



K. S. INSTITUTE OF TECHNOLOGY, BENGALURU - 560109
DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING
COURSE PLAN 2023-24 EVEN SEMESTER

COURSE INCHARGE : Dr P. N. Sudha
COURSE CODE/TITLE : 18EC81/Wireless and Cellular communication
YEAR/ SEMESTER/SECTION : IV/VIII/A
BRANCH : ECE

Sl. No.	Topic to be covered	Mode of Delivery	Teaching Aid	No. of Periods	Cumulative No. of Periods	Proposed Date
MODULE 1: Mobile Radio Propagation						
1	The Cellular Concept – Cellular Concept	L+D	BB, LCD	1	1	12 th Feb 2024
2	Analysis of Cellular Systems	L+D	BB	1	2	12 th Feb 2024
3	Sectoring			2	4	13 th Feb 2024
4	Mobile Radio Propagation – Large Scale Path Loss – Free Space Propagation Model & problems	L+D	BB	2	6	19 th Feb 2024
5	Relating Power to Electric Field, Three Basic Propagation Mechanisms – Reflection (Ground Reflection), Diffraction, Scattering	L+D	BB	1	7	19 th Feb 2024
6	Practical Link Budget, Fading and Multipath – Broadband wireless channel	L+D	BB,LCD	1	8	20 th Feb 2024
7	Delay Spread and Coherence Bandwidth, Doppler Spread and Coherence Time	L+D	BB	1	9	20 th Feb 2024
8	Angular spread and Coherence	L+D	BB,LCD	1	10	26 th Feb 2024
9	Distance Statistical Channel Model of a Broadband Fading Channel	L+D	BB	1	11	26 th Feb 2024
10	Problems & Pedagogy	L+D	BB	1	12	26 th Feb 2024

MODULE 2: GSM and TDMA Technology						
11	GSM System overview – Introduction	L+PS	BB	1	13	27 th Feb 2024
12	GSM System overview – Introduction	L+ D	BB	1	13	27 th Feb 2024
13	GSM Channel Concept	L+D	BB	1	15	4 th Mar 2024
14	GSM Channel Concept	L+D	BB	1	16	4 th Mar 2024
15	GSM System Operations	L+D	LCD	1	17	4 th Mar 2024
16	GSM System Operations	L+D	BB	1	18	4 th Mar 2024
17	GSM Identities	L+D	BB	2	20	4 th Mar 2024
18	Infrastructure Communications (Um Interface)	L+D	BB	1	21	5 th Mar 2024
19	Network and System Architecture	L+D	BB	1	22	5 th Mar 2024
20	GSM System Operations	L+D	LCD	1	23	5 th Mar 2024
21	Traffic cases, GSM	L+D	LCD	1	24	18 th Mar 2024
22	Pedagogy & Test			1	25	18 th Mar 2024
MODULE 3: CDMA Technology						
23	CDMA System Over view- Introduction	L+AV	LCD	1	26	19 th Mar 2024
24	CDMA Network and system Architecture	L+D	BB	1	27	19 th Mar 2024
25	CDMA Basics	L+AV	LCD	1	28	25 th Mar 2024
26	CDMA Basics	L+D	BB	1	29	25 th Mar 2024
27	CDMA Channel Concepts	L+D	BB	1	30	25 th Mar 2024
28	CDMA Channel Concepts	L+D	BB	1	31	26 th Mar 2024
29	CDMA System (Layer 3) operations 3G CDMA	L+D	BB	3	34	1 st April 2024
30	Pedagogy & QP Revision	L+D	BB	1	35	1 st April 2024
MODULE 4: LTE – 4G						
31	Key Enablers for LTE 4G – OFDM	L+D	BB	1	31	2 nd April 2024
32	SC-FDE, SC-FDMA	L+AV	LCD	1	32	2 nd April 2024
33	Channel Dependent Multiuser Resource Scheduling	L+D	LCD, BB	1	33	2 nd April 2024
34	Multi-Antenna Techniques, Flat IP Architecture	L+AV	LCD	1	34	15 th April 2024
35	LTE Network Architecture	L+D	BB	1	35	15 th April 2024
36	Multi-Carrier Modulation – Multicarrier concepts	L+D	BB	1	36	15 th April 2024
37	OFDM Basics, OFDM in LTE	L+D	BB	1	37	16 th April 2024
38	Timing and Frequency Synchronization	L+D	BB	1	38	16 th April 2024
39	Peak to Average Ration	L+D	BB	1	39	16 th April 2024

40	SC-Frequency Domain Equalization, Computational Complexity Advantage of OFDM and SC-FDE	L+D	BB	1	40	22 nd April 2024
MODULE 5: LTE – 4G						
41	LTE – 4G OFDMA and SC-FDMA	L+D	LCD, BB	1	41	22 nd April 2024
42	Multiple Access for OFDM Systems, OFDMA, SCFDMA	L+D	LCD	1	42	22 nd April 2024
43	Multiuser Diversity and Opportunistic Scheduling	L+D	LCD	1	43	23 rd April 2024
44	OFDMA and SC-FDMA in LTE	L+D	LCD, BB	1	44	23 rd April 2024
45	OFDMA system Design Considerations	L+D	BB	1	45	23 rd April 2024
46	The LTE Standard – Introduction to LTE and	L+D	BB	1	46	29 th April 2024
47	Hierarchical Channel Structure of LTE	L+D	BB	1	47	29 th April 2024
48	Downlink OFDMA Radio Resources, Uplink SC-FDMA Radio Resources	L+D	BB	1	48	30 th April 2024

Text Books:

1. Fundamentals of LTE Arunabha Ghosh, Jan Zhang, Jefferey Andrews, Riaz Mohammed, Pearson education (Formerly Prentice Hall, Communications Engg and Emerging Technologies), ISBN-13: 978-0-13-703311-9.
2. Introduction to Wireless Telecommunications Systems and Networks, Gary Mullet, First Edition, Cengage Learning India Pvt Ltd., 2006, ISBN – 13: 978-81-315-0559-5.

Reference Books:

1. “Wireless Communications: Principles and Practice” Theodore Rappaport, 2nd Edition ,Prentice Hall Communications Engineering and Emerging Technologies Series, 2002, ISBN 0-13-042232-0.
2. LTE for UMTS Evolution to LTE –Advanced ‘ Harri Holma and Antti Toskala, Second Edition-2011, John Wiley & Sons, Ltd. Print ISBN:9780470660003.2

Details for Teaching Aids:

1. Black Board
2. Laptop, LCD Projector

Signature of Course In-charge

[Handwritten Signature]
10/2/24

Signature of Module Coordinator

[Handwritten Signature]
10/2/24

Signature of HOD

[Handwritten Signature]
10/2/24



K.S. INSTITUTE OF TECHNOLOGY BANGALORE

DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING

NAME OF THE STAFF : Dr P N SUDHA

SUBJECT CODE/NAME : 21EC642/CRYPTOGRAPHY

SEMESTER/YEAR : VI/ III/A

ACADEMIC YEAR : 2023-2024

Sl. No.	Topic to be covered	Mode of Delivery	Teaching Aid	No. of Periods	Cumulative No. of Periods	Proposed Date
MODULE 1: BASIC CONCEPTS OF NUMBER THEORY & FINITE FIELDS:						
1	Divisibility and division algorithm,	L+D	BB	1	1	29 th April 2024
2	Modular arithmetic,	L+D, PS	BB	1	2	30 th April 2024
3	Euclidean algorithm & problems	L+ D, PS	BB	1	3	2 nd May 2024
4	Extended Euclidean algorithm & problems	L+D	BB	1	4	13 th May 2024
5	Groups, Rings and Fields, Finite fields of the form GF(p), Polynomial arithmetic	L+D	BB	1	5	14 th May 2024
6	Finite fields of the form GF(2 ^m)	L+D	BB	1	6	15 th May 2024
5	To solve QP problems & Pedagogy		LCD	1	7	16 th May 2024
MODULE 2: SYMMETRICAL CIPHERS						
6	Computer Security Concepts & A model for Network Security	L+D	BB	1	8	20 th May 2024
7	Classical Encryption Techniques: Symmetrical cipher model	L+D	BB	1	9	21 st May 2024
8	Substitution techniques	L+D	BB	6	15	22 nd May 2024

9	Transposition techniques			2	17	23 rd May 2024 & 25 th May 2024
10	To solve QP problems & Pedagogy		LCD	1	18	30 th May 2024
MODULE 3: Block Ciphers						
10	Traditional Block cipher structure, Data Encryption standard	L+D	BB	2	20	3 rd June 2024 & 4 th June 2024
11	The AES cipher	L+D	BB	3	23	5 th to 8 th June 2024
12	More on number theory: Prime numbers, Fermat's	L+D	BB	1	24	10 th June 2024
13	Euler's theorem	L+D	BB	2	26	11 th & 12 th June 2024
14	Discrete logarithm	L+D	BB	1	27	13 th June 2024
15	To solve QP problems & Pedagogy activity		LCD	1	28	18 th June 2024
MODULE 4: ASYMMETRIC CIPHER						
16	Principle of public Key cryptosystem	L+D, PS	BB	1	29	19 th June 2024
17	Principles of Public-Key Cryptosystems: The RSA algorithm	L+D, PS	BB	1	30	20 th June 2024
18	Diffie - Hellman Key Exchange	L+D	BB	2	32	22 nd & 23 rd June 2024
19	Elliptic Curve Arithmetic,	L+D	BB	2	34	24 th & 25 th June 2024
20	Elliptic Curve Cryptography	L+D	BB	2	36	26 th June 2024
21	To solve QP problems & Pedagogy activity		LCD	1	37	1 st July 2024
MODULE 5: PSEUDO-RANDOM-SEQUENCE GENERATORS AND STREAM CIPHERS						
22	Linear Feedback Shift Registers	L+D, PS	BB	1	38	2 nd July 2024
23	Design and analysis of stream ciphers	L+D	BB	1	39	3 rd July 2024
24	Design & analysis of Stream ciphers using LFSRs	L+D	BB	1	40	4 th July 2024
25	A5 algorithm	L+D	BB	1	41	8 th July 2024
26	Hughes XPD/KPD	L+D	BB	1	42	9 th July 2024
27	Nanotequ	L+D	BB	1	43	10 th July 2024
28	Additive generators	L+D	BB	1	44	11 th July 2024
29	Gifford generator	L+D	BB	1	45	15 th July 2024
30	PKZIP	L+D	BB	1	46	16 th July 2024
31	To solve QP problems & Pedagogy activity	L+D	LCD	1	47	18 th July 2024
32	Revision	L+D	BB, LCD	1	48	30 th July 2024

Text Books:

- William Stallings, “Cryptography and Network Security Principles and Practice”, Pearson Education Inc., 6th Edition, 2014, ISBN: 978-93-325-1877-3
- Bruce Schneider, “Applied Cryptography Protocols, Algorithms, and Source code in C”, Wiley Publications, 2nd Edition, ISBN: 9971-51-348-X

Reference Books:

- Understanding Cryptography - A Textbook for Students and Practitioners, Paar, Christof, Pelzl, Jan, Springer (2010).
- Cryptography Engineering: Design Principles and Practical Applications, Niels Ferguson, Bruce Schneier, Tadayoshi Kohno, Wiley (2010).
- Cryptography: Theory and Practice, Third Edition, Douglas R. Stinson, CRC Press (2005).
- Cryptography: A Very Short Introduction, Fred C. Piper; Sean Murphy, Oxford University Press (2002)..

WEB MATERIALS:

- <https://learncryptography.com/>
- www.cryptolab.us/
- <https://cryptopals.com>

Details for the teaching Aids

1. BB
2. LCD



Signature of Course In charge



Signature of Module Coordinator



Signature of HOD



K S INSTITUTE OF TECHNOLOGY BANGALORE

DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING

NAME OF THE STAFF : Dr. B Sudarshan

SUBJECT CODE/NAME : 21C61/ TECHNOLOGICAL INNOVATION MANAGEMENT AND ENTREPRENEURSHIP

SEMESTER/YEAR/SEC : VI/ III/ B

ACADEMIC YEAR : 2023-2024

Sl. No.	Topic to be covered	Mode of Delivery	Teaching Aid	No. of Periods	Cumulative No. of Periods	Proposed Date A Section
Module 1: Management & Planning						
1	Management: Nature and Functions of Management – Importance, Definition	L+D	BB	1	1	29.4.2024
2	Management Functions, Levels of Management	L+D	BB	1	2	2.5.2024
3	Roles of Manager, Managerial Skills	L+D	BB	1	3	3.5.2024
4	Management & Administration, Management as a Science, Art & Profession	L+D	BB	1	4	11.5.2024
5	Project Case Studies	L+D	BB	1	5	11.5.2024
6	Planning-Nature, Importance	L+D	BB	1	6	14.5.2024
7	Types of Plans, Steps and Limitations of Planning	L+D	BB	1	7	15.5.2024
8	Decision Making – Meaning, Types	L+D	BB	1	8	16.5.2024
9	Steps in Decision Making	L+D	BB	1	9	17.5.2024
10	Project Case Studies	L+D	BB	1	10	17.5.2024
Module 2: Organizing and Staffing: Organization, Directing and Controlling						
11	Meaning, Characteristics, Process of Organizing, Principles of Organizing, Span of Management (meaning and importance only),	L+D	BB	1	11	21.5.2024

12	Departmentalization, Committees–Meaning, Types of Committees,	L+D	BB	1	12	22.5.2024
13	Staffing-Need and Importance, Recruitment and Selection Process,	L+D	BB	1	13	28.5.2024
14	Directing and Controlling: Meaning and Requirements of Effective Direction, Giving Orders	L+D	BB	1	14	29.5.2024
15	Motivation-Nature of Motivation, Motivation Theories : Maslow’s Need-Hierarchy Theory	L+D	BB	1	15	30.5.2024
16	Herzberg’s Two Factor Theory	L+D	BB	1	16	31.5.2024
17	Communication – Meaning, Importance and Purposes of Communication	L+D	BB	1	17	4.6.2024
Module 3: Leadership, Social Responsibilities of Business						
18	Leadership-, Behavioral Approach of Leadership; Coordination-Meaning Types, Techniques of Coordination	L+D	BB	1	18	5.6.2024
19	Controlling – Meaning, Need for Control	L+D	BB	1	19	6.6.2024
20	System, Benefits of Control	L+D	BB	1	20	7.6.2024
21	Essentials of Effective Control System	L+D	BB	1	21	11.6.2024
22	Steps in Control Process	L+D	BB	1	22	12.6.2024
23	Social Responsibilities of Business: Meaning of Social Responsibility,	L+D	BB	1	23	13.6.2024
24	Social Responsibilities of Business towards Different Groups	L+D	BB	1	24	14.6.2024
25	Responsibilities of Business towards Different Groups	L+D	BB	1	25	18.6.2024
26	Social Audit	L+D	BB	1	26	19.6.2024
27	Business Ethics and Corporate Governance	L+D	BB	1	27	20.6.2024
Module 4: Entrepreneurship, Identification of business opportunities,						
28	Entrepreneurship: Definition of Entrepreneur, Evolution of concept of Entrepreneurship,	L+D	BB	1	28	21.6.2024
29	Entrepreneurship today, types of Entrepreneurs.	L+D	BB	1	29	22.6.2024
30	Intrapreneurship, Entrepreneurship Competencies	L+D	BB	1	30	25.6.2024
31	capacity building for Entrepreneurship	L+D	BB	1	31	26.6.2024
32	Identification of business opportunities,: Introduction,	L+D	BB	1	32	2.7.2024

33	Mobility of Entrepreneurs	L+D	BB	1	33	3.7.2024
34	Business opportunities in India,	L+D	BB	1	34	4.7.2024
35	Models for opportunity evaluation	L+D	BB	1	35	5.7.2024
Module 5: Business Plans and Institutions supporting Business opportunities						
36	Business Plans: Introduction, Purposes of a Business Plan, contents of a Business Plan	L+D	BB	1	36	9.7.2024
37	Presenting a Business Plan, Why some Business Plan fail?	L+D	BB	1	37	10.7.2024
38	Procedure for setting up an enterprise	L+D	BB	1	38	11.7.2024
39	Institutions supporting Business opportunities: Central Level Institutions	L+D	BB	1	39	12.7.2024
40	NBMSME-DO, NSIC	L+D	BB	1	40	13.7.2024
41	State level institutions :State Directorate Industries and Commerce, DIC's	L+D	BB	1	41	16.7.2024
42	SFC's, SDIC	L+D	BB	1	42	18.7.2024
43	SIADB	L+D	BB	1	43	19.7.2024
44	Other Institutions: NABARD, TCO	L+D	BB	1	44	23.7.2024
45	SIDBI	L+D	BB	1	45	24.7.2024
46	Export Promotion Councils	L+D	BB	1	46	25.7.2024
47	Non-Government Organizations	L+D	BB	1	47	26.7.2024



Course In charge



Module Coordinator



HOD





K.S. INSTITUTE OF TECHNOLOGY BANGALORE
DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING
COURSE PLAN 2023-24 EVEN SEMESTER

COURSE INCHARGE : Dr. REKHA N
COURSE CODE/NAME : BEC403/CONTROL SYSTEMS
YEAR/ SEMESTER/SECTION : 2nd / 4th /A
BRANCH : Electronics & Communication Engineering

Sl.No	Topic to be covered	Mode of Delivery	Teaching Aid	No. of Periods	Cumulative No. of Periods	Proposed Date
Module 1: Introduction to Control Systems						
1.	Introduction to Control Systems: Types of Control Systems, Effect of Feedback Systems,	L+D	BB	1	1	22 nd April 2024
2.	Differential equation of Physical Systems – Mechanical Systems,	L+ D	BB	4	5	24 th April- 2 nd May 2024
3.	Differential equation of Electrical Systems,	L+ D	BB	2	7	3 rd -6 th May 2024
4.	Analogous Systems	L+D	BB	2	9	8 th -9 th May 2024
Module 2: Block Diagrams and Signal Flow Graphs						
5.	Block diagrams: Transfer functions	L+D	BB	4	13	11 th -16 th May 2024

6.	Signal flow graphs: Transfer functions, Block diagram algebra and Signal Flow graphs.	L+DE	BB	3	16	17 th - 24 th May 2024
7.	Signal flow graphs: Transfer functions, Block diagram algebra and Signal Flow graphs.	L+ PS	BB	2	18	25 th -27 th May 2024
Module 3:Time Response of Feedback Control Systems						
8.	Time Response of feedback control systems: Standard test signals,	L+ DE	BB	2	20	29 th - 30 th May 2024
9.	Unit step response of First order Systems.	L+D	BB	1	21	31 st May 2024
10.	Second order Systems	L+D	BB	2	23	3 rd - 5 th June 2024
11.	Time response specifications of second order systems	L+D	BB	3	26	6 th - 8 th June 2024
12.	Steady state errors and error constants.	L+D	BB	2	28	10 th - 12 th June 2024
13.	Introduction to PI, PD	L+DE	LCD	1	29	13 th June 2024
14.	PID Controllers	T+ STx	BB	1	30	14 th June 2024
Module 4:Stability Analysis						
15.	<i>Stability analysis: Concepts of stability, Necessary conditions for Stability, Routh stability criterion</i>	L+D	LCD	1	31	19 th June 2024
16.	Relative stability analysis: more on the Routh stability criterion	L+D	BB	1	32	20 th June 2024
17.	Introduction to Root-Locus Techniques	L+D	BB	1	33	21 th June 2024
18.	The root locus concepts, Construction of root loci.	L+D	BB	4	37	22 nd June to 1 st July 2024
19.	Frequency domain analysis and stability: Correlation between time and frequency response,	L+D	BB	1	38	3 rd July 2024
20.	Bode Plots, Experimental determination of transfer function	L+D	BB	3	41	4 th to 8 th July 2024

Module 5: Frequency Domain Analysis and Stability						
21.	Introduction to Polar Plots,	L+PS(Tx)	BB	2	43	10 th -11 th July 2024
22.	Nyquist Stability criterion	L+PS(Tx)	BB	4	47	12 th -18 th July 2024
23.	Introduction to lead, lag and lead-lag compensating networks (excluding design).	L+D	LCD	1	48	19 th July 2024
24.	Introduction to State variable analysis: Introduction, Concept of State,	L+D	LCD	1	49	22 nd July 2024
25.	State variables & State model	L+D	LCD	1	50	24 th July 2024
26.	State model for electrical systems,	L+D	BB	2	52	25 th -26 th July 2024
27.	Solution of state equations	L+D	BB	2	54	27 th July – 7 th August 2024


Text Book:

1. I J.Nagarath and M.Gopal, — Control Systems Engineering, New Age International Publishers, Fifth Edition.

Reference Books:

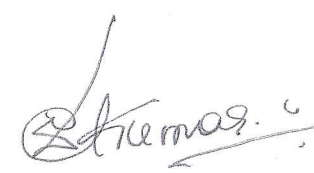
1. Modern Control Engineering| K.Ogata, Pearson Education Asia/PHI, 4th Edition, 2002. ISBN : 978-81-203-40107.
2. Automatic Control Systems|, Benjamin C. Kuo, John Wiley India Pvt. Ltd., 8th Edition, 2008.
3. Feedback and Control System| Joseph J Distefano III et al., Schaum's Outlines, TMH, 2nd Edition 2007

Details of the teaching aids: Black Board, LCD Projector


Course In charge


Module coordinator


HOD ECE


PRINCIPAL



K.S. INSTITUTE OF TECHNOLOGY BANGALORE
DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING
COURSE PLAN 2023-24 EVEN SEMESTER

COURSE INCHARGE : Dr. REKHA N
COURSE CODE/NAME : BEC403/CONTROL SYSTEMS
YEAR/ SEMESTER/SECTION : 2nd / 4th /B
BRANCH : Electronics & Communication Engineering

Sl.No	Topic to be covered	Mode of Delivery	Teaching Aid	No. of Periods	Cumulative No. of Periods	Proposed Date
Module 1: Introduction to Control Systems						
1.	Introduction to Control Systems: Types of Control Systems, Effect of Feedback Systems,	L+D	BB	1	1	22 nd April 2024
2.	Differential equation of Physical Systems – Mechanical Systems,	L+ D	BB	4	5	23 rd April- 30 th April 2024
3.	Differential equation of Electrical Systems,	L+ D	BB	2	7	2 nd -3 rd May 2024
4.	Analogous Systems	L+D	BB	2	9	6 th -7 th May 2024
Module 2: Block Diagrams and Signal Flow Graphs						
5.	Block diagrams: Transfer functions	L+D	BB	4	13	9 th -14 th May 2024

