rectangular and circular waveguides and their applications, Mode of waveguide; Propagation constant of rectangular waveguide, cut off wavelength, guide wavelength and their relationship with free space wavelength(no mathematical derivation).Impossibility of TEM mode in a waveguide.</p>	5th	To plot radiation pattern of horn antenna in horizontal and vertical planes.
	18th	<p>Waveguides Rectangular and circular waveguides and their applications, Mode of waveguide; Propagation constant of rectangular waveguide, cut off wavelength, guide wavelength and their relationship with free space wavelength(no mathematical derivation).Impossibility of TEM mode in a waveguide.</p>		
	19th	<p>Waveguides Rectangular and circular waveguides and their applications, Mode of waveguide; Propagation constant of rectangular waveguide, cut off wavelength, guide wavelength and their relationship with free space wavelength(no mathematical derivation).Impossibility of TEM mode in a waveguide.</p>		
	20th	Waveguides		

		Rectangular and circular waveguides and their applications, Mode of waveguide; Propagation constant of rectangular waveguide, cut off wavelength, guide wavelength and their relationship with free space wavelength(no mathematical derivation).Impossibility of TEM mode in a waveguide.		
6th	21st	Waveguides Rectangular and circular waveguides and their applications, Mode of waveguide; Propagation constant of rectangular waveguide, cut off wavelength, guide wavelength and their relationship with free space wavelength(no mathematical derivation).Impossibility of TEM mode in a waveguide.	6th	To verify the properties of magic tee.
	22nd	Waveguides Rectangular and circular waveguides and their applications, Mode of waveguide; Propagation constant of rectangular waveguide, cut off wavelength, guide wavelength and their relationship with free space wavelength(no mathematical derivation).Impossibility of TEM mode in a waveguide.		
	23rd	Waveguides Rectangular and circular waveguides and their applications, Mode of waveguide; Propagation constant of rectangular waveguide, cut off wavelength, guide wavelength and their relationship with free space wavelength(no mathematical derivation).Impossibility of TEM mode in a waveguide.		
	24th	Waveguides Rectangular and circular waveguides and their		

		applications, Mode of waveguide; Propagation constant of rectangular waveguide, cut off wavelength, guide wavelength and their relationship with free space wavelength(no mathematical derivation).Impossibility of TEM mode in a waveguide.		
7th	25th	Waveguides Rectangular and circular waveguides and their applications, Mode of waveguide; Propagation constant of rectangular waveguide, cut off wavelength, guide wavelength and their relationship with free space wavelength(no mathematical derivation).Impossibility of TEM mode in a waveguide.	7th	Revision
	26th	Waveguides Rectangular and circular waveguides and their applications, Mode of waveguide; Propagation constant of rectangular waveguide, cut off wavelength, guide wavelength and their relationship with free space wavelength(no mathematical derivation).Impossibility of TEM mode in a waveguide.		
	27th	Microwave Components Constructional features, characteristics and application of tees, bends, matched termination, twists, detector mount, slotted section, directional coupler, fixed and variable attenuator, isolator, circulator and duplexer, coaxial to waveguide adapter, horn antenna.		
	28th	Microwave Components Constructional features, characteristics and application of tees, bends, matched termination, twists, detector mount, slotted section,		

		directional coupler, fixed and variable attenuator, isolator, circulator and duplexer, coaxial to waveguide adapter, horn antenna.		
8th	29th	Microwave Components Constructional features, characteristics and application of tees, bends, matched termination, twists, detector mount, slotted section, directional coupler, fixed and variable attenuator, isolator, circulator and duplexer, coaxial to waveguide adapter, horn antenna.	8th	Revision
	30th	Microwave Components Constructional features, characteristics and application of tees, bends, matched termination, twists, detector mount, slotted section, directional coupler, fixed and variable attenuator, isolator, circulator and duplexer, coaxial to waveguide adapter, horn antenna.		
	31st	Microwave Components Constructional features, characteristics and application of tees, bends, matched termination, twists, detector mount, slotted section, directional coupler, fixed and variable attenuator, isolator, circulator and duplexer, coaxial to waveguide adapter, horn antenna.		
	32nd	Microwave Components Constructional features, characteristics and application of tees, bends, matched termination, twists, detector mount, slotted section, directional coupler, fixed and variable attenuator, isolator, circulator and duplexer, coaxial to waveguide adapter, horn antenna.		
9th	33rd	Microwave Components	9th	Revision

