



II – I



VIDYA JYOTHI INSTITUTE OF TECHNOLOGY

Department of Computer Science & Engineering

Year & Sem: II Year I Semester

Course name: Probability And Statistics

Course Code: A13014

Regulation: R15

COURSE OUTCOMES:

After completing this course the student must demonstrate the knowledge and Ability to	
CO 1	To differentiate among random variables involved in the probability models which are useful for all branches of engineering.
CO 2	Derive relationship among variety of performance measures using probability distributions.
CO 3	Acquire elementary knowledge of parametric and non parametric tests and understand the use of observing state analysis for predicting future conditions.
CO 4	Identify and examine situations that generate using problems and able to solve the tests of ANOVA for classified data.
CO 5	Apply proper measurement, Indicators and techniques of correlation and Regression analysis.

CO -PO MAPPING:

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3	2	2	1	1	1	-	2	1	2	3
CO2	3	3	2	2	1	1	1	-	2	1	2	3
CO3	3	3	3	2	1	1	2	-	1	2	3	2
CO4	3	3	3	2	3	1	1	-	2	3	2	2
CO5	3	3	3	2	-	1	2	-	1	2	2	2
Avg	3	3	3	2	1	1	2	-	2	2	2	2

CO - PSO MAPPING:

	PSO1	PSO2
CO1	2	1
CO2	2	1
CO3	2	1
CO4	2	1
CO5	2	1
Avg	2	1



VIDYA JYOTHI INSTITUTE OF TECHNOLOGY

Department of Computer Science & Engineering

Year & Sem: II Year I Semester

Course name: Mathematical Foundations of Computer science

Course Code: A13504

Regulation: R15

COURSE OUTCOMES:

After completing this course the student must demonstrate the knowledge and Ability to	
CO 1	To evaluate elementary mathematical arguments and identify fallacious reasoning (not just fallacious conclusions).
CO 2	Solve discrete mathematics problems that involve: computing permutations and combinations of a set.
CO 3	Analyze and deduce problems involving recurrence relations and generating functions.
CO 4	Perform operations on discrete structures such as sets, functions, relations and sequences.
CO 5	Apply Graph theory models to solve problems of Computer Science & Engineering.

CO -PO MAPPING:

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3	3	3	2	2	-	1	-	1	-	3
CO2	3	3	3	3	2	2	-	1	-	1	-	3
CO3	3	3	3	3	2	3	-	-	-	1	-	3
CO4	3	3	3	3	2	3	-	-	-	1	-	3
CO5	3	3	3	3	2	2	2	1	2	1	-	3
Avg	3	3	3	3	2	2	2	1	2	1	-	3

CO - PSO MAPPING:

	PSO1	PSO2
CO1	3	3
CO2	3	3
CO3	3	3
CO4	3	3
CO5	3	3
Avg	3	3



VIDYA JYOTHI INSTITUTE OF TECHNOLOGY

Department of Computer Science & Engineering

Year & Sem: II Year I Semester

Course name: Data Structures

Course Code: A13505

Regulation: R15

COURSE OUTCOMES:

After completing this course the student must demonstrate the knowledge and Ability to

CO 1	Analyze the representation of various data structures and implement the mechanisms of Stacks and Queues with their applications..
CO 2	Implement the operations like searching, insertion, deletions and traversing mechanisms on Binary Trees.
CO 3	Implement various advance concepts of trees with real time applications.
CO 4	Implement various algorithms on graph data structures, including finding the minimum spanning tree, shortest path with real time applications, etc.
CO 5	Outline the concepts of hashing, collision and its resolution methods using hash function.

CO -PO MAPPING:

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3	3	3	3	-	-	-	-	-	2	1
CO2	3	3	3	3	3	-	-	-	-	-	2	1
CO3	3	3	3	3	3	-	-	-	-	-	2	1
CO4	3	3	3	3	3	-	-	-	-	-	2	1
CO5	3	3	3	3	3	-	-	-	-	-	2	1
Avg	3	3	3	3	3	-	-	-	-	-	2	1

CO - PSO MAPPING:

	PSO1	PSO2
CO1	3	3
CO2	3	3
CO3	3	3
CO4	3	3
CO5	3	3
Avg	3	3



VIDYA JYOTHI INSTITUTE OF TECHNOLOGY

Department of Computer Science & Engineering

Year & Sem: II Year I Semester

Course name: Digital Logic Design

Course Code: A13406

Regulation: R15

COURSE OUTCOMES:

After completing this course the student must demonstrate the knowledge and Ability to	
CO 1	Manipulate numeric information in different forms, e.g. different bases, signed integers, various codes such as ASCII, Gray and BCD.
CO 2	Manipulate simple Boolean expressions using the theorems and postulates of Boolean algebra and to minimize combinational functions.
CO 3	Design and analyze small combinational circuits
CO 4	To use standard combinational functions/building blocks to build larger more complex circuits.
CO 5	Design and analyze small sequential circuits and devices and to use standard sequential Functions/building blocks to build larger more complex circuits.

CO -PO MAPPING:

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3	3	2	2	2	-	-	2	1	2	3
CO2	3	3	3	2	3	2	-	-	3	2	3	1
CO3	3	3	2	3	1	1	-	1	3	2	3	3
CO4	3	2	3	3	3	1	-	1	1	2	1	3
CO5	3	2.75	2.75	2.5	2.5	1	-	1	2.25	1.75	2.25	2.25
Avg	3	3	3	3	3	1	-	1	2	2	2	2

CO - PSO MAPPING:

	PSO1	PSO2
CO1	3	2
CO2	3	2
CO3	3	2
CO4	3	2
CO5	3	2
Avg	3	2



VIDYA JYOTHI INSTITUTE OF TECHNOLOGY

Department of Computer Science & Engineering

Year & Sem: II Year I Semester

Course name: OOP

Course Code: A13506

Regulation: R15

COURSE OUTCOMES:

After completing this course the student must demonstrate the knowledge and Ability to	
CO 1	Describe importance concepts of Object Oriented Programming.
CO 2	Develop the applications using Object Oriented Programming through C++.
CO 3	Implements the concepts of inheritance and polymorphism.
CO 4	Apply the IO Streams and files to develop a program for real time problems.
CO 5	Apply advanced features like templates and exception handling to make programs supporting reusability and sophistication.

CO -PO MAPPING:

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3	3	2	2	1	1	1	-	-	2	2
CO2	3	3	3	2	2	-	-	1	1	2	2	2
CO3	3	3	3	3	1	1	-	1	2	1	2	2
CO4	3	3	2	2	2	-	-	1	1	1	2	2
CO5	3	2	3	2	2	1	1	2	-	2	2	3
Avg	3	3	3	2	2	1	1	1	1	2	2	2

CO - PSO MAPPING:

	PSO1	PSO2
CO1	3	2
CO2	3	3
CO3	3	2
CO4	3	3
CO5	3	3
Avg	3	3



VIDYA JYOTHI INSTITUTE OF TECHNOLOGY
Department of Computer Science & Engineering

Year & Sem: II Year I Semester

Course name: EDC

Course Code: A13401

Regulation: R15

COURSE OUTCOMES:

After completing this course the student must demonstrate the knowledge and Ability to	
CO 1	Understand and Analyze the different types of diodes, operation and its characteristics.
CO 2	To analyze and design diode application circuits like rectifiers, filters.
CO 3	Understand and Analyze the operation and characteristics of BJT and FET.
CO 4	Design and analyze the DC bias circuitry of BJT and FET.
CO 5	Design biasing circuits using diodes and transistors.

CO -PO MAPPING:

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3	3	3	1	2	-	-	2	-	-	-
CO2	3	3	2	3	1	3	-	2	2	-	-	-
CO3	2	2	3	2	1	3	-	2	2	-	-	-
CO4	2	2	2	2	1	2	-	-	2	-	-	-
CO5	3	2	2	2	1	3	-	-	2	2	-	-
Avg	3	2	2	2	1	3	-	-	2	2	-	-

CO - PSO MAPPING:

	PSO1	PSO2
CO1	3	3
CO2	3	3
CO3	3	3
CO4	3	3
CO5	3	3
Avg	3	3



VIDYA JYOTHI INSTITUTE OF TECHNOLOGY

Department of Computer Science & Engineering

Year & Sem: II Year I Semester

Course name: DS LAB

Course Code: A13585

Regulation: R15

COURSE OUTCOMES:

After completing this course the student must demonstrate the knowledge and Ability to	
CO 1	Develop the programs on stack and its applications.
CO 2	Demonstrate the operations on trees.
CO 3	Demonstrate the implementations of various advanced trees.
CO 4	Design and implementation of programs on BST and graph traversals.
CO 5	Understand the C++ program structure and also basics of C++ programming.

