

Lesson Plan

Name of the Faculty : **Ms. Jagdeep Kaur**

Discipline : **Electronics and Communication Engineering**

Semester : **6th**

Subject : **Digital Signal Processing(ECE- 302N)**

Lesson plan : **15 Weeks (From January, 2018 to April, 2018)**

Lecture per Week (in Hours):**Lectures-03**

Week	Theory	
	Lecture Day	Topic
1 st	1.	UNIT-1 Discrete Transforms: Z- transform and its properties,
	2.	Inversion of Z-transform
	3.	One sided Z-transform and solution of differential equations
2 nd	4.	Analysis of LTI systems in Z-domain, causality, stability, schur-cohn stability test
	5.	ASSIGNMENT NO 1 “Relationship between Z-transform and Fourier transform”
	6.	Frequency Selective Filters: All pass filters, minimum-phase, maximum-phase and mixed-phase systems
3 rd	7.	Goertzel algorithm
	8.	Chirp Z-transform
	9.	applications of Z-Transform
4 th	10.	TEST OF UNIT-1
	11.	UNIT-2 Frequency Domain Sampling and DFT
	12.	Linear filtering using DFT
5 th	13.	Frequency analysis of signals using DFT, radix 2, radix-4,
	14.	computation of DFT of real sequences
	15.	ASSIGNMENT NO-2 “Properties of DFT”
6 th	16.	Implementation of Discrete Time Systems
	17.	Direct form, cascade form
	18.	Frequency sampling and lattice structures for FIR systems.
7 th	19.	Direct forms, transposed form, cascade form parallel form
	20.	Lattice and lattice
	21.	ladder structures for IIR systems.
8 th	22.	TEST OF UNIT-2
	23.	UNIT-3 Design of FIR Filters : Characteristics of practical frequency selective filters.
	24.	Filters design specifications

9 th	25.	peak pass band ripple, minimum stop band attenuation,
	26.	Four types of FIR filters,
	27.	ASSIGNMENT NO-3 “alternation theorem”
10 th	28.	Design of FIR filters using windows
	29.	Kaiser window
	30.	ASSIGNMENT NO-4 “Gibbs phenomenon”
11 th	31.	design methods for FIR filters
	32.	design of FIR filters by frequency sampling method,
	33.	design of optimum equiripple FIR filters.
12 th	34.	TEST OF UNIT-3
	35.	UNIT-4 Design of IIR Filters: Design of IIR filters from analog filters,
	36.	Design by approximation of derivatives,
13 th	37.	Impulse Invariance Method
	38.	Bilinear Transformation Method
	39.	Characteristics of Butterworth filter
14 th	40.	ASSIGNMENT NO-5 “Least Square Methods”
	41.	Characteristics of Chebyshev filter
	42.	Characteristics of Elliptical analog filters
15 th	43.	Design of IIR filters, Frequency transformation
	44.	design of IIR filters in frequency domain
	45.	TEST OF UNIT-4

Text Books:

1. John G. Proakis, Digital Signal Processing, PHI

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Reference Books:

1. S. K. Mitra, Digital Signal Processing , TMH
2. Rabiner and Gold, Digital Signal Processing, PHI
3. Salivahan, Digital Signal Processing , TMH
4. Digital Signal Processing: Alon V. Oppenheim;PHI

Lesson Plan

Name of the faculty: Mr. Pardeep Sandhu

Discipline: Electronics & Communication Engineering

Semester: 6th

Subject: Digital Design using Verilog (ECE-304N)

Lesson Plan Duration: 15 Weeks (from January, 2018 to April, 2018)

Week	Theory	
	Lecture Day	Topic Covered
1 st	1	Introduction , Conventional Approach to Digital Design
	2	VLSI design, ASIC design flow
	3	Role of HDL. Conventional Data flow, ASIC data flow
2 nd	4	Verilog as HDL Levels of Design Description, Concurrency
	5	Synthesis and Simulation
	6	Functional Verification, System Tasks
3 rd	7	Programming Language Interface (PLI)
	8	Module, Simulation and Synthesis Tools
	9	Test Benches
4 th	10	Language Constructs and conventions, Keywords,
	11	Identifiers, White Space characters, Comments, Numbers
	12	Strings, Logic Values, Strengths, Data Types, Scalars and Vectors
5 th	13	Parameters, Memory, Operators, System Tasks
	14	Gate level modeling: Introduction, AND Gate Primitive
	15	Module Structure, Other Gate Primitives, Illustrative Examples,
6 th	16	-Continued to next Lecture-
	17	Tri-State Gates
	18	Array of Instances of Primitives, Additional Examples

