

Lesson Plan Duration : 15 weeks /work Load (Lecture/ Practical) per week (in hours): 03 HOURS (Theory) + 06 HOURS (03 Hours*2 Groups) (PRACTICAL)							
Discipline : Electronics and Communication Engg. Subject : CPC				Semester : IIIrd			
Week	Theory		Practical	Week	Theory		Practical
	Lecture day	Topic (including assignment/ test)	Topic		Lecture day	Topic (including assignment/ test)	Topic
1 <sup>st</sup>	1	Introduction to Algorithm	Programming exercises on executing and editing a C program	8 <sup>th</sup>	22	Got and switch statements	Programming exercises on switch statement
	2	Introduction to Programming Development			23	Problem Taking	
	3	Steps in development of a program			24	Introduction to Pointers	
2 <sup>nd</sup>	4	Flow charts	Programming exercises on defining variables and assigning values to variables.	9 <sup>th</sup>	25	Address operator and pointers	Programming exercises on do while, statement.
	5	Algorithm development			26	Declaring Pointers	
	6	Programme Debugging			27	Initializing pointers	
3 <sup>rd</sup>	7	Assignment / Problem Taking	Programming exercises on arithmetic and relational operators.	10 <sup>th</sup>	28	Single pointer	Programming exercises on for statement.
	8	Introduction to Program Structure			29	<b>2nd Sessional Test</b>	
	9	I/O statements,			30	Introduction to functions	
4 <sup>th</sup>	10	Assign statements	Programming exercises on arithmetic expressions and their evaluation.	11 <sup>th</sup>	31	Global and Local Variables	Programs on one-dimensional array.
	11	Constants, variables			32	Function Declaration, Standard functions	
	12	Data types			33	Parameters and Parameter Passing	
5 <sup>th</sup>	13	Operators and Expressions	Programming exercises on formatting input/output using printf and scanf and their return type values.	12 <sup>th</sup>	34	Call - by value, Call - by Reference	Programs on two-dimensional array.
	14	Standards and Formatted IOS			35	Introduction to Arrays	
	15	Data Type Casting			36	Array Declaration, Length of array	
6 <sup>th</sup>	16	<b>1st Sessional Test</b>	Programming exercises using if statement	13 <sup>th</sup>	37	Single Array	(i) Programs for putting two strings together. (ii) Programs for comparing two strings.
	17	Control Structures Introduction			38	Multidimensional Array	
	18	Decision making with IF – statement			39	Arrays of characters	
7 <sup>th</sup>	19	IF – Else a, Nested IF	Programming exercises using if Else	14 <sup>th</sup>	40	Passing an array to function	Simple programs using structures, pointers., Unions
	20	While, do-while			41	Pointers to an array	
	21	for loop, Break. Continue Statement			42	<b>3rd Sessional Test</b>	

**Specimen of lesson Plan Duration : 15 weeks**

**Discipline : Electronics and Communication Engg.**

**Subject : DIGITAL ELECTRONICS(180832) Semester : IIIrd**

**Work Load (Lecture/ Practical) per week (in hours): 03 HOURS (Theory)**

Week	Theory		Week	Theory	
	Lecture day	Topic (including assignment/ test)		Lecture day	Topic (including assignment/ test)
1 <sup>st</sup>	1	Introduction about subject	10 <sup>th</sup>	28	Concept and types of latch
	2	Distinction between analog and digital signal.		29	Operation using waveforms and truth tables of RS,
	3	Applications and advantages of digital signals.		30	T.D, Flip Flop
2 <sup>nd</sup>	4	Number System	11 <sup>th</sup>	31	REVISION, Master/ Slave J.K, Flip flop, Difference between a latch
	5	Binary, octal and hexadecimal number system:		32	<b>2nd Sessional Test</b>
	6	conversion from decimal and hexadecimal to binary and vice-versa.		33	Introduction to Asynchronous and Synchronous counters
3 <sup>rd</sup>	7	Binary addition and subtraction	12 <sup>th</sup>	34	Binary counters
	8	1's and 2's complement method of addition/subtraction.		35	Divide by N ripple counters,
	9	Codes and Parity Concept of code, weighted and non-weighted codes,		36	Decade counter, Ring counter
4 <sup>th</sup>	10	BCD, excess-3 and Gray code.	13 <sup>th</sup>	37	Introduction and basic concepts including shift left and shift right
	11	Concept of parity, single and double parity and error detection		38	Serial in parallel out, serial in serial out, parallel in serial out, parallel in
	12	Logic Gates and Families, Concept of negative and positive logic		39	Universal shift register
5 <sup>th</sup>	13	Definition, symbols and truth tables of NOT, AND	14 <sup>th</sup>	40	A/D and D/A Converters
	14	OR, NAND, NOR, EXOR Gates, NAND and NOR as universal gates.		41	Stair step Ramp A/D converter, Dual Slope A/D converter
	15	Introduction to TTL and CMOS logic families		42	Successive Approximation A/D Converter
6 <sup>th</sup>	16	Logic Simplification Postulates of Boolean algebra, De Morgan's Theorems	15 <sup>th</sup>	43	Detail study of : Binary Weighted D/A converter, R/2R ladder D/A
	17	Implementation of Boolean (logic) equation with gates		44	Applications of A/D and D/A converters
	18	<b>1st Sessional Test</b>		45	<b>3rd Sessional Test</b>
7 <sup>th</sup>	19	Karnaugh map (upto 4 variables)	16 <sup>th</sup>	46	Memory organization, classification of semiconductor memories (RAM,
	20	Application in developing combinational logic circuits		47	REVISION, static and dynamic RAM, introduction to 74181 ALU IC
	21	Application in developing combinational logic circuits		48	Revision
8 <sup>th</sup>	22	Arithmetic circuits Half adder and Full adder circuit, design and implementation	17 <sup>th</sup>	49	Revision
	23	4 bit Adder circuit		50	Revision
	24	Four bit decoder circuits for 7 segment display and decoder/driver ICs		51	Revision
9 <sup>th</sup>	25	Basic functions and block diagram of MUX		52	Revision
	26	Basic of function & block diagram, DEMUX with different ICs			
	27	Basic functions and block diagram of Encoder			