6.	Signal flow graphs: Transfer functions, Block diagram algebra and Signal Flow graphs.	L+DE	BB	3	16	16 th – 23 rd May 2024
7.	Signal flow graphs: Transfer functions, Block diagram algebra and Signal Flow graphs.	L+ PS	BB	2	18	24 th -25 th May 2024
Module 3: Time Response of Feedback Control Systems						
8.	Time Response of feedback control systems: Standard test signals,	L+ DE	BB	2	20	27 th - 28 th May 2024
9.	Unit step response of First order Systems.	L+D	BB	1	21	30 th May 2024
10.	Second order Systems	L+D	BB	2	23	31 st May - 3 rd June 2024
11.	Time response specifications of second order systems	L+D	BB	3	26	4 th - 7 th June 2024
12.	Steady state errors and error constants.	L+D	BB	2	28	8 th - 10 th June 2024
13.	Introduction to PI, PD	L+DE	LCD	1	29	11 th June 2024
14.	PID Controllers	T+ STx	BB	1	30	13 th June 2024
Module 4: Stability Analysis						
15.	Stability analysis: Concepts of stability, Necessary conditions for Stability, Routh stability criterion	L+D	LCD	1	31	14 th June 2024
16.	Relative stability analysis: more on the Routh stability criterion	L+D	BB	1	32	18 th June 2024
17.	Introduction to Root-Locus Techniques	L+D	BB	1	33	20 th June 2024
18.	The root locus concepts, Construction of root loci.	L+D	BB	4	37	21 st June to 28 th June 2024
19.	Frequency domain analysis and stability: Correlation between time and frequency response,	L+D	BB	1	38	29 th June 2024
20.	Bode Plots, Experimental determination of transfer function	L+D	BB	3	41	1 st to 4 th July 2024

Module 5: Frequency Domain Analysis and Stability						
21.	Introduction to Polar Plots,	L+PS(Tx)	BB	2	43	5 th -8 th July 2024
22.	Nyquist Stability criterion	L+PS(Tx)	BB	4	47	9 th -13 th July 2024
23.	Introduction to lead, lag and lead-lag compensating networks (excluding design).	L+D	LCD	1	48	15 th July 2024
24.	Introduction to State variable analysis: Introduction, Concept of State,	L+D	LCD	2	50	16 th - 18 th July 2024
25.	State variables & State model	L+D	LCD	2	52	19 th -22 nd July 2024
26.	State model for electrical systems,	L+D	BB	2	54	23 rd -25 th July 2024
27.	Solution of state equations	L+D	BB	2	56	26 th July – 6 th August 2024


Text Book:

1. I J.Nagarath and M.Gopal, — Control Systems Engineering, New Age International Publishers, Fifth Edition.

Reference Books:

1. Modern Control Engineering| K.Ogata, Pearson Education Asia/PHI, 4th Edition, 2002. ISBN : 978-81-203-40107.
2. Automatic Control Systems|, Benjamin C. Kuo, John Wiley India Pvt. Ltd., 8th Edition, 2008.
3. Feedback and Control System| Joseph J Distefano III et al., Schaum's Outlines, TMH, 2nd Edition 2007

Details of the teaching aids: Black Board, LCD Projector


Course In charge


Module coordinator


HOD ECE


PRINCIPAL



K S INSTITUTE OF TECHNOLOGY BANGALORE
DEPARTMENT OF ELECTONICS AND COMMUNICATION ENGINEERING

COURSE PLAN EVEN SEM-2023-24

NAME OF THE STAFF : Dr.Dinesh Kumar D S

SUBJECT CODE/NAME : 18EC832/ RADAR ENGINEERING

SEMESTER/SEC : VIII SEM /A

ACADEMIC YEAR : 2023-2024

Sl. No.	Topic to be covered	Mode of Delivery	Teaching Aid	No. of Periods	Cumulative No. of Periods	Proposed Date
Module -1: Basics of Radar & Simple form of Radar Equation						
1	Basics of Radar: Introduction, Maximum Unambiguous Range	L+AV	LCD	1	1	12/02/2024
2	Radar Waveforms, Definitions w.r.t pulse waveforms- PRF, PRI, Duty Cycle,	L+ D	LCD +BB	1	2	12/02/2024
3	Peak Transmitter Power, Average Transmitter Power	L+ D	LCD +BB	1	3	13/02/2024
4	Simple form of Radar Equation	L+D	LCD +BB	1	4	13/02/2024
5	Radar Block Diagram & Operation	L+D	LCD +BB	1	5	19/02/2024
6	Radar Frequencies	L+D	LCD +BB	1	6	19/02/2024
7	Applications of Radar, The Origins of Radar,	L+D	LCD +BB	1	7	20/02/2024
8	Problems	L+D	LCD +BB	1	8	20/02/2024
9	Problems	L+D	LCD +BB	1	9	26/02/2024
Module -2: The Radar Equation & Radar Cross Section of Targets						
10	Prediction of Radar Range Performance	L+ D	LCD +BB	1	10	26/02/2024
11	Detection of signal in Noise, Minimum Detectable Signal, Receiver Noise, SNR	L+D	LCD +BB	1	11	27/02/2024

12	Modified Radar Range Equation	L+D, PS	LCD +BB	1	12	27/02/2024
13	Envelope Detector – False Alarm Time & Probability, probability of detection	L+D, PS	LCD +BB	1	13	04/03/2024
14	Simple Targets- sphere, cone sphere	L+D, PS	LCD +BB	1	14	04/03/2024
15	Transmitter Power, PRF & Range Ambiguities	L+D, PS	LCD +BB	1	15	05/03/2024
16	System Losses	L+D, PS	LCD +BB	1	16	05/03/2024
17	Problems	L+D	LCD +BB	1	17	18/03/2024
18	Problems	L+D	LCD +BB	1	18	18/03/2024
Module -3: MTI & Pulse Doppler Radar & Digital MTI Processing						
19	Introduction, Principle, Doppler Frequency Shift	L+D	LCD +BB	1	19	19/03/2024
20	Simple CW Radar, sweep to sweep subtraction Delay Line Canceler	L+D	LCD +BB	1	20	19/03/2024
21	MTI Radar with Power amplifier transmitter, Delay line canceler	L+D	LCD +BB	1	21	25/03/2024
22	Frequency Response of single delay line, blind speeds, clutter attenuation	L+D	LCD +BB	1	22	25/03/2024
23	MTI improvement factor	L+D	LCD +BB	1	23	26/03/2024
24	N pulse delay line canceler	L+D	LCD +BB	1	24	26/03/2024
25	Digital MTI Processing: Blind Phases, I & Q channels,	L+D	LCD +BB	1	25	01/04/2024
26	Digital MTI Doppler signal Processor	L+D	LCD +BB	1	26	01/04/2024
27	Moving Target Detector, Original MTD	L+D	LCD +BB	1	27	02/04/2024
Module -4: Tracking Radar & Sequential Lobing						
28	Types of Radar tracking systems	L+AV	LCD +BB	1	28	02/04/2024
29	Monopulse tracking- Amplitude Comparison Monopulse (1D)	L+D	LCD +BB	1	29	15/04/2024
30	Monopulse (2D)	L+D	LCD +BB	1	30	15/04/2024
31	Phase comparison Monopulse	L+D	LCD +BB	1	31	16/04/2024
32	Sequential Lobing	L+D	LCD +BB	1	32	16/04/2024
33	Conical Scan Tracking Radar	L+D	LCD +BB	1	33	22/04/2024
34	Tracking in Range, Comparison of trackers	L+D	LCD +BB	1	34	22/04/2024

Module -5: Radar Antenna & Radar Receiver

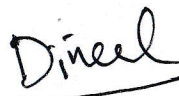
35	Functions of the Radar Antenna	L+AV	LCD +BB	1	35	23/04/2024
36	Antenna Parameters	L+D	LCD +BB	1	36	23/04/2024
37	Electronically steered phased array antennas	L+D	LCD +BB	1	37	29/04/2024
38	The Radar Receiver, Receiver Noise Figure	L+D	LCD +BB	1	38	29/04/2024
39	Super heterodyne receiver, Duplexers	L+D	LCD +BB	1	39	30/04/2024
40	Receivers Protectors	L+D	LCD +BB	1	40	30/04/2024
41	University QP discussion	L+D	LCD +BB	1	41	6/05/2023
42	University QP discussion	L+D	LCD +BB	1	42	6/05/2023
43	University QP discussion	L+D	LCD +BB	1	41	7/05/2023
44	University QP discussion	L+D	LCD +BB	1	42	7/05/2023

Text Book:

Introduction to Radar Systems- Merrill I Skolink, 3e, TMH, 2001

Reference Books:

1. Radar Principles, Technology, Applications – Byron Edde Pearson Education, 2004.
2. Radar Principles – Peebles. Jr. P.Z. Wiley, New York, 1998
3. Principles of Modern Radar: Basic Principles -Mark A. Rkhards, James A. Scheer, William A, Holm. Yesdee, 2013


Course In charge


Module Coordinator


HOD-ECE



K. S INSTITUTE OF TECHNOLOGY BANGALORE

DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING

NAME OF THE STAFF : Dr.Dinesh Kumar D S

SUBJECT CODE/NAME :21EC62 – Microwave and Antennas

SEMESTER/YEAR/SEC :VI/ III/B

ACADEMIC YEAR : 2023-24

Sl. No.	Topic to be covered	Mode of Delivery	Teaching Aid	No. of Periods	Cumulative No. of Periods	Proposed Date (B)
MODULE 1						
1	Introduction: Microwave sources	L	BB+P	1	1	29/04/2024
2	Gunn diode	L	BB+P	1	2	30/04/2024
3	Microwave transmission lines: Microwave frequencies,	L	BB+P	1	3	3/5/2024
4	Microwave devices, Microwave systems.	L	BB+P	1	4	6/5/2024
5	Transmission line equations and solutions,	L	BB+P	1	5	7/5/2024
6	Reflection Coefficient and Transmission Coefficient.	L	BB+P	1	6	8/5/2024
7	Standing wave and standing wave ratio.	L	BB+P	1	7	9/5/2024
8	Smith chart	L	BB+P	1	8	11/5/2024
9	Single stub matching	L	BB+P	1	9	13/5/2024
MODULE 2						
10	Microwave Network Theory: Introduction	L	BB+P	1	10	14/5/2024
11	S matrix representation of multi-port networks	L	BB+P	1	11	15/5/2024
12	Microwave passive devices: Coaxial connectors	L	BB+P	1	12	17/5/2024

13	Adapters	L	BB+P	1	13	20/5/2024
14	Attenuators	L	BB+P	1	14	21/5/2024
15	Phase shifters	L	BB+P	1	15	22/5/2024
16	Waveguide Tees, Magic Tee	L	BB+P	1	16	24/5/2024
17	Circulator	L	BB+P	1	17	25/5/2024
18	Isolator	L	BB+P	1	18	31/5/2024
MODULE – 3						
19	Strip Lines: Introduction	L	BB+P	1	19	3/6/2024
20	Microstrip lines, Parallel Strip lines	L	BB+P	1	20	4/6/2024
21	Antenna Basics: Introduction, Basic Antenna Parameters	L	BB+P	1	21	5/6/2024
22	Patterns, Beam Area	L	BB+P	1	22	7/6/2024
23	Radiation Intensity, Beam efficiency	L	BB+P	1	23	8/6/2024
24	Directivity and Gain, Antenna Aperture	L	BB+P	1	24	10/6/2024
25	Effective height, Bandwidth	L	BB+P	1	25	11/6/2024
26	Radio communication Link,	L	BB+P	1	26	12/6/2024
27	Antenna Field Zones	L	BB+P	1	27	14/6/2024
MODULE 4						
28	Point sources and arrays: Introduction	L	BB+P	1	28	18/6/2024
29	Point Sources, Power patterns	L	BB+P	1	29	19/6/2024
30	Power theorem, Radiation Intensity	L	BB+P	1	30	21/6/2024
31	Pattern multiplication	L	BB+P	1	31	22/6/2024
32	Linear arrays of n Isotropic sources of equal amplitude and Spacing	L	BB+P	1	32	24/6/2024
33	Electric Dipole: Introduction, Short Electric dipole	L	BB+P	1	33	25/6/2024
34	Fields of a short dipole	L	BB+P	1	34	26/6/2024
35	Radiation resistance of a short dipole	L	BB+P	1	35	1/7/2024
36	Thin linear antenna	L	BB+P	1	36	2/7/2024
MODULE 5						
37	Loop and Horn antenna: Introduction	L	BB+P	1	37	3/7/2024
38	Small loop,	L	BB+P	1	38	5/7/2024
39	Comparison of far fields of small loop and	L	BB+P	1	39	8/7/2024

	Short dipole					
40	Radiation resistance of small loop,	L	BB+P	1	40	9/7/2024
41	Horn Antennas, Rectangular antennas.	L	BB+P	1	41	10/7/2024
42	Antenna Types: The Helix geometry	L	BB+P	1	42	12/7/2024
43	Helix modes	L	BB+P	1	43	13/7/2024
44	Practical design consideration for mono-filar axial mode Helical Antenna	L	BB+P	1	44	15/7/2024
45	Yagi Uda array	L	BB+P	1	45	16/7/2024
46	Parabolic Reflector	L	BB+P	1	46	19/7/2024
47	Revision	L	BB+P	1	47	30/7/2024
48	Revision	L	BB+P	1	48	31/7/2024

Dineel

Signature of Course In charge

Dineel

Signature of Module Coordinator

Pms

Signature of HOD



KS INSTITUTE OF TECHNOLOGY BANGALORE

DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING

NAME OF THE STAFF : Santhosh Kumar.B.R

SUBJECT CODE/NAME : BEC405A/MICOCONTROLLER


SEMESTER/YEAR/SEC : IV/ II/ A

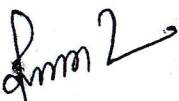
ACADEMIC YEAR : 2023-24

Sl. No.	Topic to be covered	Mode of Delivery	Teaching Aid	No. of Periods	Cumulative No. of Periods	Proposed Date (B)
Module-1: Microcontroller						
1	Microprocessor Vs Microcontroller	L	BB+P	1	1	22/4/2024
2	Micro controller & Embedded Processors,	L	BB+P	1	2	24/4/2024
3	Processor Architectures-Harvard Vs Princeton & RISC Vs CISC	L	BB+P	1	3	25/4/2024
4	8051 Architecture- Registers,	L	BB+P	1	4	27/4/2024
5	8051 Architecture- Registers,	L	BB+P	1	5	29/4/2024
6	Pin diagram	L	BB+P	1	6	02/05/2024
7	I/O ports functions,	L	BB+P	1	7	03/05/2024
8	Internal Memory organization	L	BB+P	1	8	06/05/2024
9	External Memory (ROM & RAM) interfacing.	L	BB+P	1	9	08/05/2024
MODULE 2: Instruction Set						
10	8051 Addressing Modes	L	BB+P	1	10	09/05/2024
11	8051 Addressing Modes	L	BB+P	1	11	11/05/2024
12	Data Transfer Instructions	L	BB+P	1	12	13/05/2024
13	Arithmetic instructions	L	BB+P	1	13	15/05/2024

14	Logical Instructions	L	BB+P	1	14	16/05/2024
15	Jump & Call Instructions	L	BB+P	1	15	17/05/2024
16	Stack & Subroutine Instructions of 8051	L	BB+P	1	16	23/05/2024
17	Stack & Subroutine Instructions of 8051	L	BB+P	1	17	24/05/2024
18	Additional Examples	L	BB+P	1	18	25/05/2024
MODULE 3: Timers/Counters & Serial port programming						
19	Basics of Timers & Counters	L	BB+P	1	19	27/05/2024
20	Data types & Time delay in the 8051 using C	L	BB+P	1	20	29/05/2024
21	Programming 8051 Timers, Mode 1 & Mode 2 Programming	L	BB+P	1	21	30/05/2024
22	Programming 8051 Timers, Mode 1 & Mode 2 Programming	L	BB+P	1	22	31/05/2024
23	Counter Programming (Assembly Language only)	L	BB+P	1	23	03/06/2024
24	Counter Programming (Assembly Language only)	L	BB+P	1	24	05/06/2024
25	Basics of Serial Communication	L	BB+P	1	25	06/06/2024
26	Programming the 8051 to transfer data serially	L	BB+P	1	26	07/06/2024
27	Programming the 8051 to receive data	L	BB+P	1	27	08/06/2024
MODULE 4: Interrupt Programming:						
28	Basics of Interrupts,	L	BB+P	1	28	10/06/2024
29	8051 Interrupts,	L	BB+P	1	29	12/06/2024
30	8051 Interrupts,	L	BB+P	1	30	13/06/2024
31	Programming Timer Interrupts	L	BB+P	1	31	14/06/2024
32	Programming Timer Interrupts	L	BB+P	1	32	19/06/2024
33	Programming Serial	L	BB+P	1	33	20/06/2024

	Communication Interrupts					
34	Programming Serial Communication Interrupts	L	BB+P	1	34	21/06/2024
35	Interrupt Priority in 8051(Assembly Language only)	L	BB+P	1	35	27/06/2024
36	Interrupt Priority in 8051(Assembly Language only)	L	BB+P	1	36	28/06/2024
MODULE 5: I/O Port Interfacing & Programming:						
37	I/O Programming in 8051 C	L	BB+P	1	37	01/07/2024
38	LCD interfacing,	L	BB+P	1	38	03/07/2024
39	LCD interfacing,	L	BB+P	1	39	04/07/2024
40	DAC 0808 Interfacing	L	BB+P	1	40	05/07/2024
41	ADC 0804 interfacing	L	BB+P	1	41	08/07/2024
42	Stepper motor interfacing,	L	BB+P	1	42	10/07/2024
43	DC motor control	L	BB+P	1	43	11/07/2024
44	Pulse Width Modulation (PWM) using C only	L	BB+P	1	44	12/07/2024
45	Revision	L	BB+P	1	45	15/07/2024


Signature of Course Incharge


Signature of Module Coordinator


Signature of HOD



KS INSTITUTE OF TECHNOLOGY BANGALORE

DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING

LESSON PLAN 2023-2024 EVEN Semester

COURSE INCHARGE : Dr. Devika B

SUBJECT CODE/NAME :BEC402/ PRINCIPLES OF COMMUNICATION AND SYSTEMS

SEMESTER/YEAR/SEC :VI/ II/A

ACADEMIC YEAR : 2023-24

Sl. No.	Topic to be covered	Mode of Delivery	Teaching Aid	No. of Periods	Cumulative No. of Periods	Proposed Date (A)
MODULE 1 : Random Variables and Processes						
1	Random Variables and Processes: Introduction,	L	BB+P	1	1	22/4/24
2	Probability, Conditional Probability,	L	BB+P	1	2	23/4/24
3	Random variables.	L	BB+P	1	3	24/4/24
4	Statistical Averages: Function of a random variable,	L	BB+P	1	4	25/4/24
5	Moments, Random Processes,	L	BB+P	1	5	27/4/24
6	Mean, Correlation and Covariance function:	L	BB+P	1	6	29/4/24
7	Properties of autocorrelation function,	L	BB+P	1	7	30/4/24
8	Cross-correlation functions,	L	BB+P	1	8	2/5/24
9	Gaussian Process:	L	BB+P	1	9	3/5/24
10	Gaussian Distribution Function.	L	BB+P	1	10	6/5/24
MODULE 2: Amplitude Modulation Fundamentals						
11	Amplitude Modulation Fundamentals:	L	BB+P	2	12	7/5/24,
12	AM Concepts,	L	BB+P	2	14	8/5/24, 9/5/24,



						11/5/24
13	Modulation index and Percentage of Modulation,	L	BB+P	2	16	13/5/24, 14/5/24
14	Sidebands and the frequency domain,	L	BB+P	2	18	16/5/24, 17/5/24
15	AM Power, Single Sideband Modulation.	L	BB+P	2	20	23/5/24, 25/5/24
16	AM Circuits: Amplitude Modulators:	L	BB+P	2	22	27/5/24, 28/5/24
17	Diode Modulator, Transistor Modulator, collector Modulator.	L	BB+P	2	24	30/5/24, 31/5/24
18	Amplitude Demodulators: Diode Detector,	L	BB+P	2	26	3/6/24, 4/6/24
IA-1						
19	Balanced Modulators: Lattice Modulators.	L	BB+P	1	27	6/6/24
20	Frequency Division Multiplexing:	L	BB+P	1	28	7/6/24
21	Transmitter-Multiplexer, Receiver-Demultiplexer.	L	BB+P	3	31	8/6/24, 10/6/24, 11/6/24
MODULE 3: Fundamentals of Frequency Modulation						
22	Fundamentals of Frequency Modulation:	L	BB+P	1	32	13/6/24
23	Basic Principles of Frequency Modulation,	L	BB+P	1	33	14/6/24
24	Principles of Phase Modulation,	L	BB+P	1	34	18/6/24
27	Modulation index and sidebands,	L	BB+P	1	35	20/6/24
28	Noise Suppression Effects of FM,	L	BB+P	1	36	21/6/24
29	Frequency Modulation versus Amplitude Modulation.	L	BB+P	1	37	22/6/24
30	FM Circuits: Frequency Modulators:	L	BB+P	1	38	27/6/24
31	Voltage Controlled Oscillators, Frequency Demodulators: Slope Detectors,	L	BB+P	1	39	28/6/24
32	Phase Locked Loops. Communication Receiver: Super heterodyne receiver,	L	BB+P	1	40	29/6/24
33	Frequency Conversion: Mixing Principles,.	L	BB+P	1	41	1/7/24
34	JFET Mixer	L	BB+P	1	42	2/7/24

MODULE 4: Digital Representation of Analog Signals						
35	Digital Representation of Analog Signals: Introduction, Why Digitize Analog Sources?,	L	BB+P	1	43	4/7/24
36	The Sampling process,.	L	BB+P	1	44	5/7/24
37	Pulse Amplitude Modulation,	L	BB+P	1	45	8/7/24
38	Time-Division Multiplexing, Pulse Position Modulation	L	BB+P	1	46	9/7/24
39	Generation and Detection of PPM wave.	L	BB+P	1	47	11/7/24
40	The Quantization Process. Pulse Code	L	BB+P	1	48	12/7/24
IA-2						
41	Modulation: Sampling, Quantization, Encoding, line Codes, Differential encoding,	L	BB+P	1	49	13/7/24
42	Regeneration, Decoding, filtering, multiplexing	L	BB+P	1	50	15/7/24
MODULE 5: Baseband Transmission of Digital signals						
43	Baseband Transmission of Digital signals:	L	BB+P	1	51	16/7/24
44	Introduction, Intersymbol Interference, Eye Pattern,	L	BB+P	1	52	18/7/24
45	Nyquist criterion for distortionless Transmission,	L	BB+P	1	53	19/7/24
46	Baseband M-ary PAM Transmission.	L	BB+P	1	54	22/7/24
53	Noise: Signal to Noise Ratio	L	BB+P	1	55	23/7/24
54	External Noise, Internal Noise,	L	BB+P	1	56	25/7/24, 26/7/24
55	Semiconductor Noise, Expressing Noise Levels, Noise in Cascade Stages	L	BB+P	1	57	27/7/24
IA-3						
56	Revision	L	BB+P	1	58	6/8/24

TEXTBOOK:

Books 1. Louis E Frenzel, Principles of Electronic Communication Systems, 3rd Edition, Mc Graw Hill Education (India) Private Limited, 2016. ISBN: 978-0-07-066755-6.