		Constructional features, characteristics and application of tees, bends, matched termination, twists, detector mount, slotted section, directional coupler, fixed and variable attenuator, isolator, circulator and duplexer, coaxial to waveguide adapter, horn antenna.		
	34th	Microwave Components Constructional features, characteristics and application of tees, bends, matched termination, twists, detector mount, slotted section, directional coupler, fixed and variable attenuator, isolator, circulator and duplexer, coaxial to waveguide adapter, horn antenna.		
	35th	Microwave Components Constructional features, characteristics and application of tees, bends, matched termination, twists, detector mount, slotted section, directional coupler, fixed and variable attenuator, isolator, circulator and duplexer, coaxial to waveguide adapter, horn antenna.		
	36th	Microwave Components Constructional features, characteristics and application of tees, bends, matched termination, twists, detector mount, slotted section, directional coupler, fixed and variable attenuator, isolator, circulator and duplexer, coaxial to waveguide adapter, horn antenna.		
10th	37th	Microwave Communication systems a)Block diagram and working principles of microwave communication link	10th	Revision
	38th	Microwave Communication systems		

		a)Block diagram and working principles of microwave communication link		
	39th	Microwave Communication systems a)Block diagram and working principles of microwave communication link		
	40th	Microwave Communication systems a)Block diagram and working principles of microwave communication link -Assignment		
11th	41st	Test	11th	Revision
	42nd	Microwave communication systems b) Troposcatter Communication-basic idea		
	43rd	Microwave communication systems b) Troposcatter Communication-basic idea		
	44th	Microwave communication systems b) Troposcatter Communication-basic idea		
12th	45th	Microwave communication systems b) Troposcatter Communication-basic idea	12th	Revision
	46th	Radar Systems <ul style="list-style-type: none"> ● Introduction to radar, its various applications, radar range equation(no derivation) and its application ●Block diagram and operating principles of basic pulse radar. Concepts of ambiguous range, radar area of cross section and its dependence on frequency. ●Block diagram and operating principles of CW(Doppler) and FMCW radars, and their applications. ●Block diagram and operating principles of MTI radar. ●Radar display-PPI 		
	47th	Radar Systems <ul style="list-style-type: none"> ● Introduction to radar, its 		

		<p>various applications, radar range equation(no derivation) and its application</p> <ul style="list-style-type: none"> ●Block diagram and operating principles of basic pulse radar. Concepts of ambiguous range, radar area of cross section and its dependence on frequency. ●Block diagram and operating principles of CW(Doppler) and FMCW radars, and theirs applications. ●Block diagram and operating principles of MTI radar. ●Radar display-PPI 		
	48th	<p>Radar Systems</p> <ul style="list-style-type: none"> ● Introduction to radar, its various applications, radar range equation(no derivation) and its application ●Block diagram and operating principles of basic pulse radar. Concepts of ambiguous range, radar area of cross section and its dependence on frequency. ●Block diagram and operating principles of CW(Doppler) and FMCW radars, and theirs applications. ●Block diagram and operating principles of MTI radar. ●Radar display-PPI 		
13th	49th	<p>Radar Systems</p> <ul style="list-style-type: none"> ● Introduction to radar, its various applications, radar range equation(no derivation) and its application ●Block diagram and operating principles of basic pulse radar. Concepts of ambiguous range, radar area of cross section and its dependence on frequency. ●Block diagram and operating principles of CW(Doppler) and FMCW radars, and theirs applications. ●Block diagram and operating principles of MTI radar. ●Radar display-PPI 	13th	Revision
	50th	Radar Systems		