# LESSON PLAN

**BRANCH: - ECE**

**SEMESTER:- 3rd**

**SUBJECT—Network Filters and Transmission Lines**

**Lesson Plan Duration:- 17 weeks**

**Work Load (Lecture/Practical) per week (In hours): Lecture- 03, Practical -02**

Week	Theory		Practical	
	Lecture Day	Topic (Including assignment/test)	Practical	Topic
1 <sup>st</sup>	1st	Introduction to subject, syllabus and books, Introduction to Electrical Machines.		Introduction to all Practicals and safety precautions regarding all experiments.
	2nd	Two port (four terminals) networks		
	3rd	Basic concepts of the following terms: Symmetrical and asymmetrical networks		
2 <sup>nd</sup>	4th	Balanced and unbalanced network	1 <sup>st</sup>	To measure the characteristic impedance of symmetrical T and $\pi$ networks
	5 <sup>th</sup>	$\pi$ network, Ladder network		
	6 <sup>th</sup>	Lattice network; L-network and Bridge T-network		
3 <sup>rd</sup>	7 <sup>th</sup>	Symmetrical Network: Concept and significance of the terms characteristic impedance, propagation constant, attenuation constant, phase shift constant and insertion loss.	2 <sup>nd</sup>	To measure the image impedance of a given asymmetrical T and $\pi$ networks
	8 <sup>th</sup>	T-network and $\pi$ Network		
	9 <sup>th</sup>	Asymmetrical Network: Concept and significance of iterative impedance, image impedance		
4 <sup>th</sup>	10 <sup>th</sup>	The half section (L-section)	Internal viva for the conducted 2 practicals	
	11 <sup>th</sup>	symmetrical T and $\pi$ sections into half sections		
	12 <sup>th</sup>	Rapid Revision of 1st unit, problems to be discussed and Assignment-1		
5 <sup>th</sup>	13 <sup>th</sup>	Attenuators and its types	3 <sup>rd</sup>	For a prototype low pass filter: a) Determine the characteristic impedance experimentally b) Plot the attenuation characteristic
	14 <sup>th</sup>	Units of attenuation (Decibels and Nepers):		
	15 <sup>th</sup>	General characteristics of attenuators		
6 <sup>th</sup>	16 <sup>th</sup>	Analysis and design of simple attenuator of Symmetrical T type	4 <sup>th</sup>	To design and measure the attenuation of a symmetrical T/ $\pi$ type attenuator
	17 <sup>th</sup>	Analysis and design of simple attenuator of Symmetrical $\pi$ type		
	18 <sup>th</sup>	Analysis and design of simple attenuator of L type		
7 <sup>th</sup>	19 <sup>th</sup>	<b>1<sup>st</sup> Sessional Test</b>	5 <sup>th</sup>	For a prototype high pass filter: - Determine the characteristic impedance experimentally - To plot the attenuation characteristic
	20 <sup>th</sup>	Brief idea of the use of filter networks in different communication systems		
	21	concept of low pass, high pass, band pass and band stop filters.		
8 <sup>th</sup>	22	Prototype Filter Section	Internal viva for the conducted 5 practicals	
	23	Impedance characteristics vs frequency characteristics of a low and high pass filter and their significance		
	24	Attenuation Vs frequency; Phase shift Vs frequency, characteristics impedance vs frequency of T and $\pi$ filters and their significance		
9 <sup>th</sup>	25	Simple design problems of	6 <sup>th</sup>	a) To plot the Impedance

		prototype low pass section.		characteristic of a prototype band-pass filter
	26	M-Derived Filter Sections		
	27	Limitation of prototype filters, need of m-derived filters		b) To plot the attenuation characteristic of a prototype band pass filter
10 <sup>th</sup>	28	Crystal and its equivalent circuits, special properties of piezoelectric filters and their use	7th	a) To plot the impedance characteristic of m-derived low pass filter
	29	Basic concept of active filters and their comparison with passive filters.		b) To plot the attenuation characteristics of m-derived high pass filter
	30	Revision of unit 3rd and problems to be discussed.		
11 <sup>th</sup>	31	Transmission Lines, their types and applications.	Internal viva for the conducted 7 practicals	
	32	Distributed constants, T and $\pi$ representation of transmission line section.		
	33	Concept of infinite line		
12 <sup>th</sup>	34	<b>2<sup>nd</sup> Sessional Test</b>	8th	To observe the information of standing waves on a transmission line and measurement of SWR and characteristic impedance of the line
	35	Condition for minimum distortion and minimum attenuation of signal on-the-line	9th	Draw the attenuation characteristics of a crystal filter
	36	Introduction to loading methods, Concept of reflection and standing waves	Internal viva for the conducted 9 practicals	
13 <sup>th</sup>	37	Definition of reflection coefficient		
	38	Introduction to Standing wave Ratio		
	39	SWR & VSWR and their relation		
14 <sup>th</sup>	40	Concept of transmission lines at high frequencies.		
	41	Introduction to stubs. (single, open and short stubs).		
	42	HVDC (High Voltage DC transmission)		
15 <sup>th</sup>	43	Concept and Advantage of HVDC		
	44	Disadvantage and areas of application.		
	45	Rapid Revision of whole syllabus		
16 <sup>th</sup>	46	Revision		
	47	Revision		
	48	Revision		
17 <sup>th</sup>	49	Revision		
	50	Revision		
	51	<b>3<sup>rd</sup> Sessional test</b>		

<b>Lesson Plan</b>		
<b>Discipline : Electronics and Communication Engg.</b>		
<b>Semester : 3<sup>rd</sup></b>		
<b>Subject : ELECTRONIC DEVICES AND CIRCUITS (181031)</b>		
<b>Lesson Plan Duration : 15 weeks</b>		
<b>Work Load (Lecture/ Practical) per week (in hours): 03 HOURS (Lecture) 03 Hours per Group</b>		
<b>Week</b>	<b>Theory</b>	
	<b>Lecture day</b>	<b>Topic (including assignment/ test)</b>
<b>1<sup>st</sup></b>	<b>1</b>	Introduction to Multistage Amplifiers
	<b>2</b>	Need for multistage amplifier - Gain of multistage amplifier
	<b>3</b>	Different types of multistage amplifier like RC coupled transformer coupled, direct coupled
<b>2<sup>nd</sup></b>	<b>4</b>	Their frequency response and bandwidth, Difference between voltage and power amplifiers ,mportance of impedance matching in amplifiers
	<b>5</b>	Class A, Class B
	<b>6</b>	Class AB, and Class C amplifiers
<b>3<sup>rd</sup></b>	<b>7</b>	collector efficiency and Distortion in class A,B,C
	<b>8</b>	Single ended power amplifiers, Graphical method of calculation (without derivation) of out put power
	<b>9</b>	heat dissipation curve and importance of heat sinks
<b>4<sup>th</sup></b>	<b>10</b>	Push-pull amplifier, and complementary symmetry push-pull amplifier
	<b>11</b>	Basic principles and types of feedback
	<b>12</b>	Derivation of expression for gain of an amplifier employing feedback
<b>5<sup>th</sup></b>	<b>13</b>	Effect of feedback (negative) on gain, stability, distortion and bandwidth of an amplifier
	<b>14</b>	RC coupled amplifier with emitter bypass capacitor
	<b>15</b>	Emitter follower amplifier and its application
<b>6<sup>th</sup></b>	<b>16</b>	Use of positive feedback, Barkhausen criterion for oscillations
	<b>17</b>	Different oscillator circuits-tuned collector, Hartley
	<b>18</b>	Colpitts, phase shift, Wien's bridge,
<b>7<sup>th</sup></b>	<b>19</b>	<b>1st Sessional Test</b>
	<b>20</b>	Basic Electromagnetic laws (Faraday's laws of Electromagnetic Induction)
	<b>21</b>	Crystal oscillator. Their working principles (no mathematical derivation but only simple numerical problems)
<b>8<sup>th</sup></b>	<b>22</b>	Series and parallel resonant circuits and bandwidth of resonant circuits
	<b>23</b>	Single and double tuned voltage amplifiers
	<b>24</b>	Frequency response characteristics
<b>9<sup>th</sup></b>	<b>25</b>	Working principle of transistor as switch
	<b>26</b>	Concept of multi-vibrator: astable, monostable
	<b>27</b>	Bistable and their applications