7 th	19	Design of Flip-flops with Gate Primitives
	20	Delays, Strengths and Contention Resolution
	21	Net Types, Design of Basic Circuits
8 th	22	Behavioral modeling: Operations and Assignments
	23	Functional Bifurcation
	24	Initial Construct, Always Construct, Examples
9 th	25	-Continued to next Lecture-
	26	Wait construct, Multiple Always Blocks, Designs at Behavioral Level
	27	Blocking and Non-blocking Assignments
10 th	28	The case statement, Simulation Flow
	29	IF and IF ELSE constructs, assign-deassign construct, repeat construct
	30	FOR loop, the disable construct, While loop
11 th	31	Forever loop, parallel blocks, force-release construct, Event
	32	Modeling at data flow level: Introduction, Continuous Assignment Structures
	33	Delays and Continuous Assignments
12 th	34	Assignment to Vectors, Operators
	35	Additional Examples
	36	Switch level modeling: Introduction, Basic Transistor Switches
13 th	37	CMOS Switch, Bi-directional Gates, Time Delays with Switch Primitives
	38	Instantiations with Strengths and Delays, Strength Contention with Trireg Nets
	39	Functions, tasks, and user defined primitives: Introduction, Function Tasks
14 th	40	User- Defined Primitives (UDP)
	41	FSM Design (Moore and Mealy Machines)
	42	System tasks, functions, and compiler directives: Introduction, Parameters, Path Delays.
15 th	43	Module Parameters, System Tasks and Functions
	44	File-Based Tasks and Functions, Compiler Directives
	45	Hierarchical Access, General Observations

LESSON PLAN

Name :Ms Harmanpreet Kaur (Theory)

Discipline: Electronics and Communication Department

Semester: 6th

Subject: DIGITAL COMMUNICATION (ECE-306N)

Lesson Plan Duration: 15 weeks (from January, 2018 to April, 2018)

Work Load: Lectures-03

Week	Theory	
	Lecture Day	Topic
1 st	1 st	UNIT 1: InformationTheory: Introduction, Entropy
	2 nd	<ul style="list-style-type: none"> • Huffman Coding • Channel Capacity • Capacity,Channel Coding,
	3 rd	Linear Block Codes, Matrix Description
2 nd	4 th	<ul style="list-style-type: none"> • Syndrome Decoding • Hamming Code
	5 th	Cyclic Code
	6 th	<ul style="list-style-type: none"> • Convolution Code • Viterbi decoding
3 rd	7 th	Revision Test
	8 th	Unit 2:Pulse Modulation System: Introduction to Digital communication, Basic block diagram, Advantages of digital systems over analog systems
	9 th	Sampling Process
4 th	10 th	Aperture effect
	11 th	PAM TDM system
	12 th	Quantization Process
5 th	13 th	Quantization Noise
	14 th	<ul style="list-style-type: none"> • PCM • DPCM
	15 th	Companding, A law and μ law compressors
6 th	16 th	Noise in PCM : Assignment Topic
	17 th	Delta modulation/ demodulation
	18 th	<ul style="list-style-type: none"> • ADM • Delta sigma modulator
7 th	19 th	Time division multiplexed systems (T & E type systems), Calculation of O/P signal power
	20 th	O/P signal to noise ratio in delta modulation
	21 st	Unit 3:Base Band Pulse Transmission: Matched filter and its properties average probability of symbol error in binary enclosed PCM receiver,
8 th	22 nd	Intersymbol interference
	23 rd	Nyquist criterion for distortionless base band binary transmission

	24 th	Ideal Nyquist channel raised cosine spectrum,
9 th	25 th	Correlative level coding Duo binary signalling
	26 th	Tapped delay line equalization
	27 th	Adaptive Equalization
10 th	28 th	LMS algorithm, Eye pattern
	29 th	LMS algorithm, Eye pattern
	30 th	Revision Test
11 th	31 st	Unit 4: Digital Pass Band Transmission: Pass band transmission model
	32 nd	Gram Schmidt orthogonalization procedure
	33 rd	Gram Schmidt orthogonalization procedure,
12 th	34 th	Geometric Interpretation of signals
	35 th	Response of bank of correlators to noise input
	36 th	Detection of known signal in Noise
13 th	37 th	Hierarchy of digital modulation techniques
	38 th	<ul style="list-style-type: none"> • BPSK • DPSK • DEPSK
	39 th	QPSK systems; ASK, FSK,
14 th	40 th	QASK, Many FSK
	41 st	MSK, Many QAM,
	42 nd	Signal space diagram and spectra of the above systems
15 th	43 rd	Effect of intersymbol interference
	44 th	Bit symbol error probabilities
	45 th	Synchronization.