CO -PO MAPPING:

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3	3	3	3	2	-	-	2	2	1	3
CO2	3	3	3	3	3	2	-	-	2	2	1	3
CO3	3	3	3	3	3	2	-	-	2	2	1	3
CO4	3	3	3	3	3	2	-	-	2	2	1	3
CO5	3	3	3	3	3	2	-	-	2	2	1	3
Avg	3	3	3	3	3	2	-	-	2	2	1	3

CO - PSO MAPPING:

	PSO1	PSO2
CO1	3	3
CO2	3	3
CO3	3	3
CO4	3	3
CO5	3	3
Avg	3	3



VIDYA JYOTHI INSTITUTE OF TECHNOLOGY

Department of Computer Science & Engineering

Year & Sem: II Year I Semester

Course name: ED&C&DLD LAB

Course Code: A13483

Regulation: R15

COURSE OUTCOMES:

After completing this course the student must demonstrate the knowledge and Ability to

CO 1	To verify Various logic gates and flip flops.
CO 2	To Understand and evaluate the counter IC's and shift registers.
CO 3	To Understand and show the characteristics and applications of Diode
CO 4	To identify and produce the characteristics and applications of transistors
CO 5	To identify and produce the characteristics and applications of FETs

CO -PO MAPPING:

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3	3	3	3	-	-	1	2	3	3	-
CO2	3	3	2	3	3	-	-	1	2	3	3	-
CO3	3	3	2	3	3	-	-	-	2	3	3	-
CO4	3	3	2	3	3	-	-	1	2	3	3	-
CO5	3	3	2	3	3	-	-	-	2	3	3	-
Avg	3	3	2	3	3	-	-	1	2	3	3	-

CO - PSO MAPPING:

	PSO1	PSO2
CO1	2	3
CO2	2	3
CO3	2	3
CO4	2	3
CO5	2	3
Avg	2	3



II - II



VIDYA JYOTHI INSTITUTE OF TECHNOLOGY

Department of Computer Science & Engineering

Year & Sem: II year II sem

Course name: DESIGN AND ANALYSIS OF ALGORITHMS

Course Code:A14507

Regulation: R 15

COURSE OUTCOMES:

After completing this course the student must demonstrate the knowledge and ability to

CO1	Analyze the efficiency of algorithms.
CO2	Develop algorithms divide & conquer, greedy and related problems.
CO3	Examine the performance of Dynamic programming.
CO4	Explain performance of algorithm using Backtracking.
CO5	Analyze NP-Hard and NP-Complete problems.

CO -PO MAPPING:

	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	3	3	-	2	2	-	-	-	-	3	-	3
CO 2	3	3	3	3	2	-	-	-	-	-	1	-
CO 3	3	3	3	3	2	2	-	-	-	-	1	-
CO 4	3	3	3	3	2	2	-	-	-	-	1	-
CO 5	3	3	3	-	-	-	1	-	-	-	2	-
Avg	3	3	3	3	2	2	1	-	-	3	1	3

CO - PSO MAPPING:

	PSO1	PSO2
CO1	3	2
CO2	3	2
CO3	3	2
CO4	3	2
CO5	3	2
Avg	3	2



VIDYA JYOTHI INSTITUTE OF TECHNOLOGY

Department of Computer Science & Engineering

Year & Sem: II Year II Sem

Course name: Computer Organization

Course Code: A14508

Regulation: R15

COURSE OUTCOMES:

After completing this course the student must demonstrate the knowledge and ability to	
CO 1	Understanding the basic organization of computer and different instruction formats and addressing modes.
CO 2	Analyze the concept of pipelining, segment registers and pin diagram of CPU.
CO 3	Write simple programs on assembly language.
CO 4	Evaluate various modes of data transfer between CPU and I/O devices.
CO 5	Examine various inter connection structures of multi processors.

CO-PO MAPPING:

	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	3	3	3	3	3	1	3	2	3	3	2	3
CO 2	2	3	3	3	3	1	2	1	2	2	2	2
CO 3	3	3	3	3	3	1	3	1	2	3	2	3
CO 4	3	3	3	3	3	1	3	1	3	3	2	3
CO 5	3	2	2	2	2	1	1	1	2	2	2	3
Avg.	3	3	3	3	3	1	2	1	3	3	2	3

CO - PSO MAPPING:

	PSO1	PSO2
CO1	3	3
CO2	2	2
CO3	3	3
CO4	3	3
CO5	3	3
Avg.	3	3



VIDYA JYOTHI INSTITUTE OF TECHNOLOGY

Department of Computer Science & Engineering

Year & Sem: II Year II Sem

Course name: DBMS

Course Code:A14509

Regulation: R15

COURSE OUTCOMES:

After completing this course the student must demonstrate the knowledge and ability to	
CO1	Design Entity-Relationship Model for enterprise level databases.
CO2	Develop the database and provide restricted access to different users of database and formulate the Complex SQL queries.
CO3	Analyze various Relational Formal Query Languages and various Normal forms to carry out Schema refinement.
CO4	Use of suitable Indices and Hashing mechanisms for real time implementation.
CO5	Ability to analyze various concurrency control protocols and working principles of recovery algorithms.

CO -PO MAPPING:

	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	3	3	3	2	2	-	3	1	-	-	2	2
CO 2	3	3	3	2	2	-	-	1	1	2	3	2
CO 3	3	3	3	3	1	-	-	1	-	1	2	2
CO 4	3	3	3	2	2	-	-	1	1	2	3	2
CO 5	3	3	3	3	2	1	1	2	-	2	2	2
Avg	3	3	3	2	2	1	3	1	1	2	2	2

CO - PSO MAPPING:

	PSO1	PSO2
CO1	3	2
CO2	3	3
CO3	3	2
CO4	3	3
CO5	3	3
Avg	3	3



VIDYA JYOTHI INSTITUTE OF TECHNOLOGY

Department of Computer Science & Engineering

Year & Sem: II Year II Sem

Course name: Software Engineering

Course Code:A14510

Regulation: R15

COURSE OUTCOMES:

After completing this course the student must demonstrate the knowledge and ability to	
CO1	Choose a process model to apply for given project requirements.
CO2	Analyze and apply the framework activities for a given project.
CO3	Design various system models for a given scenario.
CO4	Design and apply various testing techniques.
CO5	Understand metrics for Process and Products.

CO -PO MAPPING:

	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	3	3	1	2	1	2	1	1	3	3	2	3
CO 2	3	2	3	3	2	1	1	2	3	3	2	3
CO 3	3	2	3	3	3	2	1	1	2	3	2	3
CO 4	3	2	3	2	3	2	2	2	2	3	2	3
CO5	2	2	2	1	2	-	-	2	2	2	2	2
Avg	3	2	3	3	3	2	1	2	2	3	2	3

CO - PSO MAPPING:

	PSO1	PSO2
CO1	3	3
CO2	3	2
CO3	2	3
CO4	3	3
CO5	3	3
Avg	3	3



VIDYA JYOTHI INSTITUTE OF TECHNOLOGY

Department of Computer Science & Engineering

Year & Sem: II Year II Sem

Course name: Java Programming

Course Code:A14511

Regulation: R15

COURSE OUTCOMES:

After completing this course the student must demonstrate the knowledge and ability to	
CO1	Understand OOP concepts to apply basic Java constructs.
CO2	Analyze different forms of inheritance and handle different kinds of file I/O.
CO3	Evaluate the usage of Exception Handling and Multithreading in complex Java programs.
CO4	Contrast different GUI layouts and design GUI applications.
CO5	Construct a full-fledged Java GUI application and Applet with database connectivity.

CO -PO MAPPING:

	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	3	3	3	3	3	2	1	1	3	1	1	2
CO 2	3	3	3	3	3	2	1	1	3	1	1	2
CO 3	3	3	3	3	3	2	1	1	3	2	1	2
CO 4	3	3	3	3	3	2	1	1	3	2	1	2
CO5	3	3	3	3	3	2	1	1	3	2	1	2
Avg	3	3	3	3	3	2	1	1	3	1	1	2

CO - PSO MAPPING:

	PSO1	PSO2
CO1	3	2
CO2	3	2
CO3	3	2
CO4	3	2
CO5	3	2
Avg	3	2



VIDYA JYOTHI INSTITUTE OF TECHNOLOGY

Department of Computer Science & Engineering

Year & Sem: II Year II Sem

Course name: Environmental Studies

Course Code: A14016

Regulation: R15

COURSE OUTCOMES:

After completing this course the student must demonstrate the knowledge and ability to	
CO1	Explain the importance of Ecosystem.
CO2	Identify the importance of Renewable and Non-Renewable Resources.
CO3	Awareness on the Variety of Living organism and the need to conserve them.
CO4	Evaluate the sustainable developments towards Pollution free environment
CO5	Understand the Environmental Policies Management Plan and Regulations.

