

Name of the Faculty: **Sudhir Dagar, Associate Professor**

Discipline : **Electronics and Communication Engineering**

Semester : **VII**

Subject : **Project**

Lesson Plan Duration: 15 Weeks (from August 2018 to December 2018)

Work load (Lecture/Practical per week in hours: **Lectures-00, Practical-06**)

Week	Theory		Practical	
	Lecture day	Topic(including assignment/test)	Practical day	Topic
1			1	Introduction
			2	Project/Synopsis outlines
2			3	Testing of circuit on bread board
			4	Problem rectification if any
3			5	Discussion regarding PCB layout preparation
			6	Techniques for PCB fabrication
4			7	Component mounting methods
			8	Discussion/Practice of Soldering techniques
5			9	Testing of circuit on PCB
			10	Fault Diagnosis methodology/flow chart
6			11	Discussion of Results
			12	<b>First viva-voce</b>
7			<b>Ist Minor Test</b>	
8			13	Presentation regarding Project/Synopsis report writing
			14	Overview of Introduction chapter
9			15	Overview of Objectives chapter
			16	Overview of Work methodology/flow chart chapter
10			17	Overview of Circuit diagram/block diagram chapter
			18	Overview of Advantages & disadvantages chapter
11			19	Overview of Applications chapter
			20	Overview of Results chapter
12			21	Overview of Conclusion chapter
			22	Overview of Future scope & features chapter
13			23	Overview of References chapter
			24	Overview of Bibliography chapter
14			<b>IInd Minor Test</b>	
15			25	<b>Second viva voce</b>
			26	Final submission

## Lesson Plan

**Name of Faculty** : Vikram Singh Bhambhu, Guest Lecturer(ECE)  
**Discipline** : Electronics & Communication Engg.  
**Semester** : 7th  
**Subject** : Embedded System Design  
**Lesson Plan Duration:** 15 weeks (from August, 2018 to December, 2018)  
**Work Load (Lecture/Practical) per week (in hours): Lectures 04 hours**

Week	Theory	
	Lecture Day	Topic
1 <sup>st</sup>	1	Introduction to Embedded System Design
	2	Embedded Microcontroller
	3	External Memory Microcontroller
	4	Processor Architecture : Harvard vs Princeton
2 <sup>nd</sup>	5	CISC vs RISC
	6	Microcontroller Memory types
	7	Microcontroller Features :clocking
3 <sup>rd</sup>	8	I/O pins, Peripherals
	9	Interrupts
	10	Timers
	11	Introduction to PIC microcontroller
4 <sup>th</sup>	12	Architecture
	13	Pipelining
	14	Programme Memmory Consideration
	15	Addressing Modes
5 <sup>th</sup>	16	CPU Register
	17	Instruction set
	18	Simple Operation
	19	Interrupt Logic
6 <sup>th</sup>	20	Timer 2 Scalar initialization
	21	Interrupt service Routine
	22	Loop time subroutine
	23	External interrupt
7 <sup>th</sup>	24	Timers
	<b>Minor Test 1</b>	
8 <sup>th</sup>	25	Synchronous serial port module
	26	Serial peripheral device
	27	O/P Port etension
	28	I/P Port Extension
9 <sup>th</sup>	29	UART
	30	Developing tools/ environment
	31	Assembly Language Programming style
	32	Interperator
10 <sup>th</sup>	33	High level Language
	34	Debugging
	35	Airthemetic operation

	36	Bit addressing
11 <sup>th</sup>	37	Loop Control
	38	Stack operation
	39	Subroutine
	40	RAM direct addressing
12 <sup>th</sup>	41	State machine
	42	Oscillator
	43	Timer interrupt
	44	Memory mapped I/O
13 <sup>th</sup>	45	Music Box
	46	Mouse wheel turning
	47	PWM motor control
	48	Air craft demonstration
14 <sup>th</sup>	<b>Minor Test 2</b>	
15 <sup>th</sup>	49	Ultrasonic distance measuring
	50	Temperature Sensor
	51	Pressure Sensor
	52	Magnetic Field Sensor