Lesson Plan

Name of faculty : Ms. Megha
Discipline : B.Tech (ECE)
Semester : 6th
Subject : Fundamentals of Management
Lesson Plan during : 15 Weeks (From January 2018 to April, 2018)

**** Work load (Lecture / practical) per week (In hours): lectures-03, practical – 00**

WEEK	THEORY	
	LECTURE	TOPIC
	DAY	(INCLUDING ASSIGNMENT/ TEST)
1.	1.	Meaning, Definition, Nature Of FOM
	2.	Importance & Functions Of FOM
	3.	Management As Art, Science & Profession
2.	4.	Management As Social System
	5.	Concepts Of Management-Administration
	6.	Evolution Of Management Thought
3.	7.	Development Of Management Thought
	8.	Scientific Management
	9.	Administrative Theory Of Management
4.	10.	Bureaucratic Organization, Behavioral Approach
	11.	Human Relations Movement
	12.	Behavioral Science Approach
5.	13.	Modern Approach To Management
	14.	Systems Approach And Contingency Approach
	15.	Nature, Purpose And Functions, Types Of Plans
6.	16.	Planning Process
	17.	Strategies And Policies
	18.	Concept Of Corporate Strategy, Formulation Of Strategy
7.	19.	Types Of Strategies
	20.	Management By Objectives (MBO)

	21.	SWOT Analysis, Types Of Policies
8.	22.	Principles Of Formulation Of Policies
	23.	Nature, Importance, Process, Organization Structure
	24.	Line And Staff Organization
9.	25.	Delegation Of Authority And Responsibility
	26.	Centralization And Decentralization
	27.	Decision Making Process & Models
10.	28.	Departmentalization: Concept And Types
	29.	Formal & Informal Organizations
	30.	Concept, Process, Features; Manpower Planning; Job Analysis: Concept And Process
11.	31.	Recruitment And Selection: Concept, Process, Sources Of Recruitment
	32.	Performance Appraisal, Training And Development
	33.	Communication- Nature, Process, Formal And Informal, Barriers To Effective Communication
12.	34.	Theories Of Motivation-Maslow, Herzberg, McGregor
	35.	Concept And Theories, Managerial Grid, Situational Leadership
	36.	Transactional And Transformational Leadership
13.	37.	Concept, Process, Types, Barriers To Controlling, Controlling Techniques:
	38.	Budgetary Control, Return On Investment
	39.	Management Information System-MIS , TQM-Total Quality Management, Network Analysis- PERT And CPM
14.	40.	Social Responsibility Of Management–Management Of Crisis, Total Quality Management, Stress Management
	41.	Concept Of Corporate Social Responsibility (CSR) And Business Ethics. Functional Aspects Of Business
	42.	Conceptual Framework Of Functional Areas Of Management
15.	43.	Finance
	44.	Marketing
	45.	Human Resources

Lesson Plan

Name of the Faculty : **Mr. Vishal Kalra**

Discipline : **Electronics & Communication Engineering**

Semester : **6th**

Subject (**ECE-308-N**) : **COMPUTER COMMUNICATION NETWORKS**

Lesson plan : **15 Weeks(January, 2018 to April, 2018)**

Lecture per Week (in Hours) : **Lectures-03**

Week	Theory	
	Lecture Day	Topic (including Assignment/test)
1 st	46.	Unit 1: Introduction to Computer Networks
	47.	Protocols and standards
	48.	Network Models: The OSI Model (contd. To Next Lecture)
2 nd	49.	Network Models: The OSI Model
	50.	Layers in the OSI Model
	51.	TCP/IP protocol suite
3 rd	52.	Introduction to addressing
	53.	Test 1: The OSI Model
	54.	Assignment 1: The Telephone System, Narrowband ISDN, Broadband ISDN and ATM
4 th	55.	Analog and Digital signals Transmission media : Guided & Unguided
	56.	Guided & Unguided Media
	57.	Unit 2: The Data Link Layer: Data Link Layer Design issues
5 th	58.	Error Detection & correction
	59.	Data link control: Framing, Flow & Error control (contd. To Next Lecture)
	60.	Data link control: Framing, Flow & Error control
6 th	61.	Test 2: Error Detection & Correction in Data Link Layer
	62.	Noiseless channels, Noisy channels,
	63.	HDLC
7 th	64.	Point to Point Protocols
	65.	The Medium Access Sublayer: Aloha Protocols
	66.	LAN Protocols: wired LAN,s, Wireless LANS
8 th	67.	Satellite Protocols
	68.	Unit 3: Network Layer : Design Issues
	69.	IPv4 addresses
9 th	70.	IPv6 addresses

	71.	internetworking,IPv4, IPv6
	72.	Test 3: IPv4, IPv6
10 th	73.	congestion control algorithms
	74.	Transport & Session Layer:Protocol design issues
	75.	Process to process delivery
11 th	76.	UDP, remote procedurecalls
	77.	TCP connection Management
	78.	Unit 4: Presentation Layer:Design issues
12 th	79.	abstract Syntax notation (contd. To Next Lecture)
	80.	abstract Syntax notation
	81.	data compression technique, cryptography
13 th	82.	Test 4: Cryptography
	83.	Application Layer:Design issues, (contd. To Next Lecture)
	84.	Design Issues, file transfer
14 th	85.	access and management
	86.	electronic mail (contd. To Next Lecture)
	87.	electronic mail, Virtual Terminals
15 th	88.	WWW & HTTP
	89.	Test 5: Electronic Mail
	90.	Revision