CO -PO MAPPING:

	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	1	2	1	2	1	1	2	2	1	1	2	2
CO 2	3	2	1	2	2	2	1	1	1	2	2	2
CO 3	3	1	1	1	1	1	1	1	1	2	2	2
CO 4	3	1	1	1	1	1	1	1	1	2	2	2
CO5	3	1	1	1	1	1	1	1	1	2	2	2
Avg	3	1	1	1	1	1	1	1	1	2	2	2

CO - PSO MAPPING:

	PSO1	PSO2
CO1	3	2
CO2	2	3
CO3	3	3
CO4	2	3
CO5	2	2
Avg	2	3



VIDYA JYOTHI INSTITUTE OF TECHNOLOGY

Department of Computer Science & Engineering

Year & Sem: II Year II Sem

Course name: Java Programming Lab

Course Code:A14586

Regulation: R15

COURSE OUTCOMES:

After completing this course the student must demonstrate the knowledge and ability to	
CO1	Apply basic Java constructs and OOP to solve mathematical problems.
CO2	Apply Inheritance in Java programs to implement File input/output.
CO3	Analyze Exception Handling code and Multithreading concepts in advanced Java programs.
CO4	Design different GUI applications using GUI layouts.
CO5	Apply Applet development and Database connectivity to build GUI applications.

CO -PO MAPPING:

	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	3	3	3	3	3	-	1	1	3	-	1	2
CO 2	3	3	3	3	3	-	1	1	3	-	1	2
CO 3	3	3	3	3	3	-	1	1	3	1	1	2
CO 4	3	3	3	3	3	-	1	1	3	1	-	2
CO5	3	3	3	3	3	-	1	1	3	1	-	2
Avg	3	3	3	3	3	-	1	1	3	1	1	2

CO - PSO MAPPING:

	PSO1	PSO2
CO1	3	2
CO2	3	2
CO3	3	2
CO4	3	2
CO5	3	2
Avg	3	2



VIDYA JYOTHI INSTITUTE OF TECHNOLOGY

Department of Computer Science & Engineering

Year & Sem: II Year II Sem

Course name: DBMS LAB

Course Code:A14587

Regulation: R15

COURSE OUTCOMES:

After completing this course the student must demonstrate the knowledge and ability to	
CO1	Apply SQL statements including DDL, DML and DCL statements to perform different operations.
CO2	Design different views of tables for different users.
CO3	Apply various integrity Constraints on the database tables.
CO4	Apply the Normalization techniques to the data base for consistency.
CO5	Implement PLSQL concepts like cursors, procedures and triggers.

CO -PO MAPPING:

	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO1	3	3	3	2	2	-	3	1	1	-	2	2
CO2	3	3	3	2	3	-	-	1	1	2	3	2
CO3	3	3	3	3	2	1	-	1	2	1	2	2
CO4	3	3	3	2	2	-	3	1	1	-	2	2
CO5	3	3	3	2	3	-	-	1	1	2	3	2
Avg	3	3	3	2	2	1	3	1	1	2	3	2

CO - PSO MAPPING:

	PSO1	PSO2
CO1	3	2
CO2	3	2
CO3	3	2
CO4	3	2
CO5	3	2
Avg	3	2



III – I



VIDYA JYOTHI INSTITUTE OF TECHNOLOGY

Department of Computer Science & Engineering

Year & Sem: IIIYear I Sem

Course name: Linux Programming

Course Code: A15512

Regulation: R15

COURSE OUTCOMES:

After completing this course the student must demonstrate the knowledge and ability to	
CO1	Understand and make effective use of Linux utilities.
CO2	Able to write shell scripts to solve the problems.
CO3	Develop the skills necessary for file system and directory handling.
CO4	Learn the concepts of process and signal system calls.
CO5	Implement inter process communication mechanisms.

CO -PO MAPPING:

	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	3	3	2	2	2	-	3	1	-	-	2	2
CO 2	3	3	3	2	2	-	-	1	1	2	3	2
CO 3	3	3	3	3	1	-	-	1	-	1	2	2
CO 4	3	3	3	2	2	-	-	1	1	2	3	2
CO 5	3	3	3	3	2	1	1	2	-	2	2	2
Avg	3	3	3	2	2	1	2	1	1	2	2	2

CO - PSO MAPPING:

	PSO1	PSO2
CO1	3	2
CO2	3	2
CO3	3	2
CO4	3	2
CO5	3	2
Avg	3	2



VIDYA JYOTHI INSTITUTE OF TECHNOLOGY

Department of Computer Science & Engineering

Year & Sem: III Year I Sem

Course name: Computer Networks

Course Code: A15513

Regulation: R15

COURSE OUTCOMES:

After completing this course the student must demonstrate the knowledge and Ability to	
CO 1	Understand the concept of network reference models.
CO 2	Analyze various connecting devices of a network and describe multichannel access protocols.
CO 3	Analysis of routing algorithm and congestion algorithms and classify IPV4 addressing scheme.
CO 4	Understand Transport layer protocols.
CO 5	Discuss Application layer protocols.

CO -PO MAPPING:

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	3	3	3	3	2	3	1	2	3	3	3
CO2	2	3	3	3	3	2	2	1	3	3	3	2
CO3	2	3	3	3	3	2	1	1	2	3	2	3
CO4	2	3	3	3	3	2	1	1	3	3	2	3
CO5	2	3	3	3	3	2	1	1	2	3	2	3
Avg	2	3	3	3	3	2	2	1	2	3	2	3

CO - PSO MAPPING:

	PSO1	PSO2
CO1	2	2
CO2	3	3
CO3	3	2
CO4	3	2
CO5	2	2
Avg	3	2



VIDYA JYOTHI INSTITUTE OF TECHNOLOGY

Department of Computer Science & Engineering

Year & Sem: III Year I Sem

Course name: Operating Systems

Course Code:A15514

Regulation: R15

COURSE OUTCOMES:

After completing this course the student must demonstrate the knowledge and Ability to	
CO 1	Understanding the operating system concepts and process management.
CO 2	Analyze process scheduling and synchronization.
CO 3	Understand memory management concepts.
CO 4	Illustrate File system implementation and mass storage structure.
CO 5	Analyze deadlock mechanisms.

CO -PO MAPPING:

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	1	1	1	-	-	-	-	1	-	1	1
CO2	3	3	2	2	3	3	1	2	1	-	1	1
CO3	3	1	1	2	3	2	2	2	1	-	1	1
CO4	3	2	1	2	2	3	2	2	1	2	1	1
CO5	3	3	1	2	3	2	3	2	1	-	1	1
Avg	3	2	1	2	2	2	2	2	1	2	1	1

CO - PSO MAPPING:

	PSO1	PSO2
CO1	3	3
CO2	3	3
CO3	3	3
CO4	3	3
CO5	3	3
Avg	3	3



VIDYA JYOTHI INSTITUTE OF TECHNOLOGY

Department of Computer Science & Engineering

Year & Sem: III Year I Sem

Course name: FLAT

Course Code:A15515

Regulation: R15

COURSE OUTCOMES:

After completing this course the student must demonstrate the knowledge and ability to	
CO1	Analyze and design Finite state machine for solving problems of computer science.
CO2	Design regular grammars for Finite Automata.
CO3	Analyze context free grammars and push down automata.
CO4	Find the solutions for the problems of computer science using Turing Machines.
CO5	Analyze Chomsky Hierarchy and computability theory.

CO -PO MAPPING:

	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	3	3	3	1	1	1	1	-	1	1	1	1
CO 2	3	3	2	2	2	1	2	2	1	1	1	1
CO 3	3	3	2	3	2	1	2	2	1	1	1	1
CO 4	3	3	2	2	2	1	2	2	-	1	1	2
CO5	3	3	3	3	3	2	2	2	2	2	2	2
Avg	3	3	2	2	2	1	2	2	1	1	1	1

CO - PSO MAPPING:

	PSO1	PSO2
CO1	1	2
CO2	1	2
CO3	1	2
CO4	1	2
CO5	3	3
Avg	1	2



VIDYA JYOTHI INSTITUTE OF TECHNOLOGY

Department of Computer Science & Engineering

Year & Sem: III Year I Sem

Course name: Human Computer Interaction

Course Code:A15518

Regulation: R15

COURSE OUTCOMES:

After completing this course the student must demonstrate the knowledge and ability to	
CO1	Understand the capabilities of both humans and computers from the viewpoint of human information processing.
CO2	Analyze the design process and use the design rules.
CO3	Identify and analyze the user models and theories.
CO4	Compare different mobile applications and analyze mobile design.
CO5	Design the web interface using drag and drop, overlays etc.

CO -PO MAPPING:

	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	3	1	2	1	2	2	1	-	2	2	1	2
CO 2	3	1	2	1	3	2	-	1	3	3	3	3
CO 3	3	2	2	2	2	3	2	2	3	2	2	3
CO 4	3	1	3	2	3	2	2	1	3	3	3	3
CO 5	3	1	3	3	3	-	2	1	3	3	3	3
Avg	3	1	2	2	3	2	2	1	3	3	2	3

CO - PSO MAPPING:

	PSO1	PSO2
CO1	2	3
CO2	3	2
CO3	3	3
CO4	3	3
CO5	3	3
Avg	3	3



VIDYA JYOTHI INSTITUTE OF TECHNOLOGY

Department of Computer Science & Engineering

Year & Sem: III Year I Sem

Course name: Introduction to Microcontroller & Applications.

