



**Department of Electronics & Communication Engg.**

**LESSON PLAN**

**Session: Aug – Dec, 2025-26**

**Semester: 7<sup>th</sup>**

**Name:** \_\_\_\_\_

**University Roll Number:** \_\_\_\_\_

**BUDDHA INSTITUTE OF TECHNOLOGY**

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CL-1 Sector - 7, GIDA, Gorakhpur - 273209 (U.P)

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**Timetable**

**Evaluation scheme**

**Subject1- Wireless & Mobile Communication**

**Subject 2- VLSI Design**

**Subject 3- Renewable Energy Resources**

**PPC (MATHE)**

**HEC- Higher Education (GATE)**

**Lab 1 - VLSI Design Lab**

**Lab 2 - Internship Assessment Lab**

**Lab 3- Project Lab**

### TIME TABLE

Day / Time	9:10-10:00 AM	10:00-10:55 AM		11:10-12:05 PM	12:05-01:00 PM	01:00-1:55 PM	L U N C H B R E A K	2:40-3:35 PM	3:35-4:30 PM
	Monday	VLSI Design Lab-7A1 (AS) - Internship Assessment -7A2 (AKC) -		PPC (Math) (ST)	VLSI Design (AS)	WMC (AKC)			
Tuesday	Project Lab - 7A (AKC) -		RER (RS)	PPC (Math) (ST)	VLSI Design (AS)				
Wednesday	PSC - 7A (AKC)-		RER (RS)	HEC (YY)	WMC (AKC)				
Thursday	Project Lab - 7A (AKC) -		RER (RS)	HEC (YY)	VLSI Design (AS)				
Friday	VLSI Design Lab-7A2 (AS) - Internship Assessment -7A1 (AKC) -		CSEP (AS)	WMC (AKC)	RER (RS)				
Saturday	Project Lab - 7A (AKC) -		WMC (AKC)	VLSI Design (AS)					

### EVALUATION SCHEME

<b>Subject Code</b>	<b>Subject</b>	<b>Sessional Marks</b>	<b>Exam Marks</b>	<b>Total Marks</b>
<b>THEORY SUBJECTS</b>				
BEC 071	Wireless & Mobile Communication	50	100	150
BEC 701	VLSI Design	50	100	150
BOE074	Renewable Energy Resources	50	100	150
<b>PRACTICAL/DESIGN/DRAWING</b>				
BEC-751	VLSI Design Lab	25	25	50
BEC-752	Internship Assessment Lab	50	-	50
BEC-753	Project Lab	150	-	150



# BUDDHA INSTITUTE OF TECHNOLOGY

Department of Electronics and Communication Engineering

ACADEMIC YEAR 2025-26 (ODD Semester)

## LESSON PLAN

Semester: <b>VII</b>	Section: <b>A</b>	Course Code: <b>BEC-071</b>	Contact Hours /week: <b>6</b>
Course name: <b>Wireless and Mobile Communication</b>			# of credits: 3
Teacher's name: <b>Mr. Anil Kumar Chaudhary</b>			Designation: AP
Sessional Marks: 50	End Semester Examination Marks:100		University Exam Hours: 3

<b>Prerequisites if any:</b>			
Code No	Course Name	Description	Semester
KEC601	Digital Communication	Modulation and Demodulation of Digital modulation schemes-ASK, FSK, PSK, DPSK, QPSK, Introduction of Spread spectrum communication (DS-SS, FH-SS).	VI

Content delivery methods:	Chalk & Board, PPT, Video, Book
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**COURSE SYLLABUS (as prescribed by University / Board)**