2. Simon Haykin & Michael Moher, Communication Systems, 5th Edition, John Wiley, India Pvt. Ltd, 2010, ISBN: 978-81-265-2151-7.

REFERENCES:

1. B P Lathi, Zhi Ding, "Modern Digital and Analog Communication Systems", Oxford University Press., 4th edition, 2010, ISBN: 97801980738002.
2. Herbert Taub, Donald L Schilling, Goutam Saha, "Principles of Communication systems", 4th Edition, Mc Graw Hill Education (India) Private Limited, 2016. ISBN: 978-1-25-902985-1

WEB MATERIALS:

1. Principles of Communication Systems <https://nptel.ac.in/courses/108104091>
2. Communication Engineering <https://nptel.ac.in/courses/117102059>



Course Incharge



Module Coordinator



HOD



K. S INSTITUTE OF TECHNOLOGY BANGALORE

DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING

NAME OF THE STAFF : Dr. Electa Alice Jayarani A

SUBJECT CODE/NAME :21EC62 – Microwave and Antennas

SEMESTER/YEAR/SEC :VI/ III/A


ACADEMIC YEAR : 2023-24

Sl. No.	Topic to be covered	Mode of Delivery	Teaching Aid	No. of Periods	Cumulative No. of Periods	Proposed Date (B)
MODULE 1						
1	Introduction: Microwave sources	L	BB+P	1	1	29/04/2024
2	Gunn diode	L	BB+P	1	2	30/04/2024
3	Microwave transmission lines: Microwave frequencies,	L	BB+P	1	3	2/5/2024
4	Microwave devices, Microwave systems.	L	BB+P	1	4	6/5/2024
5	Transmission line equations and solutions,	L	BB+P	1	5	7/5/2024
6	Reflection Coefficient and Transmission Coefficient.	L	BB+P	1	6	8/5/2024
7	Standing wave and standing wave ratio.	L	BB+P	1	7	9/5/2024
8	Smith chart	L	BB+P	1	8	13/5/2024
9	Single stub matching	L	BB+P	1	9	14/5/2024
MODULE 2						
10	Microwave Network Theory: Introduction	L	BB+P	1	10	15/5/2024
11	S matrix representation of multi-port networks	L	BB+P	1	11	16/5/2024
12	Microwave passive devices: Coaxial connectors	L	BB+P	1	12	20/5/2024

13	Adapters	L	BB+P	1	13	21/5/2024
14	Attenuators	L	BB+P	1	14	22/5/2024
15	Phase shifters	L	BB+P	1	15	27/5/2024
16	Waveguide Tees, Magic Tee	L	BB+P	1	16	28/5/2024
17	Circulator	L	BB+P	1	17	29/5/2024
18	Isolator	L	BB+P	1	18	30/5/2024
MODULE - 3						
19	Strip Lines: Introduction	L	BB+P	1	19	3/6/2024
20	Microstrip lines, Parallel Strip lines	L	BB+P	1	20	4/6/2024
21	Antenna Basics: Introduction, Basic Antenna Parameters	L	BB+P	1	21	5/6/2024
22	Patterns, Beam Area	L	BB+P	1	22	6/6/2024
23	Radiation Intensity, Beam efficiency	L	BB+P	1	23	8/6/2024
24	Directivity and Gain, Antenna Aperture	L	BB+P	1	24	10/6/2024
25	Effective height, Bandwidth	L	BB+P	1	25	11/6/2024
26	Radio communication Link,	L	BB+P	1	26	12/6/2024
27	Antenna Field Zones	L	BB+P	1	27	13/6/2024
MODULE 4						
28	Point sources and arrays: Introduction	L	BB+P	1	28	18/6/2024
29	Point Sources, Power patterns	L	BB+P	1	29	19/6/2024
30	Power theorem, Radiation Intensity	L	BB+P	1	30	20/6/2024
31	Pattern multiplication	L	BB+P	1	31	22/6/2024
32	Linear arrays of n Isotropic sources of equal amplitude and Spacing	L	BB+P	1	32	24/6/2024
33	Electric Dipole: Introduction, Short Electric dipole	L	BB+P	1	33	25/6/2024
34	Fields of a short dipole	L	BB+P	1	34	26/6/2024
35	Radiation resistance of a short dipole	L	BB+P	1	35	1/7/2024
36	Thin linear antenna	L	BB+P	1	36	2/7/2024
MODULE 5						
37	Loop and Horn antenna: Introduction	L	BB+P	1	37	3/7/2024
38	Small loop,	L	BB+P	1	38	4/7/2024
39	Comparison of far fields of small loop and	L	BB+P	1	39	8/7/2024

	Short dipole					
40	Radiation resistance of small loop,	L	BB+P	1	40	9/7/2024
41	Horn Antennas, Rectangular antennas.	L	BB+P	1	41	10/7/2024
42	Antenna Types: The Helix geometry	L	BB+P	1	42	11/7/2024
43	Helix modes	L	BB+P	1	43	12/7/2024
44	Practical design consideration for mono-filar axial mode Helical Antenna	L	BB+P	1	44	15/7/2024
45	Yagi Uda array	L	BB+P	1	45	16/7/2024
46	Parabolic Reflector	L	BB+P	1	46	18/7/2024
47	Revision	L	BB+P	1	47	30/7/2024
48	Revision	L	BB+P	1	48	31/7/2024


Signature of Course In charge


Signature of Module Coordinator


Signature of HOD



K. S. INSTITUTE OF TECHNOLOGY, BENGALURU - 560109
DEPARTMENT OF APPLIED SCIENCE AND HUMANITIES
LESSON PLAN 2023-24 EVEN SEMESTER

COURSE INCHARGE : Ramya K R

COURSE TYPE / CODE/TITLE: Theory/BESCK204B /Introduction to Electrical Engineering

YEAR/ SEMESTER/SECTION : I / II / A

BRANCH : Computer Science and Engineering

Sl. No.	Topic to be covered	Mode of Delivery	Teaching Aid	No. of Periods	Cumulative No. of Periods	Proposed Date
Module1: Introduction, Power Generation, DC Circuits						
1	DC Circuits: Ohm's Law and its limitations. KCL & KVL	L+PS	BB	1	1	7/3/2024
2	Problems	L+PS	BB	1	2	9/3/2024
3	series, parallel circuits	L+D	BB	1	3	11/3/2024
4	problems	L+PS	BB	1	4	12/3/2024
5	series-parallel circuits	L+D	BB	1	5	14/3/2024
6	Problems	L+PS	BB	1	6	15/3/2024
7	Introduction: Conventional and non-conventional energy resources	L+D	BB	1	7	18/3/2024
8	General structure of electrical power systems using single line diagram approach.	L+D	BB	1	8	19/3/2024
9	Power Generation: Hydrel, Nuclear	L+D	PPT	1	9	21/3/2024

10	Power Generation: Solar, wind	L+D	PPT	1	10	22/3/2024
Module2: A.C. Fundamentals and Three phase Circuits						
11	Equation of AC Voltage and current.	L+D	BB	1	11	23/3/2024
12	Definition of waveform, time period, frequency, amplitude, phase, phase difference, average value, RMS value, form factor, peak factor.	L+D	BB	1	12	25/3/2024
13	Voltage and current relationship with phasor diagrams in R, L, and C circuits.	L+D	BB	2	14	26/3/2024 28/3/2024
14	Problems, Concept of Impedance.	L+PS	BB	2	16	30/3/2024 1/4/2024
15	Analysis of R-L, R-C Series circuits, concept of power factor	L+D	BB	1	17	2/4/2024
16	problems	L+PS	BB	2	19	4/4/2024 5/4/2024
Internal Test -1 (17-4-2024)						
17	Analysis of R-L-C Series circuits	L+D	BB	1	20	8/4/2024
18	Problems	L+PS	BB	1	21	12/4/2024
19	Generation of Three phase AC quantity, advantages and limitations	L+D	PPT	1	22	13/4/2024
20	star and delta connection, relationship between line and phase quantities (excluding proof), Problems	L+D+PS	BB	2	24	18/4/2024 19/4/2024
Module 4-Transformers and Three-phase induction Motors						
21	Transformers: Necessity of transformer, principle of operation	L+D	BB	1	25	22/4/2024
22	Types and construction of single-phase transformers	L+D	PPT	1	26	23/4/2024
23	EMF equation, losses	L+D	BB	1	27	25/4/2024
24	Problems	L+PS	BB	1	28	26/4/2024
25	variation of losses with respect to load, Efficiency	L+D	BB	1	29	29/4/2024
26	Problems	L+PS	BB	2	31	30/4/2024 2/5/2024
27	Three-phase, induction Motors: Concept of rotating magnetic field	L+D	BB	1	32	3/5/2024

28	Principle of operation, construction, features of motor types – squirrel cage and wound rotor	L+D	PPT	1	33	6/5/2024
29	Slip and its significance	L+D	BB	1	34	7/5/2024
30	Problems	L+PS	BB	2	36	9/5/2024 11/5/2024
Module 5- Domestic Wiring, Electricity bill, Equipment Safety measures and Personal safety measures						
31	Domestic Wiring: Requirements, Types of wiring: casing, capping	L+D	BB	1	37	13/5/2024
32	Two way and three-way control of load.	L+D	PPT	1	38	14/5/2024
Internal Test -2 (20-5-2024)						
33	Electricity bill: Power rating of household appliances including air conditioners, PCs, laptops, printers, etc.	L+D	BB	1	39	16/5/2024
34	Definition of “unit” used for consumption of electrical energy	L+D	BB	1	40	17/5/2024
35	Two-part electricity tariff, calculation of electricity bill for domestic consumers	L+D	BB	1	41	23/5/2024
36	problems	L+PS	BB	2	43	24/5/2024 25/5/2024
37	Equipment Safety measures: Working principle of Fuse and Miniature circuit breaker (MCB), merits and demerits.	L+D	BB	1	44	27/5/2024
38	Personal safety measures: Electric Shock, Safety Precautions to avoid shock	L+D	PPT	1	45	28/5/2024
39	Earthing and its types,	L+D	PPT	1	46	30/5/2024
Module 3- DC Machines						
40	DC Machines: Generator- constructional details	L+D	PPT	1	47	31/5/2024
41	Principle of operation, induced emf expression.	L+D	PPT	1	48	3/6/2024
42	Types of generators, and the relation between induced emf and terminal voltage.	L+D	BB	1	49	4/6/2024
43	Problems.	L+PS	BB	2	51	6/6/2024 7/6/2024
44	Motor-Principle of operation, back emf and torque equations	L+D	BB	1	52	8/6/2024

45	Types of motors	L+D	BB	1	53	10/6/2024
46	Problems.	L+PS	BB	2	55	11/6/2024 13/6/2024
47	Characteristics (shunt and series only), Problems.	L+D	BB	1	56	14/6/2024
48	speed control (armature & field) of DC motors (series & shunt only), Problems, Applications of DC motors.	L+D	BB	1	57	18/6/2024
Internal Test -3 (22/6/2024)						
49	Activity / Pedagogy		PPT	2	59	28/6/2024 29/6/2024

Text Books:

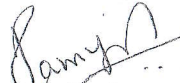
1. Basic Electrical Engineering by D C Kulshreshtha, Tata McGraw Hill, First Edition 2019.
2. A text book of Electrical Technology by B.L. Theraja, S Chand and Company, reprint edition 2014.

Reference Books:


1. Basic Electrical Engineering, D. P. Kothari and I. J. Nagrath, Tata McGraw Hill 4th edition, 2019.
2. Principles of Electrical Engineering & Electronics by V. K. Mehta, Rohit Mehta, S. Chand and Company Publications, 2nd edition, 2015.
3. Fundamentals of Electrical Engineering by Rajendra Prasad, PHI, 3rd edition, 2014.


Details of the teaching aids:

1. BB – Black Board
2. PPT Power Point Presentation


Course Incharge


Module Coordinator


HEAD OF THE DEPARTMENT
Dept. of Electronics & Communication E...
K.S. Institute of Technology
Bengaluru - 560 109.


PRINCIPAL
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K.S. INSTITUTE OF TECHNOLOGY
BENGALURU - 560 109.



K. S. INSTITUTE OF TECHNOLOGY, BENGALURU - 560109
DEPARTMENT OF APPLIED SCIENCE AND HUMANITIES
LESSON PLAN 2023-24 EVEN SEMESTER

COURSE INCHARGE : Ramya K R

COURSE TYPE / CODE/TITLE: Theory/BESCK204B /Introduction to Electrical Engineering

YEAR/ SEMESTER/SECTION : I / II / B

BRANCH : Computer Science and Engineering

Sl. No.	Topic to be covered	Mode of Delivery	Teaching Aid	No. of Periods	Cumulative No. of Periods	Proposed Date
Module1: Introduction, Power Generation, DC Circuits						
1	DC Circuits: Ohm's Law and its limitations. KCL & KVL	L+PS	BB	1	1	6/3/2024
2	Problems	L+PS	BB	1	2	7/3/2024
3	series, parallel circuits	L+D	BB	1	3	9/3/2024
4	problems	L+PS	BB	1	4	12/3/2024
5	series-parallel circuits	L+D	BB	1	5	13/3/2024
6	Problems	L+PS	BB	1	6	14/3/2024
7	Introduction: Conventional and non-conventional energy resources	L+D	BB	1	7	15/3/2024
8	General structure of electrical power systems using single line diagram approach.	L+D	BB	1	8	19/3/2024
9	Power Generation: Hydel, Nuclear	L+D	PPT	1	9	20/3/2024

10	Power Generation: Solar, wind	L+D	PPT	1	10	21/3/2024
Module2: A.C. Fundamentals and Three phase Circuits						
11	Equation of AC Voltage and current.	L+D	BB	1	11	22/3/2024
12	Definition of waveform, time period, frequency, amplitude, phase, phase difference, average value, RMS value, form factor, peak factor.	L+D	BB	1	12	23/3/2024
13	Voltage and current relationship with phasor diagrams in R, L, and C circuits.	L+D	BB	2	14	26/3/2024 27/3/2024
14	Problems, Concept of Impedance.	L+PS	BB	2	16	28/3/2024 2/4/2024
15	Analysis of R-L, R-C Series circuits, concept of power factor	L+D	BB	1	17	3/4/2024
16	problems	L+PS	BB	2	19	4/4/2024 5/4/2024
Internal Test -1 (17-4-2024)						
17	Analysis of R-L-C Series circuits	L+D	BB	1	20	10/4/2024
18	Problems	L+PS	BB	1	21	12/4/2024
19	Generation of Three phase AC quantity, advantages and limitations	L+D	PPT	1	22	13/4/2024
20	star and delta connection, relationship between line and phase quantities (excluding proof), Problems	L+D+PS	BB	2	24	18/4/2024 19/4/2024
Module 4-Transformers and Three-phase induction Motors						
21	Transformers: Necessity of transformer, principle of operation	L+D	BB	1	25	23/4/2024
22	Types and construction of single-phase transformers	L+D	PPT	1	26	24/4/2024
23	EMF equation, losses	L+D	BB	1	27	25/4/2024
24	Problems	L+PS	BB	1	28	26/4/2024
25	variation of losses with respect to load, Efficiency	L+D	BB	1	29	27/4/2024
26	Problems	L+PS	BB	2	31	30/4/2024 2/5/2024
27	Three-phase induction Motors: Concept of rotating magnetic field	L+D	BB	1	32	3/5/2024

28	Principle of operation, construction features of motor types – squirrel cage and wound rotor	L+D	PPT	1	33	7/5/2024
29	Slip and its significance	L+D	BB	1	34	8/5/2024
30	Problems	L+PS	BB	2	36	9/5/2024 11/5/2024
Module 5- Domestic Wiring, Electricity bill, Equipment Safety measures and Personal safety measures						
31	Domestic Wiring: Requirements, Types of wiring: casing, capping	L+D	BB	1	37	14/5/2024
32	Two way and three-way control of load.	L+D	PPT	1	38	15/5/2024
Internal Test -2 (20-5-2024)						
33	Electricity bill: Power rating of household appliances including air conditioners, PCs, laptops, printers, etc.	L+D	BB	1	39	16/5/2024
34	Definition of “unit” used for consumption of electrical energy	L+D	BB	1	40	17/5/2024
35	Two-part electricity tariff, calculation of electricity bill for domestic consumers	L+D	BB	1	41	23/5/2024
36	problems	L+PS	BB	2	43	24/5/2024 28/5/2024
37	Equipment Safety measures: Working principle of Fuse and Miniature circuit breaker (MCB), merits and demerits.	L+D	BB	1	44	29/5/2024
38	Personal safety measures: Electric Shock, Safety Precautions to avoid shock	L+D	PPT	1	45	30/5/2024
39	Earthing and its types,	L+D	PPT	1	46	31/5/2024
Module 3- DC Machines						
40	DC Machines: Generator- constructional details	L+D	PPT	1	47	4/6/2024
41	Principle of operation, induced emf expression.	L+D	PPT	1	48	5/6/2024
42	Types of generators, and the relation between induced emf and terminal voltage.	L+D	BB	1	49	6/6/2024
43	Problems.	L+PS	BB	2	51	7/6/2024 11/6/2024
44	Motor-Principle of operation, back emf and torque equations	L+D	BB	1	52	12/6/2024

45	Types of motors	L+D	BB	1	53	13/6/2024
46	Problems.	L+PS	BB	1	54	14/6/2024
47	Characteristics (shunt and series only), Problems.	L+D	BB	1	55	18/6/2024
48	speed control (armature & field) of DC motors (series & shunt only), Problems, Applications of DC motors.	L+D	BB	1	56	19/6/2024
Internal Test -3 (22/6/2024)						
49	Activity / Pedagogy		PPT	2	58	28/6/2024 29/6/2024

Text Books:

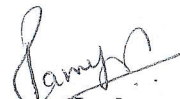
1. Basic Electrical Engineering by D C Kulshreshtha, Tata McGraw Hill, First Edition 2019.
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3. Fundamentals of Electrical Engineering by Rajendra Prasad, PHI, 3rd edition, 2014.


Details of the teaching aids:

1. BB – Black Board
2. PPT Power Point Presentation


Course Incharge


Module Coordinator


HOD
HEAD OF THE DEPARTMENT
Dept. of Electronics & Communication Engg.
K.S. Institute of Technology
Bengaluru - 560 109.


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BENGALURU - 560 109.