		<ul style="list-style-type: none"> ● Introduction to radar, its various applications, radar range equation(no derivation) and its application ●Block diagram and operating principles of basic pulse radar. Concepts of ambiguous range, radar area of cross section and its dependence on frequency. ●Block diagram and operating principles of CW(Doppler) and FMCW radars, and their applications. ●Block diagram and operating principles of MTI radar. ●Radar display-PPI 		
	51st	<p>Radar Systems</p> <ul style="list-style-type: none"> ● Introduction to radar, its various applications, radar range equation(no derivation) and its application ●Block diagram and operating principles of basic pulse radar. Concepts of ambiguous range, radar area of cross section and its dependence on frequency. ●Block diagram and operating principles of CW(Doppler) and FMCW radars, and their applications. ●Block diagram and operating principles of MTI radar. ●Radar display-PPI 		
	52nd	<p>Radar Systems</p> <ul style="list-style-type: none"> ● Introduction to radar, its various applications, radar range equation(no derivation) and its application ●Block diagram and operating principles of basic pulse radar. Concepts of ambiguous range, radar area of cross section and its dependence on frequency. ●Block diagram and operating principles of CW(Doppler) and FMCW radars, and their applications. ●Block diagram and operating principles of MTI radar. ●Radar display-PPI 		

14th	53rd	<p>Radar Systems</p> <ul style="list-style-type: none"> ● Introduction to radar, its various applications, radar range equation(no derivation) and its application ●Block diagram and operating principles of basic pulse radar. Concepts of ambiguous range, radar area of cross section and its dependence on frequency. ●Block diagram and operating principles of CW(Doppler) and FMCW radars, and their applications. ●Block diagram and operating principles of MTI radar. ●Radar display-PPI 	14th	Revision
	54th	<p>Radar Systems</p> <ul style="list-style-type: none"> ● Introduction to radar, its various applications, radar range equation(no derivation) and its application ●Block diagram and operating principles of basic pulse radar. Concepts of ambiguous range, radar area of cross section and its dependence on frequency. ●Block diagram and operating principles of CW(Doppler) and FMCW radars, and their applications. ●Block diagram and operating principles of MTI radar. ●Radar display-PPI 		
	55th	<p>Radar Systems</p> <ul style="list-style-type: none"> ● Introduction to radar, its various applications, radar range equation(no derivation) and its application ●Block diagram and operating principles of basic pulse radar. Concepts of ambiguous range, radar area of cross section and its dependence on frequency. ●Block diagram and operating principles of CW(Doppler) and FMCW radars, and their applications. ●Block diagram and operating principles of MTI radar. 		

		<ul style="list-style-type: none"> ●Radar display-PPI 		
	56th	<p>Radar Systems</p> <ul style="list-style-type: none"> ● Introduction to radar, its various applications, radar range equation(no derivation) and its application ●Block diagram and operating principles of basic pulse radar. Concepts of ambiguous range, radar area of cross section and its dependence on frequency. ●Block diagram and operating principles of CW(Doppler) and FMCW radars, and their applications. ●Block diagram and operating principles of MTI radar. ●Radar display-PPI 		
15th	57th	<p>Radar Systems</p> <ul style="list-style-type: none"> ● Introduction to radar, its various applications, radar range equation(no derivation) and its application ●Block diagram and operating principles of basic pulse radar. Concepts of ambiguous range, radar area of cross section and its dependence on frequency. ●Block diagram and operating principles of CW(Doppler) and FMCW radars, and their applications. ●Block diagram and operating principles of MTI radar. ●Radar display-PPI 	15th	Revision
	58th	<p>Radar Systems</p> <ul style="list-style-type: none"> ● Introduction to radar, its various applications, radar range equation(no derivation) and its application ●Block diagram and operating principles of basic pulse radar. Concepts of ambiguous range, radar area of cross section and its dependence on frequency. ●Block diagram and operating principles of CW(Doppler) and FMCW radars, and their applications. ●Block diagram and operating 		

		<p>principles of MTI radar.</p> <ul style="list-style-type: none"> ● Radar display-PPI 		
	59th	<p>Radar Systems</p> <ul style="list-style-type: none"> ● Introduction to radar, its various applications, radar range equation(no derivation) and its application ● Block diagram and operating principles of basic pulse radar. Concepts of ambiguous range, radar area of cross section and its dependence on frequency. ● Block diagram and operating principles of CW(Doppler) and FMCW radars, and their applications. ● Block diagram and operating principles of MTI radar. ● Radar display-PPI <p>-Assignment</p>		
	60th	Test		