<b>10<sup>th</sup></b>	<b>28</b>	Block diagram of IC555 and its working and applications
	<b>29</b>	IC555 as monostable
	<b>30</b>	astable multi-vibrator
<b>11<sup>th</sup></b>	<b>31</b>	bistable multivibrator
	<b>32</b>	Characteristics of an ideal operational amplifier and its block diagram
	<b>33</b>	IC-741 and its pin configuration
<b>12<sup>th</sup></b>	<b>34</b>	Definition of differential voltage gain, CMRR, PSRR
	<b>35</b>	<b>2nd Sessional Test</b>
	<b>36</b>	slew rate and input offset current
<b>13<sup>th</sup></b>	<b>37</b>	Operational amplifier as an inverter
	<b>38</b>	scale changer, adder
	<b>39</b>	Subtractor, Differentiator, Integrator
<b>14<sup>th</sup></b>	<b>40</b>	Concept of DC power supply
	<b>41</b>	Line and load regulation
	<b>42</b>	Concept of fixed voltage, IC regulators (like 7805, 7905),
<b>15<sup>th</sup></b>	<b>43</b>	Variable voltage regulator like (IC 723)
	<b>44</b>	Revision
	<b>45</b>	Revision
<b>16<sup>th</sup></b>	<b>46</b>	Revision
	<b>47</b>	Revision
	<b>48</b>	Revision
<b>17<sup>th</sup></b>	<b>46</b>	<b>3rd Sessional Test</b>
	<b>47</b>	Revision
	<b>48</b>	Revision



Lesson Plan			
Discipline : Electronics and Communication Engg.			
Semester : 3 <sup>rd</sup>			
Subject : ELECTRONICS INSTRUMENTS & MEASUREMENTS			
Lesson Plan Duration : 15 Weeks			
Work Load (Lecture/ Practical) per week (in hours): 03 HOURS (Lecture)			
Week	Theory		Practical
	Lecture day	Topic (including assignment/ test)	
1 <sup>st</sup>	1	Introduction about subject	
	2	Syllabus of the subject	
2 <sup>nd</sup>	3	<b>ch-1.Basics of measurements-</b> Measurement, method of measurement, types of instruments	Measurement of voltage, resistance, frequency using digital multimeter
	4	Specifications of instruments Accuracy, precision	
	5	Specifications of instruments sensitivity, resolution, range, errors in Measurement	
3 <sup>rd</sup>	6	sources of errors, limiting errors,	Measurement of voltage, resistance, frequency using digital multimeter
	7	loading effect, importance and applications of standards and calibration	
	8	Class work/Assignment and revision.	
4 <sup>th</sup>	9	<b>Ch-2 .Voltage ,Current and Resistance Measurement-</b> Principles of measurement of DC voltage	Measurement of voltage, frequency, time period and phase using CRO
	10	Principles of measurement of DC current	
	11	Principles of measurement of AC voltage	
5 <sup>th</sup>	12	Principles of measurement of AC current	Measurement of voltage, frequency, time period and phase using CRO
	13	Principles of operation and construction of permanent magnet moving coil (PMMC) instruments	
	14	Moving iron type instruments	
6 <sup>th</sup>	15	Class work and revision.	Measurement of voltage, frequency, time period and phase using CRO
	16	Class work and revision.	
	17	<b>1st Sessional Test</b>	
7 <sup>th</sup>	18	<b>Ch-3. Cathod Ray Oscilloscope</b> -Construction and working of Cathode Ray Tube(CRT)	Measurement of voltage, frequency, time and phase using DSO
	19	Block diagram description of a basic CRO and triggered sweep oscilloscope	
	20	Front panel controls	
8 <sup>th</sup>	21	Specifications of CRO and their explanation	Measurement of Q of a coil
	22	Measurement of current, voltage, frequency	
	23	Measurement of current time period and phase using CRO	
9 <sup>th</sup>	24	Digital storage oscilloscope (DSO) block diagram and working principle	Measurement of Q of a coil
	25	Class work/Assignment and revision.	
	26	Class work/Assignment and revision.	



10 <sup>th</sup>	27	<b>Ch-4.Impedance Bridge Q Meter-</b> Wheat stone bridge	Measurement of resistance and inductance of coil using RLC Bridge
	28	AC bridges: Maxwell's induction bridge	
	29	Hay's bridge, De-Sauty's bridge,	
11 <sup>th</sup>	30	Schering bridge and Anderson bridge	Measurement of resistance and inductance of coil using RLC Bridge
	31	Block diagram description of laboratory type RLC bridge, specifications of RLC bridge	
	32	Block diagram and working principle of Q meter and revision	
12 <sup>th</sup>	33	<b>2nd Sessional Test</b>	
	34	<b>Ch-5.Signal Generators and Analytical Instruments-</b> Explanation of block diagram specifications of low frequency, RF generators	Measurement of impedance using Maxwell Induction Bridge
	35	pulse generator, function generator	
13 <sup>th</sup>	36	Distortion factor meter	To find the value of unknown resistance using Wheat Stone Bridge
	37	Instrumentation amplifier: its characteristics, need and working	
	38	<b>Ch-6.Digital Instruments-</b> Comparison of analog and digital instruments	
14 <sup>th</sup>	39	Working principle of ramp, dual slope digital voltmeter.	Measurement of distortion using Distortion Factor Meter
	40	Working principle of integration type digital voltmeter	
	41	Block diagram and working of a digital multi-meter	
15 <sup>th</sup>	42	Specifications of digital multi-meter and their applications	Use of logic pulser and logic probe
	43	Limitations of digital multi-meters	
	44	Working principle of logic probe, logic pulser analyzer	
16 <sup>th</sup>	45	Working principle of logic analyzer and signature analyzer	Use of logic pulser and logic probe
	46	Revision	
	47	<b>3rd Sessional Test</b>	

