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

Deaprtment of Basic Sciences & Humanities

Regulation: VR25

I B. Tech I Semester

COURSE TITLE: MATRICES AND CALCULUS **COURSE CODE:** 25MA101BS

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

CO No.	COURSE OUTCOME STATEMENT	BT Level
CO1	Apply matrix operations to solve systems of linear equations using Echelon form, Gauss-Jordan method, and iterative techniques like Gauss-Seidel	3
CO2	Analyze and interpret eigenvalues, eigenvectors, and quadratic forms to perform matrix diagonalization and transformations using Cayley-Hamilton Theorem.	3
CO3	Demonstrate understanding of single-variable calculus concepts including limits, continuity, mean value theorems, and Taylor's series, and apply them to curve tracing.	3
CO4	Use partial differentiation techniques including Euler's theorem, Jacobians, and Lagrange multipliers to solve multivariable optimization problems	2
CO5	Evaluate double and triple integrals in various coordinate systems and apply them to compute areas and volumes in engineering contexts.	3

MAPPING

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
CO1	3	3	2	2						2	2
CO2	3	3	2	2							2
CO3	3	3		2						2	2
CO4	3	3	2	2							2
CO5	3		2	2							2
Average	**3**	**3**	**2**	**2**						**2**	**2**

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I B. Tech I Semester

COURSE TITLE: **ADVANCED ENGINEERING PHYSICS** **COURSE CODE:** **25PH102BS**

At the end of the course the student will be able to:

CO No.	COURSE OUTCOME STATEMENT	BT Level
CO1	Apply quantum mechanical principles to explain particle behavior and energy band formation in solids.	3
CO2	Identify the role of semiconductor devices in science and engineering applications & understand Nanomaterials.	2
CO3	Understand concepts of quantum computing use quantum gates.	2
CO4	Classify magnetic and dielectric materials and explain their properties, synthesis and applications.	2
CO5	Explain the principles of lasers and fiber optics and their applications in communication and sensing.	2

MAPPING

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
CO1	3	3	2	2	1				1		2
CO2	3	3	3	2	2	1	1	1	1		2
CO3	3	2	2	2	2		1	1	1		3
CO4	3	2	2	1	1	2	1	1			2
CO5	3	2	2	2	2	2			1		2
Average	**3**	**2.4**	**2.2**	**1.8**	**1.6**	**1.67**	**1**	**1**	**1**		**2.2**

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Deaprtment of Basic Sciences & Humanities

Regulation: VR25

I B. Tech I Semester

COURSE TITLE: **PROGRAMMING FOR PROBLEM SOLVING** **COURSE CODE:** **25CS105ES**

The student will learn

CO No.	COURSE OUTCOME STATEMENT	BT Level
CO1	To write algorithms and to draw flowcharts for solving problems.	3
CO2	To convert the algorithms/flowcharts to C programs.	6
CO3	To code and test a given logic in the C programming language.	6
CO4	To decompose a problem into functions and to develop modular reusable code.	3
CO5	To use arrays, pointers, strings and structures to write C programs. Searching and sorting problems.	2

MAPPING

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
CO1	3	3	3	3	3				3		3
CO2	2	3	2	3	3				2		3
CO3	2	3	2	3	3				2		2
CO4	3	3	3	3	3				3		2
CO5	3	2	3	2	2				3		3
Average	**2.6**	**2.8**	**2.6**	**2.8**	**2.8**				**2.6**		**2.6**

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I B. Tech I Semester

COURSE TITLE: INTRODUCTION TO ELECTRICAL ENGINEERING **COURSE CODE:** 25EE106ES

Students will be able to:

CO No.	COURSE OUTCOME STATEMENT	BT Level
CO1	Analyze D.C. circuits using basic laws and theorems.	4
CO2	Analyze A.C. circuits and threephase systems.	2
CO3	Explain operation and performance of transformers.	2
CO4	Describe construction and working of electrical machines.	2
CO5	Identify components of electrical installations and perform basic calculations.	2

MAPPING

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
CO1	3	3	1	1					1		1
CO2	3	3	1	2	2				1		1
CO3	3	2	2	2	2				1		1
CO4	3	2	2	1	2			1	1		1
CO5	3	2	2	2	3	1		1	2	1	1
Average	**3**	**2.4**	**1.6**	**1.6**	**2.25**	**1**		**1**	**1.2**	**1**	**1**

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I B. Tech I Semester

COURSE TITLE: **ENGINEERING DRAWING AND COMPUTER AIDED DRAFTING** **COURSE CODE:** **25ME103ES**

At the end of the course, the student will be able to:

CO No.	COURSE OUTCOME STATEMENT	BT Level
CO1	Understand and apply the principles of orthographic and isometric projections	2
CO2	Create sectional views and dimensioned drawings using BIS standards.	2
CO3	Use CAD software to generate 2D engineering drawings.	2
CO4	Visualize and construct solid models from 2D views.	2
CO5	Interpret and produce engineering drawings of mechanical components and assemblies.	2

MAPPING

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
CO1	3		3		3				2		2
CO2	3		1		2				3		2
CO3	3		3		2				2		3
CO4	3		3		2				3		3
CO5	3		2		3				3		3
Average	**3**		**2.4**		**2.4**				**2.6**		**2.6**

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I B. Tech I Semester

COURSE TITLE: **ENGLISH FOR SKILL ENHANCEMENT** **COURSE CODE:** **25EN104HS**

Students will be able to:

CO No.	COURSE OUTCOME STATEMENT	BT Level
CO1	Choose appropriate vocabulary in their oral and written communication.	3
CO2	Demonstrate their understanding of the rules of functional grammar and sentence Structures.	2
CO3	Develop comprehension skills from known and unknown passages.	2
CO4	Write paragraphs, essays, précis and draft letters.	2
CO5	Write abstracts and reports in various contexts.	2

MAPPING

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
CO1	2					3	3	2	3		3
CO2	2					2	2	1	3		2
CO3	2					3	3	3	3		3
CO4	2					2	2	2	3		2
CO5	2					2	3		3		2
Average	**2**					**2.4**	**2.6**	**2**	**3**		**2.4**

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I B. Tech I Semester

COURSE TITLE: ADVANCED ENGINEERING PHYSICS LAB **COURSE CODE:** 25PH107BS

The students will be able to

CO No.	COURSE OUTCOME STATEMENT	BT Level
CO1	Appreciate Quantum physics in semiconductor devices and optoelectronics.	2
CO2	Determine key electrical, magnetic, and optical properties of semiconductorsand other functional materials.	3
CO3	Characterize semiconductors using Hall effect and energy gap measurementtechniques.	4
CO4	Demonstrate working knowledge of laser systems and optical Fiber parametersthrough experimental study.	3
CO5	Apply scientific methods for accurate data collection, analysis, and technical report writing.	3

MAPPING

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
CO1	3	2									
CO2	3	3		2	2			1			
CO3	3	3	1	3	2	1	1	1			
CO4	2	2	1	2	3	1	1	1			
CO5	2	2	1	2	2	1	1	1	2	3	
Average	**2.6**	**2.4**	**1**	**2.25**	**2.25**	**1**	**1**	**1**	**2**	**3**	

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I B. Tech I Semester

COURSE TITLE: **PROGRAMMING FOR PROBLEM SOLVING LAB** **COURSE CODE:** **25CS108ES**

The candidate is expected to be able to:

CO No.	COURSE OUTCOME STATEMENT	BT Level
CO1	Implement, compile and debug programs in C language for solving a problem	3
CO2	Design programs involving decision structures, loops for problem solving	6
CO3	Design programs to develop applications using array data structure	6
CO4	Apply functions to solve real world problems	3
CO5	Make use of pointers to design applications with efficient use of memory	2

MAPPING

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
CO1	3	3	3	3	3				3		3
CO2	2	3	2	3	3				2		3
CO3	2	3	2	3	3				2		2
CO4	3	3	3	3	3				3		2
CO5	3	2	3	2	2				3		3
Average	**2.6**	**2.8**	**2.6**	**2.8**	**2.8**				**2.6**		**2.6**

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I B. Tech I Semester

COURSE TITLE: ENGLISH LANGUAGE AND COMMUNICATION SKILLS LAB **COURSE CODE:** 25EN109HS

At the end of the course, the student will be able to:

CO No.	COURSE OUTCOME STATEMENT	BT Level
CO1	Better understanding of nuances of language through audio-visual experience and group activities.	2
CO2	Neutralization of accent for intelligibility.	2
CO3	Speaking with clarity and confidence thereby enhancing employability skills of the students.	2
CO4	Build self –confidence and art of presentations	6
CO5	Overcome stage fear, develop team playing	2

MAPPING

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
CO1	2					3	3	2	3		3
CO2	2					2	2	1	3		2
CO3	2					3	3	3	3		3
CO4	2					2	2	2	3		2
CO5	2					2	3		3		2
Average	**2**					**2.4**	**2.6**	**2**	**3**		**2.4**