Lesson Plan

Name of the Faculty :- Ms. Vineet

Discipline :- ECE

Semester :- Sixth

Subject :- Wireless and Mobile Communication

Lesson Plan Duration: - 15 Weeks (From February 2024 to June 2024)

Workload (Lecture / Practical) per week (in hours):- Lectures-04, Practicals-03

Week	Theory		Practical	
	Lecture day	Topic(topic including assignment/test)	Practical day	Topic
1st	1st	Wireless communication Basics	1st	Study the features, specification and working of cellular mobile
	2nd	Advantages of wireless communication		
	3rd	Electromagnetic waves		
	4th	Frequency Spectrum used		
2nd	5th	Cellular Network Systems	2nd	To study the call processing using CDMA trainer kit.
	6th	Propagation considerations a) Range b) Atmospheric Effect c) Geographic Effect d) Fading e) Doppler Effect f) Multipath Effect		
	7th	Propagation considerations a) Range b) Atmospheric Effect c) Geographic Effect d) Fading e) Doppler Effect f) Multipath Effect		
	8th	Propagation considerations a) Range b) Atmospheric Effect c) Geographic Effect d) Fading e) Doppler Effect f) Multipath Effect		

3rd	9th	Propagation considerations a) Range b) Atmospheric Effect c) Geographic Effect d) Fading e) Doppler Effect f) Multipath Effect	3rd	Observing call processing of GSM trainer kit.
	10th	Cellular Concept 1.Introduction to 1G and 2G		
	11th	Cellular Concept 1.Introduction to 1G and 2G		
	12th	2.Cell area 3.Cell Site structure 4.Capacity of cell		
4th	13th	2.Cell area 3.Cell Site structure 4.Capacity of cell	4th	Demonstration of Base Trans Receiver (B.T.S.) with nearby cellular tower
	14th	5.Frequency Reuse 6.Interference (Co-channel, Adjacent channel) 7.Power Control for reducing Interference		
	15th	5.Frequency Reuse 6.Interference (Co-channel, Adjacent channel) 7.Power Control for reducing Interference		
	16th	5.Frequency Reuse 6.Interference (Co-channel, Adjacent channel) 7.Power Control for reducing Interference		
5th	17th	8.Fundamentals of cellular network planning a) Coverage planning b) Capacity planning c) Cell splitting and sectoring	5th	Demonstration of data transfer using Bluetooth
	18th	8.Fundamentals of cellular network planning d) Coverage planning e) Capacity planning f) Cell splitting and sectoring		
	19th	8.Fundamentals of cellular network planning g) Coverage planning h) Capacity planning i) Cell splitting and sectoring		

		-Assignment		
	20th	Test		
6th	21st	Multiple Access Techniques for Wireless Communication 1.Introduction to Multiple Access 2.Frequency Division Multiple Access(FDMA) 3.Time Division Multiple Access(TDMA) 4.Distinction between TDMA FDD and TDMA TDD 5.Code Division Multiple Access(CDMA),WCDMA	6th	To set up a Wi-fi network
	22nd	Multiple Access Techniques for Wireless Communication 1.Introduction to Multiple Access 2.Frequency Division Multiple Access(FDMA) 3.Time Division Multiple Access(TDMA) 4.Distinction between TDMA FDD and TDMA TDD 5.Code Division Multiple Access(CDMA),WCDMA		
	23rd	Multiple Access Techniques for Wireless Communication 1.Introduction to Multiple Access 2.Frequency Division Multiple Access(FDMA) 3.Time Division Multiple Access(TDMA) 4.Distinction between TDMA FDD and TDMA TDD 5.Code Division Multiple Access(CDMA),WCDMA		
	24th	Multiple Access Techniques for Wireless Communication 1.Introduction to Multiple Access 2.Frequency Division Multiple Access(FDMA) 3.Time Division Multiple Access(TDMA) 4.Distinction between TDMA FDD and TDMA TDD 5.Code Division Multiple Access(CDMA),WCDMA		