Course Code: OE

Regulation: R15

COURSE OUTCOMES:

After completing this course the student must demonstrate the knowledge and ability to	
CO1	Describe the architecture of 8051 with its special function registers
CO2	Interpret the internal organization of 8051 with its unique features.
CO3	Infer and give examples about the various addressing modes, instruction formats and instructions of 8051.
CO4	Construct the hardware and software interaction with each other using programming.
CO5	Summarize the features of the advanced architecture using ARM controller.

CO -PO MAPPING:

	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	2	3	3	2	2	-	-	-	-	-	-	-
CO 2	2	3	3	2	2	-	-	-	-	-	-	-
CO 3	3	3	3	3	3	-	-	-	-	-	-	-
CO 4	3	3	3	3	3	3	2	-	2	2	2	3
CO 5	3	3	3	3	2	-	-	-	2	-	2	3
Avg	3	3	3	3	3	3	2	-	2	-	2	3

CO - PSO MAPPING:

	PSO1	PSO2
CO1	3	2
CO2	3	2
CO3	3	2
CO4	3	2
CO5	3	2
Avg	3	2



VIDYA JYOTHI INSTITUTE OF TECHNOLOGY

Department of Computer Science & Engineering

Year & Sem: III Year I Sem

Course name: Basic Electronics & Instrumentation

Course Code:OE

Regulation: R15

COURSE OUTCOMES:

After completing this course the student must demonstrate the knowledge and ability to	
CO1	Summarize the concepts of different Diode devices with its characteristics.
CO2	Summarize the concepts of different Transistor devices with its characteristics.
CO3	Describe the fundamental concepts and basic principle of meters.
CO4	Categorize different transducers and their working principles
CO5	Explain different bridges and understand how different physical parameters can beacquired.

CO -PO MAPPING:

	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	3	3	3	3	1	-	2	-	2	1	-	3
CO 2	3	3	3	3	1	-	2	-	2	1	-	3
CO 3	3	3	3	3	1	-	2	-	2	1	-	3
CO 4	3	3	3	3	1	-	2	-	2	1	-	3
CO 5	3	3	3	3	1	-	2	-	2	1	-	3
Avg	3	3	3	3	1	-	2	-	2	1	-	3

CO - PSO MAPPING:

	PSO1	PSO2
CO1	2	2
CO2	2	2
CO3	2	1
CO4	1	1
CO5	1	2
Avg	2	2



VIDYA JYOTHI INSTITUTE OF TECHNOLOGY

Department of Computer Science & Engineering

Year & Sem: III Year I Sem

Course name: Non-Conventional Energy Sources

Course Code:OE

Regulation: R15

COURSE OUTCOMES:

After completing this course the student must demonstrate the knowledge and ability to	
CO1	Realize the importance of renewable energy sources for energy planning.
CO2	Understand the value of solar energy potential and exploit the solar energy for real world applications.
CO3	Understand the potential of wind energy, types of wind mills, performance characteristics and Betz criteria.
CO4	Analyze the potential of both tidal and ocean thermal energies and learn the extraction methods.
CO5	Know the potential of Geothermal, Bio-mass energies and learn relevant extraction methods.

CO -PO MAPPING:

	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	3	1	3	3	-	3	3	-	-	-	-	-
CO 2	3	3	3	3	1	2	2	-	-	-	-	-
CO 3	3	2	2	3	-	2	2	-	-	1	-	-
CO 4	3	3	3	3	1	2	2	1	-	-	1	-
CO 5	3	2	3	3	1	2	2	1	-	1	1	-
Avg	3	3	3	3	1	2	2	1	-	1	1	-

CO - PSO MAPPING:

	PSO1	PSO2
CO1	2	2
CO2	3	2
CO3	2	2
CO4	3	3
CO5	2	2
Avg	2	2



VIDYA JYOTHI INSTITUTE OF TECHNOLOGY

Department of Computer Science & Engineering

Year & Sem: III Year I Sem

Course name: Elements of Mechanical Engineering

Course Code: OE

Regulation: R15

COURSE OUTCOMES:

After completing this course the student must demonstrate the knowledge and ability to	
CO1	Understand the basic concepts of mechanical engineering.
CO2	Applying principles of engineering mechanics in mechanism and machines
CO3	Develop manufacturing methods to produce engineering components.
CO4	Evaluating alternative designs for the engineering components
CO5	Comparing various standards relevant to automobiles.

CO -PO MAPPING:

	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	3	-	-	-	-	-	-	-	-	-	-	-
CO 2	2	2	-	-	-	-	-	-	-	-	-	-
CO 3	3	-	3	-	-	-	-	-	-	-	-	-
CO 4	2	-	-	-	-	-	-	-	-	-	-	-
CO 5	2	-	-	2	-	-	-	-	-	-	-	-
Avg	2	2	3	2	-	3	-	-	-	-	-	-

CO - PSO MAPPING:

	PSO1	PSO2
CO1	-	2
CO2	-	3
CO3	-	2
CO4	-	2
CO5	-	2
Avg	-	2



VIDYA JYOTHI INSTITUTE OF TECHNOLOGY

Department of Computer Science & Engineering

Year & Sem: III Year I Sem

Course name: Product Engineering

Course Code:OE

Regulation: R15

COURSE OUTCOMES:

After completing this course the student must demonstrate the knowledge and ability to	
CO1	Identifying scheduling techniques for project management.
CO2	Designing the products and their life cycles.
CO3	Generating the products with different material requirements.
CO4	Conceptualization the products with their drawings for standardization.
CO5	Evaluating the life of the products by conducting various tests.

CO -PO MAPPING:

	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	2	1	3	1	-	-	-	-	-	-	-	-
CO 2	3	2	2	2	2	2	2	1	-	-	-	-
CO 3	3	2	2	2	-	-	-	-	-	-	-	-
CO 4	2	2	2	2	-	-	-	-	-	-	-	-
CO 5	2	1	3	1	-	-	-	-	-	-	-	2
Avg	2	2	2	2	2	2	2	1	-	-	-	2

CO - PSO MAPPING:

	PSO1	PSO2
CO1	-	-
CO2	2	-
CO3	-	-
CO4	-	-
CO5	2	-
Avg	2	-



VIDYA JYOTHI INSTITUTE OF TECHNOLOGY

Department of Computer Science & Engineering

Year & Sem: III Year I Sem

Course name: Smart City

Course Code:OE

Regulation: R15

COURSE OUTCOMES:

After completing this course the student must demonstrate the knowledge and ability to	
CO1	Understand the necessity of smart infrastructure and to promote cities that provide quality of life to citizens.
CO2	Explain technology-based solution on smart mobility.
CO3	Illustrate & introduce the smart and sustainable waste and water management for smart cities.
CO4	Evaluate economical models for smart infrastructure solution.
CO5	Create healthy and waste ridden environment.

CO -PO MAPPING:

	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	3	2	1	1		1	2	2	2	1		2
CO 2	3	3	3	2	3	2	2	1	2	2	1	2
CO 3	2	2	3	3	3	3	3	2	3	1		3
CO 4	2	2	1	2	2	1	3	2	1	1		2
CO 5	1	2	1			1	1		2	1	2	
Avg	2	2	2	2	3	2	2	2	2	1	2	2

CO - PSO MAPPING:

	PSO1	PSO2
CO1	3	3
CO2	2	3
CO3	1	1
CO4	1	1
CO5	1	2
Avg	2	2



VIDYA JYOTHI INSTITUTE OF TECHNOLOGY

Department of Computer Science & Engineering

Year & Sem: III Year I Sem

Course name: Remote Sensing & GIS

Course Code: OE

Regulation: R15

COURSE OUTCOMES:

After completing this course the student must demonstrate the knowledge and ability to	
CO1	Select the type of remote sensing technique / data for required purpose.
CO2	Identify the earth surface features from satellite images.
CO3	Analyze the energy interactions in the atmosphere and earth surface features.
CO4	Prepare thematic maps.
CO5	Interpretations of satellite data for various applications.

CO -PO MAPPING:

	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	-	3	-	3	2	3	2	-	2	2	-	2
CO 2	3	1	-	2	2	-	3	-	1	-	-	2
CO 3	3	2	2	1	2	-	2	-	-	3	-	2
CO 4	1	3	3	2	3	2	2	-	2	2	2	3
CO 5	2	2	-	3	2	2	2	-	1	-	-	2
Avg	2	2	3	2	2	2	2	-	1	2	2	2

CO - PSO MAPPING:

	PSO1	PSO2
CO1	2	3
CO2	3	2
CO3	1	2
CO4	1	2
CO5	2	1
Avg	2	2



VIDYA JYOTHI INSTITUTE OF TECHNOLOGY

Department of Computer Science & Engineering

Year & Sem: III Year I Sem

Course name: Total Quality Management

Course Code:OE

Regulation: R15

COURSE OUTCOMES:

After completing this course the student must demonstrate the knowledge and ability to	
CO1	To explore the quality framework in production and operational aspects.
CO2	To evaluate the role of quality in product design and analysis.
CO3	To analyze quality in process improvement and modern production management tools.
CO4	To understand the role of TQM tools and techniques in elimination of wastages and reduction of defects.
CO5	To analyze the requirements of quality management system.

