VIGNAN'S INSTITUTE OF MANAGEMENT AND TECHNOLOGY FOR WOMEN

(An Autonomous Institution)

[Sponsored by Lavu Educational Society, Affiliated to JNTUH & Approved by AICTE, New Delhi]

Kondapur (V), Ghatkesar (M), Medchal-Malkajgiri (D) - 501 301. Phone: 96529 10002/3

Department of Electronics and Communication Engineering

Regulation: VR24

II B. Tech I Semester

COURSE TITLE: NUMERICAL METHODS AND COMPLEX VARIABLES **COURSE CODE:** MA301BS

After learning the contents of this paper the student must be able to

CO No.	COURSE OUTCOME STATEMENT	BT Level
CO1	Express any periodic function in terms of sine and cosine	3
CO2	Find the root of a given polynomial and transcendental equations and Estimate the value for the given data using interpolation	3
CO3	Find the numerical solutions for a given first order ODE's	3
CO4	Analyze the complex function with reference to their analyticity, integration using Cauchy's integral and residue theorems	4
CO5	Taylor's and Laurent's series expansions in complex function	2

MAPPING

CO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3
CO1	3	2	2	2	-	-	-	-	-	-	-	2	1	2	-
CO2	3	2	2	2	-	-	-	-	-	-	-	2	2	2	-
CO3	3	2	-	2	-	-	-	-	-	-	-	2	1	2	-
CO4	3	2	2	2	-	-	-	-	-	-	-	-	1	-	-
CO5	3	2	2	-	-	-	-	-	-	-	-	2	2	-	1
Average	**3**	**2**	**2**	**2**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**2**	**1.4**	**2**	**1**

VIGNAN'S INSTITUTE OF MANAGEMENT AND TECHNOLOGY FOR WOMEN

(An Autonomous Institution)

[Sponsored by Lavu Educational Society, Affiliated to JNTUH & Approved by AICTE, New Delhi]

Kondapur (V), Ghatkesar (M), Medchal-Malkajgiri (D) - 501 301. Phone: 96529 10002/3

Department of Electronics and Communication Engineering

Regulation: VR24

II B. Tech I Semester

COURSE TITLE: ANALOG CIRCUITS **COURSE CODE: EC302PC**

Upon completing this course, the students will be able to

CO No.	COURSE OUTCOME STATEMENT	BT Level
CO1	Design the amplifiers with various biasing techniques.	6
CO2	Design single stage amplifiers using BJT and FET	6
CO3	Design multistage amplifiers and understand the concepts of High Frequency Analysis of BJT.	6
CO4	Understand the various types of amplifier circuits	2
CO5	Utilize the Concepts of negative feedback to improve the stability of amplifiers and positive feedback to sustained oscillations.	3

MAPPING

CO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3
CO1	2	2	2	2	2	-	-	-	-	-	-	2	2	2	-
CO2	2	2	2	2	2	-	-	-	-	-	-	2	3	2	-
CO3	2	1	2	-	2	-	-	-	-	-	-	2	2	2	-
CO4	3	3	2	-	-	-	-	-	-	-	-	2	2	3	-
CO5	3	3	3	2	-	-	-	-	-	-	-	2	3	2	-
Average	**2.4**	**2.2**	**2.2**	**2**	**2**	**-**	**-**	**-**	**-**	**-**	**-**	**2**	**2.4**	**2.2**	**-**

VIGNAN'S INSTITUTE OF MANAGEMENT AND TECHNOLOGY FOR WOMEN

(An Autonomous Institution)

[Sponsored by Lavu Educational Society, Affiliated to JNTUH & Approved by AICTE, New Delhi]

Kondapur (V), Ghatkesar (M), Medchal-Malkajgiri (D) - 501 301. Phone: 96529 10002/3