7th	25th	Multiple Access Techniques for Wireless Communication 1.Introduction to Multiple Access 2.Frequency Division Multiple Access(FDMA) 3.Time Division Multiple Access(TDMA) 4.Distinction between TDMA FDD and TDMA TDD 5.Code Division Multiple Access(CDMA),WCDMA	7th	To study faults on GSM mobile trainer.
	26th	Multiple Access Techniques for Wireless Communication 1.Introduction to Multiple Access 2.Frequency Division Multiple Access(FDMA) 3.Time Division Multiple Access(TDMA) 4.Distinction between TDMA FDD and TDMA TDD 5.Code Division Multiple Access(CDMA),WCDMA		
	27th	Multiple Access Techniques for Wireless Communication 1.Introduction to Multiple Access 2.Frequency Division Multiple Access(FDMA) 3.Time Division Multiple Access(TDMA) 4.Distinction between TDMA FDD and TDMA TDD 5.Code Division Multiple Access(CDMA),WCDMA		
	28th	Multiple Access Techniques for Wireless Communication 1.Introduction to Multiple Access 2.Frequency Division Multiple Access(FDMA) 3.Time Division Multiple Access(TDMA) 4.Distinction between TDMA FDD and TDMA TDD 5.Code Division Multiple Access(CDMA),WCDMA		
8th	29th	Multiple Access Techniques for Wireless Communication	8th	Visit to Mobile Switching Centre

		<p>1.Introduction to Multiple Access</p> <p>2.Frequency Division Multiple Access(FDMA)</p> <p>3.Time Division Multiple Access(TDMA)</p> <p>4.Distinction between TDMA FDD and TDMA TDD</p> <p>5.Code Division Multiple Access(CDMA),WCDMA</p>		
	30th	<p>Multiple Access Techniques for Wireless Communication</p> <p>1.Introduction to Multiple Access</p> <p>2.Frequency Division Multiple Access(FDMA)</p> <p>3.Time Division Multiple Access(TDMA)</p> <p>4.Distinction between TDMA FDD and TDMA TDD</p> <p>5.Code Division Multiple Access(CDMA),WCDMA</p>		
	31st	<p>Multiple Access Techniques for Wireless Communication</p> <p>1.Introduction to Multiple Access</p> <p>2.Frequency Division Multiple Access(FDMA)</p> <p>3.Time Division Multiple Access(TDMA)</p> <p>4.Distinction between TDMA FDD and TDMA TDD</p> <p>5.Code Division Multiple Access(CDMA),WCDMA</p>		
	32nd	<p>Mobile Communication Systems</p> <p>1.Introductionof Global Systems for Mobile Communication(GSM) and its architecture, Introduction to CDMA System, comparison of CDMA AND GSM Systems</p> <p>2. Introduction to GPRS, EDGE, Bluetooth and Wi-fi.</p>		
9th	33rd	<p>Mobile Communication Systems</p> <p>1.Introductionof Global Systems for Mobile Communication(GSM) and its architecture, Introduction to CDMA System, comparison of CDMA AND GSM Systems</p>	9th	Revision

		2. Introduction to GPRS, EDGE, Bluetooth and Wi-fi.		
	34th	Mobile Communication Systems 1.Introductionof Global Systems for Mobile Communication(GSM) and its architecture, Introduction to CDMA System, comparison of CDMA AND GSM Systems 2. Introduction to GPRS, EDGE, Bluetooth and Wi-fi.		
	35th	Mobile Communication Systems 1.Introductionof Global Systems for Mobile Communication(GSM) and its architecture, Introduction to CDMA System, comparison of CDMA AND GSM Systems 2. Introduction to GPRS, EDGE, Bluetooth and Wi-fi.		
	36th	Mobile Communication Systems 1.Introductionof Global Systems for Mobile Communication(GSM) and its architecture, Introduction to CDMA System, comparison of CDMA AND GSM Systems 2. Introduction to GPRS, EDGE, Bluetooth and Wi-fi.		
10th	37th	Mobile Communication Systems 1.Introductionof Global Systems for Mobile Communication(GSM) and its architecture, Introduction to CDMA System, comparison of CDMA AND GSM Systems 2. Introduction to GPRS, EDGE, Bluetooth and Wi-fi.	10th	Revision
	38th	Mobile Communication Systems 1.Introductionof Global Systems for Mobile Communication(GSM) and its architecture, Introduction to CDMA System, comparison of CDMA AND GSM Systems 2. Introduction to GPRS, EDGE, Bluetooth and Wi-fi.		
	39th	Mobile Communication Systems 1.Introductionof Global Systems for Mobile		