K S INSTITUTE OF TECHNOLOGY BANGALORE

DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING

NAME OF THE STAFF : Mrs. Vishalini D

SUBJECT CODE/NAME : 21C61/ TECHNOLOGICAL INNOVATION MANAGEMENT AND ENTREPRENEURSHIP


SEMESTER/YEAR/SEC : VI / III/ A


ACADEMIC YEAR : 2023-2024

Sl. No.	Topic to be covered	Mode of Delivery	Teaching Aid	No. of Periods	Cumulative No. of Periods	Proposed Date A Section
Module 1: Management & Planning						
1	Management: Nature and Functions of Management – Importance, Definition	L+D	BB	1	1	29.4.2024
2	Management Functions, Levels of Management	L+D	BB	1	2	2.5.2024
3	Roles of Manager, Managerial Skills	L+ D	BB	1	3	3.5.2024
4	Management & Administration, Management as a Science, Art & Profession	L+D	BB	1	4	11.5.2024
5	Project Case Studies	L+D	BB	1	5	11.5.2024
6	Planning-Nature, Importance	L+D	BB	1	6	14.5.2024
7	Types of Plans, Steps and Limitations of Planning	L+D	BB	1	7	15.5.2024
8	Decision Making – Meaning, Types	L+D	BB	1	8	16.5.2024
9	Steps in Decision Making	L+D	BB	1	9	17.5.2024
10	Project Case Studies	L+D	BB	1	10	17.5.2024
Module 2: Organizing and Staffing: Organization, Directing and Controlling						
11	Meaning, Characteristics, Process of Organizing, Principles of Organizing, Span of Management (meaning and importance only),	L+ D	BB	1	11	21.5.2024

12	Departmentalization, Committees–Meaning, Types of Committees,	L+D	BB	1	12	22.5.2024
13	Staffing-Need and Importance, Recruitment and Selection Process,	L+D	BB	1	13	28.5.2024
14	Directing and Controlling: Meaning and Requirements of Effective Direction, Giving Orders	L+D	BB	1	14	29.5.2024
15	Motivation-Nature of Motivation, Motivation Theories : Maslow’s Need-Hierarchy Theory	L+D	BB	1	15	30.5.2024
16	Herzberg’s Two Factor Theory	L+D	BB	1	16	31.5.2024
17	Communication – Meaning, Importance and Purposes of Communication	L+D	BB	1	17	4.6.2024
Module 3: Leadership, Social Responsibilities of Business						
18	Leadership-, Behavioral Approach of Leadership; Coordination-Meaning Types, Techniques of Coordination	L+D	BB	1	18	5.6.2024
19	Controlling – Meaning, Need for Control	L+D	BB	1	19	6.6.2024
20	System, Benefits of Control	L+D	BB	1	20	7.6.2024
21	Essentials of Effective Control System	L+D	BB	1	21	11.6.2024
22	Steps in Control Process	L+D	BB	1	22	12.6.2024
23	Social Responsibilities of Business: Meaning of Social Responsibility,	L+D	BB	1	23	13.6.2024
24	Social Responsibilities of Business towards Different Groups	L+D	BB	1	24	14.6.2024
25	Responsibilities of Business towards Different Groups	L+D	BB	1	25	18.6.2024
26	Social Audit	L+D	BB	1	26	19.6.2024
27	Business Ethics and Corporate Governance	L+D	BB	1	27	20.6.2024
Module 4: Entrepreneurship, Identification of business opportunities,						
28	Entrepreneurship: Definition of Entrepreneur, Evolution of concept of Entrepreneurship,	L+D	BB	1	28	21.6.2024
29	Entrepreneurship today, types of Entrepreneurs.	L+D	BB	1	29	22.6.2024
30	Intrapreneurship, Entrepreneurship Competencies	L+D	BB	1	30	25.6.2024
31	capacity building for Entrepreneurship	L+D	BB	1	31	26.6.2024
32	Identification of business opportunities,: Introduction,	L+D	BB	1	32	2.7.2024

33	Mobility of Entrepreneurs	L+D	BB	1	33	3.7.2024
34	Business opportunities in India,	L+D	BB	1	34	4.7.2024
35	Models for opportunity evaluation	L+D	BB	1	35	5.7.2024
Module 5: Business Plans and Institutions supporting Business opportunities						
36	Business Plans: Introduction, Purposes of a Business Plan, contents of a Business Plan	L+D	BB	1	36	9.7.2024
37	Presenting a Business Plan, Why some Business Plan fail?	L+D	BB	1	37	10.7.2024
38	Procedure for setting up an enterprise	L+D	BB	1	38	11.7.2024
39	Institutions supporting Business opportunities: Central Level Institutions	L+D	BB	1	39	12.7.2024
40	NBMSME-DO, NSIC	L+D	BB	1	40	13.7.2024
41	State level institutions :State Directorate Industries and Commerce, DIC's	L+D	BB	1	41	16.7.2024
42	SFC's, SDIC	L+D	BB	1	42	18.7.2024
43	SIADB	L+D	BB	1	43	19.7.2024
44	Other Institutions: NABARD, TCO	L+D	BB	1	44	23.7.2024
45	SIDBI	L+D	BB	1	45	24.7.2024
46	Export Promotion Councils	L+D	BB	1	46	25.7.2024
47	Non-Government Organizations	L+D	BB	1	47	26.7.2024


Course In charge


Module Coordinator


HOD





K.S.I.T

K.S. INSTITUTE OF TECHNOLOGY BANGALORE

DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING

COURSE IN CHARGE : Mrs.V.SANGEETHA

COURSE CODE/NAME : 21EC642/CRYPTOGRAPHY

SEMESTER/YEAR : VI/ III/B

ACADEMIC YEAR : 2023-2024

Sl. No.	Topic to be covered	Mode of Delivery	Teaching Aid	No. of Periods	Cumulative No. of Periods	Proposed Date
MODULE 1: BASIC CONCEPTS OF NUMBER THEORY & FINITE FIELDS:						
1	Divisibility and division algorithm	L+D	BB	1	1	29 th April 2024
2	Modular arithmetic	L+D, PS	BB	1	2	30 th April 2024
3	Euclidean algorithm & problems	L+ D, PS	BB	1	3	2 nd May 2024
4	Extended Euclidean algorithm & problems	L+D	BB	1	4	13 th May 2024
5	Groups, Rings and Fields, Finite fields of the form GF(p), Polynomial arithmetic	L+D	BB	1	5	14 th May 2024
6	Finite fields of the form GF(2 ^m)	L+D	BB	1	6	15 th May 2024
5	To solve QP problems	L+D	BB	1	7	16 th May 2024
MODULE 2: SYMMETRICAL CIPHERS						
6	Computer Security Concepts & A model for Network Security	L+D	LCD	1	8	20 th May 2024
7	Classical Encryption Techniques: Symmetrical cipher model	L+D	BB	1	9	21 st May 2024
8	Substitution techniques	L+D	BB	6	15	22 nd May 2024

9	Transposition techniques	L+D	BB	2	17	23 rd May 2024 & 25 th May 2024
10	To solve QP problems	L+D	BB	1	18	30 th May 2024
MODULE 3: Block Ciphers						
10	Traditional Block cipher structure, Data Encryption standard	L+D	BB	2	20	3 rd June 2024 & 4 th June 2024
11	The AES cipher	L+D	BB	3	23	5 th to 8 th June 2024
12	More on number theory: Prime numbers, Fermat's	L+D	BB	1	24	10 th June 2024
13	Euler's theorem	L+D	BB	2	26	11 th & 12 th June 2024
14	Discrete logarithm	L+D	BB	1	27	13 th June 2024
15	To solve QP problems	L+D	BB	1	28	18 th June 2024
MODULE 4: ASYMMETRIC CIPHER						
16	Principle of public Key cryptosystem	L+D, PS	BB	1	29	19 th June 2024
17	Principles of Public-Key Cryptosystems: The RSA algorithm	L+D, PS	BB	1	30	20 th June 2024
18	Diffie - Hellman Key Exchange	L+D	BB	2	32	22 nd & 23 rd June 2024
19	Elliptic Curve Arithmetic,	L+D	BB	2	34	24 th & 25 th June 2024
20	Elliptic Curve Cryptography	L+D	BB	2	36	26 th June 2024
21	To solve problems	L+D	BB	1	37	1 st July 2024
MODULE 5: PSEUDO-RANDOM-SEQUENCE GENERATORS AND STREAM CIPHERS						
22	Linear Feedback Shift Registers	L+D, PS	BB	1	38	2 nd July 2024
23	Design and analysis of stream ciphers	L+D	BB	1	39	3 rd July 2024
24	Design & analysis of Stream ciphers using LFSRs	L+D	BB	1	40	4 th July 2024
25	A5 algorithm	L+D	BB	1	41	8 th July 2024
26	Hughes XPD/KPD	L+D	BB	1	42	9 th July 2024
27	Nanotequ	L+D	BB	1	43	10 th July 2024
28	Additive generators	L+D	BB	1	44	11 th July 2024
29	Gifford generator	L+D	BB	1	45	15 th July 2024
30	PKZIP	L+D	BB	1	46	16 th July 2024
31	To solve QP problems & Pedagogy activity	L+D	LCD	1	47	18 th July 2024
32	Revision	L+D	BB, LCD	1	48	30 th July 2024

Text Books:

- William Stallings, "Cryptography and Network Security Principles and Practice", Pearson Education Inc., 6th Edition, 2014, ISBN: 978-93-325-1877-3
- Bruce Schneier, "Applied Cryptography Protocols, Algorithms, and Source code in C", Wiley Publications, 2nd Edition, ISBN: 9971-51-348-X

Reference Books:

- Understanding Cryptography - A Textbook for Students and Practitioners, Paar, Christof, Pelzl, Jan, Springer (2010).
- Cryptography Engineering: Design Principles and Practical Applications, Niels Ferguson, Bruce Schneier, Tadayoshi Kohno, Wiley (2010).
- Cryptography: Theory and Practice, Third Edition, Douglas R. Stinson, CRC Press (2005).
- Cryptography: A Very Short Introduction, Fred C. Piper; Sean Murphy, Oxford University Press (2002)..


WEB MATERIALS:


- <https://learncryptography.com/>
- www.cryptolab.us/
- <https://cryptopals.com>

Details for the teaching Aids

1. BB
2. LCD


Signature of Course In charge


Signature of Module Coordinator


Signature of HOD



K S INSTITUTE OF TECHNOLOGY BANGALORE
DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING

NAME OF THE STAFF : Praveen A
SUBJECT CODE/NAME : 21EC63/VLSI Design and Testing
SEMESTER/YEAR/SEC : VI /III/A
ACADEMIC YEAR : 2023-2024

Sl. No.	Topic to be covered	Mode of Delivery	Teaching Aid	No. of Periods	Cumulative No. of Periods	Proposed Date
MODULE 1: Introduction & MOS Transistor Theory						
1	A Brief History	L+I	LCD	1	1	29-04-24
2	MOS Transistors, CMOS Logic	L+D	BB	1	2	30-04-24
3	CMOS Logic	L+D	BB	1	3	03-05-24
4	Introduction to MOS Transistor Theory	L+D	BB	1	4	06-05-24
5	Long channel I-V Characteristics	L+ I	BB, LCD	1	5	07-05-24
6	Long channel I-V Characteristics	L+I	BB, LCD	1	6	08-05-24
7	Non-ideal I-V Effects	L+D	BB	1	7	11-05-24
8	Non-ideal I-V Effects	L+D	BB	1	8	13-05-24
10	DC Transfer Characteristics	L+I	BB, LCD	1	10	14-05-24
11	DC Transfer Characteristics	L+I	BB, LCD	1	11	15-05-24

MODULE 2: Fabrication and Delay

13	CMOS Fabrication using N-well	L+ I	BB+LCD	1	13	17-05-24
14	CMOS Fabrication using N-well	L+I	BB+LCD	1	14	20-05-24
15	Basic Layout concepts	L+ I	BB+LCD	1	15	21-05-24
16	Introduction to Fabrication Process	L+ I	BB+LCD	1	16	22-05-24
17	CMOS Technologies	L+D	BB	1	17	24-05-24
18	CMOS Technologies	L+I	BB, LCD	1	18	25-05-24
20	Introduction to Delay concept	L+ I	BB+LCD	1	20	27-05-24
21	Transient Response	L+ I	BB+LCD	1	21	28-05-24
22	RC Delay Model	L+ I	BB+LCD	1	22	29-05-24
23	RC Delay Model	L+ I	BB+LCD	1	23	31-05-24
24	Linear Delay Model	L+D	BB	1	24	07-06-24
25	Logical Efforts of Paths	L+D	BB	1	26	08-06-24

MODULE 3: Semiconductor Memories

27	Introduction to Semiconductor Memories	L+D	BB	1	27	10-06-24
28	Dynamic Random Access Memory (DRAM)	L+D	BB	1	28	11-06-24
29	Dynamic Random Access Memory (DRAM)	L+D	BB	1	29	12-06-24
30	Static Random Access Memory (SRAM)	L+I	BB	1	30	14-06-24
31	Static Random Access Memory (SRAM)	L+D	BB	1	31	18-06-24
32	Nonvolatile Memory: Flash Memory	L+D	BB	1	32	19-06-24
33	Ferroelectric Random Access Memory	L+D	BB	1	33	21-06-24

MODULE 4: Test generation for combinational logic circuits						
34	Faults in digital circuits: Failures and faults	L+D	BB	1	34	22-06-24
35	Modelling of faults	L+D	BB	1	35	24-06-24
36	Temporary faults	L+D	BB	1	36	25-06-24
37	Fault diagnosis of digital circuits	L+D	BB	1	37	26-06-24
38	Fault diagnosis of digital circuits	L+D	BB	1	38	01-07-24
39	Test generation techniques for combinational circuits	L+D	BB	1	39	02-07-24
40	Test generation techniques for combinational circuits	L+D	BB	1	40	03-07-24
41	Detection of multiple faults in combinational logic circuits	L+D	BB	1	41	05-07-24
42	Detection of multiple faults in combinational logic circuits	L+D	BB	1	42	08-07-24
MODULE 5: Test generation for sequential circuits						
43	Testing of sequential circuits	L+D	BB	1	43	09-07-24
44	State table verification	L+D	BB	1	44	10-07-24
45	Test generation based on circuits structure	L+D	BB	1	45	12-07-24
46	Functional fault models	L+D	BB	1	46	13-07-24
47	Test generation based on functional fault models.	L+D	BB	1	47	15-07-24
48	Controllability and Observability, Adhoc design rules	L+D	BB	1	48	16-07-24
49	Design of diagnosable sequential circuits, The scan path technique	L+D	BB	1	49	18-07-24
50	LSSD, Random Access scan technique, Partial scan	L+D	BB	1	50	19-07-24
51	Revision	L+D	BB	1	51	30-07-24
52	VTU Question Paper Discussion	L+D	BB	1	52	31-07-24



Signature of Course In charge



Signature of Module Coordinator



Signature of HOD ECE



K S INSTITUTE OF TECHNOLOGY BANGALORE
DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING

NAME OF THE STAFF : Praveen A
SUBJECT CODE/NAME : 21EC63/VLSI Design and Testing
SEMESTER/YEAR/SEC : VI /III/B
ACADEMIC YEAR : 2023-2024


Sl. No.	Topic to be covered	Mode of Delivery	Teaching Aid	No. of Periods	Cumulative No. of Periods	Proposed Date
MODULE 1: Introduction & MOS Transistor Theory						
1	A Brief History	L+I	LCD	1	1	29-04-24
2	MOS Transistors, CMOS Logic	L+D	BB	1	2	30-04-24
3	CMOS Logic	L+D	BB	1	3	02-05-24
4	Introduction to MOS Transistor Theory	L+D	BB	1	4	03-05-24
5	Long channel I-V Characteristics	L+ I	BB, LCD	1	5	06-05-24
6	Long channel I-V Characteristics	L+I	BB, LCD	1	6	07-05-24
7	Non-ideal I-V Effects	L+D	BB	1	7	09-05-24
8	Non-ideal I-V Effects	L+D	BB	1	8	11-05-24
10	DC Transfer Characteristics	L+I	BB, LCD	1	10	13-05-24
11	DC Transfer Characteristics	L+I	BB, LCD	1	11	14-05-24


MODULE 2: Fabrication and Delay

13	CMOS Fabrication using N-well	L+ I	BB+LCD	1	13	16-05-24
14	CMOS Fabrication using N-well	L+I	BB+LCD	1	14	17-05-24
15	Basic Layout concepts	L+ I	BB+LCD	1	15	20-05-24
16	Introduction to Fabrication Process	L+ I	BB+LCD	1	16	21-05-24
17	CMOS Technologies	L+D	BB	1	17	23-05-24
18	CMOS Technologies	L+I	BB, LCD	1	18	24-05-24
20	Introduction to Delay concept	L+ I	BB+LCD	1	20	25-05-24
21	Transient Response	L+ I	BB+LCD	1	21	27-05-24
22	RC Delay Model	L+ I	BB+LCD	1	22	28-05-24
23	RC Delay Model	L+ I	BB+LCD	1	23	30-05-24
24	Linear Delay Model	L+D	BB	1	24	31-05-24
25	Logical Efforts of Paths	L+D	BB	1	26	06-06-24
MODULE 3: Semiconductor Memories						
27	Introduction to Semiconductor Memories	L+D	BB	1	27	07-06-24
28	Dynamic Random Access Memory (DRAM)	L+D	BB	1	28	08-06-24
29	Dynamic Random Access Memory (DRAM)	L+D	BB	1	29	10-06-24
30	Static Random Access Memory (SRAM)	L+I	BB	1	30	11-06-24
31	Static Random Access Memory (SRAM)	L+D	BB	1	31	13-06-24
32	Nonvolatile Memory: Flash Memory	L+D	BB	1	32	14-06-24
33	Ferroelectric Random Access Memory	L+D	BB	1	33	18-06-24

MODULE 4: Test generation for combinational logic circuits						
34	Faults in digital circuits: Failures and faults	L+D	BB	1	34	20-06-24
35	Modelling of faults	L+D	BB	1	35	21-06-24
36	Temporary faults	L+D	BB	1	36	24-06-24
37	Fault diagnosis of digital circuits	L+D	BB	1	37	25-06-24
38	Fault diagnosis of digital circuits	L+D	BB	1	38	01-07-24
39	Test generation techniques for combinational circuits	L+D	BB	1	39	02-07-24
40	Test generation techniques for combinational circuits	L+D	BB	1	40	04-07-24
41	Detection of multiple faults in combinational logic circuits	L+D	BB	1	41	05-07-24
42	Detection of multiple faults in combinational logic circuits	L+D	BB	1	42	08-07-24
MODULE 5: Test generation for sequential circuits						
43	Testing of sequential circuits	L+D	BB	1	43	09-07-24
44	State table verification	L+D	BB	1	44	11-07-24
45	Test generation based on circuits structure	L+D	BB	1	45	12-07-24
46	Functional fault models	L+D	BB	1	46	13-07-24
47	Test generation based on functional fault models.	L+D	BB	1	47	15-07-24
48	Controllability and Observability, Adhoc design rules	L+D	BB	1	48	16-07-24
49	Design of diagnosable sequential circuits, The scan path technique	L+D	BB	1	49	18-07-24
50	LSSD, Random Access scan technique, Partial scan	L+D	BB	1	50	19-07-24
51	Revision	L+D	BB	1	51	30-07-24
52	VTU Question Paper Discussion	L+D	BB	1	52	31-07-24


Signature of Course In charge


Signature of Module Coordinator


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KS INSTITUTE OF TECHNOLOGY BANGALORE

DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING

NAME OF THE STAFF : S CHRISTO JAIN
SUBJECT CODE/NAME : 21EC643/ Python Programming
SEMESTER/YEAR/SEC : VI/ III/A&B
ACADEMIC YEAR : 2023-24

Sl. No.	Topic to be covered	Mode of Delivery	Teaching Aid	No. of Periods	Cumulative No. of Periods	Proposed Date
MODULE 1: Python Basics						
1	Python Basics, Entering Expressions into the Interactive Shell, The Integer, Floating-Point	L+D	BB+LCD	1	1	29/4/24
2	String Data Types, String Concatenation and Replication, Storing Values in Variables	L+ D	BB+LCD	1	2	30/4/24
3	Your First Program, Dissecting Your Program	L+ D	BB+LCD	1	3	2/5/24
4	Flow control, Boolean Values, Comparison Operators, Boolean Operators	L+D	BB+LCD	1	4	6/5/24
5	Mixing Boolean and Comparison Operators, Elements of Flow Control, Program Execution	L+ D	BB+LCD	1	5	7/5/24
6	Flow Control Statements, Importing Modules, Ending a Program Early with sys.exit()	L+D	BB+LCD	1	6	8/5/24
7	Functions, def Statements with Parameters, Return Values and return Statements	L+D	BB+LCD	1	7	9/5/24
8	The None Value, Keyword Arguments and print() Local and Global Scope, The global Statement Exception Handling, A Short Program: Guess the	L+ D	BB+LCD	1	8	13/5/24


	Number					
9	Tutorial	L+D	BB+LCD	0	9	14/5/24
10	Tutorial	L+D	BB+LCD	0	10	15/5/24
MODULE 2: List Strings and Dictionary						
11	Lists, The List Data Type, Working with Lists	L+D	BB+LCD	1	11	16/5/24
12	Assignment 1	L+D	Assignment Book	0	12	20/5/24
13	Augmented Assignment Operators, Methods	L+D	BB+LCD	1	13	21/5/24
14	Program: Magic 8 Ball with a List	L+ D + PS	BB+LCD	1	14	22/5/24
15	List-like Types: Strings and Tuples, References	L+ D + PS	BB+LCD	1	15	23/5/24
16	Dictionaries and Structuring Data, The Dictionary Data Type	L+D	BB+LCD	1	16	25/5/24
17	Pretty Printing, Using Data Structures to Model Real-World Things	L+ D + PS	BB+LCD	1	17	30/5/24
18	Manipulating Strings, Working with Strings	L+D	BB+LCD	1	18	31/5/24
19	Useful String Methods of strings Project: Password Locker Project: Adding Bullets to Wiki Markup	L+D	BB+LCD	1	19	3/6/24
MODULE 3: Pattern Matching with Regular Expressions						
20	Pattern Matching with Regular Expressions, Finding Patterns of Text Without Regular Expressions, Finding Patterns of Text with Regular Expressions	L+ D	BB+LCD	1	20	4/6/24
21	Pattern Matching with Regular Expressions, Greedy and Nongreedy Matching, The findall() Method	L+ D	BB+LCD	1	21	5/6/24
22	Character Classes, Making Your Own Character Classes, The Caret and Dollar Sign Characters	L+D	BB+LCD	1	22	6/6/24


	The Wildcard Character, Review of Regex Symbols, Case-Insensitive Matching					
23	Substituting Strings with the sub() Method, Managing Complex Regexes, Combining re .IGNORECASE, re .DOTALL, and	L+D	BB+LCD	1	23	8/6/24
24	Phone Number and Email Address Extractor Reading and Writing Files, Files and File Paths, The os.path Module, The File Reading/Writing Process, Saving Variables with the shelve Module, Saving Variables with the pprint.pformat() Function	L+D	BB+LCD	1	24	10/6/24
25	Project: Generating Random Quiz Files, Project: Multiclipboard, Organizing Files	L+D	BB+LCD	1	25	11/6/24
26	The shutil Module, Walking a Directory Tree, Compressing Files with the zipfile Module	L+D + PS	BB+LCD	1	26	12/6/24
27	Project: Renaming Files with American-Style Dates to European-Style Dates, Project: Backing Up a Folder into a ZIP File, Debugging, Raising Exceptions, Getting the Traceback as a String, Assertions, Logging, IDLE's Debugger	L+D + PS	BB+LCD	1	27	13/6/24
MODULE 4: Classes and objects						
28	Classes and objects, Programmer-defined types, Attributes, Rectangles, Instances as return values, Objects are mutable, Copying	L+D	BB+LCD	1	28	18/6/24
29	Classes and functions, Time, Pure functions, Modifiers	L+D	BB+LCD	1	29	19/6/24
30	Prototyping versus planning, Classes and methods, Object oriented features, Printing objects, Another example	L+D	BB+LCD	1	30	20/6/24
31	The init method, The __str__ method, Operator	L+D	BB+LCD	1	31	22/6/24

	overloading					
32	Type-based dispatch, Polymorphism	L+ D	BB+LCD	1	32	24/6/24
33	Interface and implementation, Inheritance, Card objects	L+ D	BB+LCD	1	33	25/6/24
34	Class attributes, Comparing cards	L+D	BB+LCD	1	34	26/6/24
35	Decks, Printing the deck, Add, remove, shuffle and sort, Inheritance, Class diagrams, Data encapsulation	L+ D + PS	BB+LCD	1	35	1/7/24
MODULE 5: Web Scraping						
36	HTTP, The World's simplest Web Browser, Retrieving an image over HTTP	L+D	BB+LCD	1	36	1/7/24
37	Retrieving web pages with urllib, Parsing html and scraping the web	L+ D	BB+LCD	1	37	2/7/24
38	Parsing HTML using RE, Beautiful Soup, Reading binary files using urllib, XML, Parsing XML, Looping through nodes, JSON, Parsing JSON	L+ D	BB+LCD	1	38	3/7/24
39	API, geocoding Web Service, Security & API usage, what is database? Database Concepts	L+ D + PS	BB+LCD	1	39	4/7/24
40	Database Browser, Creating a database table, SQL, Spidering Twitter	L+ D + PS	BB+LCD	1	40	8/7/24
41	Basic data modelling, Programming with multiple tables	L+ D + PS	BB+LCD	1	41	9/7/24
42	Three kinds of Keys, JOI	L+D	BB+LCD	1	42	10/7/24
43	Three kinds of Keys, JOI	L+D	BB+LCD	1	43	11/7/24
44	Program	L+ D + PS	BB+LCD	1	44	12/7/24
45	Program	L+ D + PS	BB+LCD	1	45	15/7/24