Module No	UNIT Contents	Hours	COs
1	<p><b>Wireless Communication Fundamentals:</b>            Evolution of mobile radio communication fundamentals. General Model of Wireless Communication Link, Types of Signals, Cellular Infrastructure, Cellular System Components, Antennas for Cellular Systems, Operation of Cellular Systems, Channel Assignment, Frequency reuse, Channel Assignment strategies, Handoff Strategies Cellular Interferences, Sectorization; Wireless Channel and Radio Communication, Free Space Propagation Model, Channel Noise and Losses, Fading in Land Mobile Systems, Multipath Fading, Fading Effects on Signal and Frequency, Shadowing; Wireless Channel Modeling: AWGN Channel, Rayleigh Channel, Rician Fading Channel, Nakagami Fading Channel, Okumura and Hata Path Loss Model; Channel Modeling: Stochastic, Flat Fading, Wideband Time-Dispersive Channel Modeling.</p>	18	CO1
2	<p><b>Spread Spectrum and Diversity:</b>            Theory of Vocoders, Types of Vocoders; Spread Spectrum Modulation, Pseudo-Noise Codes with Properties and Code Generation Mechanisms, DSSS and FHSS Systems, Time Hopping and Hybrid Spread Systems; Multicarrier Modulation Techniques, Zero Inter Symbol Interference Communication Techniques, Detection Strategies, Diversity Combining Techniques: Selection Combining, Threshold Combining, Equal Gain Combining, Maximum Ratio Combining; Spatial Diversity and Multiplexing in MIMO Systems, Channel Estimation.</p>	13	CO2
3	<p><b>Equalization and Multiple Access:</b>            Equalization Techniques: Transversal Filters, Adaptive Equalizers, Zero Forcing Equalizers, Decision Feedback Equalizers, and related algorithms; Multiplexing and Multiple Access: FDMA, TDMA, CDMA, OFDMA, SC-FDMA, IDMA Schemes and Hybrid Method of Multiple Access Schemes, RAKE Receiver; Multiple Access for Radio Packet Systems: Pure ALOHA, Slotted ALOHA, CSMA and their versions; Packet and Pooling Reservation Based Multiple Access Schemes.</p>	11	CO3
4	<p><b>Cellular Networks:</b>            GSM system for mobile Telecommunication, General Packet Radio Service, Edge Technology; CDMA Based Standards: IS 95 to CDMA 2000, Wireless Local Loop, IMT 2000 and UMTS, Long Term Evolution (LTE), Mobile Satellite Communication.</p>	11	CO4
5	<p><b>Other Wireless Networks:</b>            Introduction to Mobile Adhoc Networks, Bluetooth, Wi-Fi Standards, WiMax Standards, Li-Fi Communication, Ultra-Wideband Communication, Mobile data networks, Wireless Standards IMT 2000, Introduction to 4G &amp; 5G and concept of NGN.</p>	10	CO5

**COURSE OUTCOMES:** At the end of the Course, the Student will be able to:

<b>C01</b>	Express the basic knowledge of mobile radio & cellular communication fundamentals and their application to propagation mechanisms, path loss models and multi-path phenomenon.
<b>C02</b>	Analyze the performance of various voice coding and diversity techniques.
<b>C03</b>	Apply the knowledge of wireless transmission basics to understand the concepts of equalization and multiple access techniques.
<b>C04</b>	Examine the performance of cellular systems being employed such as GSM, CDMA and LTE using various theoretical and mathematical aspects.
<b>C05</b>	Express basic knowledge of Mobile Adhoc networks and the existing & upcoming data communication networks in wireless and mobile communication domain.

**Mapping of CO v/s PO:**

	P01	P02	P03	P04	P05	P06	P07	P08	P09	P010	P011	P012
<b>C01</b>	2	2	2	1	1	-	-	-	-	-	1	1
<b>C02</b>	2	2	1	1	1	-	-	-	-	-	1	1
<b>C03</b>	1	2	1	1	1	-	-	-	-	-	1	1
<b>C04</b>	2	2	2	1	1	-	-	-	-	-	1	1
<b>C05</b>	2	1	2	1	1	-	-	-	-	-	1	1
<b>Average</b>	1.8	1.8	1.6	1	1						1	1

	PS01	PS02	PS03
<b>C01</b>	2	1	1
<b>C02</b>	1	2	1
<b>C03</b>	2	1	1
<b>C04</b>	2	1	1
<b>C05</b>	1	1	1
<b>Average</b>	1.6	1.2	1

**Correlation levels:**

1-Slight (Low)

2-Moderate (Medium)

3-Substantial (High)

<b>Gap in the syllabus</b>	
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<b>Topics to be covered beyond syllabus</b>	NA
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### LESSON PLAN

Lecture	Module	Scheduled			Conducted			
		Topic	*RBT Levels	C O Mapping	Date	Topic	Date	No. Of Students
1.	I	General Introduction Dissemination of V, M, PEO, PSO	L2	CO1				
2.		Introduction	L2					
3.		Evolution of mobile radio communication fundamentals	L2					
4.		General Model of Wireless Communication Link	L2					
5.		Types of Signals, Cellular Infrastructure, Cellular System Components	L2					
6.		Antennas for Cellular Systems, Operation of Cellular Systems	L2					
7.		Channel Assignment	L2					