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I B. Tech II Semester

COURSE TITLE: ORDINARY DIFFERENTIAL EQUATIONS AND VECTOR CALCULUS

COURSE CODE: 25MA201BS

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

CO No.	COURSE OUTCOME STATEMENT	BT Level
CO1	Solve first-order ordinary differential equations using exact, linear, and Bernoulli methods and model physical phenomena like cooling and growth.	3
CO2	Solve higher-order linear differential equations with constant coefficients and nonhomogeneous terms using appropriate techniques including variation of parameters	3
CO3	Use Laplace Transforms to simplify and solve initial value problems, including handling periodic functions and evaluating integrals	3
CO4	Compute and interpret gradient, divergence, and curl of vector fields, and verify vector identities and properties of scalar potential functions.	2
CO5	Evaluate line, surface, and volume integrals and apply Green's, Gauss's, and Stokes' theorems to solve problems in vector calculus.	3

MAPPING

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
CO1	3	3	2	2							
CO2	3	3		2							
CO3	3		3	3							
CO4	3	3	3								
CO5	3	3	3	3							
Average	**3**	**3**	**2.75**	**2.5**							

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I B. Tech II Semester

COURSE TITLE: ENGINEERING CHEMISTRY **COURSE CODE:** 25CH202BS

At the end of the course, the student will be able to:

CO No.	COURSE OUTCOME STATEMENT	BT Level
CO1	Students will be able to understand the fundamental properties of water and its applications in both domestic and industrial purposes.	2
CO2	Students will gain basic knowledge of electro chemical processes and their relevance to corrosion and its control methods.	2
CO3	Students will comprehend the significance and practical applications of batteries and various energy sources, enhancing their potential as future engineers and entrepreneurs.	2
CO4	Students will learn the basic concepts and properties of polymers and other engineering materials.	2
CO5	Students will be able to apply the principles of UV-Visible, IR-spectroscopy and Raman spectroscopy in analyzing pollutants in dye industries and biomedical applications.	2

MAPPING

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
CO1	2	3	2								3
CO2	2	3	2								2
CO3	3	2	2								3
CO4	3	3	1								3
CO5	2	2	2								3
Average	**2.4**	**2.6**	**1.8**								**2.8**

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I B. Tech II Semester

COURSE TITLE: PYTHON PROGRAMMING **COURSE CODE:** 25ML203ES

Students will be able to:

CO No.	COURSE OUTCOME STATEMENT	BT Level
CO1	Write Python programs using variables, operators, expressions, and control structures.	2
CO2	Implement Python programs using built-in data structures like lists, tuples, sets, and dictionaries.	3
CO3	Apply modular and object-oriented programming principles in Python.	3
CO4	Handle files, exceptions, and apply Python libraries for problem-solving.	6
CO5	Develop small-scale applications in Python for automation and data manipulation.	2

MAPPING

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
CO1	3	2	2	2						2	3
CO2	3	3	3	2						2	3
CO3	3			2						2	3
CO4	2	2	2	2						2	
CO5	2	2	2	2						2	
Average	**2.6**	**2.25**	**2.25**	**2**						**2**	**3**

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I B. Tech II Semester

COURSE TITLE: DATA STRUCTURES **COURSE CODE:** 25DS205ES

The students will be able to:

CO No.	COURSE OUTCOME STATEMENT	BT Level
CO1	Understand the fundamental concepts of data structures and select appropriate data structures to efficiently represent and organize information for solving computational problems.	2
CO2	Analyze and evaluate the efficiency trade-offs among different data structure implementations based on time and space complexity considerations.	3
CO3	Apply and implement searching, sorting, and pattern matching algorithms to solve various computational problems effectively.	3
CO4	Design and develop programs using linear and non-linear data structures such as hash tables, trees, heaps, graphs, tries, and AVL trees.	6
CO5	Develop efficient algorithmic solutions using advanced data structures and analyze their applications in real-world problem-solving scenarios.	2

MAPPING

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
CO1	3	2	3	3	2	2		3		3	3
CO2	2	3	2	3	2	3		2		2	2
CO3	3	3	2	2	3	2		3		2	3
CO4	3	3	2	3	3	3		2		2	3
CO5	2	3	3	3	2	2		2		2	3
Average	**2.6**	**2.8**	**2.4**	**2.8**	**2.4**	**2.4**		**2.4**		**2.2**	**2.8**

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I B. Tech II Semester

COURSE TITLE: NETWORK ANALYSIS AND SYNTHESIS **COURSE CODE:** 25EE204ES

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

CO No.	COURSE OUTCOME STATEMENT	BT Level
CO1	Analyze planar and magnetically coupled networks using graph-theoretic methods and transformer principles	2
CO2	Analyse the Steady state and transient analysis of RLC Circuits	2
CO3	Characterization of two port network parameters.	4
CO4	Analyse the Design aspect of various filters and attenuators	2
CO5	Analyze network functions and synthesize passive networks using Foster and Cauer methods.	4