46	Program	L+ D + PS	BB+LCD	1	46	16/7/24
47	Program	L+ D + PS	BB+LCD	1	47	17/7/24
48	Program	L+ D + PS	BB+LCD	1	48	18/7/24


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12	Modified Radar Range Equation	L+D, PS	LCD +BB	1	12	27/02/2024
13	Envelope Detector – False Alarm Time & Probability, probability of detection	L+D, PS	LCD +BB	1	13	04/03/2024
14	Simple Targets- sphere, cone sphere	L+D, PS	LCD +BB	1	14	04/03/2024
15	Transmitter Power, PRF & Range Ambiguities	L+D, PS	LCD +BB	1	15	05/03/2024
16	System Losses	L+D, PS	LCD +BB	1	16	05/03/2024
17	Problems	L+D	LCD +BB	1	17	18/03/2024
18	Problems	L+D	LCD +BB	1	18	18/03/2024
Module -3: MTI & Pulse Doppler Radar & Digital MTI Processing						
19	Introduction, Principle, Doppler Frequency Shift	L+D	LCD +BB	1	19	19/03/2024
20	Simple CW Radar, sweep to sweep subtraction Delay Line Canceler	L+D	LCD +BB	1	20	19/03/2024
21	MTI Radar with Power amplifier transmitter, Delay line canceler	L+D	LCD +BB	1	21	25/03/2024
22	Frequency Response of single delay line, blind speeds, clutter attenuation	L+D	LCD +BB	1	22	25/03/2024
23	MTI improvement factor	L+D	LCD +BB	1	23	26/03/2024
24	N pulse delay line canceler	L+D	LCD +BB	1	24	26/03/2024
25	Digital MTI Processing: Blind Phases, I & Q channels,	L+D	LCD +BB	1	25	01/04/2024
26	Digital MTI Doppler signal Processor	L+D	LCD +BB	1	26	01/04/2024
27	Moving Target Detector, Original MTD	L+D	LCD +BB	1	27	02/04/2024
Module -4: Tracking Radar & Sequential Lobing						
28	Types of Radar tracking systems	L+AV	LCD +BB	1	28	02/04/2024
29	Monopulse tracking- Amplitude Comparison Monopulse (1D)	L+D	LCD +BB	1	29	15/04/2024
30	Monopulse (2D)	L+D	LCD +BB	1	30	15/04/2024
31	Phase comparison Monopulse	L+D	LCD +BB	1	31	16/04/2024
32	Sequential Lobing	L+D	LCD +BB	1	32	16/04/2024
33	Conical Scan Tracking Radar	L+D	LCD +BB	1	33	22/04/2024
34	Tracking in Range, Comparison of trackers	L+D	LCD +BB	1	34	22/04/2024



K S INSTITUTE OF TECHNOLOGY BANGALORE
DEPARTMENT OF ELECTONICS AND COMMUNICATION ENGINEERING

COURSE PLAN EVEN SEM-2023-24

NAME OF THE STAFF : Mr. Saleem S Tevaramani
SUBJECT CODE/NAME : 18EC832/ RADAR ENGINEERING
SEMESTER/SEC : VIII SEM /A
ACADEMIC YEAR : 2023-2024

Sl. No.	Topic to be covered	Mode of Delivery	Teaching Aid	No. of Periods	Cumulative No. of Periods	Proposed Date
Module -1: Basics of Radar & Simple form of Radar Equation						
1	Basics of Radar: Introduction, Maximum Unambiguous Range	L+AV	LCD	1	1	12/02/2024
2	Radar Waveforms, Definitions w.r.t pulse waveforms- PRF, PRI, Duty Cycle,	L+ D	LCD +BB	1	2	12/02/2024
3	Peak Transmitter Power, Average Transmitter Power	L+ D	LCD +BB	1	3	13/02/2024
4	Simple form of Radar Equation	L+D	LCD +BB	1	4	13/02/2024
5	Radar Block Diagram & Operation	L+D	LCD +BB	1	5	19/02/2024
6	Radar Frequencies	L+D	LCD +BB	1	6	19/02/2024
7	Applications of Radar, The Origins of Radar,	L+D	LCD +BB	1	7	20/02/2024
8	Problems	L+D	LCD +BB	1	8	20/02/2024
9	Problems	L+D	LCD +BB	1	9	26/02/2024
Module -2: The Radar Equation & Radar Cross Section of Targets						
10	Prediction of Radar Range Performance	L+ D	LCD +BB	1	10	26/02/2024
11	Detection of signal in Noise, Minimum Detectable Signal, Receiver Noise, SNR	L+D	LCD +BB	1	11	27/02/2024

Module -5: Radar Antenna & Radar Receiver

35	Functions of the Radar Antenna	L+AV	LCD +BB	1	35	23/04/2024
36	Antenna Parameters	L+D	LCD +BB	1	36	23/04/2024
37	Electronically steered phased array antennas	L+D	LCD +BB	1	37	29/04/2024
38	The Radar Receiver, Receiver Noise Figure	L+D	LCD +BB	1	38	29/04/2024
39	Super heterodyne receiver, Duplexers	L+D	LCD +BB	1	39	30/04/2024
40	Receivers Protectors	L+D	LCD +BB	1	40	30/04/2024
41	University QP discussion	L+D	LCD +BB	1	41	6/05/2023
42	University QP discussion	L+D	LCD +BB	1	42	6/05/2023
43	University QP discussion	L+D	LCD +BB	1	41	7/05/2023
44	University QP discussion	L+D	LCD +BB	1	42	7/05/2023

Text Book:

Introduction to Radar Systems- Merrill I Skolink, 3e, TMH, 2001

Reference Books:

1. Radar Principles, Technology, Applications – Byron Edde Pearson Education, 2004.
2. Radar Principles – Peebles. Jr. P.Z. Wiley, New York, 1998
3. Principles of Modern Radar: Basic Principles -Mark A. Rkhards, James A. Scheer, William A, Holm. Yesdee, 2013


Course In charge


Module Coordinator


HOD-ECE



K S INSTITUTE OF TECHNOLOGY, BANGALORE

DEPARTMENT OF APPLIED SCIENCE AND HUMANITIES LESSON PLAN 2022-23 EVEN SEMESTER

COURSE INCHARGE : Mr. SATISH KUMAR B
COURSE TYPE / CODE / TITLE : Theory/ BBEE203 / BASIC ELECTRONICS
YEAR/ SEMESTER/SECTION : I/II/F
BRANCH : ELECTRONICS AND COMMUNICATION ENGG

Sl. No.	Topic to be covered	Mode of Delivery	Teaching Aid	No. of Periods	Cumulative No. of Periods	Proposed Date
MODULE 1: Semiconductor Diodes						
1	Introduction, PN Junction diode,	L+D	BB	1	1	06/03/2024
2	Characteristics and Parameters, Diode	L+D	BB	1	2	07/03/2024
3	Approximations, DC Load Line analysis	L+D	BB	1	3	09/03/2024
4	Diode Applications: Introduction, HWR	L+D	BB	1	3	11/03/2024
5	Full Wave Rectification,	L+D	BB	1	5	12/03/2024
6	Full Wave Rectifier Power Supply:	L+D	BB	1	6	13/03/2024
7	Capacitor Filter Circuit,	L+D	BB	1	7	14/03/2024
8	RC π Filter (includes numerical)	L+D	BB	1	8	18/03/2024
9	Zener Diodes: Junction Breakdown	L+D	BB	1	9	19/03/2024
10	Characteristics and Parameters, ,	L+D	BB	1	10	20/03/2024
11	Equivalent Circuit	L+D	BB	1	11	21/03/2024
12	Zener Diode Voltage Regulator	L+D	LCD	1	12	25/03/2024

MODULE 2: Operational Amplifiers						
13	Introduction, The Operational Amplifier	L+D	BB	1	13	26/03/2024
14	Block Diagram Representation of Typical Op-Amp	L+D	BB	1	14	27/03/2024
15	Schematic Symbol, Op-Amp parameters - Gain,	L+ D	BB	1	15	28/03/2024
16	Parameters	L+D	BB	1	16	30/03/2024
17	The Ideal Op-Amp ,Equivalent Circuit of Op-Amp	L+D	BB	1	17	01/04/2024
18	Open Loop Op-Amp configurations	L+D	BB	1	18	02/04/2024
19	Inverting & Non Inverting Amplifier	L+D	BB	1	19	03/04/2024
21	Differential Amplifier,	L+D	BB	1	21	04/04/2024
22	Op-Amp Applications: Inverting Configuration, Non-Inverting Configuration,	L+D	BB	1	22	08/04/2024
23	Differential Configuration,	L+D	BB	1	23	10/04/2024
24	Integrator,	L+D	BB	1	24	13/04/2024
MODULE 3: Boolean Algebra and Logic Circuits						
25	IA-1	L+D	BB	1	25	17/04/2024
26	Number Base Conversion, octal & Hexa Decimal Numbers,	L+D	L+D	1	26	18/04/2024
27	Complements, Basic definitions,	L+D	BB	1	27	22/04/2024
28	Axiomatic Definition of Boolean Algebra,	L+D	BB	1	28	23/04/2024
29	Basic Theorems and Properties of Boolean Algebra,	L+D	BB	1	29	24/04/2024
30	Boolean Functions,	L+D	L+D	1	30	25/04/2024
31	Canonical and Standard Forms,	L+D	BB	1	31	27/04/2024
32	Other Logic Operations,	L+D	BB	1	32	29/04/2024
33	Digital Logic Gates	L+D	BB	1	33	30/04/2024
34	Combinational logic	L+D	LCD	1	34	02/05/2024
35	Activity Lab	L+D	BB	1	35	06/05/2024
MODULE 3: Introduction to Transducers						

36	Transducers	L+D	BB	1	36	07/05/2024
37	Resistive Transducers, Inductive Transducers,	L+D	BB	1	37	08/05/2024
38	Capacitive Transducers,	L+D	BB	1	38	09/05/2024
39	Thermal transducers,	L+D	BB	1	39	13/05/2024
40	Optoelectronic transducer	L+D	LCD	1	40	14/05/2024
41	Communications:	L+D	BB	1	41	15/05/2024
42	Activity lab	L+D	BB	1	42	16/05/2024
43	IA-2	L+D	BB	1	43	22/05/2024
44	Introduction to communication	L+D	BB	1	44	25/05/2024
45	Communication System	L+D	BB	1	45	27/05/2024
46	Modulation	L+D	BB	1	46	28/05/2024
MODULE 5: Transistors						
47	BJT Voltages & Currents, BJT Amplification,	L+D	BB	1	47	29/05/2024
49	Common Base Characteristics,	L+D	BB	1	49	30/05/2024
50	Common Emitter Characteristics,	L+D	BB	1	50	03/06/2024
51	Common Collector Characteristics,	L+D	LCD	1	51	04/06/2024
52	BJT Biasing:	L+D	BB	1	52	05/06/2024
53	Introduction,	L+D	L+D	1	53	06/06/2024
54	DC Load line and Bias point	L+D	BB	1	54	08/06/2024
55	Field Effect Transistor: Junction Field Effect	L+D	BB	1	55	10/06/2024
56	Transistor, JFET Characteristics,	L+D	BB	1	56	11/06/2024
57	MOSFETs: Enhancement	L+D	BB	1	57	12/06/2024
58	MOSFETs, Depletion Enhancement MOSFETs	L+D	BB	1	58	13/06/2024
59	Activity Lab	L+D	BB	1	59	18/06/2024
60	Activity Lab	L+D	BB	1	60	19/06/2024
61	Revision	L+D	BB	1	61	22/06/2024
62	Revision	L+D	BB	1	62	28/06/2024
63	Revision	L+D	BB	1	63	29/06/2024

Text Books:

1. Electronic Devices and Circuits, David A Bell, 5th Edition, Oxford, 2016
2. Op-amps and Linear Integrated Circuits, Ramakanth A Gayakwad, Pearson Education, 4th Edition
3. Digital Logic and Computer Design, M. Morris Mano, PHI Learning, 2008 ISBN-978-81-203-0417-8
4. Electronic Instrumentation and Measurements (3rd Edition) – David A. Bell, Oxford University Press, 2013
5. Electronic Communication Systems, George Kennedy, 4th Edition, TMH

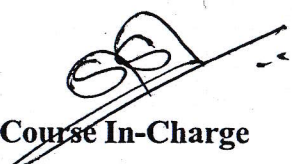
Web Materials:

<https://www.youtube.com/watch?v=CWulQ1ZSE3c> -Basics of Magnet and motor

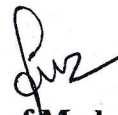
<https://www.youtube.com/watch?v=mj2uoTztDI8>

Details for the teaching Aids

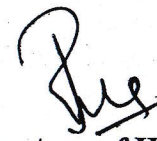
Black Board and LCD



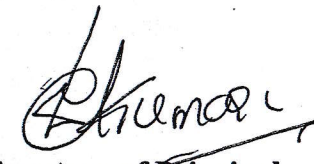
Signature of Course In-Charge



Signature of Module Coordinator



Signature of HOD



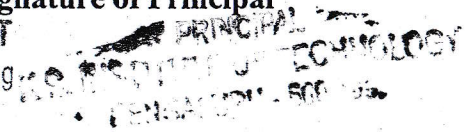
Signature of Principal

HEAD OF THE DEPARTMENT

Dept. of Electronics & Communication Engg.

K.S. Institute of Technology

Bengaluru - 560 109.



PRINCIPAL
K.S. INSTITUTE OF TECHNOLOGY
BENGLURU - 560 109



K S INSTITUTE OF TECHNOLOGY, BANGALORE

DEPARTMENT OF APPLIED SCIENCE AND HUMANITIES LESSON PLAN 2022-23 EVEN SEMESTER

COURSE INCHARGE : Mr. SATISH KUMAR B
COURSE TYPE / CODE / TITLE : Theory/ BBEE203 / BASIC ELECTRONICS
YEAR/ SEMESTER/SECTION : I/II/G
BRANCH : ELECTRONICS AND COMMUNICATION ENGG

Sl. No.	Topic to be covered	Mode of Delivery	Teaching Aid	No. of Periods	Cumulative No. of Periods	Proposed Date
MODULE 1: Semiconductor Diodes						
1	Introduction, PN Junction diode,	L+D	BB	1	1	06/03/2024
2	Characteristics and Parameters, Diode	L+D	BB	1	2	09/03/2024
3	Approximations, DC Load Line analysis	L+ D	BB	1	3	11/03/2024
4	Diode Applications: Introduction, Half Wave Rectification,	L+ D	BB	1	3	12/03/2024
5	Full Wave Rectification,	L+ D	BB	1	5	13/03/2024
6	Full Wave Rectifier Power Supply:	L+D	BB	1	6	15/03/2024
7	Capacitor Filter Circuit,	L+D	BB	1	7	18/03/2024
8	RC π Filter (includes numerical)	L+D	BB	1	8	19/03/2024
9	Zener Diodes: Junction Breakdown, Circuit Symbol and Package,	L+D	BB	1	9	20/03/2024
10	Characteristics and Parameters, ,	L+D	BB	1	10	22/03/2024
11	Equivalent Circuit	L+D	BB	1	11	23/03/2024

12	Zener Diode Voltage Regulator	L+D	LCD	1	12	25/03/2024
MODULE 2: Operational Amplifiers						
13	Introduction, The Operational Amplifier	L+D	BB	1	13	26/03/2024
14	Block Diagram Representation of Typical Op-Amp	L+D	BB	1	14	30/03/2024
15	Schematic Symbol, Op-Amp parameters - Gain,	L+ D	BB	1	15	25/03/2024
16	Input resistance, Output resistance, CMRR, Slew rate, Bandwidth, input offset voltage, Input bias Current and Input offset Current	L+D	BB	1	16	01/04/2024
17	The Ideal Op-Amp , Equivalent Circuit of Op-Amp, ,	L+D	BB	1	17	02/04/2024
18	Open Loop Op-Amp configurations	L+D	BB	1	18	03/04/2024
19	Inverting & Non Inverting Amplifier	L+D	BB	1	19	05/04/2024
21	Differential Amplifier,	L+D	BB	1	21	08/04/2024
22	Op-Amp Applications: Inverting Configuration, Non-Inverting Configuration,	L+D	BB	1	22	10/04/2024
23	Differential Configuration,	L+D	BB	1	23	12/04/2024
24	Integrator,	L+D	BB	1	24	13/04/2024
MODULE 3: Boolean Algebra and Logic Circuits						
25	IA-1	L+D	BB	1	25	17/04/2024
26	Number Base Conversion, octal & Hexa Decimal Numbers,	L+D	L+D	1	26	19/04/2024
27	Complements, Basic definitions,	L+D	BB	1	27	22/04/2024
28	Axiomatic Definition of Boolean Algebra,	L+D	BB	1	28	23/04/2024
29	Basic Theorems and Properties of Boolean Algebra,	L+D	BB	1	29	24/04/2024
30	Boolean Functions,	L+D	L+D	1	30	26/04/2024
31	Canonical and Standard Forms,	L+D	BB	1	31	27/04/2024
32	Other Logic Operations,	L+D	BB	1	32	29/04/2024

33	Digital Logic Gates	L+D	BB	1	33	30/04/2024
34	Combinational logic	L+D	LCD	1	34	03/05/2024
35	Activity Lab	L+D	BB	1	35	6/05/2024
MODULE 3: Introduction to Transducers						
36	Transducers	L+D	BB	1	36	07/05/2024
37	Resistive Transducers, Inductive Transducers,	L+D	BB	1	37	08/05/2024
38	Capacitive Transducers,	L+D	BB	1	38	11/05/2024
39	Thermal transducers,	L+D	BB	1	39	13/05/2024
40	Optoelectronic transducer	L+D	LCD	1	40	14/05/2024
41	Communications:	L+D	BB	1	41	15/05/2024
42	Activity lab	L+D	BB	1	42	17/05/2024
43	IA-2	L+D	BB	1	43	22/05/2024
44	Introduction to communication	L+D	BB	1	44	24/05/2024
45	Communication System	L+D	BB	1	45	25/05/2024
46	Modulation	L+D	BB	1	46	27/05/2024
MODULE 5: Transistors						
47	BJT Voltages & Currents, BJT Amplification,	L+D	BB	1	47	28/05/2024
49	Common Base Characteristics,	L+D	BB	1	49	29/05/2024
50	Common Emitter Characteristics,	L+D	BB	1	50	31/05/2024
51	Common Collector Characteristics,	L+D	LCD	1	51	03/06/2024
52	BJT Biasing:	L+D	BB	1	52	04/06/2024
53	Introduction,	L+D	L+D	1	53	05/06/2024
54	DC Load line and Bias point	L+D	BB	1	54	07/06/2024
55	Field Effect Transistor: Junction Field Effect	L+D	BB	1	55	08/06/2024
56	Transistor, JFET Characteristics,	L+D	BB	1	56	10/06/2024
57	MOSFETs: Enhancement	L+D	BB	1	57	11/06/2024
58	MOSFETs, Depletion Enhancement MOSFETs	L+D	BB	1	58	12/06/2024
59	Activity Lab	L+D	BB	1	59	14/06/2024
60	Activity Lab	L+D	BB	1	60	18/06/2024

61	Revision	L+D	BB	1	61	19/06/2024
62	Revision	L+D	BB	1	62	22/06/2024
63	Revision	L+D	BB	1	63	28/06/2024
64	Revision	L+D	BB	1	64	29/06/2024

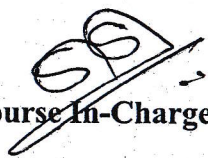
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2. Op-amps and Linear Integrated Circuits, Ramakanth A Gayakwad, Pearson Education, 4th Edition
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<https://www.youtube.com/watch?v=CWulQ1ZSE3c> -Basics of Magnet and motor
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Signature of Course In-Charge

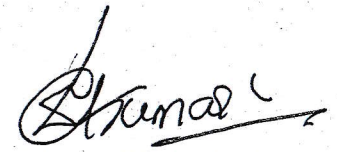


Signature of Module Coordinator



Signature of HOD

HEAD OF THE DEPARTMENT
 Dept. of Electronics & Communication Engg
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 Bengaluru - 560 109.



Signature of Principal

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 BENGALURU - 560 109.