Department of Electronics and Communication Engineering

Regulation: VR24

II B. Tech I Semester

COURSE TITLE: NETWORK ANALYSIS AND SYNTHESIS **COURSE CODE:** EC303PC

Upon completing this course, the students will be able to

CO No.	COURSE OUTCOME STATEMENT	BT Level
CO1	Gain the knowledge on basic RLC circuit's behaviour.	4
CO2	Analyze the Steady state and transient analysis of RLC Circuits.	2
CO3	Know the characteristics of two port network parameters.	4
CO4	Analyse the Design aspect of various filters and attenuators	2
CO5	Synthesize LC, RC and RL Functions by foster and causer methods	4

MAPPING

CO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3
CO1	3	3	3	2	2	-	-	-	-	-	3	3	3	3	-
CO2	3	2	1	-	-	-	1	-	-	-	-	1	2	3	-
CO3	2	3	2	-	-	-	1	-	-	-	-	1	3	3	-
CO4	3	2	1	-	-	-	-	-	-	-	-	1	2	3	-
CO5	2	3	3	-	-	-	1	-	-	-	-	1	3	3	-
Average	**2.6**	**2.6**	**2**	**2**	**2**	**-**	**1**	**-**	**-**	**-**	**3**	**1.4**	**2.6**	**3**	**-**

VIGNAN'S INSTITUTE OF MANAGEMENT AND TECHNOLOGY FOR WOMEN

(An Autonomous Institution)

[Sponsored by Lavu Educational Society, Affiliated to JNTUH & Approved by AICTE, New Delhi]

Kondapur (V), Ghatkesar (M), Medchal-Malkajgiri (D) - 501 301. Phone: 96529 10002/3

Department of Electronics and Communication Engineering

Regulation: VR24

II B. Tech I Semester

COURSE TITLE: DIGITAL LOGIC DESIGN **COURSE CODE: EC304PC**

Upon completing this course, the students will be able to

CO No.	COURSE OUTCOME STATEMENT	BT Level
CO1	Understand the numerical information in different forms and Boolean Algebra theorems	2
CO2	Postulates of Boolean algebra and to minimize combinational functions	3
CO3	Design and analyze combinational circuits	4
CO4	Design and analyze sequential circuits	4
CO5	Known about the logic families and realization of logic gates.	2

MAPPING

CO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3
CO1	3	2	3	1	2	1	-	-	-	-	-	2	3	2	-
CO2	3	2	2	1	2	1	-	-	-	-	-	2	3	2	-
CO3	2	3	3	2	2	1	-	-	-	-	-	1	3	3	1
CO4	3	2	1	1	1	-	-	-	-	-	-	-	3	3	1
CO5	3	2	2	1	1	-	-	-	-	-	-	1	3	2	-
Average	**2.8**	**2.2**	**2.2**	**1.2**	**1.6**	**1**	**-**	**-**	**-**	**-**	**-**	**1.5**	**3**	**2.4**	**1**

VIGNAN'S INSTITUTE OF MANAGEMENT AND TECHNOLOGY FOR WOMEN

(An Autonomous Institution)

[Sponsored by Lavu Educational Society, Affiliated to JNTUH & Approved by AICTE, New Delhi]

Kondapur (V), Ghatkesar (M), Medchal-Malkajgiri (D) - 501 301. Phone: 96529 10002/3

Department of Electronics and Communication Engineering

Regulation: VR24

II B. Tech I Semester

COURSE TITLE: SIGNALS AND SYSTEMS **COURSE CODE: EC305PC**

Upon completing this course, the students will be able to

CO No.	COURSE OUTCOME STATEMENT	BT Level
CO1	Characterize various signals, systems and their time and frequency domain analysis, using transform techniques.	4
CO2	Identify the conditions for transmission of signals through systems and conditions for physical realization of systems.	2
CO3	Use sampling theorem for baseband and band pass signals for various types of sampling and for different duty cycles	3
CO4	Apply the correlation and PSD functions for various applications.	3
CO5	Study the concepts of distortion less transmission through LTI systems, convolution and correlation properties	2

