



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: VR25

II B. Tech II Semester

COURSE TITLE: Environmental Science

COURSE CODE: 25VA311BS

Upon completing this course, the student will be able to:

CO No.	COURSE OUTCOME STATEMENT	BT Level
CO1	Understand technologies on the basis of ecological principles principles and environmental regulations	2
CO2	Evaluate technologies on the basis of ecological principles principles and environmental regulations	5
CO3	Develop technologies on the basis of ecological principles principles and environmental regulations	6
CO4	Understand the impacts of developmental activities and mitigation measures	2
CO5	Understand the importance of ecological balance for sustainable development	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	PSO 1	PSO 2	PSO 3
CO1	2	2		1	1	3	2				2			3
CO2	2	3	2	2	2	3	2				2			3
CO3	3	3	3	2	2	3	2				3			3
CO4	2	2		2	1	3	2				2			3
CO5	1	1		1	1	3	2				1			3
Average	2	2.2	2.5	1.6	1.4	3	2	-	-	-	2	-	-	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: VR25

II B. Tech II Semester

COURSE TITLE: Numerical Methods and Complex Variables

COURSE CODE: 25MA401BS

After learning the contents of this subject, the student must be able to

CO No.	COURSE OUTCOME STATEMENT	BT Level
CO1	Express any periodic function in terms of sine and cosine	2
CO2	Find the root of a given polynomial and transcendental equations and Estimate the value for the given data using interpolation	2
CO3	Find the numerical solutions for a given first order ODE's	2
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	PSO 1	PSO 2	PSO 3
CO1	3	2	2	2							2	3	1	
CO2	3	2	2	2							2	3	1	
CO3	3	2		2							2	2	2	
CO4	3	2	2	2								3	1	
CO5	3	2	2								2	3	1	1
Average	3	2	2	2	-	-	-	-	-	-	2	2.8	1.2	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: VR25

II B. Tech II Semester

COURSE TITLE: Electromagnetic Fields and Transmission Lines

COURSE CODE: 25EC402PC

Upon completing this course, the student will be able to

CO No.	COURSE OUTCOME STATEMENT	BT Level
CO1	Acquire knowledge of Basic Laws, Concepts and solve problems related to Electrostatic Fields and Magnetostatics Fields.	2
CO2	Differentiate the static and time-varying EM fields and apply Maxwell's Equations at different Boundaries.	4
CO3	Able to classify conductors and dielectric materials and analyze the Wave Propagations in those mediums.	2
CO4	To solve transmission line problems numerically and using smith charts.	2
CO5		0

MAPPING

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



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: VR25

II B. Tech II Semester

COURSE TITLE: Analog and Digital Communications **COURSE CODE:** 25EC403PC

Upon completing this course, the student will be able to

CO No.	COURSE OUTCOME STATEMENT	BT Level
CO1	Design and analyze various Analog and digital Modulation and Demodulation techniques.	6
CO2	Understand the effect of noise present in continuous wave Modulation techniques.	2
CO3	Understand the concept of Super heterodyne Receiver and Pulse Modulation Techniques	2
CO4	Analyze and design the various coding techniques and Base band Transmission.	4
CO5	Apply information theory principles and coding techniques for efficient and reliable communication.	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	PSO 1	PSO 2	PSO 3
CO1	3	3	3	1		3	2					3	3	
CO2	3	3	3	1		2	2					3	3	
CO3	3	3	3	1		2	2					3	2	
CO4	3	3	3	1		3	2					2	3	
CO5	3	3	2	2		2	2				1	3	3	
Average	3	3	2.8	1.2	-	2.4	2	-	-	-	1	2.8	2.8	-



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: VR25

II B. Tech II Semester

COURSE TITLE: Electronic Circuit Analysis

COURSE CODE: 25EC404PC

Upon completing this course, the student will be able to:

CO No.	COURSE OUTCOME STATEMENT	BT Level
CO1	Analyze and classify multistage amplifier configurations and determine the impact of coupling schemes on amplifier performance and frequency response.	4
CO2	Apply the hybrid- π transistor model to evaluate high-frequency behavior of common-emitter amplifiers and calculate gain-bandwidth product.	3
CO3	Examine feedback amplifier types and assess the influence of negative feedback on gain stability, bandwidth, and distortion.	4
CO4	Design and analyze LC, RC, and crystal oscillators based on the Barkhausen criterion to generate sinusoidal waveforms.	6
CO5	Design power amplifiers and multivibrator circuits, and evaluate their performance in terms of efficiency, distortion, and waveform generation.	6

MAPPING

CO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PSO 1	PSO 2	PSO 3
CO1	3	3	2	2	1	1						2	3	
CO2	3	3	3	2	2						1	3	3	
CO3	3	3	3	2	2	1					1	3	2	
CO4	3	3	3	2	2						1	2	3	
CO5	3	3	3	2	2	1					1	3	3	
Average	3	3	2.8	2	1.8	1	-	-	-	-	1	2.6	2.8	-

Department of Electronics and Communication Engineering

Regulation: VR25

II B. Tech II Semester

COURSE TITLE: Linear and Digital IC Applications

COURSE CODE: 25EC405PC

By the end of this course, students will be able to:

CO No.	COURSE OUTCOME STATEMENT	BT Level
CO1	A thorough understanding of operational amplifiers with linear integrated circuits.	2
CO2	Attain the knowledge of functional diagrams and design applications of IC555andIC565.	2
CO3	Acquire the knowledge and design the Data converters.	2
CO4	Understanding of the different families of digital integrated circuits and their characteristics.	2
CO5	Analyze sequential logic ICs and memory devices for digital system implementation.	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	PSO 1	PSO 2	PSO 3
CO1	3	3	2	1								3	2	
CO2	3	3	3	1								3	3	
CO3	3	3	3	1								3	3	
CO4	3	3	2	1								3	3	
CO5	3	3	2	1								3	3	
Average	3	3	2.4	1	-	-	-	-	-	-	-	3	2.8	-



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: VR25

II B. Tech II Semester

COURSE TITLE: Computational Mathematics Lab

COURSE CODE: 25MA406BS

Upon completing this course, the student will be able to

CO No.	COURSE OUTCOME STATEMENT	BT Level
CO1	Develop the code to find the Eigen values and Eigen Vectors using Python/MATLAB.	6
CO2	Develop the code find solution of Algebraic and Transcendental Equations and Linear system of equations using Python/MATLAB	6
CO3	Write the code to solve problems of First-Order ODEs Higher order linear differential equations with constant coefficients	6
CO4	Implement numerical solutions for first-order ordinary differential equations and related applications.	3
CO5	Develop programs to solve higher-order linear differential equations and visualize solutions graphically.	6

MAPPING

CO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PSO 1	PSO 2	PSO 3
CO1	3	2	2	2	3					1		2	3	
CO2	3	3	2	2	3					1		2	3	
CO3	3	3	2	2	3					1		2	3	
CO4	3	2	2	2	3					1		2	3	
CO5	3	2	2	2	3					1	1	2	3	1
Average	3	2.4	2	2	3	-	-	-	-	1	1	2	3	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: VR25

II B. Tech II Semester

COURSE TITLE: Analog and Digital Communications **COURSE CODE:** 25EC407PC
Lab

Upon completing this course, the student will be able to

CO No.	COURSE OUTCOME STATEMENT	BT Level
CO1	Will be able to design and implement various Analog modulation and demodulation Techniques and observe the time and frequency domain characteristics of these modulated Signals	2
CO2	Will be able to design and implement various Pulse modulation and demodulation Techniques and observe the time and frequency domain characteristics of these modulated Signals	2
CO3	Will be able to understand the concept of aliasing and different types of Sampling with various Sampling rates and duty Cycles by implementing practically	2
CO4	Will be able to design and implement various Digital modulation and demodulation Techniques and observe the waveforms of these modulated Signals practically	2
CO5	Analyze the performance of digital communication systems under noise using constellation diagrams, eye patterns, matched filters, and coding techniques.	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	PSO 1	PSO 2	PSO 3
CO1	1		3	1	2	2		2	3	2		2	3	
CO2	1		3	1	2	2		2	3	2		2	3	
CO3	1		3	1	2	2		2	3	2		2	3	
CO4	1		3	1	2	2		2	3	2		2	3	
CO5	2	2	3	2	3	2		2	3	2	1	3	3	1
Average	1.2	2	3	1.2	2.2	2	-	2	3	2	1	2.2	3	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: VR25