8.		Channel Assignment, Frequency reuse, Channel Assignment strategies	L2					
9.		Handoff Strategies Cellular Interferences, Sectorization	L2					
10.		Wireless Channel and Radio Communication, Free Space Propagation Model	L2					
11.		<b>Tutorial-1</b>						
12.		Channel Noise and Losses, Fading in Land Mobile Systems	L2					
13.		Multipath Fading, Fading Effects on Signal and Frequency, Shadowing	L2					
14.		Wireless Channel Modeling: AWGN Channel, Rayleigh Channel	L2					
15.		Rician Fading Channel, Nakagami Fading Channel	L2					
16.		Ocumura and Hata Path Loss Model, Channel Modeling: Stochastic, Flat Fading	L2					
17.		Wideband Time-Dispersive Channel Modeling	L2					
18.		<b>Tutorial 2</b>						
19.		Spread Spectrum and Diversity: Theory of Vocoders Spread Spectrum Modulation	L2					
20.		Spread Spectrum Modulation Pseudo-Noise	L2					
21.	II	DSSS and FHSS Systems	L2	C02				
22.		Multicarrier Modulation Techniques	L2					
23.		Zero Inter Symbol Interference	L2					
24.		<b>Tutorial-3</b>						

25.		Communication Techniques, Detection Strategies	L2					
26.		Diversity Combining Techniques	L2					
27.		Selection Combining, Threshold Combining	L2					
28.		Equal Gain Combining Maximum Ratio Combining	L2					
29.		Spatial Diversity and Multiplexing in MIMO Systems	L2					
30.		Channel Estimation	L2					
31.		<b>Tutorial 4</b>						
32.		Equalization and Multiple Access: Equalization Techniques: Transversal Filters	L2					
33.		Adaptive Equalizers Zero Forcing Equalizers	L2					
34.		Decision Feedback Equalizers. and related	L2					
35.		Multiplexing and Multiple Access: FDMA, TDMA	L2					
36.		<b>Tutorial-5</b>	L2					
37.		CDMA, OFDMA	L2					
38.	<b>III</b>	SC- FDMA, IDMA Schemes and Hybrid Method of Multiple Access Schemes,	L2	<b>C03</b>				
39.		RAKE Receiver	L2					
40.		Multiple Access for Radio Packet Systems: Pure ALOHA, Slotted ALOHA, CSMA and their versions	L2					
41.		CSMA and their versions, Packet and Pooling Reservation Based Multiple Access Schemes.	L2					

42.		<b>Tutorial 6</b>						
43.	IV	Cellular Networks: GSM system for mobile Telecommunication	L2	CO4				
44.		Cellular Networks: GSM system for mobile Telecommunication	L2					
45.		General Packet Radio Service,	L2					
46.		Edge Technology	L2					
47.		IS 95 CDMA 2000	L2					
48.		<b>Tutorial 7</b>						
49.		Wireless Local Loop	L2					
50.		IMT 2000 UMTS	L2					
51.		Long Term Evolution (LTE)	L2					
52.		Mobile Satellite Communication	L2					
53.		<b>Tutorial 8</b>						
54.	V	Other Wireless Networks: Introduction to Mobile Adhoc Networks	L2	CO5				
55.		Bluetooth	L2					
56.		Wi-Fi Standards WiMax Standards	L2					
57.		Li-Fi Communication	L2					
58.		<b>Tutorial-9</b>						
59.		Ultra-Wideband Communication	L2					
60.		Mobile data networks, Wireless Standards IMT	L2					

	2000							
61.	Introduction to 4G & 5G,	L2						
62.	concept of NGN	L2						
63.	<b>Tutorial 10</b>	L2						

Class Test	Syllabus
CT-01	Class 1-Class 18
CT-02	Class 19-Class 36
PRE-AKTU	Full Syllabus

**\*Revised Bloom's Taxonomy (RBT) Levels:**

L1 – Remembering; L2 – Understanding; L3 – Applying; L4 – Analysing; L5 – Evaluating; L6 - Creating