CO -PO MAPPING:

	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	2	1	3	2	2	-	-	-	3	3	2	3
CO 2	-	-	3	3	2	-	-	-	3	-	1	3
CO 3	2	-	2	2	2	-	-	-	3	-	-	3
CO 4	-	-	3	-	3	-	3	-	-	-	-	-
CO 5	-	-	2	-	-	-	3	1	3	2	-	-
Avg	2	1	3	2	2	2	3	1	3	2	2	3

CO - PSO MAPPING:

	PSO1	PSO2
CO1	-	2
CO2	2	2
CO3	2	2
CO4	2	2
CO5	-	2
Avg	2	2



VIDYA JYOTHI INSTITUTE OF TECHNOLOGY

Department of Computer Science & Engineering

Year & Sem: III Year I Sem

Course name: Operating Systems & Computer Networks Lab Through Linux

Course Code:A15588

Regulation: R15

COURSE OUTCOMES:

After completing this course the student must demonstrate the knowledge and ability to	
CO1	Implement Data link layer framing methods.
CO2	Implement various algorithms for error detection and correction.
CO3	Simulate various routing algorithms.
CO4	Implement CPU scheduling algorithms.
CO5	Simulate various page replacement techniques and file allocation methods.
CO6	Implement deadlock avoidance and prevention algorithms

CO -PO MAPPING:

	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	3	3	3	3	3	3	2	2	2	1	2	2
CO 2	3	3	3	3	3	3	2	2	2	1	2	2
CO 3	3	3	3	3	2	2	2	2	2	1	2	2
CO 4	3	3	3	3	3	3	2	2	2	1	2	2
CO 5	3	3	3	3	2	2	2	2	2	1	2	2
CO6	3	3	3	3	3	3	2	2	2	1	2	2
Avg	3	3	3	3	3	3	2	2	2	1	2	2

CO - PSO MAPPING:

	PSO1	PSO2
CO1	3	3
CO2	3	3
CO3	3	3
CO4	3	3
CO5	3	3
CO6	3	3



VIDYA JYOTHI INSTITUTE OF TECHNOLOGY

Department of Computer Science & Engineering

Avg	3	3
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VIDYA JYOTHI INSTITUTE OF TECHNOLOGY

Department of Computer Science & Engineering

Year & Sem: III Year I Sem

Course name: Advanced Communication Skills Lab

Course Code: A15089

Regulation: R15

COURSE OUTCOMES:

After completing this course the student must demonstrate the knowledge and ability to	
CO1	Develop sound communication skills in various situations with the help of (enriched) vocabulary.
CO2	Practice reading techniques for a faster and better comprehension.
CO3	Exhibit strong writing skills to express ideas effectively.
CO4	Demonstrate effective presentation skills.
CO5	Use appropriate verbal and non-verbal skills for a successful career.

CO -PO MAPPING:

	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	-	-	-	-	-	-	-	-	-	3	-	3
CO 2	-	-	-	-	-	-	-	-	-	3	-	3
CO 3	-	-	-	-	-	-	-	-	-	3	-	3
CO 4	-	-	-	-	-	-	-	-	2	3	-	3
CO 5	-	-	-	-	-	-	-	-	2	3	-	3
Avg	-	-	-	-	-	-	-	-	2	3	-	3

CO - PSO MAPPING:

	PSO1	PSO2
CO1	3	3
CO2	3	3
CO3	3	3
CO4	3	3
CO5	3	3
Avg	3	3



III – II



VIDYA JYOTHI INSTITUTE OF TECHNOLOGY

Department of Computer Science & Engineering

Year & Sem: III Year II Sem

Course name: Web Technologies

Course Code:A16522

Regulation: R15

COURSE OUTCOMES:

After completing this course the student must demonstrate the knowledge and ability to	
CO1	Create static and dynamic web pages using HTML and java script
CO2	Analyze the XML and how to parse XML data with java
CO3	Develop web applications using server side scripting language-PHP
CO4	Implement the web applications using JDBC and java servlets
CO5	Apply web applications with Java Server Pages

CO -PO MAPPING:

	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	3		3	-	3	2	2	1	2	-	3	2
CO 2	3	1	3	-	2	-	-	-	-	-	2	2
CO 3	3	3	3	-	3	2	3	2	3	2	3	3
CO 4	3	2	3	3	2	3	3	1	2	2	3	3
CO 5	3	2	3	2	2	3	2	1	2	2	3	3
Avg	3	2	3	3	2	3	3	1	2	2	3	3

CO - PSO MAPPING:

	PSO1	PSO2
CO1	3	2
CO2	3	2
CO3	2	2
CO4	3	3
CO 5	3	3
Avg	3	2



VIDYA JYOTHI INSTITUTE OF TECHNOLOGY

Department of Computer Science & Engineering

Year & Sem: III year II Sem

Course name: Compiler Design

Course Code:A16523

Regulation: R 15

COURSE OUTCOMES:

After completing this course the student must demonstrate the knowledge and ability to	
CO1	Differentiate the phases in compilation & parsing.
CO2	Identify the process in parsing and semantic analysis.
CO3	Explain about symbol tables and code optimization methods.
CO4	Explain about code optimization methods.
CO5	Analyze data flow and generate object code.

CO -PO MAPPING:

	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	3	2	3	3	1	-	1	-	1	1	-	3
CO 2	3	3	3	3	3	-	1	-	1	1	-	3
CO 3	3	2	3	3	2	-	-	-	2	2	1	3
CO 4	3	2	3	3	2	-	-	-	2	2	1	3
CO 5	3	2	3	3	2	-	1	-	2	2	2	3
Avg	3	2	3	3	2	-	1	-	2	2	1	3

CO - PSO MAPPING:

	PSO1	PSO2
CO1	3	2
CO2	3	2
CO3	3	2
CO4	3	2
CO5	3	2
Avg	3	2



VIDYA JYOTHI INSTITUTE OF TECHNOLOGY

Department of Computer Science & Engineering

Year & Sem: III B.Tech II Sem

Course name: Data Warehousing And Data Mining

Course Code:A16525

Regulation: R15

COURSE OUTCOMES:

After completing this course the student must demonstrate the knowledge and Ability to	
CO 1	Understand the fundamentals of Data warehousing and OLAP technology.
CO 2	Understand Data Mining and Data Pre-processing.
CO 3	Analyze and apply association algorithms on large data sets.
CO 4	Analyze and apply classification algorithms on large data sets.
CO 5	Analyze and apply clustering techniques on large data.

CO -PO MAPPING:

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3	3	3	3	3	2	2	3	2	3	3
CO2	3	3	3	3	3	3	2	2	2	2	3	3
CO3	3	3	3	3	3	3	2	2	3	2	3	3
CO4	3	3	3	3	3	3	2	2	3	2	3	3
CO5	3	3	3	3	3	3	2	2	3	2	3	3
Avg	3	3	3	3	3	3	2	2	3	2	3	3

CO - PSO MAPPING:

	PSO1	PSO2
CO1	3	3
CO2	3	3
CO3	3	3
CO4	3	3
CO5	3	3
Avg	3	3



VIDYA JYOTHI INSTITUTE OF TECHNOLOGY

Department of Computer Science & Engineering

Year & Sem: III B.Tech II Sem

Course Name: Managerial Economics And Financial Analysis

Course Code:A16018

Regulation: R15

COURSE OUTCOMES:

After completing this course the student must demonstrate the knowledge and Ability to

CO 1	Analyze the scope of managerial economics.
CO 2	Apply managerial tools and techniques to attain optimal decisions.
CO 3	Analyze how production function is carried out to achieve maximum output.
CO 4	Analyze changing business environment in post liberalization scenario.
CO 5	Evaluate and interpret the financial statements to make informed decisions.

CO -PO MAPPING:

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	2	3	3	3	3	2	2	3	2	3	3
CO2	2	2	3	3	2	3	2	2	2	2	3	3
CO3	2	2	3	2	2	3	2	2	3	2	3	3
CO4	3	3	3	2	2	3	2	2	3	2	3	3
CO5	3	3	3	2	3	3	2	2	3	2	3	3
Avg	2	2	3	2	2	3	2	2	3	2	3	3

CO - PSO MAPPING:

	PSO1	PSO2
CO1	3	2
CO2	2	2
CO3	2	2
CO4	2	3
CO5	2	3
Avg	2	2



VIDYA JYOTHI INSTITUTE OF TECHNOLOGY

Department of Computer Science & Engineering

Year & Sem: III B.Tech II Sem

Course name: Object Oriented Analysis & Design

Course Code:A16526

Regulation: R15

COURSE OUTCOMES:

After completing this course the student must demonstrate the knowledge and Ability to	
CO 1	Understand object oriented software development process.
CO 2	Gain exposure to object oriented methodologies & UML diagrams.
CO 3	Use object oriented behavioral modeling analysis for project.
CO 4	Apply object oriented Architectural modeling analysis for project.
CO 5	Construct for developing structural design of a given project by using.