MAPPING

CO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3
CO1	3	3	2	1	-	1	-	-	-	1	-	-	3	2	-
CO2	3	3	2	1	-	1	-	-	-	1	-	-	2	3	-
CO3	3	3	2	1	-	1	-	-	-	1	-	-	3	2	-
CO4	3	3	3	2	-	1	-	-	-	2	-	-	3	2	1
CO5	3	3	3	2	-	1	-	-	-	2	-	-	3	2	-
Average	**3**	**3**	**2.4**	**1.4**	**-**	**1**	**-**	**-**	**-**	**1.4**	**-**	**-**	**2.8**	**2.2**	**1**

VIGNAN'S INSTITUTE OF MANAGEMENT AND TECHNOLOGY FOR WOMEN

(An Autonomous Institution)

[Sponsored by Lavu Educational Society, Affiliated to JNTUH & Approved by AICTE, New Delhi]

Kondapur (V), Ghatkesar (M), Medchal-Malkajgiri (D) - 501 301. Phone: 96529 10002/3

Department of Electronics and Communication Engineering

Regulation: VR24

II B. Tech I Semester

COURSE TITLE: ANALOG CIRCUITS LABORATORY **COURSE CODE:** EC306PC

Upon completing this course, the students will be able to

CO No.	COURSE OUTCOME STATEMENT	BT Level
CO1	Design amplifiers with required Q point and analyse amplifier characteristics	6
CO2	Examine the effect multistage amplification on frequency response	4
CO3	Investigate feedback concept in amplifiers and oscillator	3
CO4	Evaluate the performance of analog circuits by measuring and analyzing their parameters, such as frequency and amplitude responses.	5
CO5	Compare experimental results with theoretical analysis to understand and verify circuit behavior.	5

MAPPING

CO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3
CO1	3	3	3	-	3	-	-	3	3	-	-	1	2	2	-
CO2	2	3	2	-	3	-	-	3	3	-	-	1	2	2	-
CO3	3	3	3	-	3	-	-	3	3	-	-	1	2	2	-
CO4	2	3	1	-	-	-	-	3	3	-	-	1	2	2	1
CO5	3	3	2	2	-	-	-	3	3	-	-	1	2	2	1
Average	**2.6**	**3**	**2.2**	**2**	**3**	**-**	**-**	**3**	**3**	**-**	**-**	**1**	**2**	**2**	**1**

VIGNAN'S INSTITUTE OF MANAGEMENT AND TECHNOLOGY FOR WOMEN

(An Autonomous Institution)

[Sponsored by Lavu Educational Society, Affiliated to JNTUH & Approved by AICTE, New Delhi]

Kondapur (V), Ghatkesar (M), Medchal-Malkajgiri (D) - 501 301. Phone: 96529 10002/3

Department of Electronics and Communication Engineering

Regulation: VR24

II B. Tech I Semester

COURSE TITLE: DIGITAL LOGIC DESIGN LABORATORY **COURSE CODE:** EC307PC

Upon completing this course, the students will be able to

CO No.	COURSE OUTCOME STATEMENT	BT Level
CO1	Acquire the knowledge on numerical information in different forms and Boolean Algebra theorems.	2
CO2	Define Postulates of Boolean algebra and to minimize combinational functions, and design the combinational circuits.	3
CO3	Design and analyze sequential circuits for various cyclic functions.	6
CO4	Characterize logic families and analyze them for the purpose of AC and DC parameters.	4
CO5	Implement, simulate, and verify combinational and sequential logic circuits using hardware description languages (HDLs) and digital simulation tools.	3

MAPPING

CO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3
CO1	3	3	3	1	-	1	-	-	1	-	-	2	3	1	-
CO2	2	2	2	2	-	1	-	-	1	-	-	2	2	2	-
CO3	3	3	2	2	-	1	-	-	1	-	-	1	2	2	-
CO4	1	1	2	1	-	-	-	-	-	-	-	-	2	1	-
CO5	2	2	3	1	2	-	-	-	2	2	-	2	3	1	1
Average	**2.2**	**2.2**	**2.4**	**1.4**	**2**	**1**	**-**	**-**	**1.25**	**2**	**-**	**1.75**	**2.4**	**1.4**	**1**