**Vikram Singh Bhambhu**

**Guest Lecturer (ECE)**

## Lesson Plan

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**Discipline** : Electronics & Communication Engg.  
**Semester** : 7th  
**Subject** : Embedded System Design  
**Lesson Plan Duration:** 15 weeks (from August, 2018 to December, 2018)  
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	52	Magnetic Field Sensor

**Vikram Singh Bhambhu**

**Guest Lecturer (ECE)**

Name of the Faculty: **SAHIL ARORA, ASSISTANT PROFESSOR (ECE)**

Discipline : **Electronics and Communication Engineering**

Semester : **IV**

Subject : **Digital Signal Processing**

Lesson Plan Duration: 15Weeks (from AUGUST 2018 to DECEMBER 2018)

**Work load (Lecture/Practical per week in hours: Lectures-03, Tutorial-01,**

Week	Theory		ACTUAL LESSON PLAN COVERED	
	Lecture day	Topic(including assignment/test)		
1	1	SIGNAL CLASSIFICATION		
	2	FREQUENCY DOMAIN REPRESENTATION		
	3	TIME DOMAIN REPRESENTATION		
	4	REPRESENTATION OF SEQUENCE BY FOURIER TRANSFORM		
2	5	PROPERTIES OF FOURIER TRANSFORM		
	6	DISCRETE TIME RANDOM SIGNALS		
	7	ENERGY AND POWER SIGNALS		
	8	DISCRETE TIME SYSTEMS		
3	9	CLASSIFICATION OF DTS		
	10	PROPERTIES OF DTS		
	11	TIME INVARIANT SYSTEMS		
	12	FIR SYSTEMS		
4	13	IIR SYSTEMS		
	14	SAMPLING OF TIME SIGNALS		
	15	SAMPLING THEOREM		
	16	APPLICATIONS		
5	17	FREQUENCY DOMAIN REPRESENTATION OF SAMPLING		
	18	REPRESENTATION OF BAND LIMITED SIGNALS FROM ITS SAMPLES		
	19	DISCRETE TIME PROCESSING OF CONTINUOUS TIME SIGNALS		
	20	PROBLEMS AND SOLUTIONS		
6	21	CHANGING THE SAMPLING RATE USING DISCRETE TIME PROCESSING.		
	22	PROBLEMS AND SOLUTION		
	23	INTRODUCTION OF Z TRANSFORM		
	24	PROBLEMS AND SOLUTION		
7		<b>1st Minor Test</b>		
8	25	PROPERTIES OF REGION OF CONVERGENCE		
	26	PROPERTIES OF Z-TRANSFORM		
	27	-DO-		
	28	PROBLEMS AND SOLUTION		
9	29	<b>Assignment Questions</b>		
	30	INVERSION OF Z-TRANSFORM		
	31	APPLICATION OF Z-TRANSFORM		
	32	Problems and solutions		
10	33	BASICS OF DIGITAL FILTER		
	34	FUNDAMENTALS OF DIGITAL FILTERING		

	35	VARIOUS TYPES OF DIGITAL FILTER		
	36	DESIGN TECHNIQUES OF DIGITAL FILTERS		
11	37	WINDOW TECHNIQUES FOR FIR FILTER		
	38	WINDOW TECHNIQUES		
	39	BILINEAR TRANSFORMATION FOR IIR		
	40	PROBLEMS AND SOLUTION		
12	41	BACKWARD DIFFERENCE METHOD FOR IIR		
	42	ANALYSIS OF FINITE WORD LENGTH EFFECTS OF DSP		
	43	DSP ALGORITHM IMPLEMENTATION CONSIDERATION		
	44	PROBLEMS AND SOLUTIONS		
13	45	APPLICATION OF DSP		
	46	MULTIRATE DSP		
	47	INTRODUCTION TO MULTIRATE DSP		
	48	SAMPLING RATE CONVERSION		
14		<b>2<sup>ND</sup> MINOR TEST</b>		
15	49	FILTER STRUCTURES, DIGITAL FILTER BANKS		
	50	<b>AssignmentEvaluation</b>		
	51	MULTISTAGE DECIMATOR & INTERPOLATORS		
	52	PROBLEMS AND SOLUTION		