CO -PO MAPPING:

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	3	3	3	3	1	1	2	2	3	3	3
CO2	2	3	3	3	3	2	1	1	3	3	3	3
CO3	2	3	3	3	3	1	2	2	2	3	2	3
CO4	2	3	3	3	3	2	2	2	2	3	2	3
CO5	2	3	3	3	3	2	2	2	2	3	2	3
Avg	2	3	3	3	3	2	2	2	2	3	2	3

CO - PSO MAPPING:

	PSO1	PSO2
CO1	3	2
CO2	3	2
CO3	3	2
CO4	3	3
CO5	3	2
Avg	3	3



VIDYA JYOTHI INSTITUTE OF TECHNOLOGY

Department of Computer Science & Engineering

Year & Sem: III B.Tech II Sem

Course name: Fundamentals Of Embedded Systems

Course Code:OE

Regulation: R15

COURSE OUTCOMES:

After completing this course the student must demonstrate the knowledge and Ability to	
CO 1	Contrast the basics of embedded system with its application.
CO 2	Illustrate the components required for embedded system design.
CO 3	Summarize the different development tool for embedded system.
CO 4	Relate the concepts of RTOS in real time programming.
CO 5	Outline the features of advanced buses for distributed data transfer in system design.

CO -PO MAPPING:

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3	3	3	3	-	3	-	3	3	-	3
CO2	3	3	3	3	3	-	3	-	3	3	-	3
CO3	3	3	3	3	3	-	3	-	3	3	-	3
CO4	3	3	3	3	3	-	3	-	3	3	-	3
CO5	3	3	3	3	3	-	3	-	3	3	-	3
Avg	3	3	3	3	3	-	3	-	3	3	-	3

CO - PSO MAPPING:

	PSO1	PSO2
CO1	3	3
CO2	3	3
CO3	3	3
CO4	3	3
CO5	3	3
Avg	3	3



VIDYA JYOTHI INSTITUTE OF TECHNOLOGY

Department of Computer Science & Engineering

Year & Sem: III B.Tech II Sem

Course name: Principles of Communication

Course Code: OE

Regulation: R15

COURSE OUTCOMES:

After completing this course the student must demonstrate the knowledge and Ability to

CO 1	Understanding the fundamentals of communications.
CO 2	Summarize the different modulation techniques involved in analog Communication
CO 3	Summarize the different modulation techniques involved in digital Communication
CO 4	Identify the applications of various wired and wireless communications in real time.
CO 5	Elaborate the fundamentals of satellite and optical communications.

CO -PO MAPPING:

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3	3	-	3	-	3	-	3	3	-	3
CO2	3	3	3	-	3	-	3	-	3	3	-	3
CO3	3	3	3	-	3	-	3	-	3	3	-	3
CO4	3	3	3	-	3	-	3	--	3	3	-	3
CO5	3	3	3	--	3	-	3	-	3	3	-	3
Avg	3	3	3	-	3	-	3	-	3	3	-	3

CO - PSO MAPPING:

	PSO1	PSO2
CO1	3	2
CO2	3	2
CO3	3	2
CO4	3	2
CO5	3	2
Avg	3	2



VIDYA JYOTHI INSTITUTE OF TECHNOLOGY

Department of Computer Science & Engineering

Year & Sem: III B.Tech II Sem

Course name: Principles of Electrical Power Utilization

Course Code: OE

Regulation: R15

COURSE OUTCOMES:

After completing this course the student must demonstrate the knowledge and Ability to	
CO 1	Understand terms and concepts of illumination.
CO 2	Apply the concepts of different electric lamps and good lighting Practices for artificial lighting systems.
CO 3	Understands the methods of electric heating and welding.
CO 4	Understands the concepts of different electric traction systems and existing traction system in India.
CO 5	Analyze the mechanics of train movement.

CO -PO MAPPING:

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3	3	2	-	2	1	-	-	-	1	-
CO2	3	3	3	2	-	2	1	-	-	-	1	-
CO3	3	3	3	2	-	2	1	-	-	-	1	-
CO4	3	3	3	2	-	2	1	-	-	-	1	-
CO5	3	3	3	2	-	2	1	-	-	-	1	-
Avg	3	3	3	2	-	2	1	-	-	-	1	-

CO - PSO MAPPING:

	PSO1	PSO2
CO1	1	1
CO2	1	1
CO3	1	1
CO4	1	1
CO5	1	1
Avg	1	1



VIDYA JYOTHI INSTITUTE OF TECHNOLOGY

Department of Computer Science & Engineering

Year & Sem: III B.Tech II Sem

Course name: Energy Audit And Conservation

Course Code: A16525

Regulation: R15

COURSE OUTCOMES:

After completing this course the student must demonstrate the knowledge and Ability to	
CO 1	Realize the need for energy auditing and conservation. Get awareness on types of energy audit; represent energy flows and energy consumption in tabular and graphical methods.
CO 2	Understand and exploit energy saving opportunities in energy efficient motors and power factor improvement methods.
CO 3	Learn energy auditing and conservation opportunities in HVAC systems with respect to energy efficient buildings.
CO 4	Analyze economic viability with respect to real world problems using depreciation methods.
CO 5	Know the check lists for energy conservation in boilers, heat pumps, cooling systems, compressors and fans.

CO -PO MAPPING:

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	2	1	-	-	1	2	1	-	1	1	1
CO2	3	2	1	-	-	1	2	1	-	1	1	1
CO3	3	2	1	-	-	1	2	1	-	1	1	1
CO4	3	2	1	2	-	1	2	1	-	3	1	1
CO5	3	2	1	1	-	1	2	1	-	1	3	1
Avg	3	2	1	2	-	1	2	1	-	1	1	1

CO - PSO MAPPING:

	PSO1	PSO2
CO1	1	1
CO2	1	1



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CO3	1	1
CO4	1	1
CO5	1	1
Avg	1	1



VIDYA JYOTHI INSTITUTE OF TECHNOLOGY

Department of Computer Science & Engineering

Year & Sem: III B.Tech II Sem

Course name: Basic Automobile Engineering

Course Code:OE

Regulation: R15

COURSE OUTCOMES:

After completing this course the student must demonstrate the knowledge and Ability to	
CO 1	Understanding the basic structure of an automobile.
CO 2	Evaluating different cooling and lubrication systems of an automobile.
CO 3	Analyzing the electrical systems in tandem with ignition systems.
CO 4	Comparing the various transmission systems for their effectiveness.
CO 5	Understanding and there by implement the subsystems in the automobile for its low emission.

CO -PO MAPPING:

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	1	1	2	-	-	-	-	-	-	-	1
CO2	2	1	1	2	-	-	-	-	-	-	-	1
CO3	3	2	2	2	-	-	-	-	-	-	-	1
CO4	2	1	1	3	-	-	-	-	-	-	-	2
CO5	2	1	1	3	-	-	3	2	-	-	-	2
Avg	2	1	1	3	-	-	3	2	-	-	-	1

CO - PSO MAPPING:

	PSO1	PSO2
CO1	-	2
CO2	-	2
CO3	-	3
CO4	-	2
CO5	-	2
Avg	-	2



VIDYA JYOTHI INSTITUTE OF TECHNOLOGY

Department of Computer Science & Engineering

Year & Sem: III B.Tech II Sem

Course name: Material Science Engineering

Course Code:OE

Regulation: R15

COURSE OUTCOMES:

After completing this course the student must demonstrate the knowledge and Ability to

CO 1	Understanding the crystal structures and necessity of alloys.
CO 2	Classifying the ferrous materials and their heat treatment process.
CO 3	Evaluating the non-ferrous materials and their applications in Engineering usage.
CO 4	Applying the composite materials as an efficient substitute.
CO 5	Implementing the principles of nano science and their by producing materials.

CO -PO MAPPING:

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	2	-	3	1	-	-	-	-	-	-	1
CO2	3	1	-	2	2	-	-	-	-	-	-	1
CO3	3	2	-	2	2	-	-	-	-	-	-	1
CO4	2	2	-	3	1	-	-	-	-	-	-	2
CO5	2	1	-	2	1	-	-	-	-	-	-	2
Avg	2	2	-	2	1	-	-	-	-	-	-	1

CO - PSO MAPPING:

	PSO1	PSO2
CO1	2	-
CO2	2	-
CO3	3	-
CO4	2	-
CO5	2	-
Avg	2	-



VIDYA JYOTHI INSTITUTE OF TECHNOLOGY

Department of Computer Science & Engineering

Year & Sem: III B.Tech II Sem

Course name: Green Building Technologies

Course Code: OE

Regulation: R15

COURSE OUTCOMES:

After completing this course the student must demonstrate the knowledge and Ability to	
CO 1	Understand the Green building concept and focus on approaches that make building sustainable.
CO 2	Illustrate Green building assessment and accreditation system.
CO 3	Able to apply low energy building strategies.
CO 4	Designing green building and improve sustainability of infrastructure.
CO 5	Classify the economic benefits of green buildings.