**References:**

**Text books :( As per University / Board syllabus)**

**T1.** T.S. Rappaport, "Wireless Communication-Principles and practice", Pearson Publications, Second Edition.

**T2.** Upena Dalal, "Wireless Communication and Networks", Oxford Press Publications, first edition.

**Reference Books:(As per University / Board syllabus)**

**R1.** S. Haykin & M. Moher, "Modern wireless communication", Pearson, 2005.

**Faculty Sign**

**HOD's sign**



**BUDDHA INSTITUTE OF TECHNOLOGY**  
DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING  
**ACADEMIC YEAR 2025-26 (ODD Semester)**

**LESSON PLAN**

Semester: VII	Section: NA	Course Code: BEC-701	Contact Hours /week: 6
Course name: VLSI Design			# of credits: 3
Teacher's name: <b>Mr. Abhishek Shukla</b>			Designation: AP
Sessional Marks: 30		End Semester Examination Marks: 70	University Exam Hours: 3

Prerequisites if any:

**Understanding of VLSI Design flow, Dynamic CMOS design, Introduction to Built-in-self-test (BIST) Concept**

Content delivery methods:

**By Chalk & Board, PPT, Video, Book**

**COURSE SYLLABUS (as prescribed by University / Board)**

Module No	UNIT Contents	Hours	COs
1	<b>Introduction:</b> VLSI Design flow, general design methodologies; critical path and worst-case timing analysis, overview of design hierarchy, layers of abstraction, integration density and Moore's law, VLSI design styles, packaging, CMOS Logic, Propagation Delay definitions, sheet resistance	13	CO1
2	<b>Interconnect Parameters:</b> Resistance, Inductance, and Capacitance, skin effect and its influence, lumped RC	16	CO2

	Model, the distributed RC Model, transient Response, RC delay model, Linear Delay Model, Logical Effort of Paths, Scaling.		
3	<b>Dynamic CMOS design:</b> steady-state behaviour of dynamic gate circuits, noise considerations in dynamic design, charge sharing, cascading dynamic gates, domino logic, np-CMOS logic, problems in single-phase clocking, two phase non-overlapping clocking scheme, Sequential CMOS Logic Circuits, Layout design.	17	CO3
4	<b>Semiconductor Memories:</b> Dynamic Random-Access Memories (DRAM), Static RAM, non-volatile memories, flash memories, Pipeline Architecture. Low – Power CMOS Logic Circuits: Introduction, Overview of Power Consumption, Low – Power Design through voltage scaling	12	CO4
5	<b>Introduction to Testing:</b> Faults in digital circuits. Modeling of faults, Functional Modelling at the Logic Level, Functional Modelling at the Register, Structural Model and Level of Modelling. Design for Testability- Ad Hoc Design for Testability Techniques, Controllability and Observability, Introduction to Built-in-self-test (BIST) Concept.	15	CO5

**COURSE OUTCOMES:** At the end of the Course, the Student will be able to:

<b>C01</b>	Express the concept of VLSI design and CMOS circuits and delay study	
<b>C02</b>	Analyze mathematical methods and circuit analysis models in analysis of CMOS digital electronics circuits.	
<b>C03</b>	Design and analyze various combinational & sequential circuits based on CMOS technology	
<b>C04</b>	Examine power logic circuits and different semiconductor memories used in present day technology	
<b>C05</b>	Interpret faults in digital circuits, Fault Models and various Testing Methodologies.	

**Mapping of CO v/s PO:**

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
<b>C01</b>	2	2	3	-	3	2	-	2	-	-	-	3
<b>C02</b>	2	2	2	-	-	-	-	-	-	-	-	-
<b>C03</b>	2	2	2	-	-	-	-	-	-	-	-	-
<b>C04</b>	2	2	-	-	3	2	-	3	-	-	-	3
<b>C05</b>	3	2	3	-	-	-	-	-	-	-	-	-
<b>Average</b>	<b>2.0</b>	<b>2.0</b>	<b>2.5</b>	-	<b>3</b>	<b>2</b>	-	<b>2.5</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>3.0</b>

	PS01	PS02	PS03
<b>C01</b>	2	2	1
<b>C02</b>	1	-	-
<b>C03</b>	1	-	-
<b>C04</b>	3	2	1
<b>C05</b>	1	-	-
<b>Average</b>	2.4	2	1