Specimen of lesson Plan Duration : 15 Weeks					
Discipline : Electronics and Communication Engg.					
Subject : Principles of Comm. Engg. (181033) Semester : IIIrd					
Work Load (Lecture/ Practical) per week (in hours): 03 HOURS (Theory)					
Week	Theory		Week	Theory	
	Lecture day	Topic (including assignment/ test)		Lecture day	Topic (including assignment/ test)
1 <sup>st</sup>	1	Introduction about subject, - Need for modulation	10 <sup>th</sup>	28	detector circuit; concept of Clipping
	2	frequency translation and demodulation in communication systems		29	Clipping and formula for RC time constant for minimum distortion (no derivation)
	3	Basic scheme of a modern communication system		30	Revision
2 <sup>nd</sup>	4	Derivation of expression for an amplitude modulated wave.	11 <sup>th</sup>	31	Revision
	5	Carrier and side band components. Modulation index		32	<b>2nd Sessional Test</b>
	6	Spectrum and BW of AM Wave. Relative power distribution in carrier and side bands.		33	Basic principles of FM detection using slope detector
3 <sup>rd</sup>	7	Elementary idea of DSB-SC	12 <sup>th</sup>	34	Foster-Seeley discriminator
	8	SSB-SC, ISB		35	Foster-Seeley discriminator
	9	VSB modulations, their comparison, and areas of applications		36	Ratio detector
4 <sup>th</sup>	10	Expression for frequency modulated wave and its frequency spectrum (without Proof and analysis of Bessel function)	13 <sup>th</sup>	37	Block diagram of Phase locked Loop (PLL) FM demodulators (No Derivation)
	11	Modulation index, maximum frequency deviation and deviation ratio, BW of FM signals		38	Block diagram of Phase locked Loop (PLL) FM demodulators (No Derivation)
	12	Carson's rule.		39	Statement of sampling theorem and elementary idea of sampling frequency for pulse modulation
5 <sup>th</sup>	13	Effect of noise on FM carrier, Noise triangle, Role of limiter	14 <sup>th</sup>	40	Basic concepts of time division multiplexing (TDM)
	14	Need for pre-emphasis and de-emphasis, capture effect.		41	frequency division multiplexing (FDM)
	15	Comparison of FM and AM in communication systems		42	Pulse Amplitude Modulation (PAM)
6 <sup>th</sup>	16	<b>1st Sessional Test</b>	15 <sup>th</sup>	43	Pulse Position Modulation (PPM),
	17	Derivation of expression for phase modulated wave, modulation index, comparison with frequency modulation		44	Pulse Width Modulation (PWM).
	18	Collector and Base Modulator		45	REVISION
7 <sup>th</sup>	19	Collector and Base Modulator	16 <sup>th</sup>	46	REVISION
	20	Square Low Modulator		47	REVISION
	21	Balanced Modulator		48	<b>3rd Sessional Test</b>
8 <sup>th</sup>	22	Working principles and applications of reactance modulator	17 <sup>th</sup>	49	REVISION
	23	varactor diode modulator		50	REVISION
	24	VCO and Armstrong phase modulator		51	REVISION
9 <sup>th</sup>	25	Stabilization of carrier using AFC (Block diagram approach).			
	26	Stabilization of carrier using AFC (Block diagram approach).			
	27	Principles of demodulation of AM wave using diode			

## Specimen of lesson Plan

**Discipline** : **Electronics and Communication Engg.**  
**Semester** : **Vth**  
**Subject** : **AUDIO VIDEO System (181052)**  
**Lesson Plan Duration** : **15 weeks**  
**Work Load (Lecture/ Practical) per week (in hours):** 03 HOURS (Lecture)

Week	Theory	
	Lecture day	Topic (including assignment/ test)
1 <sup>st</sup>	1	Audio Systems:
	2	Microphones and Loudspeakers
	3	Carbon, moving coil, cordless microphone
2 <sup>nd</sup>	4	Direct radiating and horn loudspeaker
	5	Multi-speaker system
	6	Sound Recording
3 <sup>rd</sup>	7	Data and signal
	8	Digital audio processing
	9	Time compression and expansion
4 <sup>th</sup>	10	Television, Monochrome TV
	11	Elements of TV communication system
	12	Scanning and its need
5 <sup>th</sup>	13	Need of synchronizing and blanking pulses, VSB,
	14	Composite Video Signal
	15	Picture Tube
6 <sup>th</sup>	16	Camera Tube : Vidicon and Plumbicon
	17	Picture Tube
	18	Camera Tube : Vidicon and Plumbicon
7 <sup>th</sup>	19	<b>1st Sessional Test</b>
	20	TV Receiver: Block diagram, function of each block,
	21	waveform at input and output of each block
8 <sup>th</sup>	22	Colour Television
	23	Primary, secondary colours
	24	Concept of Mixing, Colour Triangle
9 <sup>th</sup>	25	Camera tube
	26	PAL TV Receiver
	27	Concept of Compatibility with Monochrome
10 <sup>th</sup>	28	Receiver
	29	NTSC, PAL, SECAM system ( brief comparison)
	30	NTSC, PAL, SECAM system ( brief comparison)
11 <sup>th</sup>	31	NTSC, PAL, SECAM system ( brief comparison)
	32	LCD and LED Television
	33	LCD and LED Television
12 <sup>th</sup>	34	LCD and LED Television
	35	<b>2nd Sessional test</b>
	36	Basic principle and working of LCD and LED TV
13 <sup>th</sup>	37	Class Test
	38	Cable Television: Working of Cable TV, DTH, HDTV
	39	Cable Television: Working of Cable TV, DTH, HDTV
14 <sup>th</sup>	40	Scanner
	41	Digital Camera
	42	VCD/DVD
15 <sup>th</sup>	43	Revision
	44	Revision
	45	Revision
16 <sup>th</sup>	46	Revision
	47	Revision
	48	Revision
17 <sup>th</sup>	49	Revision
	50	Revision
	51	<b>3rd Sessional test</b>

## Specimen of lesson Plan

**Discipline** : **Electronics and Communication Engg.**  
**Semester** : **Vth**  
**Subject** : **COMPUTER NETWORKS(181051)**  
**Lesson Plan Duration** : **15 weeks**

**Work Load (Lecture/ Practical) per week (in hours):** 03 HOURS (Lecture)

Week	Theory	
	Lecture day	Topic (including assignment/ test)
1 <sup>st</sup>	1	what is Network, Network Types
	2	Peer to Peer Network, Server Client Network
	3	LAN, MAN and WAN
2 <sup>nd</sup>	4	Network Services
	5	Network Topologies
	6	Switching Techniques
3 <sup>rd</sup>	7	OSI reference model, Physical layer concepts
	8	Data link Layer Concepts, Network Layer Concepts
	9	Transport Layer concepts, Session Layer Concepts
4 <sup>th</sup>	10	Presentation Layer Concepts, Application Layer Concepts
	11	Concept of physical and logical addressing
	12	Different classes of IP addressing, Special IP address
5 <sup>th</sup>	13	Sub netting and super netting
	14	Loop back concepts, IPV4 & IPV6 packet format
	15	Configuring IPV4 and IPV6
6 <sup>th</sup>	16	Types of Cables, Shilded and unshielded pair of cables
	17	straight wire and cross over cables with cplour coding
	18	Ethernet specification & standardization
7 <sup>th</sup>	19	<b>1st Sessional Test</b>
	20	RJ45, RJ11, BNC and SCST connectors
	21	Network connectivity devices, NICs
8 <sup>th</sup>	22	Hubs, Repeaters, Switches
	23	Router and Routing protocols
	24	Configuring of Router
9 <sup>th</sup>	25	VOIP and Net -to- Phone telephony
	26	Client Server technology
	27	Server Management
10 <sup>th</sup>	28	RAID manegment
	29	Cryptography
	30	Ethical hacking
11 <sup>th</sup>	31	revision
	32	revision
	33	revision
12 <sup>th</sup>	34	<b>2nd Sessional Test</b>
	35	revision
	36	Basics of Wireless

<b>13<sup>th</sup></b>	<b>37</b>	Wireless MAN
	<b>38</b>	Wireless LAN
	<b>39</b>	Wi-Fi
<b>14<sup>th</sup></b>	<b>40</b>	WiMax
	<b>41</b>	Revision
	<b>42</b>	Revision
<b>15<sup>th</sup></b>	<b>43</b>	Revision
	<b>44</b>	Revision
	<b>45</b>	Revision
16 <sup>th</sup>	<b>46</b>	Revision
	<b>47</b>	Revision
	<b>48</b>	Revision
<b>17<sup>th</sup></b>	<b>49</b>	Revision
	<b>50</b>	Revision
	<b>51</b>	<b>3rd Sessional test</b>