MAPPING

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
CO1	3	3	3	2	2					3	3
CO2	3	2	1								1
CO3	2	3	2								1
CO4	3	2	1								1
CO5	2	3	3								1
Average	**2.6**	**2.6**	**2**	**2**	**2**					**3**	**1.4**

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I B. Tech II Semester

COURSE TITLE: ENGINEERING CHEMISTRY LAB COURSE CODE: 25CH206BS

The experiments will make the student gain skills on:

CO No.	COURSE OUTCOME STATEMENT	BT Level
CO1	Students will develop practical skills through hands-on chemistry experiments relevant to engineering.	6
CO2	Students will learn to determine important parameters such as water hardness and the corrosion rate of mild steel under various conditions	4
CO3	Students will be able to apply techniques like conductometry, potentiometry and pH metry to determine concentrations or equivalence points in acid-base reactions	4
CO4	Students will gain experience in synthesizing polymers such as Bakelite, Nylon6,6.	2
CO5	Students will understand the working principle of colorimetry and the relationship between absorbance and concentration (Beer-Lambert Law).	2

MAPPING

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
CO1	3	3						2			
CO2	2	3						1			
CO3	2	2						3			
CO4	3	2						2			
CO5	2	3						3			
Average	**2.4**	**2.6**						**2.2**			

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COURSE TITLE: APPLIED PYTHON PROGRAMMING LAB **COURSE CODE:** 25ML208ES

Upon completing this Lab, the students will be able to

CO No.	COURSE OUTCOME STATEMENT	BT Level
CO1	Build basic programs using fundamental programming constructs	6
CO2	Write and execute python codes for different applications	6
CO3	Capable to implement on hardware boards	2
CO4	Implement exception handling mechanisms to create robust and error-tolerant applications.	3
CO5	Utilizing Python Libraries and Modules	2

MAPPING

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
CO1	3	2	2	2						2	3
CO2	3	3	3	2						2	3
CO3	3			2						2	3
CO4	2	2	2	2						2	
CO5	2	2	2	2						2	
Average	**2.6**	**2.25**	**2.25**	**2**						**2**	**3**

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I B. Tech II Semester

COURSE TITLE: APPLIED PYTHON PROGRAMMING LAB **COURSE CODE:** 25CS208ES

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

CO No.	COURSE OUTCOME STATEMENT	BT Level
CO1	Understand the basic syntax, control structures, and data types in Python programming.	2
CO2	Apply functions, modules, and exception handling to develop modular Python programs.	3
CO3	Implement file handling, regular expressions, and data structures for solving real-world problems.	3
CO4	Develop Python programs using object-oriented programming concepts and standard libraries.	6
CO5	Demonstrate teamwork, documentation, and ethical practices in software development using Python.	2

CO-PO MAPPING

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
CO1	3	2	2	2						2	3
CO2	3	3	3	2						2	3
CO3	3			2						2	3
CO4	2	2	2	2						2	
CO5	2	2	2	2						2	
Average	**2.6**	**2.25**	**2.25**	**2**						**2**	**3**

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I B. Tech II Semester

COURSE TITLE: DATA STRUCTURES LAB **COURSE CODE:** 25DS207ES

Upon completing this Lab, the students will be able to

CO No.	COURSE OUTCOME STATEMENT	BT Level
CO1	Implement fundamental operations on linear data structures such as linked lists, stacks, and queues using appropriate programming techniques.	3
CO2	Apply various sorting and searching techniques to organize and retrieve data efficiently.	3
CO3	Design and implement tree-based data structures including Binary Search Trees, AVL Trees, B-Trees, B+ Trees, and Red-Black Trees.	6
CO4	Develop solutions using graph traversal algorithms and hashing techniques for efficient data representation and retrieval.	3
CO5	Analyze, implement, and evaluate suitable data structures and algorithms to solve real-world computational problems effectively.	2

MAPPING

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
CO1	3	3	2	2	2	2		3		2	2
CO2	3	3	3	3	2	2		2		3	2
CO3	3	3	3	3	2	2		2		3	3
CO4	3	3	3	3	3	2		2		2	3
CO5	3	3	3	3	3	3		3		2	3
Average	**3**	**3**	**2.8**	**2.8**	**2.4**	**2.2**		**2.4**		**2.4**	**2.6**

VIGNAN'S INSTITUTE OF MANAGEMENT AND TECHNOLOGY FOR WOMEN

(An Autonomous Institution)