Correlation levels: 1-Slight (Low)    2-Moderate (Medium)    3-Substantial (High)

<b>Gap in the syllabus</b>	The syllabus lacks a systematic organization, with a mix of diverse topics clustered together within the same units.	
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<b>Topics to be covered beyond syllabus</b>	Much enough topics to cover in the limited time. Therefore topics beyond the syllabus is not included in the syllabus.
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### LESSON PLAN

Lecture	Module	Scheduled			Conducted				
		Topic	*RBT	CO Mapping	Date	Topic	Date	OT	Std
1	I	Introduction: 1	L2	CO1					
2		Introduction:2	L2						
3		VLSI Design flow	L2						
4		general design methodologies	L2						
5		critical path and worst-case timing analysis	L2						
6		overview of design hierarchy	L2						

7		layers of abstraction,	L2					
8		<b>Tutorial 1</b>	L2					
9		Integration density and Moore's law,	L2					
10		VLSI design styles, packaging	L2					
11		CMOS Logic,	L2					
12		Propagation Delay definitions, sheet resistance	L2					
13		<b>Tutorial 2</b>	L2					
14	II	<b>Interconnect Parameters:</b> Resistance, Inductance, and Capacitance,	L2	CO2				
15		Skin effect and its influence,	L2					
16		Lumped RC Model	L2					
17		<b>Tutorial 3</b>	L2					
18		The distributed RC Model	L3					
19		Transient Response	L2					
20		RC delay model	L3					
21		Linear Delay Model, Logical Effort of Paths Scaling.	L2					

22		<b>Tutorial 4</b>	L2						
23		Revision Classes	L2						
24		Discussion on Question Paper	L3						
25	III	Dynamic CMOS design	L2	CO3					
26		Steady-state behavior of dynamic gate circuits,	L2						
27		Noise considerations in dynamic design	L2						
28		Charge sharing, cascading dynamic gates	L2						
29		Domino logic	L2						
30		<b>Tutorial 5</b>	L2						
31		np-CMOS logic	L2						
32		Problems in single-phase clocking	L2						
33		Twophase non-overlapping clocking scheme,	L2						
34		Sequential CMOS Logic Circuits	L2						
35		Layout design	L2						
36		<b>Tutorial 6</b>	L2						
37	IV	<b>Semiconductor Memories:</b> Dynamic Random (DRAM Static)	L2	CO4					
38		Access Memories (RAM, non-volatile memories)	L2						
39		Flash memories	L2						
40		Pipeline Architecture.	L2						
41		Pipeline Architecture	L2						

42		<b>Tutorial 7</b>	L2					
43		Low – Power CMOS Logic Circuits:	L2					
44	V	Introduction, Overview of Power Consumption,	L2	CO5				
45		Low – Power Design through voltage scaling	L2					
46		<b>Tutorial 8</b>	L2					
47			L2					
48		<b>Introduction to Testing:</b> Faults in digital circuits. Modeling of faults,	L2					
49		Functional Modeling at the Logic Level,	L2					
50		Functional Modeling at the Register	L2					
51		<b>Tutorial 9</b>	L2					
52		Structural Model and Level of Modeling.	L2					
53		Design for Testability	L2					
54		Ad Hoc Design for Testability Techniques	L2					
55		Controllability and Observability,	L2					
56		Introduction to Built-in-self-test (BIST) Concept.	L2					
57		<b>Tutorial 10</b>	L2					
58		<b>Revision</b>	L2					

<b>Class Test</b>	<b>Syllabus</b>
<b>CT-01</b>	<b>Class 1-Class 12</b>
<b>CT-02</b>	<b>Class 13-Class 28</b>
<b>PRE-AKTU</b>	<b>Full Syllabus</b>

**\*Revised Bloom's Taxonomy (RBT) Levels:**

L1 – Remembering; L2 – Understanding; L3 – Applying; L4 – Analysing; L5 – Evaluating; L6 - Creating

**Literature:**

**Text Book:** 1. Sung-Mo Kang & Yosuf Leblebici, “CMOS Digital Integrated Circuits: Analysis & Design”,Mcgraw Hill, 4th Edition. 2. Neil H.E.Weste, David Money Harris, “CMOS VLSI Design – A circuits and Systems Perspective” Pearson, 4th Edition. 3. D. A. Pucknell and K. Eshraghian, “Basic VLSI Design: Systems and Circuits”, PHI, 3rd Ed.,1994.