### Specimen of lesson Plan

**Discipline** : **Electronics and Communication Engg.**  
**Semester** : **Vth**  
**Subject** : **Digital Communication (181053)**  
**Lesson Plan Duration** : **15 weeks**

**Work Load (Lecture/ Practical) per week (in hours):** 03 HOURS (Lecture)

Week	Theory	
	Lecture day	Topic (including assignment/ test)
1 <sup>st</sup>	1	Introduction to Basic block diagram of digital and data communication systems
	2	Their comparison with analog communication systems.
	3	REVISION
2 <sup>nd</sup>	4	Sampling theorem and its basic concept.
	5	Introduction to PAM, PWM
	6	Introduction to PPM, PWM
3 <sup>rd</sup>	7	Quantization and error of Quantization
	8	PCM & their advantage and disadvantage
	9	DPCM & their advantage and disadvantage
	10	REVISION
4 <sup>th</sup>	11	DELTA Modulation
	12	ADAPTIVE DELTA Modulation, concept of COMPANDING
	13	Frequency hopping spread spectrum technique
5 <sup>th</sup>	14	REVISION
	15	Basic block diagram and principle of working of Amplitude shift keying (ASK)
	16	Interrupted continuous wave (ICW)
	17	REVISION
6 <sup>th</sup>	18	Frequency Shift keying (FSK)
	19	Quadrature Phase Shift Keying(QPSK)
	20	Phase shift keying (PSK),
7 <sup>th</sup>	21	<b>1st Sessional Test</b>
	22	two tone modulation
8 <sup>th</sup>	23	REVISION
	24	Characteristics/working of data transmission circuits;Bandwidth requirements
	25	Characteristics/working of data transmission circuits; Noise



<b>9<sup>th</sup></b>	<b>26</b>	Cross talk
	<b>27</b>	Echo suppressors
	<b>28</b>	Distortion
<b>10<sup>th</sup></b>	<b>29</b>	Equalizers
	<b>30</b>	Data transmission speeds
	<b>31</b>	REVISION
<b>11<sup>th</sup></b>	<b>32</b>	REVISION
	<b>33</b>	<b>2nd Sessional Test</b>
	<b>34</b>	REVISION
<b>12<sup>th</sup></b>	<b>35</b>	Need and function of modems
	<b>36</b>	Need and function of modems
	<b>37</b>	Mode of modems operation (low speed, medium speed and high speed
	<b>38</b>	Modem interconnection
<b>13<sup>th</sup></b>	<b>39</b>	Modem data transmission speed,
	<b>40</b>	Modem modulation method.
	<b>41</b>	Modem modulation method.
<b>14<sup>th</sup></b>	<b>42</b>	Space and time switching:
	<b>43</b>	Working principle of STS and TST switches.
	<b>44</b>	Working principle of STS and TST switches.
<b>15<sup>th</sup></b>	<b>45</b>	<b>3rd Sessional Test</b>
	<b>46</b>	REVISION
	<b>47</b>	REVISION
<b>16<sup>th</sup></b>	<b>48</b>	REVISION
	<b>49</b>	REVISION
	<b>50</b>	REVISION
<b>17<sup>th</sup></b>	<b>51</b>	REVISION
	<b>52</b>	REVISION
	<b>53</b>	REVISION

Specimen of lesson Plan Duration : 15 weeks							
Discipline : Electronics and Communication Engg.				Subject : MICROCONTROLLERS Semester : Vth			
Work Load (Lecture/ Practical) per week (in hours): 04 HOURS (Theory) + 06 HOURS (03 Hours*2 Groups) (PRACTICAL)							
Week	Theory		Practical	Week	Theory		Practical
	Lecture day	Topic (including assignment/ test)	Topic		Lecture day	Topic (including assignment/ test)	Topic
1 <sup>st</sup>	1	Architecture of 8051Microcontroller	Introduction	8th	29	Compiler operations	Programming to interface Hex 4x4 matrix Keypad
	2	Architecture of 8051Microcontroller					
	3	Architecture of 8051Microcontroller					
	4	Pin details					
2 <sup>nd</sup>	5	I/O Port structure	Familiarization with Micro-controller Kit and its different sections	9th	33	7- segment interface	Viva
	6	Memory Organization					
	7	Special Function Registers (SFRs)					
	8	External Memory					
3 <sup>rd</sup>	9	REVISION	Familiarization with Assembly Language Programming (PC Based)	10th	37	2nd Sessional Test	Programming for A/D converter, result on LCD
	10	REVISION					
	11	Instruction Set of 8051					
	12	Instruction Set of 8051					
4 <sup>th</sup>	13	Instruction Set of 8051	Programming to interface switches and LEDs	11th	41	A/D, interface with programming	Programming for D/A converter, result on LCD
	14	Time Compression					
	15	Addressing Modes					
	16	Types of Instructions					
5 <sup>th</sup>	17	Types of Instructions	Viva	12th	45	RTC interface with programming	Programming for serial data transmission from PC to Kit or Vice versa
	18	Types of Instructions					
	19	Timer operation					
	20	Serial Port operation					
6 <sup>th</sup>	21	Interrupts	Programming and interface of Seven Segment and LCD	13th	49	Introduction of PIC Micro controllers	Programming and interfacing of RELAY and Buzzer
	22	REVISION					
	23	REVISION					
	24	1st Sessional Test					
7 <sup>th</sup>	25	Assembler directives	Programming and interfacing of Graphical LCD	14th	53	REVISION	Viva
	26	Assembler directives					
	27	Assembler operation					
	28	Assembler operation					

Lesson Plan			
:			
<b>Discipline</b>	:	<b>Electronics and Communication Engg.</b>	
<b>Semester</b>	:	<b>Vth</b>	
<b>Subject</b>	:	<b>OFC</b>	
<b>Lesson Plan Duration : 15 weeks</b>			
<b>Work Load (Lecture/ Practical) per week (in hours): 03 HOURS (Lecture)</b>			
Week	Theory		Practical
	Lecture day	Topic (including assignment/ test)	
1st	1	<b>Ch-1.Introduction</b>	
	2	Syllabus of Subject	
2nd	3	Historical perspective, basic communication systems	To set up fiber analog link
	4	Optical frequency range, advantages of optical fiber communication	
	5	Application of fiber optic communication	
3rd	6	Electromagnetic spectrum used, Advantages of OFC	
	7	Principle of light penetration	To set up optic digital link
	8	reflection, critical angle	
4th	9	Assignment/Class work	
	10	Revision	To set up optic digital link
	11	<b>Ch-2. Optical Fibers and Cables</b> -Constructional details	
5th	12	multimode and mono-mode fibers	
	13	step index and graded index fibers	To measure bending losses in optical fibers
	14	acceptance angle and types of optical fiber cables	
6th	15	Assignment/Class work	
	16	Revision	To measure bending losses in optical fibers
	17	<b>1st Sessional Test</b>	
7th	18	<b>Ch-3. Losses in Optical cables</b> -Absorption Losses	
	19	Scattering Losses	To observe and measure the splice or connector loss
	20	Radiation losses	
8th	21	Connector losses, Bending losses	
	22	Dispersion: Types and its effect on data rate	To measure and calculate numerical aperture of optical fiber
	23	Testing of losses using OTDR	