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Deaprtment of Basic Sciences & Humanities

Regulation: VR25

I B. Tech II Semester

COURSE TITLE: **BASIC ELECTRICAL ENGINEERING LAB** **COURSE CODE:** **25EE209ES**

At the end of the Laboratory, the student will be able to

CO No.	COURSE OUTCOME STATEMENT	BT Level
CO1	Study different meters and instruments for measurement of electrical quantities	2
CO2	Study the linear and nonlinear characteristics of different types of loads experimentally	2
CO3	Design and experiment potential divider circuits	6
CO4	Experimentally verify the basic circuit theorems	2
CO5	Measure power and power factor in ac circuits	2

MAPPING

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
CO1	2	3	2	2		2		2	2		3
CO2	3	3	2	3		2		2	2		3
CO3	3	3	3	2		2		2	2		2
CO4	3	2	3	3		2		2	2		3
CO5	3	2	2	3		2		2	2		2
Average	**2.8**	**2.6**	**2.4**	**2.6**		**2**		**2**	**2**		**2.6**

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Regulation: VR25

I B. Tech II Semester

COURSE TITLE: ENGINEERING WORKSHOP **COURSE CODE:** 25ME210ES

At the end of the workshop/course, the student will be able to:

CO No.	COURSE OUTCOME STATEMENT	BT Level
CO1	Understand the basic manufacturing processes and operations.	2
CO2	Use hand tools and equipment safely and efficiently	3
CO3	Perform basic operations in carpentry, fitting, welding, sheet metal work, and machining.	3
CO4	Read and interpret workshop drawings.	2
CO5	Develop teamwork, time management, and quality awareness in a workshop environment.	3

MAPPING

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
CO1	2		3		3			3	2		3
CO2	2		3		3			3	2		2
CO3	3		2		2			2	2		2
CO4	3		2		2			2	3		2
CO5	3		3		2			2	3		3
Average	**2.6**		**2.6**		**2.4**			**2.4**	**2.4**		**2.4**

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Deaprtment of Basic Sciences & Humanities

Regulation: VR25

I-B. Tech I Semester

COURSE TITLE: **ELECTRONIC DEVICES AND CIRCUITS** **COURSE CODE:** **25EC303PC**

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

CO No.	COURSE OUTCOME STATEMENT	BT Level
CO1	Analyze the electrical characteristics and models of semiconductor diodes and apply them in rectifier and clipping circuits.	2
CO2	Evaluate the operation and configurations of Bipolar Junction Transistors (BJTs) and analyze their input and output characteristics.	4
CO3	Design appropriate biasing networks for BJTs and determine the operating point for amplifier applications.	3
CO4	Analyze transistor amplifier circuits using h-parameter models and assess performance for various configurations.	3
CO5	Analyze the structure, working, and characteristics of JFETs, MOSFETs, and advanced devices like Fin FETs and CNTFETs, and compare modern device technologies	2

MAPPING

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
CO1	3	2	2	1							1
CO2	3	3	3	2				1			1
CO3	3	3	3	2				1			2
CO4	3	3	3	3				1			2
CO5	3	2	3	2				2			2
Average	**3**	**2.6**	**2.8**	**2**				**1.25**			**1.6**

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Deaprtment of Basic Sciences & Humanities

Regulation: VR25

I B. Tech I Semester

COURSE TITLE: IT WORKSHOP LAB **COURSE CODE:** 25IT210ES

Upon completing this Lab, the students will be able to

CO No.	COURSE OUTCOME STATEMENT	BT Level
CO1	Identify PC hardware components, assemble/disassemble computer systems, and install Windows/Linux operating systems	3
CO2	Configure Internet connectivity, apply cybersecurity practices, and demonstrate safe browsing and cyber hygiene.	3
CO3	Prepare professional documents, certificates, abstracts, and newsletters using LaTeX, MS Word, and Overleaf	3
CO4	Perform data entry, calculations, analysis, visualization, and Pivot Table operations using MS Excel.	3
CO5	Design effective multimedia presentations using MS PowerPoint and demonstrate communication, teamwork, and documentation skills.	3

MAPPING

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
CO1	3	2	2	2	3	2	-	2	2	2	2
CO2	3	3	2	2	3	3	-	2	2	2	2
CO3	3	2	3	2	3	2	-	2	3	3	2
CO4	3	3	3	3	3	2	-	2	2	2	3
CO5	3	2	3	2	3	2	-	3	3	3	2
Average	**3.0**	**2.4**	**2.6**	**2.2**	**3.0**	**2.2**	**-**	**2.2**	**2.4**	**2.4**	**2.2**