II B. Tech II Semester

COURSE TITLE: Electronic Circuit Analysis Lab

COURSE CODE: 25EC408PC

Upon completing this course, the student will be able to:

CO No.	COURSE OUTCOME STATEMENT	BT Level
CO1	Design and analyze multistage and power amplifiers and evaluate their frequency response and efficiency.	6
CO2	Implement and examine feedback and oscillator circuits and validate theoretical conditions for sustained oscillations.	3
CO3	Develop and interpret waveform generation circuits such as multivibrators and time base generators.	6
CO4	Perform simulations to validate analog circuit performance using industry-standard software tools.	3
CO5	Correlate practical results with theoretical predictions and identify deviations due to real-world constraints	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	PSO 1	PSO 2	PSO 3
CO1	3	3	3	2	2	1						3	3	
CO2	3	3	3	2	2	1						3	3	
CO3	3	3	3	2	1							3	2	
CO4	2	2	3	3	3						1	2	3	
CO5	3	3	2	3	2	1					1	3	3	1
Average	2.8	2.8	2.8	2.4	2	1	-	-	-	-	1	2.8	2.8	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: VR25

II B. Tech II Semester

COURSE TITLE: Linear and Digital IC Applications
Lab

COURSE CODE: 25EC409PC

Upon completing this course, the student will be able to

CO No.	COURSE OUTCOME STATEMENT	BT Level
CO1	Design and implementation of various analog circuits using 741 ICs.	6
CO2	Design and implementation of various Multivibrators using 555 timer .	6
CO3	Design and implement various circuits using digital ICs	6
CO4	Design and implement ADC, DAC and voltage regulators.	6
CO5	Analyze and verify the performance of linear and digital IC-based circuits and correlate practical observations with theoretical specifications.	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	PSO 1	PSO 2	PSO 3
CO1	1		3	3	3				3	3		2	3	
CO2	1		3	3	3				3	3		2	3	
CO3	1		3	3	3				3	3		3	3	
CO4	1		3	3	3				3	3		3	3	
CO5	2	2	3	3	3				3	3	1	3	3	1
Average	1.2	2	3	3	3	-	-	-	3	3	1	2.6	3	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: VR25

II B. Tech II Semester

COURSE TITLE: Web and Mobile Applications

COURSE CODE: 25IT410SD

Upon completing this course, the student will be able to:

CO No.	COURSE OUTCOME STATEMENT	BT Level
CO1	Understand and apply core web technologies (HTML, CSS, JavaScript) for structured, styled, and interactive webpages.	2
CO2	Build responsive websites using frameworks like Bootstrap and manage code using Git/GitHub.	6
CO3	Create simple server-side functionality using Node.js and store/retrieve data from basic databases.	6
CO4	Design and develop mobile applications using Flutter for Android and iOS.	6
CO5	Integrate web and mobile development into a functional mini project with deployment.	6

MAPPING

CO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PSO 1	PSO 2	PSO 3
CO1	2	2	1	1	3			1	2		1	1	3	
CO2	2	2	3	2	3			2	2	1	1	3		
CO3	2	3	3	2	3			1	2	2	2	3		
CO4	2	2	3	2	3			2	2	2	2	3	1	
CO5	2	3	3	3	3	1	1	2	2	2	2	2	3	2
Average	2	2.4	2.6	2	3	1	1	1.6	2	1.75	1.6	2.4	2.33	2