Text Books:

1. Forouzan B.A, Data Communications and Networking, Tata-Mc-Graw Hill .
2. Tanenbaum A.S, Computer Networks, PHI.

Reference Books:

- 1 Stallings W, Data and Computer Communications, PHI.
- 2 Leon –Garcia, Computer Networks, Mc Graw Hill

Lesson Plan

Name of the Faculty : **Ms. Jagdeep Kaur**

Discipline : **Electronics and Communication Engineering**

Semester : **6th**

Subject : **Digital Signal Processing Lab(ECE- 310N)**

Lesson plan : **15 Weeks (From January, 2018 to April, 2018)**

Lecture per Week (in Hours):**Practical-03**

Week	Practical	
	Practical Day	Topic
1 st	1.	Introduction to MATLAB
	2.	
	3.	
2 nd	4.	Write a program to plot the following functions: a)impulse function b)unit step c)unit ramp d)exponential e) sinusoidal
	5.	
	6.	
3 rd	7.	Write a program to plot the Sine wave, cosine wave and Tangent wave.
	8.	
	9.	
4 th	10.	Write a program to plot the convolution and multiplication of two signals
	11.	
	12.	
5 th	13.	VIVA NO 1
	14.	
	15.	
6 th	16.	Write a program to verify the Symmetry, time shifting and modulating properties of DTFT with a rectangular pulse.
	17.	
	18.	
7 th	19.	Write a program to study the aliasing effect by using a Sinusoidal Signal. Show the plots of' continuous time Signal. Sampled Signal and reconstructed signals by using subplot
	20.	
	21.	
8 th	22.	Write a program to find the convolution of two sequences using in built convolution function
	23.	
	24.	
9 th	25.	To study the frequency shift property of DTFT
	26.	
	27.	
10 th	28.	VIVA NO 2
	29.	
	30.	

11 th	31.	Write a program to plot real, imaginary phase and magnitude of exponential function
	32.	
	33.	
12 th	34.	Write a program to verify the properties of Discrete Fourier Transform (DFT).
	35.	
	36.	
13 th	37.	To study different window functions available in signal processing
	38.	
	39.	
14 th	40.	Write a program to study the sampling theorem of a continuous time signal.
	41.	
	42.	
15 th	43.	VIVA NO-3
	44.	
	45.	

Lesson Plan

Name of the faculty: Mr. Pardeep Sandhu

Discipline: Electronics & Communication Engineering

Semester: 6th

Subject: Digital Design using Verilog Lab (ECE-312N)

Lesson Plan Duration: 15 Weeks (from January, 2018 to April, 2018)

Week No.	Practical
1 st	Write a Program to implement logic gates.
2 nd	Write a Program to implement half-adder.
3 rd	Write a Program to implement full-adder.
4 th	1 st Viva-Voce.
5 th	Write a Program to implement 4 bit addition/subtraction.
6 th	Write a Program to implement a 3:8 decoder.
7 th	Write a Program to implement an 8:1 multiplexer.
8 th	2 nd Viva-Voce.
9 th	Write a Program to implement a 1:8 demultiplexer.
10 th	Write a Program to implement 4 bit comparator.
11 th	Write a Program to implement Mod-10 up counter.
12 th	Write a program to perform serial to parallel transfer of 4 bit binary number.
13 th	3 rd Viva-Voce

LESSON PLAN

Name :Ms Harmanpreet Kaur (Practical)

Discipline: Electronics and Communication Department

Semester: 6th

Subject: DIGITAL COMMUNICATION LAB (ECE-314N)

Lesson Plan Duration: 15 weeks (from January, 2018 to April, 2018)

Work Load: Practical:03

Week	Practical	
	Practical Day	Topic
1 st	1 st	Introduction to lab
2 nd	2 nd	To Study ASK
3 rd	3 rd	To Study PSK
4 th	4 th	Viva Voice
5 th	5 th	To Study FSK
6 th	6 th	To Study Balanced Modulator & Demodulator
7 th	7 th	Viva Voice
8 th	8 th	To Study PCM
9 th	9 th	Setting up a Fiber Optical Analog Link
10 th	10 th	Viva Voice
11 th	11 th	Setting up a Fiber Optic Digital Link
12 th	12 th	Losses in Optical Fiber
13 th	13 th	Measurement of Numerical Aperture
14 th	14 th	Time Division multiplexing of signals
15 th	15 th	Viva Voice