CO -PO MAPPING:

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	2	1	-	-	2	3	2	3	1	-	1
CO2	1	-	1	1	1	2	3	1	2	1	1	1
CO3	3	2	3	2	3	3	3	2	3	1	2	2
CO4	3	3	2	3	2	2	3	2	1	-	1	2
CO5	2	1	-	-	-	2	2	1	2	-	2	1
Avg	2	2	2	2	2	2	3	2	2	1	2	1

CO - PSO MAPPING:

	PSO1	PSO2
CO1	1	2
CO2	1	2
CO3	2	3
CO4	2	2
CO5	-	-
Avg	2	2



VIDYA JYOTHI INSTITUTE OF TECHNOLOGY

Department of Computer Science & Engineering

Year & Sem: III B.Tech II Sem

Course name: Environment Pollution & Control Methods

Course Code: OE

Regulation: R15

COURSE OUTCOMES:

After completing this course the student must demonstrate the knowledge and Ability to

CO 1	Understanding about the various air pollutants and effect on environment.
CO 2	Analyze quality of air in the form of air quality index and dispersion modeling.
CO 3	Determine sampling and measurements of air Pollutants.
CO 4	Analysis and measurement of soil contamination.
CO 5	Predict types of noise and problems arise due to noise pollution.

CO -PO MAPPING:

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3	-	-	-	2	2	1	-	1	-	1
CO2	2	-	1	2	2	1	1	1		1		1
CO3	1	2	3	1	-	1	1	-	-	1	-	-
CO4	2	1	-	-	-	1	1	-	1	-	-	-
CO5	1	-	1	-	-	1	1	1	-	1	-	1
Avg	2	2	2	2	2	1	1	1	1	1	-	1

CO - PSO MAPPING:

	PSO1	PSO2
CO1	-	2
CO2	-	3
CO3	-	2
CO4	-	1
CO5	-	2
Avg	-	2



VIDYA JYOTHI INSTITUTE OF TECHNOLOGY

Department of Computer Science & Engineering

Year & Sem: III B.Tech II Sem

Course name: Financial Institutions And Markets

Course Code: OE

Regulation: R15

COURSE OUTCOMES:

After completing this course the student must demonstrate the knowledge and Ability to	
CO 1	Understand object oriented software development process
CO 2	Gain exposure to object oriented methodologies & UML diagrams
CO 3	Use object oriented behavioral modeling analysis for project
CO 4	Apply object oriented Architectural modeling analysis for project
CO 5	Construct for developing structural design of a given project by using

CO -PO MAPPING:

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	3	3	3	3	1	1	2	2	3	3	3
CO2	2	3	3	3	3	2	1	1	3	3	3	3
CO3	2	3	3	3	3	1	2	2	2	3	2	3
CO4	2	3	3	3	3	2	2	2	2	3	2	3
CO5	2	3	3	3	3	2	2	2	2	3	2	3
Avg	2	3	3	3	3	2	2	2	2	3	2	3

CO - PSO MAPPING:

	PSO1	PSO2
CO1	3	2
CO2	3	2
CO3	3	2
CO4	3	3
CO5	3	2
Avg	3	3



VIDYA JYOTHI INSTITUTE OF TECHNOLOGY

Department of Computer Science & Engineering

Year & Sem: III B.Tech II Sem

Course name: Web Technologies & Case Tools Lab

Course Code: A16589

Regulation: R15

COURSE OUTCOMES:

After completing this course the student must demonstrate the knowledge and Ability to	
CO1	Create static web application using HTML.
CO2	Create dynamic web applications XML, Java script and validation of forms.
CO3	Develop web applications with servlets Java server pages, PHP, MYSQL.
CO4	Understand how UML supports the entire OOAD process.
CO5	Apply the phases of OOAD to real time applications.
CO6	Understand the essential characteristics of tools used for designing a model.

CO -PO MAPPING:

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	3	3	3	3	1	1	2	2	3	3	3
CO2	2	3	3	3	3	2	1	1	3	3	3	3
CO3	2	3	3	3	3	1	2	2	2	3	2	3
CO4	2	3	3	3	3	2	2	2	2	3	2	3
CO5	2	3	3	3	3	2	2	2	2	3	2	3
CO6	2	3	3	3	3	2	2	2	2	3	2	3
Avg	2	3	3	3	3	2	2	2	2	3	2	3

CO - PSO MAPPING:

	PSO1	PSO2
CO1	3	2
CO2	3	2
CO3	3	2
CO4	3	3



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Department of Computer Science & Engineering

CO5	3	2
CO6	3	2
Avg	3	3



VIDYA JYOTHI INSTITUTE OF TECHNOLOGY
Department of Computer Science & Engineering

Year & Sem: III B.Tech II Sem

Course name: Compiler Design & Data Mining Lab

Course Code: A16590

Regulation: R15

COURSE OUTCOMES:

After completing this course the student must demonstrate the knowledge and Ability to	
CO1	Understand the role of Lexical analyzer.
CO2	Identify the working of compiler construction tools-LEX, YACC and Parser.
CO3	Derive Machine code from intermediate code.
CO4	Able to understand WEKA tool.
CO5	Ability to add mining algorithms as a component to the existing tools.
CO6	Able to apply mining techniques for realistic data.

CO -PO MAPPING:

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	3	3	3	3	1	1	2	2	3	3	3
CO2	2	3	3	3	3	2	1	1	3	3	3	3
CO3	2	3	3	3	3	1	2	2	2	3	2	3
CO4	2	3	3	3	3	2	2	2	2	3	2	3
CO5	2	3	3	3	3	2	2	2	2	3	2	3
CO6	2	3	3	3	3	2	2	2	2	3	2	3
Avg	2	3	3	3	3	2	2	2	2	3	2	3

CO - PSO MAPPING:

	PSO1	PSO2
CO1	3	2
CO2	3	2
CO3	3	2
CO4	3	3



VIDYA JYOTHI INSTITUTE OF TECHNOLOGY
Department of Computer Science & Engineering

CO5	3	2
CO6	3	2
Avg	3	3



IV – I



VIDYA JYOTHI INSTITUTE OF TECHNOLOGY

Department of Computer Science & Engineering

Year & Sem: IV Year I Sem

Course name: Mobile Application Development

Course Code: A17531

Regulation: R15

COURSE OUTCOMES:

After completing this course the student must demonstrate the knowledge and ability to	
CO 1	Understand the concept of J2ME.
CO 2	Design a User interface for a mobile application using J2ME.
CO 3	Create a mobile application for small computing devices.
CO 4	Apply the concepts of JDBC & Embedded SQL for Database Connection.
CO 5	Understand the generic connection framework.

CO-PO MAPPING:

	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	3	3	3	3	3	1	3	2	3	3	2	3
CO 2	2	3	3	3	3	1	2	1	2	2	2	2
CO 3	3	3	3	3	3	1	3	1	2	3	2	3
CO 4	3	3	3	3	3	1	3	1	3	3	2	3
CO 5	3	2	2	2	2	1	1	1	2	2	2	3
Avg	3	3	3	3	3	1	2	1	3	3	2	3

CO - PSO MAPPING:

	PSO1	PSO2
CO1	3	3
CO2	2	2
CO3	3	3
CO4	3	3
CO5	3	3
Avg	3	3



VIDYA JYOTHI INSTITUTE OF TECHNOLOGY

Department of Computer Science & Engineering

Year & Sem: IV Year I Sem

Course name: Information Security

Course Code: A17532

Regulation: R15

COURSE OUTCOMES:

After completing this course the student must demonstrate the knowledge and ability to	
CO1	Identify various security attacks.
CO2	Understand various encryption principles and algorithms.
CO3	Analyze different cryptography algorithms.
CO4	Understand various security association and key management.
CO5	Design a firewall for security.

CO -PO MAPPING:

	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	2	3	3	3	3	2	2	2	1	1	2	3
CO 2	2	3	3	3	3	3	2	3	2	1	2	3
CO 3	2	2	2	2	3	2	2	3	2	1	2	3
CO 4	2	3	3	2	3	2	2	2	2	2	3	3
CO 5	3	3	3	3	3	2	2	2	2	2	3	3
Avg	2	3	3	3	3	2	2	2	2	1	2	3

CO - PSO MAPPING:

	PSO1	PSO2
CO1	3	3
CO2	3	3
CO3	3	3
CO4	3	3
CO5	3	3
Avg	3	3



VIDYA JYOTHI INSTITUTE OF TECHNOLOGY

Department of Computer Science & Engineering

Year & Sem: IV Year I Sem

Course name: Cloud Computing

Course Code: A17533

Regulation: R15

COURSE OUTCOMES:

After completing this course the student must demonstrate the knowledge and ability to	
CO1	Understand different Cloud Services.
CO2	Analyze different Approaches for migration into cloud.
CO3	Prioritize the challenges in cloud Technology.
CO4	Understand the Virtualization Concepts.
CO5	Assess future Research directions in cloud computing.