**Reference Books:** 1. R. J. Baker, H. W. Li, and D. E. Boyce , " CMOS circuit design, layout, and simulation", WileyIEEE Press,2007. 2. M. Abramovici, M.A. Breuer and A.D. Friedman, "Digital Systems and Testable Design" , Jaico Publishing House

**Faculty Sign**

**HOD's sign**



**BUDDHA INSTITUTE OF TECHNOLOGY**  
**DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING**  
**ACADEMIC YEAR 2025-26 (ODD Semester)**

**LESSON PLAN**

Semester: VII	Section: A	Course Code: : BOE074	Contact Hours /week: 6
Course name: RENEWABLE ENERGY RESOURCES			# of credits: 3
Teacher's name: Mr. RAHUL KUMAR SHUKLA			Designation: AP
Sessional Marks:30	End Semester Examination Marks:70		University Exam Hours: 3

Prerequisites if any:

NA

Content delivery methods:

By Face to face delivery, Presentation, Tutorial etc.

**COURSE SYLLABUS (as prescribed by University / Board)**

Module No	UNIT Contents	Hours	COs
1	Introduction: Various non-conventional energy resources- Introduction, availability, classification, relative merits and demerits. Solar Cells: Theory of solar cells. Solar cell materials, solar cell array, solar cell power plant, limitations.	10	CO1
2	Solar Thermal Energy: Solar radiation, flat plate collectors and their materials, applications and performance, focussing of collectors and their materials, applications and performance; solar thermal power plants, thermal energy storage for solar heating and cooling, limitations.	11	CO2

3	Geothermal Energy: Resources of geothermal energy, thermodynamics of geo- thermal energy conversion-electrical conversion, non-electrical conversion, environmental considerations. Magneto-hydrodynamics (MHD): Principle of working of MHD Power plant, performance and limitations. Cells: Principle of working of various types of fuel cells and their working, performance and limitations.	14	C03
4	Thermo-electrical and thermionic Conversions: Principle of working, performance and limitations. Wind Energy: Wind power and its sources, site selection, criterion, momentum theory, classification of rotors, concentrations and augments, wind characteristics. Performance and limitations of energy conversion systems.	9	C04
5	Bio-mass: Availability of bio-mass and its conversion theory. Ocean Thermal Energy Conversion (OTEC): Availability, theory and working principle, performance and limitations. Wave and Tidal Wave: Principle of working, performance and limitations. Waste Recycling Plants.	9	C05

**COURSE OUTCOMES:** At the end of the Course, the Student will be able to:

<b>C01</b>	Understand the classification, availability, and comparative merits and demerits of various non-conventional energy resources.
<b>C02</b>	Explain the working principles, construction, and limitations of solar photovoltaic and solar thermal energy systems.
<b>C03</b>	Describe the principles and performance of geothermal, MHD, fuel cells, thermoelectric, and thermionic energy conversion systems.
<b>C04</b>	Understand wind, biomass, ocean thermal, wave, and tidal energy technologies in terms of site selection, working, and efficiency.
<b>C05</b>	Assess the role of waste recycling and alternative energy systems in achieving sustainable energy solutions.

**Mapping of CO v/s PO:**

	P01	P02	P03	P04	P05	P06	P07	P08	P09	P010	P011	P012
<b>C01</b>	2	1	-	-	-	-	-	-	-	-	-	0.5
<b>C02</b>	2	2	2	1	-	-	-	-	-	-	-	-
<b>C03</b>	2	2	2	2	2	-	-	-	-	-	-	1
<b>C04</b>	1	2	2	2	2	-	-	-	-	-	-	-
<b>C05</b>	1	1	2	2	2	-	-	-	-	-	-	-
<b>Average</b>	1.6	1.6	2	1.3	1.2	-	-	-	-	-	-	0.3

	PSO1	PSO2	PSO3
<b>C01</b>	2	1	2
<b>C02</b>	2	2	2
<b>C03</b>	1	3	2
<b>C04</b>	2	3	2
<b>C05</b>	2	3	2
<b>Average</b>	1.8	2.4	2

Correlation levels: 1-Slight (Low)    2-Moderate (Medium)    3-Substantial (High)