SAHIL ARORA  
ASSISTANT PROFESSOR  
ECE Department

## Lesson Plan

<b>Name of Faculty</b>	:	Gourav Sharma, Guest Faculty
<b>Discipline</b>	:	Electronics & Communication Engg.
<b>Semester</b>	:	7th
<b>Subject</b>	:	Optical Communication (EE-405E)
<b>Lesson Plan Duration:</b>		15 weeks (from August, 2018 to November, 2018)
<b>Work Load (Lecture) :</b>		Per week (in hours): <b>Lectures 04 hours.</b>

Week	Theory	
	Lecture Day	Topic (Including Assignment/Test)
1 <sup>st</sup>	1	Electromagnetic spectrum used for optical communication
	2	Block diagram of optical communication system
	3	Basics of transmission of light rays
	4	Advantages of optical fiber communication
2 <sup>nd</sup>	5	Optical fibers structures and their types
	6	Attenuation
	7	Scattering
	8	Absorption
3 <sup>rd</sup>	9	Fiber Bend Loss
	10	Dispersion
	11	Fiber Coupler
	12	Connector
4 <sup>th</sup>	13	Problem & Solution of 1 <sup>st</sup> Unit
	14	Problem & Solution of 2 <sup>nd</sup> Unit
	15	Light emitting diode
	16	Recombination processes
5 <sup>th</sup>	17	The spectrum of recombination radiation
	18	LED characteristics
	19	Internal quantum efficiency
	20	External quantum efficiency
6 <sup>th</sup>	21	LED structure
	22	Lens coupling to fiber
	23	Behavior at high frequencies.
	24	Problem & Solution of 3 <sup>rd</sup> Unit
7 <sup>th</sup>	<b>1<sup>st</sup> Minor Test</b>	
8 <sup>th</sup>	25	Basic principles of laser action in semi -conductors
	26	optical gain,
	27	lasing threshold
	28	Assignment 1
9 <sup>th</sup>	29	laser structures and characteristics
	30	laser to fiber coupling
	31	Comparison with LED source.
	32	Problems and Solution of 4 <sup>th</sup> Unit



10 <sup>th</sup>	33	Principles of optical detection
	34	Quantum efficiency, Responsivity
	35	General principles of PIN photodetector
	36	Intrinsic absorption
11 <sup>th</sup>	37	Materials and designs for PIN photodiodes, ,
	38	Impulse and frequency response of PIN photodiodes
	39	Noise in PIN Photodiodes
	40	Problems and Solution
12 <sup>th</sup>	41	multiplication process
	42	APD Design,
	43	APD bandwidth,
	44	APD noise
13 <sup>th</sup>	45	Assignment-II
	46	Revision & Problem Solving of 1 <sup>st</sup> Unit
	47	Revision & Problem Solving of 2 <sup>nd</sup> Unit
	48	Revision & Problem Solving of 2 <sup>nd</sup> Unit
14 <sup>th</sup>	<b>2<sup>nd</sup> Minor Test</b>	
15 <sup>th</sup>	49	Revision & Problem Solving of 3 <sup>rd</sup> Unit
	50	Revision & Problem Solving of 4 <sup>th</sup> Unit
	51	Revision & Problem Solving of 5 <sup>th</sup> Unit
	52	Revision & Problem Solving of 5 <sup>th</sup> Unit

Gourav Sharma  
Guest Faculty  
E.C.E.Department

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Discipline : **Electronics and Communication Engineering**

Semester : **VII**

Subject : **Project**

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