		Communication(GSM) and its architecture, Introduction to CDMA System, comparison of CDMA AND GSM Systems 2. Introduction to GPRS, EDGE, Bluetooth and Wi-fi.		
	40th	Mobile Communication Systems 1.Introductionof Global Systems for Mobile Communication(GSM) and its architecture, Introduction to CDMA System, comparison of CDMA AND GSM Systems 2. Introduction to GPRS, EDGE, Bluetooth and Wi-fi. -Assignment		
11th	41st	Test	11th	Revision
	42nd	Introduction to 3G and 4G 1.Introduction to Architecture and Features of UMTS 2.HSPA(High Speed Packet Access) 3. Features and Architecture of LTE(Long Term Evolution)		
	43rd	Introduction to 3G and 4G 1.Introduction to Architecture and Features of UMTS 2.HSPA(High Speed Packet Access) 3. Features and Architecture of LTE(Long Term Evolution)		
	44th	Introduction to 3G and 4G 1.Introduction to Architecture and Features of UMTS 2.HSPA(High Speed Packet Access) 3. Features and Architecture of LTE(Long Term Evolution)		
12th	45th	Introduction to 3G and 4G 1.Introduction to Architecture and Features of UMTS 2.HSPA(High Speed Packet Access) 3. Features and Architecture of LTE(Long Term Evolution)	12th	Revision
	46th	Introduction to 3G and 4G 1.Introduction to Architecture and Features of UMTS 2.HSPA(High Speed Packet Access)		

		3. Features and Architecture of LTE(Long Term Evolution)		
	47th	Introduction to 3G and 4G 1.Introduction to Architecture and Features of UMTS 2.HSPA(High Speed Packet Access) 3. Features and Architecture of LTE(Long Term Evolution)		
	48th	Introduction to 3G and 4G 1.Introduction to Architecture and Features of UMTS 2.HSPA(High Speed Packet Access) 3. Features and Architecture of LTE(Long Term Evolution)		
13th	49th	Introduction to 3G and 4G 1.Introduction to Architecture and Features of UMTS 2.HSPA(High Speed Packet Access) 3. Features and Architecture of LTE(Long Term Evolution)	13th	Revision
	50th	Introduction to 3G and 4G 1.Introduction to Architecture and Features of UMTS 2.HSPA(High Speed Packet Access) 3. Features and Architecture of LTE(Long Term Evolution)		
	51st	Troubleshooting GSM Mobile Phone 1.Assembling and disassembling of GSM phone 2.Study parts of Mobile Phone 3.Testing of various parts		
	52nd	Troubleshooting GSM Mobile Phone 1.Assembling and disassembling of GSM phone 2.Study parts of Mobile Phone 3.Testing of various parts		
14th	53rd	Troubleshooting GSM Mobile Phone 1.Assembling and disassembling of GSM phone 2.Study parts of Mobile Phone 3.Testing of various parts	14th	Revision
	54th	Troubleshooting GSM Mobile Phone		

		1.Assembling and dissembling of GSM phone 2.Study parts of Mobile Phone 3.Testing of various parts		
	55th	Troubleshooting GSM Mobile Phone 1.Assembling and dissembling of GSM phone 2.Study parts of Mobile Phone 3.Testing of various parts		
	56th	Troubleshooting GSM Mobile Phone 1.Assembling and dissembling of GSM phone 2.Study parts of Mobile Phone 3.Testing of various parts		
15th	57th	Troubleshooting GSM Mobile Phone 1.Assembling and dissembling of GSM phone 2.Study parts of Mobile Phone 3.Testing of various parts	15th	Revision
	58th	Troubleshooting GSM Mobile Phone 1.Assembling and dissembling of GSM phone 2.Study parts of Mobile Phone 3.Testing of various parts		
	59th	Troubleshooting GSM Mobile Phone 1.Assembling and dissembling of GSM phone 2.Study parts of Mobile Phone 3.Testing of various parts -Assignment		
	60th	Test		