<b>Gap in the syllabus</b>	
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<b>Topics to be covered beyond syllabus</b>	Advances knowledge in solar technology
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## LESSON PLAN

Lecture	Module	Scheduled				Conducted			
		Topic	*RBT Levels	C O Mapping	Date	Topic	Date	No. Of Students	Faculty Sign
1	I	Introduction: Various non-conventional energy resources	L1	CO 1					
2		Introduction, availability	L1						
3		classification, relative merits and demerits	L2						
4		Theory of solar cells.,	L2						
5		Solar cell materials	L2						
		<b>Tutorial 1</b>							
6		solar cell array	L2						
7		solar cell power plant,	L2						
8		limitations.	L2						
		<b>Tutorial 2</b>							
9	II	Solar Thermal Energy,	L2						
10		Solar radiation,	L2						

11	flat plate collectors and their materials,	L2					
12	applications and performance	L2					
	<b>Tutorial 3</b>						
13	focussing of collectors and their materials	L2					
14	applications and performance	L2					
15	solar thermal power plants	L2					
16	thermal energy storage for solar heating and cooling	L2					
17	limitations.	L2					
18	<b>Tutorial 4</b>						
19	Geothermal Energy:	L3					
20	Resources of geothermal energy,	L3					
21	thermodynamics of geo- thermal energy conversion-electrical conversion	L3					
22	non-electrical conversion,	L2					
	<b>Tutorial 5</b>						
23	environmental considerations	L2					
24	Magneto-hydrodynamics (MHD)	L2					
25	Principle of working of MHD Power plant	L3					

26		performance and limitations	L3					
27		Cells: Principle of working of various types of fuel cells and their working,	L2	CO 2				
28		performance and limitations.	L2					
29		<b>Tutorial 6</b>						
30		Methods of setting out simple circular curves	L2					
32		Transition curves- types, characteristics	L2					
33		Transition curves- types, characteristics	L2					
34		equations of various transition curves	L2					
35	II	Introduction to vertical curves	L2					
36	I	<b>Tutorial 7</b>						
37		Thermo-electrical and thermionic Conversions	L2					
38		Principle of working, performance and limitations.	L2					
39		Wind Energy: Wind power and its sources	L2					
40		site selection	L2					
41		criterion	L2					
42		momentum theory	L2					

43		<b>Tutorial 8</b>						
44		classification of rotors	L2					
45		concentrations and augments	L2					
46		wind characteristics	L2					
47		Performance and limitations of energy conversion systems	L2					
48		Bio-mass	L2					
49		<b>Tutorial 9</b>		CO 3				
50	IV	Availability of bio-mass and its conversion theory	L2					
51		Ocean Thermal Energy Conversion (OTEC)	L2					
52		Availability, theory and working principle,	L2					
53		Scale and flying height	L2					
54		Wave and Tidal Wave	L2					
55		Principle of working	L2					
56	VI	performance and limitations		C04				
57		Waste Recycling Plants	L2					
58		<b>Tutorial 10</b>	L2					

<b>Class Test</b>	<b>Syllabus</b>
<b>CT-01</b>	<b>Class 1-Class 32</b>
<b>CT-02</b>	<b>Class 33-Class 58</b>
<b>PRE-AKTU</b>	<b>Full Syllabus</b>

**\*Revised Bloom's Taxonomy (RBT) Levels:**

**\*Revised Bloom's Taxonomy (RBT) Levels:**

L1 – Remembering; L2 – Understanding; L3 – Applying; L4 – Analysing; L5 – Evaluating; L6 - Creating

**References:**

**Text books :( As per University / Board syllabus)**

**T1.**Punmia BC: Surveying Vol. I, II, Laxmi Publication

**T2.**Arora, K.R., Surveying, Vol-I, II and III, Standard Book House.

**T3.**Manoj, K. Arora and Badjatia, Geomatics Engineering, Nem Chand & Bros, 2011

**Reference Books:(As per University / Board syllabus)**

**R1.**Madhu, N, Sathikumar, R and Satheesh Gobi, Advanced Surveying: Total Station, GIS and Remote Sensing, Pearson India, 2006.