9 <sup>th</sup>	24	Testing of losses using OTDR	
	25	Revision	To measure and calculate numerical aperture of optical fiber
	26	<b>Ch-4. Optical Sources</b> -Characteristics of light source used in optical communication,LED and LASER	
10 <sup>th</sup>	27	Principle of operation of LED	To observe characteristics of optical source
	28	different type of LED structures used and their brief description	
	29	LED driving circuitry	
11 <sup>th</sup>	30	Injection Laser diode,	
	31	principle of operation of Injection Laser diode,	To observe characteristics of optical source
	32	different injection laser diodes,	
12 <sup>th</sup>	33	comparison of LED and ILD,	
	34	Revision	To observe characteristics of optical detector
	35	<b>2nd Sessional Test</b>	
13 <sup>th</sup>	36	<b>Ch-5,Optical Detectors</b> -Introduction	
	37	Characteristics of photo detectors used in optical communication	To observe characteristics of optical detector
	38	PIN diode	
14 <sup>th</sup>	39	Avalanche photo diode (APD)	
	40	Noise in detectors	To splice the available optical fiber
	41	<b>Ch-6.Optical Amlifiers</b> -Types of optical amplifiers	
15 <sup>th</sup>	42	semiconductor & fiber optical amplifiers	To connect a fiber with connector at both ends
	43	principle of operation of SOA, types of SOA.	
	44	EDFA, Raman amplifiers.	
16 <sup>th</sup>	45	Comparison of SOA, EDFA and Raman Amplifiers.	To identify and use various components and tools used in optical fiber communication
	46	Revision	
	47	<b>3rd Sessional test</b>	

## Lesson Plan

Discipline	:	ECE
Year	:	1st Sem
Subject	:	Electronic Wkshp(Practical)
Lesson Plan Duration	:	Practical -06 Hrs/week

week	Practical Topic
1	Concept of Resistors, Color Coding, Tolerance, Maximum power rating, Application of LDR, Classification of Capacitors, Coding of capacitors-using numerals, directly printed values on capacitors, Ceramic capacitor and Electrolytic capacitor.
2	Concept of Inductors & Testing of components using Multi meter/LCR Q-meter, Identify different types of soldering guns and practice soldering of different electronic active and passive components and IC bases on lug boards and PCBs.
3	Join the broken PCB track and test, Prepare component for soldering.
4	Identify different types of mains transformers and their testing.
5	Identify the primary and secondary transformer windings and test the polarity, Identify different sizes, shapes of cores used in low capacity transformers.
6	<b>1<sup>st</sup> Internal Sessional exam</b>
7	Measure the primary and secondary voltage of different transformers. PN junction diode: Terminal Identification, setting on bread board and testing.
8	Zener diode: Terminal Identification, setting on bread board testing, LED, Photo diode :Terminal Identification, setting on bread board and testing. Integrated Circuits (ICs) like 7404, 7408, 7432, 7805, 555, 741: Pin diagram, Identification, setting on bread board and testing.
9	Switches, Application of Toggle, Rotary, push to on & push to off, Relays and application of General purpose relay, Power Supply, DC power supply
10	Function Generator, Front panel controls, Functions: sine wave, square wave, triangular wave and Amplitude measurement.
11	<b>2<sup>nd</sup> Sessional exam</b>
12	Digital Multi Meter, Front panel controls of DMM Study of AC and DC Waveforms Construction of various electronic circuits on breadboard Circuits like: rectifiers, filter circuits, clipper, clamper, transistor amplifiers, logic gates, LED driver circuit, power supply, etc Testing of outputs of various electronic circuits using test Equipment.
13	Identify the Phase, Neutral and Earth on power Socket. Construct a test lamp and use it to check mains, Use a Tester to monitor AC power. Measure the voltage between phase and ground and rectify earthing. Identify and test different AC mains cables.
14	Prepare the mains cable for termination, Measure AC and DC voltages using multi meter Replace the fuse, battery for the given multimeter
15	<b>3<sup>rd</sup> Sessional Exam</b>

# **LESSON PLAN**

**DISCIPLINE** :ECE  
**SEMESTER** :1<sup>st</sup>  
**SUBJECT** :English

**& communication skill** **LESSON PLAN**

**DURATION** 15

**WEEKS**

**WORK LOAD PER WEEK** : Lectures (Theory) 02+02+02+02+02+02+02+02+02+02,

WEEK	<b>Theory</b>	
	LECTURE DAY	TOPIC (WITH ASSIGNMENT & TESTS)
<b>1</b>	1	Techniques of reading: Skimming and Scanning, Extensive and Intensive Reading: Textual Study
	2	Homecoming – R.N. Tagore
<b>2</b>	3	Life Sketch of Sir Mokshagundam Visvesvarayya,
	4	Nouns
<b>3</b>	5	Pronouns
	6	Significance, essentials and effectiveness of Written Communication
<b>4</b>	7	Revision
	8	Revision
<b>1<sup>st</sup> sessional test</b>		
<b>5</b>	9	Life Sketch of Dr. Abdul Kalam
	10	Concept and Process of Communication
<b>6</b>	11	Types of Communication (Verbal Communication)
	12	Barriers to communication
<b>7</b>	13	Articles
	14	Verbs(Main and Auxiliary)
<b>8</b>	15	Speaking Skill: Significance and essentials of Spoken Communication
	16	Listening Skill: Significance and essentials of Listening, Revision
<b>2<sup>nd</sup> sessional test</b>		
<b>9</b>	17	Narayan Murthy's speech at LBSNA
	18	Narayan Murthy's speech at LBSNA
<b>10</b>	19	Tenses
	20	Tenses
<b>11</b>	21	Notice Writing
	22	Notice Writing
<b>12</b>	23	Official Letters and E-mails
	24	Official Letters and E-mails
<b>3<sup>rd</sup> sessional test</b>		
<b>13</b>	25	Frequently-used Abbreviations used in Letter-Writing
	26	Paragraph Writing
<b>14</b>	27	Paragraph Writing
	28	Netiquettes
<b>15</b>	29	Revision
	30	Revision

# **LESSON PLAN**

**DISCIPLINE : ECE**

**SEMESTER : First**

**SUBJECT :English and communication skill (Practical)**

**LESSON PLAN DURATION : 15 WEEKS**

**WORK LOAD PER WEEK :Practicals = 2**

<b>WEEK</b>	<b>Practical</b>
1	Reading Practice of lessons in the Lab Activity classes.
	Comprehension exercises of unseen passages along with the lessons prescribed.
	Vocabulary enrichment and grammar exercises based on the selected readings
2	Conversation Practice
3	Chapter-1.3 Comprehension Passage
4	Chapter 1.4 Comprehension Passages
5	Chapter 1.5 Comprehension Passages
6	Reading aloud Newspaper headlines and important articles
7	Introducing oneself, others and leave- taking(talking about yourself)
8	Just a minute (JAM) sessions: Speaking extempore for one minute on given topics
9	Just a minute (JAM) sessions: Speaking extempore for one minute on given topics
10	Narayan Murthy's speech at LBSNA
11	Offering-Responding to offers
12	Apologizing & Forgiving, Complaining;
13	Talking about likes and dislikes
14	Self-introduction Mock
	Situational Conversation
15	Revision
	Revision