VIGNAN'S INSTITUTE OF MANAGEMENT AND TECHNOLOGY FOR WOMEN

(An Autonomous Institution)

[Sponsored by Lavu Educational Society, Affiliated to JNTUH & Approved by AICTE, New Delhi]

Kondapur (V), Ghatkesar (M), Medchal-Malkajgiri (D) - 501 301. Phone: 96529 10002/3

Department of Electronics and Communication Engineering

Regulation: VR24

II B. Tech I Semester

COURSE TITLE: **BASIC SIMULATION LABORATORY** **COURSE CODE:** **EC308PC**

Upon completing this course, the students will be able to

CO No.	COURSE OUTCOME STATEMENT	BT Level
CO1	Generate, analyze and perform various operations on Signals/Sequences both in time and Frequency domain	3
CO2	Analyze and Characterize Continuous and Discrete Time Systems both in Time and Frequency domain along with the concept of Sampling	4
CO3	Generate different Random Signals and capable to analyze their Characteristics	3
CO4	Apply the Concepts of Deterministic and Random Signals for Noise removal Applications and on other Real Time Signals	3
CO5	Use modern simulation tools (such as MATLAB/Simulink or equivalent) to model, simulate, and validate signal processing algorithms for real-world engineering applications.	3

MAPPING

CO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3
CO1	3	2	3	3	3	2	-	-	3	1	-	1	1	2	-
CO2	3	2	3	3	3	2	-	-	3	1	-	1	2	2	-
CO3	3	2	3	3	3	2	-	-	3	1	-	1	2	2	-
CO4	3	2	3	3	3	2	-	-	3	1	-	1	2	2	-
CO5	2	2	3	3	3	-	-	-	2	2	-	2	2	2	1
Average	**2.8**	**2**	**3**	**3**	**3**	**2**	**-**	**-**	**2.8**	**1.2**	**-**	**1.2**	**1.8**	**2**	**1**

VIGNAN'S INSTITUTE OF MANAGEMENT AND TECHNOLOGY FOR WOMEN

(An Autonomous Institution)

[Sponsored by Lavu Educational Society, Affiliated to JNTUH & Approved by AICTE, New Delhi]

Kondapur (V), Ghatkesar (M), Medchal-Malkajgiri (D) - 501 301. Phone: 96529 10002/3

Department of Electronics and Communication Engineering

Regulation: VR24

II B. Tech I Semester

COURSE TITLE: CONSTITUTION OF INDIA **COURSE CODE: *MC309**

Students will be able to:

CO No.	COURSE OUTCOME STATEMENT	BT Level
CO1	Discuss the growth of the demand for civil rights in India for the bulk of Indians before the arrival of Gandhi in Indian politics.	2
CO2	Discuss the intellectual origins of the framework of argument that informed the conceptualization of social reforms leading to revolution in India.	2
CO3	Discuss the circumstances surrounding the foundation of the Congress Socialist Party [CSP] under the leadership of Jawaharlal Nehru and the eventual failure of the proposal of direct elections through adult suffrage in the Indian Constitution	2
CO4	Discuss the passage of the Hindu Code Bill of 1956.	2
CO5	Address the role of socialism in India after the commencement of the Bolshevik Revolution in 1917 and its impact on the initial drafting of the Indian Constitution.	2

MAPPING

CO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3
CO1	3	1	3	3	1	1	-	-	2	2	2	3	-	-	2
CO2	3	3	3	3	2	1	-	-	-	2	2	3	-	-	2
CO3	2	2	3	2	2	1	2	-	-	2	2	2	-	-	2
CO4	2	2	3	2	2	1	-	-	-	2	1	2	-	-	2
CO5	3	2	3	3	2	1	-	-	-	1	2	3	-	-	2
Average	**2.6**	**2**	**3**	**2.6**	**1.8**	**1**	**2**	**-**	**2**	**1.8**	**1.8**	**2.6**	**-**	**-**	**2**