**R2.**Anji Reddy, M., Remote sensing and Geographical information system, B.S.Publications, 2001.

**R3.**Chandra AM and Ghosh SK: Remote Sensing and Geographical Information System, AlphaScience

**Faculty Sign**

**HOD's sign**



# SKILL DEVELOPMENT CELL

## Lesson Plan

Course-PPC(MATHS)

College-BIT

Department-Electronics and Communication Engineering

Class/Section-4<sup>th</sup> year

Faculty- Sudhaker Tripathi

Lecture#	Scheduled Topics	Conducted			
		Date	No Of Students	Faculty Sign	Topic
1	NUMBERS SYSTEM				
2	NUMBERS SYSTEM				
3	AVERAGE				
4	AVERAGE				
5	PERCENTAGE				
6	PERCENTAGE				
7	PROFIT AND LOSS				
8	PROFIT AND LOSS				

9	SIMPLE INTEREST				
10	SIMPLE INTEREST				
11	COMPOUND INTEREST				
12	COMPOUND INTEREST				
13	TIME AND WORK				
14	TIME AND WORK				
15	TIME AND DISTANCE				
16	TIME AND DISTANCE				
17	PERMUTATIONS AND COMBINATIONS				
18	PERMUTATIONS AND COMBINATIONS				
19	PROBABILITY				
20	PROBABILITY				

**Faculty/ Trainer Sign:**



# **BUDDHA INSTITUTE OF TECHNOLOGY**

## **ACADEMIC YEAR 2024-25**

### **LESSON PLAN – PLACEMENT SUCCESS CLASSES**

<b>Sl. #</b>	<b>Name of the Resource Person</b>	<b>Name of the topic</b>
1	Mr.Ashvini Kumar Chaturvedi	Industry Scenario and Opportunities
2	Mr.Ashvini Kumar Chaturvedi	Importance of Skills & preparation of Job Description
3	Mr.Ashvini Kumar Chaturvedi	"Tailored Resume Writing Session
4	Mr.Ashvini Kumar Chaturvedi	"Resume Optimization Masterclass
5	Mr.Ashvini Kumar Chaturvedi & GD Panel	Speak to Win: GD Prep Session
6	Mr.Ashvini Kumar Chaturvedi & GD Panel	Speak to Win: GD Prep Session
7	Mr.Ashvini Kumar Chaturvedi & Interview Panel	HR Round Mastery
8	Mr.Ashvini Kumar Chaturvedi & Interview Panel	HR Round Mastery
9	Mr.Ashvini Kumar Chaturvedi & Department Placement Coordinator	Aptitude Test Accelerator
10	Mr.Ashvini Kumar Chaturvedi & Department Placement Coordinator	Aptitude Test Accelerator
11	Mr.Ashvini Kumar Chaturvedi & Department Placement Coordinator	Winning the Tech Round (Technical Test)
12	Mr.Ashvini Kumar Chaturvedi & Department Placement Coordinator	Winning the Tech Round (Technical Test)
13	Mr.Ashvini Kumar Chaturvedi , Interview Panel	From Prep to Placement: Technical Interviews
14	Mr. Ashvini Kumar Chaturvedi , Interview Panel	From Prep to Placement: Technical Interviews
15	Mr. Ashvini Kumar Chaturvedi	Job-Ready Mock Drive Session
16	Mr.Ashvini Kumar Chaturvedi	Job-Ready Mock Drive Session

**Dept. Placement Coordinator**

**Head Placement – BIT**

## **BEC-751 VLSI Design Lab**

### **0L:0T:2P SUGGESTIVE LIST OF EXPERIMENTS:**

1. Credit Design and analysis of basic of logic Gates: AND, OR, NOT, NAND, NOR, XOR, XNOR.
2. Design and implementation of Half adder and Full adder using CMOS logic.
3. To simulate the schematic of the common drain amplifier.
4. To simulate the schematic of the differential amplifier.
5. To simulate the schematic of the operational amplifier.
6. Design of 3-8 decoder using MOS technology.
7. Design a 4:1 Multiplexer.
8. Design and implementation of Flip flop circuit.
9. Layout design of PMOS, NMOS transistors.
10. Layout design of CMOS inverter and its analysis.

### **Course Outcomes:**

**At the end of this course students will demonstrate the ability to:**

1. Designing of logic gates.
2. Implementation of combinational and sequential circuits using CMOS logic.
3. Analyze amplifier circuits.
4. Design sequential circuits such as flip flop.
5. Do the layout designing for physical analysis of the MOS transistor and MOS based circuits.