KS INSTITUTE OF TECHNOLOGY BANGALORE
DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING

NAME OF THE COURSE INCHARGE : Bhargavi Ananth
COURSE CODE/NAME : 21CS651
SEMESTER/YEAR/SEC : VI/III/A, B
ACADEMIC YEAR : 2023-24

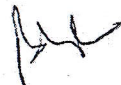
Sl. No.	Topic to be covered	Mode of Delivery	Teaching Aid	No. of Periods	Cumulative No. of Periods	Proposed Date (A)	Proposed Date (B)
MODULE 1: Introduction to Arrays.							
1	Introduction to arrays: one-dimensional arrays	L	BB	1	1	29/4/24	29/4/24
2	Two dimensional arrays, initializing two dimensional arrays	L	BB	1	2	30/4/24	2/5/24
3	Multidimensional arrays	L	BB	1	3	2/5/24	3/5/24
4	Introduction to Pointers: Pointer concepts	L	BB	1	4	3/5/24	6/5/24
5	Accessing variables through pointers	L	BB	1	5	6/5/24	8/5/24
6	Dynamic memory allocation	L	BB	1	6	7/5/24	11/5/24
7	Pointers applications, Declaring structures, Giving values to members, structure initialization	L	BB	1	7	11/5/24	13/5/24
8	Arrays of structures, nested structure, unions, size of structures	L	BB	1	8	13/5/24	15/5/24
9	Examples	L	BB	1	9	14/5/24	16/5/24
MODULE 2: Linear Data Structures-Stacks and Queues							
10	Introduction to linear data structures.	L	BB	1	10	16/5/24	17/5/24
11	Stack representation in Memory, Stack Operations	L	BB	1	11	17/5/24	20/5/24

12	Stack Operations	L	BB	1	12	20/5/24	22/5/24
13	Stack Implementation	L	BB	1	13	21/5/24	23/5/24
14	Applications of Stack	L	BB	1	14	23/5/24	24/5/24
15	Introduction, Queues-Basic concept, Logical representation of Queues	L	BB	1	15	24/5/24	25/5/24
16	Operations and its types	L	BB	1	16	25/5/24	30/5/24
17	Operations and its types	L	BB	1	17	30/5/24	31/5/24
18	Queue Implementation, Applications of Queue	L	BB	1	18	31/5/24	3/6/24
MODULE 3: Linear Data Structures-Linked List							
19	Introduction, Linked list Basic concept	L	BB	1	19	3/6/24	5/6/24
20	Logical representation of Linked list, Self-Referential structure	L	BB	1	20	4/6/24	6/6/24
21	Singly-linked List	L	BB	1	21	6/6/24	7/6/24
22	Operations on linked lists	L	BB	1	22	7/6/24	8/6/24
23	Implementation of linked list	L	BB	1	23	8/6/24	10/6/24
24	Circular Linked List	L	BB	1	24	10/6/24	12/6/24
25	Circular Linked List	L	BB	1	25	11/6/24	13/6/24
26	Applications of Linked list	L	BB	1	26	13/6/24	14/6/24
27	Examples	L	BB	1	27	14/6/24	19/6/24
MODULE 4: Non Linear Data Structures-Trees							
28	Introduction, Basic concept	L	BB	1	28	18/6/24	20/6/24
29	Binary Tree	L	BB	1	29	20/6/24	21/6/24
30	Types of Binary Tree	L	BB	1	30	21/6/24	22/6/24
31	Binary Tree Representation	L	BB	1	31	24/6/24	24/6/24
32	Binary Tree Traversal	L	BB	1	32	25/6/24	26/6/24
33	Binary Search tree	L	BB	1	33	1/7/24	1/7/24
34	Expression Trees	L	BB	1	34	2/7/24	3/7/24
35	Examples	L	BB	1	35	4/7/24	4/7/24
36	Examples	L	BB	1	36	5/7/24	5/7/24

MODULE 5: Sorting and Searching							
37	Sorting: Introduction	L	BB	1	37	8/7/24	8/7/24
38	Bubble sort	L	BB	1	38	9/7/24	10/7/24
39	Bubble sort	L	BB	1	39	11/7/24	11/7/24
40	Selection sort	L	BB	1	40	12/7/24	12/7/24
41	Selection sort	L	BB	1	41	13/7/24	13/7/24
42	Insertion sort Searching: Introduction	L	BB	1	42	15/7/24	15/7/24
43	Linear search	L	BB	1	43	16/7/24	18/7/24
44	Binary search	L	BB	1	44	18/7/24	19/7/24
45	Examples	L	BB	1	45	19/7/24	29/7/24



Signature of Course In charge



Signature of Module Coordinator



Signature of HOD



KS INSTITUTE OF TECHNOLOGY, BANGALORE

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

NAME OF THE STAFF : Bhanumathi A
SUBJECT CODE/NAME : BEC401/Electromagnetic Theory
SEMESTER/YEAR : IV 'A' / II
ACADEMIC YEAR : 2023-2024

Sl. No.	Topic to be covered	Offline Mode of Delivery	Teaching Aid	No. of Periods	Cumulative No. of Periods	Proposed Date
MODULE 1						
1.	Revision of Vector Calculus	L+D	BB	1	1	22.04.2024
2.	Coulomb's Law, Electric Field Intensity and Flux density: Introduction	L+D	BB	1	2	23.04.2024
3.	Experimental law of Coulomb	L+D	BB	1	3	24.04.2024
4.	Problems on Coulomb's law	L+D	BB	1	4	25.04.2024
5.	Electric Field intensity	L+D	BB	1	5	27.04.2024
6.	E due to continuous volume charge distribution	L+D	BB	1	6	29.04.2024
7.	E of a line charge	L+D	BB	1	7	30.04.2024
8.	E due to infinite sheet of charge	L+D	BB	1	8	02.05.2024
9.	Electric flux density	L+D	BB	1	9	06.05.2024
10.	Problems on Electric field intensity	L+PS	BB	1	10	07.05.2024
11.	Problems on distribution of charges	L+PS	BB	1	11	08.05.2024
12.	Problems on Electric Flux density	L+PS	BB	1	12	09.05.2024
MODULE 2						
13.	Gauss's law and Divergence: Gauss Law , Application of Gauss Law to a point charge and line	L+ D	BB	1	13	13.05.2024

	charge.					
14.	Application of Gauss law to surface charge and Point form of Gauss Law	L+D	BB	1	14	14.05.2024
15.	Divergence, Maxwell's First equation (Electrostatics),	L+D	BB	1	15	15.05.2024
16.	Vector Operator and divergence theorem.	L+D	BB	1	16	16.05.2024
17.	Energy ,Potential and Conductors: Energy expended in moving a point charge in an electric field	L+D	BB	1	17	20.05.2024
18.	The line integral	L+D	BB	1	18	21.05.2024
19.	Definition of potential difference and potential	L+D	BB	1	19	22.05.2024
20.	The potential field of point charge, potential gradient	L+D	BB	1	20	23.05.2024
21.	Current and Current density, Continuity of current.	L+PS	BB	1	21	25.05.2024
22.	Problems on Maxwell's equations	L+PS	BB	1	22	30.05.2024
23.	Problems on Work done	L+PS	BB	1	23	03.06.2024
MODULE 3						
24.	Poisson's and Laplace's Equation: Derivation of Poisson's and Laplace's Equations.	L+D	BB	1	24	04.06.2024
25.	Uniqueness theorem.	L+D	BB	1	25	05.06.2024
26.	Examples of the solution of Laplace's equation.	L+D	BB	1	26	06.06.2024
27.	Numerical problems on Laplace Equation	L+PS	BB	1	27	08.06.2024
28.	Steady Magnetic Field Biot-Savart Law, Ampere's circuital law	L+D	BB	1	28	10.06.2024
29.	Curl, Stokes' theorem, Magnetic flux and magnetic flux density	L+D	BB	1	29	11.06.2024
30.	Scalar and Vector Magnetic Potentials.	L+D	BB	1	30	12.06.2024
31.	Problems on Poisson's equation	L+PS	BB	1	31	13.06.2024
32.	Problems on Laplace equations	L+PS	BB	1	32	18.06.2024
33.	Problems on applications of Amperes Circuital law	L+PS	BB	1	33	19.06.2024
34.	Problems on Magnetic flux and magnetic flux density.	L+PS	BB	1	34	20.06.2024
MODULE 4						

35.	Magnetic Forces Force on a moving charge, differential current elements	L+D	BB	1	35	22.06.2024
36.	Force between differential current elements.	L+D	BB	1	36	27.06.2024
37.	Numerical Problems on force on a moving charge, force between differential current elements.	L+PS	BB	1	37	29.06.2024
38.	Magnetic Materials Magnetization and permeability,	L+D	BB	1	38	01.07.2024
39.	Magnetic boundary conditions, Magnetic circuit.	L+D	BB	1	39	02.07.2024
40.	Potential Energy and forces on magnetic materials.	L+D	BB	1	40	03.07.2024
41.	Inductance and mutual reactance.	L+D	BB	1	41	04.07.2024
42.	Numerical Problems on magnetization and permeability	L+PS	BB	1	42	08.07.2024
43.	Faraday's law of electromagnetic induction – integral and point form	L+D	BB	1	43	09.07.2024
44.	Numerical Problems on faraday's law	L+PS	BB	1	44	10.07.2024
45.	Numerical problems on integral and point form of faraday's law	L+PS	BB	1	45	11.07.2024
MODULE 5						
46.	Maxwell's equations : Continuity equation	L+D	BB	1	46	15.07.2024
47.	Inconsistency of Ampere's law with continuity equation, displacement current, conduction current	L+D	BB	1	47	16.07.2024
48.	Derivation of Maxwell's equations in point form and integral form.	L+D	BB	1	48	18.07.2024
49.	Maxwell's equations for different media	L+D	BB	1	49	19.07.2024
50.	Uniform Plane Wave: Plane wave, Uniform plane wave, Derivation of plane wave equations from Maxwell's equations	L+D	BB	1	50	22.07.2024
51.	Solution of wave equation for perfect dielectric, Relation between E and H	L+D	BB	1	51	23.07.2024
52.	Wave propagation in free space, solution of wave equation for sinusoidal excitation	L+D	BB	1	55	24.07.2024
53.	Wave propagation in any conducting media and	L+D	BB	1	53	25.07.2024

	good conductors, Skin effect or depth of penetration					
54.	Poynting's theorem and Wave power	L+D	BB	1	54	27.07.2024
55.	Numerical Problems on skin depth, wave propagation in different media,	L+PS	BB	1	55	06.08.2024
56.	Numerical problems on Poynting theorem.	L+PS	BB	1	56	07.08.2024

TEXT BOOK:

1. W.H. Hayt and J.A. Buck, "Engineering Electromagnetics", 8th Edition, Tata McGraw-Hill, 2014, ISBN-978-93-392-0327-6.


REFERENCES:


1. Elements of Electromagnetics- Matthew N.O., Sadiku, Oxford university press, 4th Edn.
2. Electromagnetic Waves and Radiating systems- E.C Jordan and K.G. Balmain, PHI, 2nd Edn.
3. Electromagnetics-Joseph Edminister, Schaum Outline Series, McGraw Hill.
4. N. Narayana Rao, -Fundamentals of Electromagnetics for Engineering ,Pearson.

WEB MATERIALS:

- 1 <https://nptel.ac.in/courses/108106073/>
2. <https://freevideolectures.com/course/2340/electromagnetic-fields>
3. <https://www.khanacademy.org/science/physics/.../v/discovery-of-electromagnetism>


Signature of Course In-charge


Signature of Module Coordinator


Signature of HOD-ECE



K S INSTITUTE OF TECHNOLOGY, BANGALORE

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

NAME OF THE STAFF : Kavya B M
SUBJECT CODE/NAME : BEC401/Electromagnetic Theory
SEMESTER/YEAR : IV/ II /B sec
ACADEMIC YEAR : 2023-2024

Sl. No.	Topic to be covered	Offline Mode of Delivery	Teaching Aid	No. of Periods	Cumulative No. of Periods	Proposed Date
MODULE 1						
1	Revision of Vector Calculus	L+D	BB	1	1	22.04.2024
2	Coulomb's Law, Electric Field Intensity and Flux density: Introduction	L+D	BB	1	2	23.04.2024
3	Experimental law of Coulomb	L+D	BB	1	3	24.04.2024
4	Electric Field intensity	L+D	BB	1	4	25.04.2024
5	Field due to continuous volume charge distribution	L+D	BB	1	5	27.04.2024
6	Field of a line charge	L+D	BB	1	6	29.04.2024
7	Field due to infinite sheet of charge	L+D	BB	1	7	30.04.2024
8	Electric flux density	L+D	BB	1	8	02.05.2024
9	Problems on Electric field intensity	L+D	BB	1	9	03.05.2024
10	Electric Flux density	L+D	BB	1	10	06.05.2024
11	Numerical Problems	L+D	BB	1	11	07.05.2024
12	Numerical Problems	L+D	BB	1	12	08.05.2024
MODULE 2						
13	Gauss's law and Divergence: Gauss Law	L+D	BB	1	13	13.05.2024

14	Application of Gauss Law to point charge	L+D	BB	1	14	14.05.2024
15	Line charge, Surface charge, Volume Charge	L+D	BB	1	15	15.05.2024
16	Point form of Gauss law	L+D	BB	1	16	16.05.2024
17	Divergence	L+D	BB	1	17	20.05.2024
18	Maxwell's First equation (Electrostatics),	L+D	BB	1	18	21.05.2024
19	Vector Operator and divergence theorem.	L+D	BB	1	19	22.05.2024
20	Numerical Problems	L+D	BB	1	20	23.05.2024
21	Energy expended in moving a point charge in an electric field	L+D	BB	1	21	25.05.2024
22	The line integral	L+PS	BB	1	22	30.05.2024
23	Definition of potential difference and potential,	L+D	BB	1	23	03.06.2024
24	The potential field of point charge, Current and Current density	L+D	BB	1	24	04.06.2024
25	Continuity of current.	L+D	BB	1	25	05.06.2024
26	Numerical Problems				26	06.06.2024
MODULE 3						
27	Derivation of Poisson's and Laplace's Equations,	L+D	BB	1	27	08.06.2024
28	Derivation of Laplace's Equations, Uniqueness theorem.	L+D	BB	1	28	10.06.2024
29	Examples of the solution of Laplace's equation.	L+D	BB	1	29	11.06.2024
30	Numerical problems on Laplace Equation	L+PS	BB	1	30	12.06.2024
31	Steady Magnetic Field Biot-Savart Law, Ampere's circuital law	L+D	BB	1	31	13.06.2024
32	Curl, Stokes' theorem, Magnetic flux and magnetic flux density	L+D	BB	1	32	18.06.2024
33	Problems on Poisson's equation, Laplace equations	L+D	BB	1	33	19.06.2024
34	Numerical Problems	L+PS	BB	1	34	20.06.2024

35	Numerical Problems	L+PS	BB	1	35	22.06.2024
MODULE 4						
36	Magnetic Forces Force on a moving charge, differential current elements	L+D	BB	1	36	27.06.2024
37	Force between differential current elements.	L+D	BB	1	37	29.06.2024
38	Numerical Problems	L+PS	BB	1	38	01.07.2024
39	Magnetic Materials Magnetization and permeability,	L+D	BB	1	39	02.07.2024
40	Magnetic boundary conditions, Magnetic circuit, Potential Energy and forces on magnetic materials	L+D	BB	1	40	03.07.2024
41	Forces on magnetic materials	L+D	BB	1	41	04.07.2024
42	Problems on Magnetic boundary conditions, Inductance and mutual reactance	L+D	BB	1	42	08.07.2024
43	Numerical Problems	L+D	BB	1	44	09.07.2024
44	Numerical Problems	L+D	BB	1	45	10.07.2024
MODULE 5						
45	Faraday law of electromagnetic induction – integral and point form					11.07.2024
46	Maxwell's equations : Continuity equation, Inconsistency of Ampere's law with continuity equation, displacement current, conduction current	L+D	BB	1	46	15.07.2024
47	Maxwell's equations in point form and Maxwell's equations in integral form.	L+D	BB	1	47	16.07.2024
48	Maxwell's equations for different media	L+D	BB	1	48	18.07.2024
49	Uniform Plane Wave: Plane wave, Uniform plane wave, Derivation of plane wave equations from Maxwell's equations	L+D	BB	1	49	22.07.2024
50	Relation between E and H	L+D	BB	1	50	23.07.2024
51	Wave equations in different media	L+D	BB	1	51	24.07.2024
52	Skin depth, depth of penetration	L+D	BB	1	52	25.07.2024
53	Poynting theorem and Wave power	L+D	BB	1	53	27.07.2024
54	Numerical Problems	L+D	BB	1	54	01.08.2024
55	Numerical Problems	L+D	BB	1	55	06.08.2024

TEXT BOOK:

W.H. Hayt and J.A. Buck, "Engineering Electromagnetics", 8th Edition, Tata McGraw-Hill, 2014, ISBN-978-93-392-0327-6.

REFERENCES:

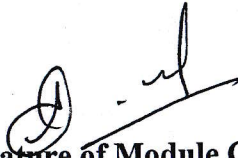
1. Elements of Electromagnetics- Matthew N.O., Sadiku, Oxford university press, 4th Edn.
2. Electromagnetic Waves and Radiating systems- E.C Jordan and K.G. Balmain, PHI, 2nd Edn.
3. Electromagnetics-Joseph Edminister, Schaum Outline Series, McGraw Hill.
4. N. Narayana Rao, -Fundamentals of Electromagnetics for Engineering –Pearson.

WEB MATERIALS:

1. <https://nptel.ac.in/courses/108106073/>
2. <https://freevideolectures.com/course/2340/electromagnetic-fields>
3. <https://www.khanacademy.org/science/physics/.../v/discovery-of-electromagnetism>



Signature of Course In-charge



Signature of Module Coordinator



Signature of HOD-ECE



KS INSTITUTE OF TECHNOLOGY BANGALORE

DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING

LESSON PLAN 2023-2024 EVEN Semester

COURSE INCHARGE : Dr. Anita P

SUBJECT CODE/NAME : BEC402/ PRINCIPLES OF COMMUNICATION AND SYSTEMS

SEMESTER/YEAR/SEC : VI/ II/B

ACADEMIC YEAR : 2023-24

Sl. No.	Topic to be covered	Mode of Delivery	Teaching Aid	No. of Periods	Cumulative No. of Periods	Proposed Date (A)
MODULE 1 : Random Variables and Processes						
1	Random Variables and Processes: Introduction,	L	BB+P	1	1	22/4/24
2	Probability, Conditional Probability,	L	BB+P	1	2	23/4/24
3	Random variables.	L	BB+P	1	3	24/4/24
4	Statistical Averages: Function of a random variable,	L	BB+P	1	4	25/4/24
5	Moments, Random Processes,	L	BB+P	1	5	27/4/24
6	Mean, Correlation and Covariance function:	L	BB+P	1	6	29/4/24
7	Properties of autocorrelation function,	L	BB+P	1	7	30/4/24
8	Cross-correlation functions,	L	BB+P	1	8	2/5/24
9	Gaussian Process:	L	BB+P	1	9	6/5/24
10	Gaussian Distribution Function.	L	BB+P	1	10	7/5/24
MODULE 2: Amplitude Modulation Fundamentals						
11	Amplitude Modulation Fundamentals:	L	BB+P	1	11	8/5/24
12	AM Concepts,	L	BB+P	2	12	9/5/24
13	Modulation index and Percentage of	L	BB+P	2	13	11/5/24

	Modulation,					
14	Sidebands and the frequency domain,	L	BB+P	2	14	13/5/24
15	AM Power, Single Sideband Modulation	L	BB+P	2	15	13/5/24
16	AM Circuits: Amplitude Modulators:	L	BB+P	2	16	14/5/24
17	Diode Modulator, Transistor Modulator, collector Modulator.	L	BB+P	2	17	16/5/24
18	Amplitude Demodulators: Diode Detector,	L	BB+P	2	18	17/5/24
IA-I						
19	Balanced Modulators: Lattice Modulators.	L	BB+P	1	19	20/5/24
20	Frequency Division Multiplexing:	L	BB+P	1	20	20/5/24
21	Transmitter-Multiplexer, Receiver-Demultiplexer.	L	BB+P	3	21	21/5/24
MODULE 3: Fundamentals of Frequency Modulation						
22	Fundamentals of Frequency Modulation:	L	BB+P	1	22	22/5/24
23	Basic Principles of Frequency Modulation,	L	BB+P	1	23	23/5/24
24	Principles of Phase Modulation,	L	BB+P	1	24	25/5/24
27	Modulation index and sidebands,	L	BB+P	1	27	20/5/24
28	Noise Suppression Effects of FM,	L	BB+P	1	28	21/5/24
29	Frequency Modulation versus Amplitude Modulation.	L	BB+P	1	29	22/5/24
30	FM Circuits: Frequency Modulators:	L	BB+P	1	30	10/6/24
31	Voltage Controlled Oscillators, Frequency Demodulators: Slope Detectors,	L	BB+P	1	31	11/6/24
32	Phase Locked Loops. Communication Receiver: Super heterodyne receiver,	L	BB+P	1	32	12/6/24
33	Frequency Conversion: Mixing Principles,.	L	BB+P	1	33	13/6/24
34	JFET Mixer	L	BB+P	1	34	18/6/24
MODULE 4: Digital Representation of Analog Signals						
35	Digital Representation of Analog Signals: Introduction, Why Digitize Analog Sources?,	L	BB+P	1	35	19/6/24
36	The Sampling process,.	L	BB+P	1	36	20/6/24
37	Pulse Amplitude Modulation,	L	BB+P	1	37	27/6/24
38	Time-Division Multiplexing, Pulse Position Modulation	L	BB+P	1	38	29/6/24

39	Generation and Detection of PAM wave.	L	BB+P	1	39	1/7/24
40	The Quantization Process. Pulse Code	L	BB+P	1	40	2/7/24
IA-2						
41	Modulation: Sampling, Quantization, Encoding, line Codes, Differential encoding,	L	BB+P	1	41	3/7/24
42	Regeneration, Decoding, filtering, multiplexing	L	BB+P	1	42	4/7/24
43	PROBLEMS	L	BB+P	1	43	8/7/24
44	PROBLEMS	L	BB+P	1	44	9/7/24
MODULE 5: Baseband Transmission of Digital signals						
45	Baseband Transmission of Digital signals:	L	BB+P	1	45	10/7/24
46	Introduction, Intersymbol Interference, Eye Pattern,	L	BB+P	1	46	11/7/24
47	Nyquist criterion for distortionless Transmission,	L	BB+P	1	47	15/7/24
48	Baseband M-ary PAM Transmission.	L	BB+P	1	48	16/7/24
49	Noise: Signal to Noise Ratio	L	BB+P	1	49	18/7/24
50	External Noise, Internal Noise,	L	BB+P	1	50	22/7/24
51	Semiconductor Noise, Expressing Noise Levels, Noise in Cascade Stages	L	BB+P	1	51	23/7/24
52	PROBLEMS	L	BB+P	1	52	24/7/24
53	PROBLEMS	L	BB+P	1	53	23/7/24
IA-3						
54	Revision	L	BB+P	1	54	24/7/24
55	Revision	L	BB+P	1	55	25/7/24

TEXTBOOK:

Books 1. Louis E Frenzel, Principles of Electronic Communication Systems, 3rd Edition, Mc Graw Hill Education (India) Private Limited, 2010, ISBN: 978-0-07-066755-6.

2. Simon Haykin & Michael Moher, Communication Systems, 5th Edition, John Wiley, India Pvt. Ltd, 2010, ISBN: 978-81-265-2151-7.