## Lesson Plan

**Discipline** : ECE  
**Semester** : 1st Semester  
**Subject** : FUNDAMENTALS OF IT

Week	Theory		Practical	
	Lecture Day	Topic (including assignment / test)	Practical Day	Topic
	1	Brief history of development of computers, Definition of Computer, Block diagram of a Computer	1	Browser features, browsing, using various search engines, writing search queries
	2	Hardware, Software, Booting: Cold and Hot Booting, Interaction between the CPU and Memory with Input/ Output devices	2	Visit various e governance/ Digital India portals, understand their features, services offered
	3	Function of CPU and major functional parts of CPU. Memory, Bit, Nibble, Byte, KB, MB, GB, TB, PB, Functions of memory	3	Read Wikipedia pages on computer hardware components, look at those components in lab, identify them, recognize various ports/interfaces and related cables, etc
	4	Use of storage devices in a Computer, List types of memory used in a Computer	4	Using Administrative Tools/Control Panel Settings of Operating Systems
	5	Importance of cache memory, CPU speed and CPU word length	5	Connect various peripherals (printer, scanner, etc.) to computer, explore various features of peripheral and their device driver software
	6	Understanding browser, Introduction to WWW, efficient use of search engines, awareness about Digital India portals (state and national portals) and college portals	6	Explore features of Open Office tools and MS-Office, create documents, create presentation, create spread sheet, using these features, do it multiple times
	7	Advantages of Email, Various email service providers,	7	Working with Conversion Software like pdf To Word, Word To PPT, etc
	8	Creation of email id, sending and receiving emails, attaching documents with email and drive	8	Working with Mobile Applications – Searching for Authentic Mobile app, Installation and Settings, Govt. of India Mobile Applications



	9	Effective use of Gmail, G-Drive, Google Calendar, Google Sites, Google Sheets	9	Creating email id, sending and receiving mails with attachments
	10	Online mode of communication using Google Meet & WebEx.	10	Using Google drive, Google calendar
	11	Introduction to Programming, Steps involved in problem solving, Definition of Algorithm	11	Create Flow chart and Algorithm for the following Addition of n numbers and display result
	12	Definition of Flowchart, Steps involved in algorithm development	12	To convert temperature from Celsius to Fahrenheit
	13	Differentiate algorithm and flowchart, symbols used in flowcharts	13	To find Area and Perimeter of Square
	14	Algorithms for simple problems, flowcharts for simple problems	14	Swap Two Numbers
	15	Practice logic building using flowchart/algorithms	15	Find the smallest of two numbers
	16	Office Tools like LibreOffice/OpenOffice/MSOffice	16	Find whether given number is Even or Odd
	17,18	OpenOffice Writer – Typesetting Text and Basic Formatting, Inserting Images, Hyperlinks, Bookmarks, Tables and Table Properties in Writer	17	To print first n even Numbers
	19, 20	Introducing LibreOffice/OpenOffice Calc, Working with Cells, Sheets, data, tables, using formulae and functions, using charts and graphics	18	Find sum of series $1+2+3+\dots+N$
	21, 22	OpenOffice Impress – Creating and Viewing Presentations, Inserting Pictures and Tables, Slide Master and Slide Design, Custom Animation	19	Print multiplication Table of a number
	23	Introduction to Digital Marketing – Why Digital Marketing	20	Generate first n Fibonacci terms $0, 1, 1, 2, 3, 5 \dots n$ ( $n > 2$ )
	24	Characteristics of Digital Marketing	21	Sum and average of given series of numbers
	25	Tools for Digital Marketing	22	Factorial of number n ( $n! = 1 \times 2 \times 3 \times \dots n$ )
	26, 27	Effective use of Social Media like LinkedIn, Google+, Facebook	23	Armstrong Number
	28	Twitter, etc.: Features of Social media	24	Find whether given number is Prime or not
	29	Advantages and Disadvantages of Social Media	25	

## Lesson Plan

**Discipline** : ECE  
**Semester** : 1st Semester  
**Subject** : FUNDAMENTALS OF IT

Week	Theory		Practical	
	Lecture Day	Topic (including assignment / test)	Practical Day	Topic
	1	Brief history of development of computers, Definition of Computer, Block diagram of a Computer	1	Browser features, browsing, using various search engines, writing search queries
	2	Hardware, Software, Booting: Cold and Hot Booting, Interaction between the CPU and Memory with Input/ Output devices	2	Visit various e governance/ Digital India portals, understand their features, services offered
	3	Function of CPU and major functional parts of CPU. Memory, Bit, Nibble, Byte, KB, MB, GB, TB, PB, Functions of memory	3	Read Wikipedia pages on computer hardware components, look at those components in lab, identify them, recognize various ports/interfaces and related cables, etc
	4	Use of storage devices in a Computer, List types of memory used in a Computer	4	Using Administrative Tools/Control Panel Settings of Operating Systems
	5	Importance of cache memory, CPU speed and CPU word length	5	Connect various peripherals (printer, scanner, etc.) to computer, explore various features of peripheral and their device driver software
	6	Understanding browser, Introduction to WWW, efficient use of search engines, awareness about Digital India portals (state and national portals) and college portals	6	Explore features of Open Office tools and MS-Office, create documents, create presentation, create spread sheet, using these features, do it multiple times
	7	Advantages of Email, Various email service providers,	7	Working with Conversion Software like pdf To Word, Word To PPT, etc
	8	Creation of email id, sending and receiving emails, attaching documents with email and drive	8	Working with Mobile Applications – Searching for Authentic Mobile app, Installation and Settings, Govt. of India Mobile Applications

	9	Effective use of Gmail, G-Drive, Google Calendar, Google Sites, Google Sheets	9	Creating email id, sending and receiving mails with attachments
	10	Online mode of communication using Google Meet & WebEx.	10	Using Google drive, Google calendar
	11	Introduction to Programming, Steps involved in problem solving, Definition of Algorithm	11	Create Flow chart and Algorithm for the following Addition of n numbers and display result
	12	Definition of Flowchart, Steps involved in algorithm development	12	To convert temperature from Celsius to Fahrenheit
	13	Differentiate algorithm and flowchart, symbols used in flowcharts	13	To find Area and Perimeter of Square
	14	Algorithms for simple problems, flowcharts for simple problems	14	Swap Two Numbers
	15	Practice logic building using flowchart/algorithms	15	Find the smallest of two numbers
	16	Office Tools like LibreOffice/OpenOffice/MSOffice	16	Find whether given number is Even or Odd
	17,18	OpenOffice Writer – Typesetting Text and Basic Formatting, Inserting Images, Hyperlinks, Bookmarks, Tables and Table Properties in Writer	17	To print first n even Numbers
	19, 20	Introducing LibreOffice/OpenOffice Calc, Working with Cells, Sheets, data, tables, using formulae and functions, using charts and graphics	18	Find sum of series $1+2+3+\dots+N$
	21, 22	OpenOffice Impress – Creating and Viewing Presentations, Inserting Pictures and Tables, Slide Master and Slide Design, Custom Animation	19	Print multiplication Table of a number
	23	Introduction to Digital Marketing – Why Digital Marketing	20	Generate first n Fibonacci terms $0, 1, 1, 2, 3, 5 \dots n$ ( $n > 2$ )
	24	Characteristics of Digital Marketing	21	Sum and average of given series of numbers
	25	Tools for Digital Marketing	22	Factorial of number n ( $n! = 1 \times 2 \times 3 \times \dots n$ )
	26, 27	Effective use of Social Media like LinkedIn, Google+, Facebook	23	Armstrong Number
	28	Twitter, etc.: Features of Social media	24	Find whether given number is Prime or not
	29	Advantages and Disadvantages of Social Media	25	