REFERENCES:

1. B P Lathi, Zhi Ding, "Modern Digital and Analog Communication Systems", Oxford University Press., 4th edition, 2010, ISBN: 97801980738002.
2. Herbert Taub, Donald L Schilling, Goutam Saha, "Principles of Communication systems", 4th Edition, Mc Graw Hill Education (India) Private Limited, 2016. ISBN: 978-1-25-902985-1

WEB MATERIALS:

1. Principles of Communication Systems <https://nptel.ac.in/courses/108104091>
2. Communication Engineering <https://nptel.ac.in/courses/117102059>



Course Incharge



Module Coordinator



HOD



K. S. INSTITUTE OF TECHNOLOGY, BENGALURU - 560109
DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING
COURSE PLAN 2023-24 EVEN SEMESTER

COURSE INCHARGE : Suma Santosh
COURSE CODE/TITLE : 18EC81/Wireless and Cellular communication
YEAR/ SEMESTER/SECTION : IV/VIII/B
BRANCH : ECE

Sl. No.	Topic to be covered	Mode of Delivery	Teaching Aid	No. of Periods	Cumulative No. of Periods	Proposed Date
MODULE 1: Mobile Radio Propagation						
1	The Cellular Concept – Cellular Concept	L+D	BB, LCD	1	1	12 th Feb 2024
2	Analysis of Cellular Systems	L+D	BB	1	2	12 th Feb 2024
3	Sectoring			2	4	13 th Feb 2024
4	Mobile Radio Propagation – Large Scale Path Loss – Free Space Propagation Model & problems	L+D	BB	2	6	19 th Feb 2024
5	Relating Power to Electric Field, Three Basic Propagation Mechanisms – Reflection (Ground Reflection) , Diffraction, Scattering	L+D	BB	1	7	19 th Feb 2024
6	Practical Link Budget, Fading and Multipath – Broadband wireless channel	L+D	BB,LCD	1	8	20 th Feb 2024
7	Delay Spread and Coherence Bandwidth, Doppler Spread and Coherence Time	L+D	BB	1	9	20 th Feb 2024
8	Angular spread and Coherence	L+D	BB,LCD	1	10	26 th Feb 2024
9	Distance Statistical Channel Model of a Broadband Fading Channel	L+D	BB	1	11	26 th Feb 2024
10	Problems & Pedagogy	L+D	BB	1	12	26 th Feb 2024

MODULE 2: GSM and TDMA Technology

11	GSM System overview – Introduction	L+PS	BB	1	13	27 th Feb 2024
12	GSM System overview – Introduction	L+ D	BB	1	13	27 th Feb 2024
13	GSM Channel Concept	L+D	BB	1	15	4 th Mar 2024
14	GSM Channel Concept	L+D	BB	1	16	4 th Mar 2024
15	GSM System Operations	L+D	LCD	1	17	4 th Mar 2024
16	GSM System Operations	L+D	BB	1	18	4 th Mar 2024
17	GSM Identities	L+D	BB	2	20	4 th Mar 2024
18	Infrastructure Communications (Um Interface)	L+D	BB	1	21	5 th Mar 2024
19	Network and System Architecture	L+D	BB	1	22	5 th Mar 2024
20	GSM System Operations	L+D	LCD	1	23	5 th Mar 2024
21	Traffic cases, GSM	L+D	LCD	1	24	18 th Mar 2024
22	Pedagogy & Test			1	25	18 th Mar 2024

MODULE 3: CDMA Technology

23	CDMA System Over view- Introduction	L+AV	LCD	1	26	19 th Mar 2024
24	CDMA Network and system Architecture	L+D	BB	1	27	19 th Mar 2024
25	CDMA Basics	L+AV	LCD	1	28	25 th Mar 2024
26	CDMA Basics	L+D	BB	1	29	25 th Mar 2024
27	CDMA Channel Concepts	L+D	BB	1	30	25 th Mar 2024
28	CDMA Channel Concepts	L+D	BB	1	31	26 th Mar 2024
29	CDMA System (Layer 3) operations 3G CDMA	L+D	BB	3	34	1 st April 2024
30	Pedagogy & QP Revision	L+D	BB	1	35	1 st April 2024

MODULE 4: LTE – 4G

31	Key Enablers for LTE 4G – OFDM	L+D	BB	1	31	2 nd April 2024
32	SC-FDE, SC-FDMA	L+AV	LCD	1	32	2 nd April 2024
33	Channel Dependent Multiuser Resource Scheduling	L+D	LCD, BB	1	33	2 nd April 2024
34	Multi-Antenna Techniques, Flat IP Architecture	L+AV	LCD	1	34	15 th April 2024
35	LTE Network Architecture	L+D	BB	1	35	15 th April 2024
36	Multi-Carrier Modulation – Multicarrier concepts	L+D	BB	1	36	15 th April 2024
37	OFDM Basics, OFDM in LTE	L+D	BB	1	37	16 th April 2024
38	Timing and Frequency Synchronization	L+D	BB	1	38	16 th April 2024
39	Peak to Average Ration	L+D	BB	1	39	16 th April 2024

40	SC-Frequency Domain Equalization, Computational Complexity Advantage of OFDM and SC-FDE	L+D	BB	1	40	22 nd April 2024
MODULE 5: LTE – 4G						
41	LTE – 4G OFDMA and SC-FDMA	L+D	LCD, BB	1	41	22 nd April 2024
42	Multiple Access for OFDM Systems, OFDMA, SCFDMA	L+D	LCD	1	42	22 nd April 2024
43	Multiuser Diversity and Opportunistic Scheduling	L+D	LCD	1	43	23 rd April 2024
44	OFDMA and SC-FDMA in LTE	L+D	LCD, BB	1	44	23 rd April 2024
45	OFDMA system Design Considerations	L+D	BB	1	45	23 rd April 2024
46	The LTE Standard – Introduction to LTE and	L+D	BB	1	46	29 th April 2024
47	Hierarchical Channel Structure of LTE	L+D	BB	1	47	29 th April 2024
48	Downlink OFDMA Radio Resources, Uplink SC-FDMA Radio Resources	L+D	BB	1	48	30 th April 2024

Text Books:

1. Fundamentals of LTE Arunabha Ghosh, Jan Zhang, Jefferey Andrews, Riaz Mohammed, Pearson education (Formerly Prentice Hall, Communications Engg and Emerging Technologies), ISBN-13: 978-0-13-703311-9.
2. Introduction to Wireless Telecommunications Systems and Networks, Gary Mullet, First Edition, Cengage Learning India Pvt Ltd., 2006, ISBN – 13: 978-81-315-0559-5.

Reference Books:

1. “Wireless Communications: Principles and Practice” Theodore Rappaport, 2nd Edition ,Prentice Hall Communications Engineering and Emerging Technologies Series, 2002, ISBN 0-13-042232-0.
2. LTE for UMTS Evolution to LTE –Advanced ‘ Harri Holma and Antii Toskala, Second Edition-2011, John Wiley & Sons, Ltd. Print ISBN:9780470660003.2

Details for Teaching Aids:

1. Black Board
2. Laptop, LCD Projector

Signature of Course In charge

Signature of Module Coordinator

Signature of HOD



K. S. INSTITUTE OF TECHNOLOGY, BENGALURU - 560109
DEPARTMENT OF APPLIED SCIENCE AND HUMANITIES
LESSON PLAN 2023-24 ODD SEMESTER

COURSE INCHARGE : Radhika T S / *Suma Sanku*
COURSE TYPE / CODE / TITLE : Theory/ BESCK104C / Introduction to Electronics &
Communication
YEAR/ SEMESTER/SECTION : 1st /IInd /I
BRANCH : Computer & Communication Engineering

Sl. No.	Topic to be covered	Mode of Delivery	Teaching Aid	No. of Periods	Cumulative No. of Periods	Proposed Date
MODULE 1: Power Supplies and Amplifiers						
1	Introduction	L+D	BB	1	1	07/03/2024
2	Power Supplies: Block diagram	L+ D	BB	1	2	11/03/2024
3	Half-wave rectifier and filters	L+ D	BB	1	3	13/03/2024
4	Full-wave rectifiers with filters	L+ D	BB	1	4	14/03/2024
5	Voltage regulators	L+D	BB	1	5	15/03/2024
6	Output resistance and voltage regulation	L+D	BB	1	6	18/03/2024
7	Voltage multipliers	L+D	BB	1	7	20/03/2024
8	Amplifiers, types, gain, Input and output resistance	L+D	BB	1	8	21/03/2024
9	Frequency Response, Negative feedback	L+D	BB	1	9	22/03/2024
10	Bandwidth and Phase Shift	L+D	BB	1	10	25/03/2024

11	Negative Feedback and Multi stage Amplifiers	L+D	BB	1	11	27/03/2024
MODULE 2: Oscillators						
12	Barkhausen criterion	L+D	BB	1	12	28/03/2024
13	Sinusoidal and non-sinusoidal oscillators	L+D	BB	1	13	01/03/2024
14	Ladder network oscillator	L+D	BB	1	14	03/04/2024
15	Crystal Controlled Oscillator	L+D	BB	1	15	04/04/2024
16	Operational Amplifiers: characteristics of ideal and practical op-amp	L+D	BB	1	16	08/04/2024
17	Operational Amplifier Configurations	L+D	BB	1	17	12/04/2024
IA1-16/04/24						
18	Operational Amplifier Circuits: Voltage Follower, summer, subtractor	L+D	BB	1	18	18/04/2024
19	Integrator and Differentiator	L+D	BB	1	19	19/04/2024
MODULE 4: Embedded Systems						
20	Embedded systems vs general computing systems	L+D	BB	1	20	22/04/2024
21	Classification of Embedded Systems	L+D	BB	1	21	24/04/2024
22	Major application areas of Embedded Systems	L+D	BB	1	22	25/04/2024
23	Elements of Embedded System	L+D	BB	1	23	26/04/2024
24	Core of the Embedded System	L+D	BB	1	24	29/04/2024
25	Microprocessor vs Microcontroller, RISC vs CISC,	L+D	BB	1	25	02/05/2024
26	Instrumentation and control system,	L+D	BB	1	26	03/05/2024
27	Transducers, Sensors, ,	L+D	BB	1	27	06/05/2024
28	Actuators, LED	L+D	BB	1	28	08/05/2024
29	7-Segment LED	L+D	BB	1	29	13/05/2024
MODULE 3: Boolean Algebra and Logic Circuits						
30	Binary numbers, Number Base Conversion	L+D	BB	1	30	15/05/2024
31	Octal & Hexa Decimal Numbers,	L+D	BB	1	31	16/05/2024

32	Complements	L+PPT	PPT	1	32	16/05/2024
33	Axiomatic Definition of Boolean	L+D	BB	1	33	17/05/2024
IA2-21/05/24						
34	Basic Theorems and Properties of Boolean Algebra	L+D	BB	1	34	23/05/2024
35	Boolean Functions	L+PPT	PPT	1	35	24/05/2024
36	Canonical and Standard Forms	L+D	BB	1	36	25/05/2024
37	Other Logic Operations	L+D	BB	1	37	27/05/2024
38	Digital Logic Gates	L+D	BB	1	38	03/06/2024
39	Combinational Circuits: Introduction and Design procedure	L+D	BB	1	39	05/06/2024
40	Adders' circuits: Half adders	L+D	BB	1	40	06/06/2024
41	Full adder	L+D	BB	1	41	07/06/2024
MODULE 5: Analog Communication Scheme & Digital Modulation Scheme						
42	Modern communication system scheme	L+D	BB	1	42	08/06/2024
43	Transmitter, Channel	L+D	BB	1	43	10/06/2024
44	Medium,	L+D	BB	1	44	12/06/2024
45	Noise, Receiver, Multiplexing	L+D	BB	1	45	12/06/2024
46	Multiplexing	L+D	BB	1	46	13/06/2024
47	Types of modulation – AM	L+D	BB	1	47	13/06/2024
48	FM Modulation	L+D	BB	1	48	13/06/2024
49	Concept of Radio wave propagation	L+D	BB	1	49	14/06/2024
50	Advantages of digital over analog communication	L+D	BB	1	50	14/06/2024
51	Radio signal transmission	L+D	BB	1	51	14/06/2024
52	ASK, FSK, PSK, Multiple Access Techniques	L+D	BB	1	52	15/06/2024
53	Multiple Access Techniques	L+D	BB	1	53	15/06/2024
54	Activity	PPT	PPT	1	54	18/06/2024
55	Activity	PPT	PPT	1	55	19/06/2024
56	Activity	PPT	PPT	1	56	19/06/2024



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IA3-21/06/24						
57	Revision, Solving Previous Year QPS	L+D	BB	1	57	24/06/2024
58	Revision, Solving Previous Year QPS	L+D	BB	1	58	24/06/2024

Text Books:

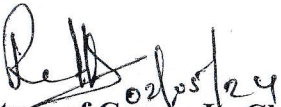
1. Mike Tooley, 'Electronic Circuits, Fundamentals & Applications', 4th Edition, Elsevier, 2015. DOI <https://doi.org/10.4324/9781315737980>. EBook ISBN9781315737980
2. Digital Logic and Computer Design, M. Morris Mano, PHI Learning, 2008 ISBN-978-81-2030417-84.
3. K V Shibu, 'Introduction to Embedded Systems', 2nd Edition, McGraw Hill Education (India), Private Limited, 2016
4. S L Kakani and Priyanka Punglia, 'Communication Systems', New Age International Publisher, 2017


Web Materials:

- <https://www.youtube.com/watch?v=C8eebS5MhuU>
- <https://www.youtube.com/watch?v=00ZbuhPruJw>

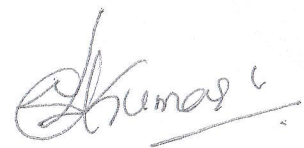
Details of the teaching aids: 1. BB – Black Board

2. PPT Power Point Presentation


Signature of Course In-Charge


Signature of Module Coordinator


Signature of HOD


Signature of Principal
PRINCIPAL
K.S. INSTITUTE OF TECHNOLOGY
BENGALURU - 560 109.



K. S. INSTITUTE OF TECHNOLOGY, BENGALURU - 560109
DEPARTMENT OF APPLIED SCIENCE AND HUMANITIES
LESSON PLAN 2023-24 EVEN SEMESTER

COURSE INCHARGE : Amrutha R

COURSE TYPE / CODE/TITLE: Theory/BESCK204B /Introduction to Electrical Engineering

YEAR/ SEMESTER/SECTION : I / II / E

BRANCH : Artificial Intelligence & Machine Learning

Sl. No.	Topic to be covered	Mode of Delivery	Teaching Aid	No. of Periods	Cumulative No. of Periods	Proposed Date
Module1: Introduction, Power Generation, DC Circuits						
1	DC Circuits: Ohm's Law and its limitations. KCL & KVL	L+PS	BB	1	1	6/3/2024
2	Problems	L+PS	BB	1	2	7/3/2024
3	Series, parallel circuits	L+D	BB	1	3	9/3/2024
4	Problems	L+PS	BB	1	4	11/3/2024
5	Series-parallel circuits	L+D	BB	1	5	12/3/2024
6	Problems	L+PS	BB	1	6	13/3/2024
7	Introduction: Conventional and non-conventional energy resources	L+D	BB	1	7	14/3/2024
8	General structure of electrical power systems using single line diagram approach.	L+D	BB	1	8	18/3/2024
9	Power Generation: Hydel, Nuclear	L+D	PPT	1	9	19/3/2024
10	Power Generation: Solar, wind	L+D	PPT	1	10	20/3/2024

Module2: A.C. Fundamentals and Three phase Circuits

11	Equation of AC Voltage and current.	L+D	BB	1	11	21/3/2024
12	Definition of waveform, time period, frequency, amplitude, phase, phase difference, average value, RMS value, form factor, peak factor.	L+D	BB	1	12	25/3/2024
13	Voltage and current relationship with phasor diagrams in R, L, and C circuits.	L+D	BB	2	14	26/3/2024 27/3/2024
14	Problems, Concept of Impedance.	L+PS	BB	2	16	28/3/2024
15	Analysis of R-L, R-C Series circuits, concept of power factor	L+D	BB	1	17	30/3/2024
16	Problems	L+PS	BB	2	19	1/4/2024 2/4/2024

Internal Test -1 (17-4-2024)

17	Analysis of R-L-C Series circuits	L+D	BB	1	20	3/4/2024
18	Problems	L+PS	BB	1	21	4/4/2024
19	Generation of Three phase AC quantity, advantages and limitations	L+D	PPT	1	22	8/4/2024
20	Star and delta connection, relationship between line and phase quantities (excluding proof), Problems	L+D+PS	BB	2	24	10/4/2024 13/4/2024

Module 4-Transformers and Three-phase induction Motors

21	Transformers: Necessity of transformer, principle of operation	L+D	BB	1	25	18/4/2024
22	Types and construction of single-phase transformers	L+D	PPT	1	26	22/4/2024
23	EMF equation, losses	L+D	BB	1	27	23/4/2024
24	Problems	L+PS	BB	1	28	24/4/2024
25	Variation of losses with respect to load, Efficiency	L+D	BB	1	29	25/4/2024
26	Problems	L+PS	BB	2	31	27/4/2024 29/4/2024
27	Three-phase induction Motors: Concept of rotating magnetic field	L+D	BB	1	32	30/4/2024
28	Principle of operation, constructional features of motor types – squirrel cage and wound rotor	L+D	PPT	1	33	2/5/2024

29	Slip and its significance	L+D	BB	1	34	6/5/2024
30	Problems	L+PS	BB	2	36	7/5/2024 8/5/2024
Module 5- Domestic Wiring, Electricity bill, Equipment Safety measures and Personal safety measures						
31	Domestic Wiring: Requirements, Types of wiring: casing, capping	L+D	BB	1	37	9/5/2024
32	Two way and three-way control of load.	L+D	PPT	1	38	13/5/2024
Internal Test -2 (20-5-2024)						
33	Electricity bill: Power rating of household appliances including air conditioners, PCs, laptops, printers, etc.	L+D	BB	1	39	14/5/2024
34	Definition of “unit” used for consumption of electrical energy	L+D	BB	1	40	15/5/2024
35	Two-part electricity tariff, calculation of electricity bill for domestic consumers	L+D	BB	1	41	16/5/2024
36	Problems	L+PS	BB	2	43	23/5/2024 25/5/2024
37	Equipment Safety measures: Working principle of Fuse and Miniature circuit breaker (MCB), merits and demerits.	L+D	BB	1	44	27/5/2024
38	Personal safety measures: Electric Shock, Safety Precautions to avoid shock	L+D	PPT	1	45	28/5/2024
39	Earthing and its types,	L+D	PPT	1	46	29/5/2024
Module 3- DC Machines						
40	DC Machines: Generator- constructional details	L+D	PPT	1	47	30/5/2024
41	Principle of operation, induced emf expression.	L+D	PPT	1	48	3/6/2024
42	Types of generators, and the relation between induced emf and terminal voltage.	L+D	BB	1	49	4/6/2024
43	Problems.	L+PS	BB	2	51	5/6/2024 6/6/2024
44	Motor-Principle of operation, back emf and torque equations	L+D	BB	1	52	8/6/2024
45	Types of motors	L+D	BB	1	53	10/6/2024

Text	46	Problems.	L+PS	BB	2	55	11/6/2024 12/6/2024
	47	Characteristics (shunt and series only), Problems.	L+D	BB	1	56	13/6/2024
	48	Speed control (armature & field) of DC motors (series & shunt only), Problems, Applications of DC motors.	L+D	BB	1	57	18/6/2024
	Internal Test -3 (22/6/2024)						
	49	Activity / Pedagogy		PPT	2	59	19/6/2024 29/6/2024

Books:

1. Basic Electrical Engineering by D C Kulshreshtha, Tata McGraw Hill, First Edition 2019.
2. A text book of Electrical Technology by B.L. Theraja, S Chand and Company, reprint edition 2014.

Reference Books:

1. Basic Electrical Engineering, D. P. Kothari and I. J. Nagrath, Tata McGraw Hill 4th edition, 2019.
2. Principles of Electrical Engineering & Electronics by V. K. Mehta, Rohit Mehta, S. Chand and Company Publications, 2nd edition, 2015.
3. Fundamentals of Electrical Engineering by Rajendra Prasad, PHI, 3rd edition, 2014.

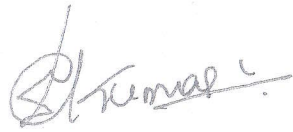
Details of the teaching aids:

1. BB – Black Board
2. PPT Power Point Presentation


Course Incharge


Module Coordinator


HOD


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K S INSTITUTE OF TECHNOLOGY BANGALORE
DEPARTMENT OF APPLIED SCIENCE AND HUMANITIES
LESSON PLAN 2023-24 EVEN SEMESTER

COURSE INCHARGE : AMRUTHA R
COURSE TYPE / CODE / TITLE : Theory / BSFHK258 / Scientific Foundations of Health
YEAR/ SEMESTER/SECTION : I / II / F
BRANCH : Electronics and Communication Engineering

Sl. No.	Topic to be covered	Mode of Delivery	Teaching Aid	No. of Periods	Cumulative No. of Periods	Proposed Date
MODULE 1: Good Health & Its balance for positive mindset						
1	Health -Importance of Health, Advantages of good health, Health beliefs	L+D	PPT	1	1	9/03/2024
2	Influencing factors of Health , Health & Behavior, Health & Society, Health & family, Health & Personality	L+ D	PPT	1	2	12/03/2024
3	Psychological disorders -Methods to improve good psychological health, Changing health habits for good health.	L+ D	PPT	1	3	19/03/2024
MODULE 2: Building of healthy lifestyles for better future						
4	Developing healthy diet for good health, Food & health, Nutritional guidelines for good health, Obesity & overweight disorders and its management, Eating disorders	L+D	PPT	1	4	26/03/2024

5	Fitness components for health, Wellness and physical function, How to avoid exercise injuries	L+ D	PPT	1	5	02/04/2024
6	Activity/ Quiz	L+D	Discussions	1	6	13/04/2024
MODULE 3: Creation of Healthy and caring relationships						
7	Building communication skills , Friends and friendship – Education, The value of relationship and communication skills, Relationships for Better or worsening of life	L+D	PPT	1	7	23/04/2024
8	Understanding of basic instincts of life (more than a biology), Changing health behaviours through social engineering	L+D	PPT	1	8	30/04/2024
9	Activity/ Quiz	L+D	Discussions	1	9	07/05/2024
MODULE 4: Avoiding risks and harmful habits						
10	Characteristics of health compromising behaviors, Recognizing and avoiding of addictions, How addiction develops,	L+D	PPT	1	10	14/05/2024
11	Types of addictions , influencing factors of addictions, Differences between addictive people and non addictive people & their behaviors.	L+D	PPT	1	11	21/05/2024
12	Differences between addictive people and non addictive people & their behaviors, Effects of addictions Such as..., how to recovery from addictions	L+D	PPT	1	12	4/06/2024

MODULE 5: Preventing & fighting against diseases for good health						
13	How to protect from different types of infections and to reduce risks for good health, Reducing risks & coping with chronic conditions	L+D	PPT	1	13	11/06/2024
14	Management of chronic illness for Quality of life, Health & Wellness of youth :a challenge for upcoming future, Measuring of health & wealth status	L+D	PPT	1	14	18/06/2024
15	Activity/ Quiz	L+D	Discussions	1	15	29/06/2024

Text Books:

1. "Scientific Foundations of Health" – Study Material Prepared by Dr. L Thimmesh, Published in VTU - University Website.
2. "Scientific Foundations of Health", (ISBN-978-81-955465-6-5) published by Infinite Learning Solutions, Bangalore – 2022.
3. Health Psychology - A Textbook, FOURTH EDITION by Jane Ogden McGraw Hill Education (India) Private Limited - Open University Press.

Reference Books:

1. Health Psychology (Second edition) by Charles Abraham, Mark Conner, Fiona Jones and Daryl O'Connor – Published by Routledge 711 Third Avenue, New York, NY 10017.
2. HEALTH PSYCHOLOGY (Ninth Edition) by SHELLEY E. TAYLOR - University of California, Los Angeles, McGraw Hill Education (India) Private Limited - Open University Press.
3. SWAYAM / NPTEL/ MOOCS/ We blinks/ Internet sources/ YouTube videos and other materials / notes.
4. Scientific Foundations of Health (Health & Welness) - General Books published for university and colleges references by popular authors and published by the reputed publisher.

Web Materials:

Weblinks and Video Lectures (e-Resources):


- <https://youtube.com/@sfhworld465>

Details for the teaching Aids


Black Board, Discussions



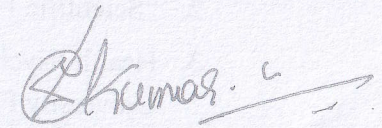
Signature of Course In-Charge



Signature of Module Coordinator



Signature of HOD



Signature of Principal

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K S INSTITUTE OF TECHNOLOGY BANGALORE
DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING
LESSON PLAN 2023-24 EVEN SEMESTER

COURSE INCHARGE : AMRUTHA R
COURSE TYPE / CODE / TITLE : Theory / BSFHK258 / Scientific Foundations of Health
YEAR/ SEMESTER/SECTION : I / II / G
BRANCH : Electronics and Communication Engineering

Sl. No.	Topic to be covered	Mode of Delivery	Teaching Aid	No. of Periods	Cumulative No. of Periods	Proposed Date
MODULE 1: Good Health & Its balance for positive mindset						
1	Health -Importance of Health, Advantages of good health, Health beliefs	L+D	PPT	1	1	15/03/2024
2	Influencing factors of Health, Health & Behavior, Health & Society, Health & family, Health & Personality	L+ D	PPT	1	2	22/03/2024
3	Psychological disorders-Methods to improve good psychological health, Changing health habits for good health.	L+ D	PPT	1	3	05/04/2024
MODULE 2: Building of healthy lifestyles for better future						
4	Developing healthy diet for good health, Food & health, Nutritional guidelines for good health, Obesity & overweight disorders and its management, Eating disorders	L+D	PPT	1	4	12/04/2024

5	Fitness components for health, Wellness and physical function, How to avoid exercise injuries	L+D	PPT	1	5	19/04/2024
6	Activity/ Quiz	L+D	Discussions	1	6	26/04/2024
MODULE 3: Creation of Healthy and caring relationships						
7	Building communication skills , Friends and friendship – Education, The value of relationship and communication skills, Relationships for Better or worsening of life	L+D	PPT	1	7	03/05/2024
8	Understanding of basic instincts of life (more than a biology), Changing health behaviours through social engineering	L+D	PPT	1	8	17/05/2024
MODULE 4: Avoiding risks and harmful habits						
9	Characteristics of health compromising behaviors, Recognizing and avoiding of addictions, How addiction develops,	L+D	PPT	1	9	24/05/2024
10	Types of addictions , influencing factors of addictions, Differences between addictive people and non addictive people & their behaviors.	L+D	PPT	1	10	31/05/2024
11	Differences between addictive people and non addictive people & their behaviors, Effects of addictions Such as..., how to recovery from addictions	L+D	PPT	1	11	31/05/2024
MODULE 5: Preventing & fighting against diseases for good health						
12	How to protect from different types of infections and to reduce risks for good health, Reducing risks & coping with chronic conditions	L+D	PPT	1	12	07/06/2024
13	Management of chronic illness for Quality of life, Health & Wellness of youth :a challenge for	L+D	PPT	1	13	14/06/2024

	upcoming future, Measuring of health & wealth status					
14	How to protect from different types of infections and to reduce risks for good health, Reducing risks & coping with chronic conditions	L+D	PPT	1	14	28/06/2024

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	upcoming future, Measuring of health & wealth status					
14	How to protect from different types of infections and to reduce risks for good health, Reducing risks & coping with chronic conditions	L+D	PPT	1	14	28/06/2024

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2. "Scientific Foundations of Health", (ISBN-978-81-955465-6-5) published by Infinite Learning Solutions, Bangalore – 2022.
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4. Scientific Foundations of Health (Health & Wellness) - General Books published for university and colleges references by popular authors and published by the reputed publisher.

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- <https://youtube.com/@sfhworld465>

Details for the teaching Aids

Black Board, Discussions, PPT

Signature of Course In-Charge

Signature of Module Coordinator

Signature of HOD

Signature of Principal

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KS INSTITUTE OF TECHNOLOGY BANGALORE

DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING

NAME OF THE STAFF : Naveen Kumar S

SUBJECT CODE/NAME : BEC405A/MICOCONTROLLER

SEMESTER/YEAR/SEC : IV/ II/B

ACADEMIC YEAR : 2023-24


Module-1: Microcontroller

Sl. No.	Topic to be covered	Mode of Delivery	Teaching Aid	No. of Periods	Cumulative No. of Periods	Proposed Date (B)
1	Microprocessor Vs Microcontroller	L	BB+P	1	1	22/4/2024
2	Micro controller & Embedded Processors,	L	BB+P	1	2	24/4/2024
3	Processor Architectures-Harvard Vs Princeton & RISC Vs CISC	L	BB+P	1	3	25/4/2024
4	8051 Architecture- Registers,	L	BB+P	1	4	27/4/2024
5	8051 Architecture- Registers,	L	BB+P	1	5	29/4/2024
6	Pin diagram	L	BB+P	1	6	02/05/2024
7	I/O ports functions,	L	BB+P	1	7	03/05/2024
8	Internal Memory organization	L	BB+P	1	8	06/05/2024
9	External Memory (ROM & RAM) interfacing.	L	BB+P	1	9	08/05/2024
MODULE 2: Instruction Set						
10	8051 Addressing Modes	L	BB+P	1	10	09/05/2024
11	8051 Addressing Modes	L	BB+P	1	11	11/05/2024
12	Data Transfer Instructions	L	BB+P	1	12	13/05/2024
13	Arithmetic instructions	L	BB+P	1	13	15/05/2024

14	Logical Instructions	L	BB+P	1	14	16/05/2024
15	Jump & Call Instructions	L	BB+P	1	15	17/05/2024
16	Stack & Subroutine Instructions of 8051	L	BB+P	1	16	23/05/2024
17	Stack & Subroutine Instructions of 8051	L	BB+P	1	17	24/05/2024
18	Additional Examples	L	BB+P	1	18	25/05/2024
MODULE 3: Timers/Counters & Serial port programming						
19	Basics of Timers & Counters	L	BB+P	1	19	27/05/2024
20	Data types & Time delay in the 8051 using C	L	BB+P	1	20	29/05/2024
21	Programming 8051 Timers, Mode 1 & Mode 2 Programming	L	BB+P	1	21	30/05/2024
22	Programming 8051 Timers, Mode 1 & Mode 2 Programming	L	BB+P	1	22	31/05/2024
23	Counter Programming (Assembly Language only)	L	BB+P	1	23	03/06/2024
24	Counter Programming (Assembly Language only)	L	BB+P	1	24	05/06/2024
25	Basics of Serial Communication	L	BB+P	1	25	06/06/2024
26	Programming the 8051 to transfer data serially	L	BB+P	1	26	07/06/2024
27	Programming the 8051 to receive data	L	BB+P	1	27	08/06/2024
MODULE 4: Interrupt Programming:						
28	Basics of Interrupts,	L	BB+P	1	28	10/06/2024
29	8051 Interrupts,	L	BB+P	1	29	12/06/2024
30	8051 Interrupts,	L	BB+P	1	30	13/06/2024
31	Programming Timer Interrupts	L	BB+P	1	31	14/06/2024
32	Programming Timer Interrupts	L	BB+P	1	32	19/06/2024
33	Programming Serial	L	BB+P	1	33	20/06/2024

	Communication Interrupts					
34	Programming Serial Communication Interrupts	L	BB+P	1	34	21/06/2024
35	Interrupt Priority in 8051(Assembly Language only)	L	BB+P	1	35	27/06/2024
36	Interrupt Priority in 8051(Assembly Language only)	L	BB+P	1	36	28/06/2024
MODULE 5: I/O Port Interfacing & Programming:						
37	I/O Programming in 8051 C	L	BB+P	1	37	01/07/2024
38	LCD interfacing,	L	BB+P	1	38	03/07/2024
39	LCD interfacing,	L	BB+P	1	39	04/07/2024
40	DAC 0808 Interfacing	L	BB+P	1	40	05/07/2024
41	ADC 0804 interfacing	L	BB+P	1	41	08/07/2024
42	Stepper motor interfacing,	L	BB+P	1	42	10/07/2024
43	DC motor control	L	BB+P	1	43	11/07/2024
44	Pulse Width Modulation (PWM) using C only	L	BB+P	1	44	12/07/2024
45	Revision	L	BB+P	1	45	15/06/2024


Signature of Course Incharge


Signature of Module Coordinator


Signature of HOD



K. S. INSTITUTE OF TECHNOLOGY, BENGALURU - 560109
DEPARTMENT OF APPLIED SCIENCE AND HUMANITIES
LESSON PLAN 2023-24 EVEN SEMESTER

COURSE INCHARGE : PRIYADHARSHINI V

COURSE TYPE / CODE/TITLE: Theory/BESCK204B /Introduction to Electrical Engineering

YEAR/ SEMESTER/SECTION : I / II / C

BRANCH : COMPUTER SCIENCE AND ENGINEERING

Sl. No	Topic to be covered	Mode of Delivery	Teaching Aid	No. of Periods	Cumulative No. of Periods	Proposed Date
Module1: Introduction, Power Generation, DC Circuits						
1	Introduction: Conventional and non-conventional energy resources	L+D	BB	1	1	06/3/24
2	General structure of electrical power systems using single line diagram approach.	L+D	BB	1	2	07/3/24
3	Power Generation: Hydel, Nuclear	L+D	PPT	1	3	09/3/24
4	Power Generation: Solar, wind	L+D	PPT	1	4	11/3/24
5	DC Circuits: Ohm's Law and its limitations. KCL & KVL	L+PS	BB	1	5	13/3/24
6	Problems	L+PS	BB	1	6	14/3/24
7	series, parallel circuits	L+D	BB	1	7	18/3/24
8	problems	L+PS	BB	1	8	20/3/24
9	series-parallel circuits	L+D	BB	1	9	21/3/24
10	Problems	L+PS	BB	1	10	22/3/24

Module 2: A.C. Fundamentals and Three phase Circuits						
11	Equation of AC Voltage and current.	L+D	BB	1	11	25/3/24
12	Definition of waveform, time period, frequency, amplitude, phase, phase difference, average value, RMS value, form factor, peak factor.	L+D	BB	1	12	27/3/24
13	Voltage and current relationship with phasor diagrams in R, L, and C circuits.	L+D	BB	1	13	28/3/24
14	Problems, Concept of Impedance.	L+PS	BB	1	14	30/3/24
15	Analysis of R-L, R-C Series circuits, concept of power factor	L+D	BB	1	15	1/4/24
16	problems	L+PS	BB	1	16	3/4/24
17	Analysis of R-L-C Series circuits	L+D	BB	1	17	4/4/24
18	Problems	L+PS	BB	1	18	5/04/24 8/04/24
19	Generation of Three phase AC quantity, advantages and limitations	L+D	PPT	1	19	10/04/24
FIRST IA TEST 17/04/2024						
20	star and delta connection, relationship between line and phase quantities (excluding proof), Problems	L+D+PS	BB	1	20	18/04/24
Module 4-Transformers and Three-phase induction Motors						
21	Transformers: Necessity of transformer, principle of operation	L+D	BB	1	21	19/04/24
22	Types and construction of single-phase transformers	L+D	PPT	1	22	22/04/24
23	EMF equation, losses	L+D	BB	1	23	24/04/24
24	variation of losses with respect to load, Efficiency	L+D	BB	1	24	25/04/24
25	Problems	L+PS	BB	2	26	26/04/24 27/04/24
26	Three-phase induction Motors: Concept of rotating magnetic field	L+D	BB	1	27	29/04/24
27	Principle of operation, constructional features of motor types → squirrel cage and wound rotor	L+D	PPT	1	28	2/05/24
28	Slip and its significance	L+D	BB	1	29	3/05/24

29	Problems	L+PS	BB	1	30	06/05/24
Module 5- Domestic Wiring, Electricity bill, Equipment Safety measures and Personal safety measures						
30	Domestic Wiring: Requirements, Types of wiring: casing, capping	L+D	BB	1	31	8/05/24
31	Two way and three-way control of load.	L+D	PPT	1	32	9/05/24
32	Electricity bill: Power rating of household appliances including air conditioners, PCs, laptops, printers, etc.	L+D	BB	1	33	11/05/24
33	Definition of "unit" used for consumption of electrical energy	L+D	BB	1	34	13/05/24
34	Two-part electricity tariff, calculation of electricity bill for domestic consumers	L+D	BB	1	35	15/05/24
35	problems	L+PS	BB	1	36	16/05/24
36	Equipment Safety measures: Working principle of Fuse and Miniature circuit breaker (MCB), merits and demerits.	L+D	BB	1	37	17/05/24
SECOND IA TEST 22/05/2024						
37	Personal safety measures: Electric Shock, Safety Precautions to avoid shock	L+D	PPT	1	38	23/05/24
38	Earthing and its types,	L+D	PPT	1	39	24/05/24
Module 3- DC Machines						
39	DC Machines: Generator- constructional details	L+D	PPT	1	40	25/05/24
40	Principle of operation, induced emf expression.	L+D	PPT	1	41	27/05/24
41	Types of generators, and the relation between induced emf and terminal voltage.	L+D	BB	1	42	29/05/24
42	Problems.	L+PS	BB	2	44	30/05/24 3/06/24
43	Motor-Principle of operation, back emf and torque equations	L+D	BB	1	45	5/06/24
44	Types of motors	L+D	BB	1	46	6/6/24
45	Problems.	L+PS	BB	2	48	7/6/24 8/6/24
46	Characteristics (shunt and series only), Problems.	L+D	BB	2	50	10/6/24

						12/6/24
47	speed control (armature & field) of DC motors (series & shunt only), Problems, Applications of DC motors.	L+D	BB	1	51	13/06/24
48	Presentation		PPT	2	53	14/06/24 19/06/24
THIRD IA TEST 22/06/2024						
49	Activity/Pedagogy			1	54	28/06/24
50	Activity/Pedagogy			1	55	29/06/24

Text Books:

1. Basic Electrical Engineering by D C Kulshreshtha, Tata McGraw Hill, First Edition 2019.
2. A text book of Electrical Technology by B.L. Theraja, S Chand and Company, reprint edition 2014.

Reference Books:

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2. Principles of Electrical Engineering & Electronics by V. K. Mehta, Rohit Mehta, S. Chand and Company Publications, 2nd edition, 2015.
3. Fundamentals of Electrical Engineering by Rajendra Prasad, PHI, 3rd edition, 2014.

Details of the teaching aids:

1. BB -Black Board
2. PPT -Power Point Presentation

V. Princyshastrini
Course Incharge

MPD
Module Coordinator

[Signature]
HEAD OF THE DEPARTMENT
HOD
Dept. of Electronics & Communication Engg
K.S. Institute of Technology

[Signature]
PRINCIPAL
K.S. INSTITUTE OF TECHNOLOGY
BENGALURU 560 100



K. S. INSTITUTE OF TECHNOLOGY, BENGALURU - 560109
DEPARTMENT OF APPLIED SCIENCE AND HUMANITIES
LESSON PLAN 2023-24 EVEN SEMESTER

COURSE INCHARGE : PRIYADHARSHINI V

COURSE TYPE / CODE/TITLE: Theory/BESCK204B /Introduction to Electrical Engineering

YEAR/ SEMESTER/SECTION : I / II / D

BRANCH : COMPUTER SCIENCE AND DESIGN

Sl. No	Topic to be covered	Mode of Delivery	Teaching Aid	No. of Periods	Cumulative No. of Periods	Proposed Date
Module1: Introduction, Power Generation, DC Circuits						
1	Introduction: Conventional and non-conventional energy resources	L+D	BB	1	1	06/3/24
2	General structure of electrical power systems using single line diagram approach.	L+D	BB	1	2	11/3/24
3	Power Generation: Hydel, Nuclear	L+D	PPT	1	3	12/3/24
4	Power Generation: Solar, wind	L+D	PPT	1	4	13/3/24
5	DC Circuits: Ohm's Law and its limitations. KCL & KVL	L+PS	BB	1	5	15/3/24
6	Problems	L+PS	BB	1	6	18/3/24
7	series, parallel circuits	L+D	BB	1	7	19/3/24
8	problems	L+PS	BB	1	8	20/3/24
9	series-parallel circuits	L+D	BB	1	9	22/3/24
10	Problems	L+PS	BB	1	10	23/3/24

Module2: A.C. Fundamentals and Three phase Circuits

11	Equation of AC Voltage and current.	L+D	BB	1	11	25/3/24
12	Definition of waveform, time period, frequency, amplitude, phase, phase difference, average value, RMS value, form factor, peak factor.	L+D	BB	1	12	26/3/24
13	Voltage and current relationship with phasor diagrams in R, L, and C circuits.	L+D	BB	1	13	27/3/24
14	Problems, Concept of Impedance.	L+PS	BB	1	14	30/3/24
15	Analysis of R-L, R-C Series circuits, concept of power factor	L+D	BB	1	15	1/4/24
16	problems	L+PS	BB	1	16	2/4/24
17	Analysis of R-L-C Series circuits	L+D	BB	1	17	3/4/24
18	Problems	L+PS	BB	1	18	8/04/24
19	Generation of Three phase AC quantity, advantages and limitations	L+D	PPT	1	19	10/04/24
FIRST IA TEST 17/04/2024						
20	star and delta connection, relationship between line and phase quantities (excluding proof), Problems	L+D+PS	BB	1	20	19/04/24

Module 4-Transformers and Three-phase induction Motors

21	Transformers: Necessity of transformer, principle of operation	L+D	BB	1	21	22/04/24
22	Types and construction of single-phase transformers	L+D	PPT	1	22	23/04/24
23	EMF equation, losses	L+D	BB	1	23	24/04/24
24	variation of losses with respect to load, Efficiency	L+D	BB	1	24	26/04/24
25	Problems	L+PS	BB	2	26	27/04/24
26	Three-phase induction Motors: Concept of rotating magnetic field	L+D	BB	1	27	29/04/24
27	Principle of operation, constructional features of motor types – squirrel cage and wound rotor	L+D	PPT	1	28	30/04/24
28	Slip and its significance	L+D	BB	1	29	3/05/24
						6/05/24

29	Problems	L+PS	BB	1	30	07/05/24
Module 5- Domestic Wiring, Electricity bill, Equipment Safety measures and Personal safety measures						
30	Domestic Wiring: Requirements, Types of wiring: casing, capping	L+D	BB	1	31	8/05/24
31	Two way and three-way control of load.	L+D	PPT	1	32	11/05/24
32	Electricity bill: Power rating of household appliances including air conditioners, PCs, laptops, printers, etc.	L+D	BB	1	33	13/05/24
33	Definition of "unit" used for consumption of electrical energy	L+D	BB	1	34	14/05/24
34	Two-part electricity tariff, calculation of electricity bill for domestic consumers	L+D	BB	1	35	15/05/24
35	problems	L+PS	BB	1	36	17/05/24
SECOND IA TEST 22/05/2024						
36	Equipment Safety measures: Working principle of Fuse and Miniature circuit breaker (MCB), merits and demerits.	L+D	BB	1	37	24/05/24
37	Personal safety measures: Electric Shock, Safety Precautions to avoid shock	L+D	PPT	1	38	25/05/24
38	Earthing and its types,	L+D	PPT	1	39	27/05/24
Module 3- DC Machines						
39	DC Machines: Generator- constructional details	L+D	PPT	1	40	28/05/24
40	Principle of operation, induced emf expression.	L+D	PPT	1	41	29/05/24
41	Types of generators, and the relation between induced emf and terminal voltage.	L+D	BB	1	42	31/05/24
42	Problems.	L+PS	BB	2	44	3/06/24 4/06/24
43	Motor-Principle of operation, back emf and torque equations	L+D	BB	1	45	5/06/24
44	Types of motors	L+D	BB	1	46	7/6/24
45	Problems.	L+PS	BB	2	48	8/6/24 10/6/24
46	Characteristics (shunt and series only), Problems.	L+D	BB	2	50	11/6/24

						12/6/24
47	speed control (armature & field) of DC motors (series & shunt only), Problems, Applications of DC motors.	L+D	BB	1	51	14/06/24
48	Presentation		PPT	2	53	18/06/24 19/06/24
THIRD IA TEST 22/06/2024						
49	Activity/Pedagogy			1	54	28/06/24
50	Activity/Pedagogy			1	55	29/06/24

Text Books:

1. Basic Electrical Engineering by D C Kulshreshtha, Tata McGraw Hill, First Edition 2019.
2. A text book of Electrical Technology by B.L. Theraja, S Chand and Company, reprint edition 2014.

Reference Books:

1. Basic Electrical Engineering, D. P. Kothari and I. J. Nagrath, Tata McGraw Hill 4th edition, 2019.
2. Principles of Electrical Engineering & Electronics by V. K. Mehta, Rohit Mehta, S. Chand and Company Publications, 2nd edition, 2015.
3. Fundamentals of Electrical Engineering by Rajendra Prasad, PHI, 3rd edition, 2014.

Details of the teaching aids:

1. BB -Black Board
2. PPT -Power Point Presentation

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