**LESSON PLAN (First Sem)****Subject: Applied Maths****Discipline: ECE****Work Load Per week: Lectures 4+4+4+4+4+4****Lesson Plan Duration :15 Weeks**

Week	DAY	Theory (Topics)
1	1	Definition of complex number, real and imaginary parts
	2	Polar and Cartesian Form and their inter conversion
	3	Conjugate of a complex number
	4	Modulus/argument of complex No
2	1	Addition subtraction, multiplication and division of complex number.
	2	Numericals complex number And Assignment-I
	3	Fundamental Rules of Logarithms
	4	Logarithm Conversation Log to exp and vice versa
3	1	Numericals Logarithms
	2	Numericals And Assignment-II
	3	Factorial
	4	Permutation, combination
4	1	Binomial theorem expansion
	2	General Term, Middle Term/ Co- eff of $x^n$
	3	Binomial theorem for any index And Assignment-III
	4	Revision
<b>1<sup>st</sup> Sessional test</b>		
5	1	Matrices: Define/Types
	2	Addition subtraction of Matrices
	3	Multiplication of Matrices
	4	Determinants (up to 2 order) by laplace method
6	1	Solution of equation by Cramer's Rule And Assignment-IV
	2	Trigonometry: Concept of angle: measurement of angle
	3	Conversion of angles
	4	Fundamental Identities, Allied angles
7	1	Addition and subtraction formula
	2	Addition and subtraction formula Numericals
	3	Transformation formula
	4	Numericals
8	1	Numericals
	2	Application: Angle of elevation/height/distance
	3	Numericals And Assignment-V
	4	Revision
<b>2<sup>nd</sup> Sessional test</b>		
9	1	Point: Distance Formula
	2	Mid Point Formula
	3	Area of Triangle
	4	Straight line: Slope of a line
10	1	Equation of straight line in various standards forms
	2	Equation of straight line in various standards forms
	3	Intersection of two straight lines, concurrency of lines
	4	Angle between two straight lines, parallel and perpendicular lines
11	1	Perpendicular distance formula,
	2	Conversion of general form of equation to the various forms And Assignment-VI
	3	Circle: General equation of a circle

	4	Centre and radius of circle
12	1	Find Standard equation of circle and centre and radius
	2	Find general equation of circle and centre and radius
	3	To find the equation of a circle, given three points lying on it
	4	To find the equation of a circle given coordinates of endpoints of a diameter, Assignment-VII
13	1	Theoretical Introduction of MATLAB
	2	Addition and subtraction of values Trigonometric functions
	3	Addition and subtraction of values Inverse Trigonometric functions
	4	General Practice And Assignment-VIII
<b>3<sup>rd</sup> Sessional test</b>		
14	1	Practice of Previous Question Papers
	2	Practice of Previous Question Papers
	3	Practice of Previous Question Papers
	4	Practice of Previous Question Papers
15	1	Revision
	2	Revision
	3	Revision
	4	Revision

## LESSON PLAN

**DISCIPLINE** :ECE  
**SEMESTER** :FIRST  
**SUBJECT** : APPLIED PHYSICS

**LESSION PLAN DURATION** : 15 WEEKS

**WORK LOAD PER WEEK** : Lectures= 2+2Practicals = 4+4+2

WEEK	THEORY		PRACTICAL	
	LECTURE DAY	TOPIC (WITH ASSIGNMENT & TESTS)		TOPIC
1	1	Definition of physics and physical quantities, Fundamental and	1	Familiarization of measuring instruments-vernier caliper, screw gauge, spherometer
	2	Units-fundamental and derived units, System of Units, FPS, CGS		
2	3	MKS,SI, Dimensions, Dimensional Formula	2	To find the diameter of a solid cylinder using vernier caliper
	4	SI unit and dimensions of some physical quantities		
3	5	Dimensional equations and principle of homogeneity	3	To find the internal diameter and depth of a beaker using verniercaliper
	6	Applications of DA, Checking correctness, Conversion of Units		
4	7	Scalar and vector quantities definition, example, types,	4	Checking of files and viva voce
	8	Vector addition-triangle and parallelogram law and		
5	9	Force, its units and resolution of force, Newton's laws of motion	5	To find the diameter of wire using screw gauge
	10	Linear momentum, impulse and law of conservation of		
6	11	Angular displacement, Angular velocity, Angular acceleration,	6	To find thickness of paper using screw gauge.
	12	Relation between linear and angular velocity, Centripetal and		
7	13	banking of roads, Rotational Motion- definition, examples	7	Checking of files & viva-voce
	14	Definitionoftorque,angularmomentum,momentofinertiaanditsp hysicalsignificance		
8	15	Work-definition, formula, unit and types of work, zero ,positive and negative work examples	8	To determine the thickness of glass strip using a spherometer
	16	Friction-definition and daily life examples , Power-definition, formula and units		
9	17	Energy-definition,units and transformation of energy	9	To determine the radius of curvature of a given spherical
	18	Kinetic energy, potential energy- definition,examples,formulaand derivation		
10	19	Law of conservation of energy with derivation	1	To verify parallelogram law of
	20	Simplenumericalproblemsbasedon formulaofPowerandEnergy		
11	21	Elasticityandplasticity-definition,deformingforce,restoring force,exampleof elasticandplastic	1	To determine atmospheric pressure using fortin's barometer
	22	Definition of stress and strain, Hookes law, modulus of elasticity	1	-----
12	23	Pressure- definition,atmosphericpressure,gaugepressure,absolutepressure	1	To determine force constant of a spring using hookes law
	24	Surfacetension- definition,SIunit,applicationsofsurfacetension,effectoftemperat	2	-----

<b>13</b>	25	Viscosity:definition,unit,examples,effectoftemperatureonviscosity	1 3	Checking of files & viva-voce
	26	Heat and temperature- Definition,Units, Difference between heat and temperature		-----
<b>14</b>	27	Principle and working of mercury thermometer, Problem discussions unit 4	1 4	To measure room temperature with the help of thermometer
	28	Modes of transfer of heat-conduction,convection,radiation, Propertiesofheatradiation		-----
<b>15</b>	29	Different scales of temperature and their relationship	1	Revision of practicals
	30	Problem discussion, Preparation of end semester exams		-----