CO -PO MAPPING:

	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	3	3	1	2	1	2	1	1	3	3	2	3
CO 2	3	2	3	3	2	1	1	2	3	3	2	3
CO 3	3	2	3	3	3	2	1	1	3	3	2	3
CO 4	3	2	3	2	3	2	2	2	2	3	2	3
CO 5	2	2	2	1	2	1	1	2	2	2	2	2
Avg	3	2	3	2	3	2	1	2	3	3	2	3

CO - PSO MAPPING:

	PSO1	PSO2
CO1	3	3
CO2	3	2
CO3	2	3
CO4	3	3
CO5	3	3
Avg	3	3



VIDYA JYOTHI INSTITUTE OF TECHNOLOGY

Department of Computer Science & Engineering

Year & Sem: IV Year I Sem

Course name: Big Data Analytics

Course Code: A17535

Regulation: R15

COURSE OUTCOMES:

After completing this course the student must demonstrate the knowledge and Ability to	
CO 1	Explain the foundations, definitions, and challenges of Big Data.
CO 2	Use Hadoop file system interfaces.
CO 3	Program using HADOOP and Map Reduce,NOSQL.
CO 4	Understand various Hadoop Eco Systems like Pig,Hive
CO 5	Outline Hadoop Eco System using Hbase,Zookeeper.

CO -PO MAPPING:

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3	3	3	3	3	3	2	2	2	2	2
CO2	3	3	3	3	3	3	3	2	3	3	2	2
CO3	3	3	3	3	3	3	3	2	3	3	3	3
CO4	3	3	3	3	3	3	3	2	3	3	3	3
CO5	3	3	3	3	3	3	3	2	2	3	3	3
Avg	3	3	3	3	3	3	3	2	3	3	2	3

CO - PSO MAPPING:

	PSO1	PSO2
CO1	3	3
CO2	3	3
CO3	3	3
CO4	3	3
CO5	3	3
Avg	3	3



VIDYA JYOTHI INSTITUTE OF TECHNOLOGY

Department of Computer Science & Engineering

Year & Sem: IV Year I Sem

Course name: Internet of Things

Course Code: A17537

Regulation: R15

COURSE OUTCOMES:

After completing this course the student must demonstrate the knowledge and Ability to	
CO 1	Describe various IoT enabled technologies.
CO 2	Understand the concepts of M2M with necessary protocols.
CO 3	Illustrate Python programming for IoT.
CO 4	Examine the Python programming with Raspberry PI.
CO 5	Design web applications for IoT.

CO -PO MAPPING:

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3	3	3	3	2	1	1	2	1	2	2
CO2	3	3	3	3	3	2	1	1	2	1	2	2
CO3	3	3	3	3	3	2	1	2	3	2	2	2
CO4	3	3	3	3	3	2	1	2	3	3	2	2
CO5	3	3	3	3	3	2	1	3	3	3	2	2
Avg	3	3	3	3	3	2	1	3	3	2	2	2

CO - PSO MAPPING:

	PSO1	PSO2
CO1	3	3
CO2	3	3
CO3	3	3
CO4	3	3
CO5	3	3
Avg	3	3



VIDYA JYOTHI INSTITUTE OF TECHNOLOGY

Department of Computer Science & Engineering

Year & Sem: IV Year I Sem

Course name: Advanced Databases

Course Code: A17538

Regulation: R15

COURSE OUTCOMES:

After completing this course the student must demonstrate the knowledge and Ability to

CO 1	Understand the concepts of Distributed Database Systems.
CO 2	Identify different Architectural Models for Distributed DBMS.
CO 3	Characterize the query processors.
CO 4	Design Algorithms for Concurrency control Mechanisms.
CO 5	Decide different Parallel DBMS Techniques based on given

CO -PO MAPPING:

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3	3	3	3	2	1	2	3	2	2	2
CO2	3	3	3	3	3	2	1	2	3	2	2	2
CO3	3	3	3	3	3	2	1	3	3	2	2	2
CO4	3	3	3	3	3	2	1	3	3	3	2	2
CO5	3	3	3	3	3	2	1	3	3	3	2	2
Avg	3	3	3	3	3	2	1	3	3	2	2	2

CO - PSO MAPPING:

	PSO1	PSO2
CO1	3	3
CO2	3	3
CO3	3	3
CO4	3	3
CO5	3	3
Avg	3	3



VIDYA JYOTHI INSTITUTE OF TECHNOLOGY

Department of Computer Science & Engineering

Year & Sem: IV Year I Sem

Course name: Software Testing Methodologies

Course Code: A17534

Regulation: R15

COURSE OUTCOMES:

After completing this course the student must demonstrate the knowledge and Ability to	
CO 1	Understand the purpose of Software testing.
CO 2	Outline various transaction flow testing techniques.
CO 3	Understand domain testing.
CO 4	Construct decision tables for Logic Based Testing.
CO 5	Implement node reduction algorithm.

CO -PO MAPPING:

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3	3	3	2	1	2	2	2	2	2	2
CO2	3	3	3	3	2	1	2	2	2	2	2	2
CO3	3	3	3	3	2	1	2	2	2	2	2	2
CO4	3	3	3	3	3	2	2	2	2	2	2	2
CO5	3	3	3	3	3	2	2	2	3	3	2	2
Avg	3	3	3	3	2	1	2	2	2	2	2	2

CO - PSO MAPPING:

	PSO1	PSO2
CO1	3	3
CO2	3	3
CO3	3	3
CO4	3	3
CO5	3	3
Avg	3	3



VIDYA JYOTHI INSTITUTE OF TECHNOLOGY

Department of Computer Science & Engineering

Year & Sem: IV Year I Sem

Course name: Introduction To Mat Lab

Course Code: OE

Regulation: R15

COURSE OUTCOMES:

After completing this course the student must demonstrate the knowledge and Ability to	
CO 1	Break down computational problems into a series of simple steps.
CO 2	Create programs in the MATLAB language for engineering applications.
CO 3	Appraise and get familiarized with the visualization techniques.
CO 4	Familiarized with Different application tools required for different area of domain.
CO 5	Expose to the common algorithms and techniques that are the building blocks of MATLAB.

CO -PO MAPPING:

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3	3	-	-	-	-	-	-	-	-	-
CO2	-	-	-	-	-	-	-	-	-	-	-	-
CO3	3	2	-	2	3	-	2	-	-	-	-	-
CO4	-	-	-	-	-	-	-	-	-	-	-	-
CO5	2	3	3	3	3	-	-	-	-	-	-	-
Avg	2	3	2	2	2	-	2	-	-	2	-	2

CO - PSO MAPPING:

	PSO1	PSO2
CO1	3	3
CO2	3	3
CO3	3	3
CO4	3	3
CO5	3	3
Avg	3	3



VIDYA JYOTHI INSTITUTE OF TECHNOLOGY

Department of Computer Science & Engineering

Year & Sem: IV Year I Sem

Course name: Circuit Simulation Using Pspice

Course Code: OE

Regulation: R15

COURSE OUTCOMES:

After completing this course the student must demonstrate the knowledge and Ability to	
CO 1	Describe circuits for PSpice simulation.
CO 2	Understand the types of DC TO AC and their output variable analysis.
CO 3	Understand the response of transient analysis and obtain their output variables.
CO 4	Analyze simulation circuit for different applications.
CO 5	Develop simulation circuit for different applications

CO -PO MAPPING:

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3	3	2	2	-	-	-	-	-	-	-
CO2	3	3	3	3	3	-	-	-	2	-	-	-
CO3	3	3	3	3	3	3	-	-	2	-	2	3
CO4	3	3	3	3	2	3	-	-	2	-	2	3
CO5	3	3	3	3	2	3	-	-	2	-	2	3
Avg	3	3	3	3	3	3	-	-	2	-	2	3

CO - PSO MAPPING:

	PSO1	PSO2
CO1	3	2
CO2	3	2
CO3	3	2
CO4	3	2
CO5	3	2
Avg	3	2



VIDYA JYOTHI INSTITUTE OF TECHNOLOGY

Department of Computer Science & Engineering

Year & Sem: IV Year I Sem

Course name: Energy Storage Systems

Course Code: OE

Regulation: R15

COURSE OUTCOMES:

After completing this course the student must demonstrate the knowledge and Ability to	
CO 1	Understand Electrical Energy Storage Technologies.
CO 2	Understand the needs for electric energy storage
CO 3	Analyze the characteristics and features of energy from various sources.
CO 4	Classify various types of energy storage and various devices used for the purpose.
CO 5	Apply the same concepts to real time solutions like electric vehicles, smart Grid and SCADA etc.

CO -PO MAPPING:

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3	3	3	3	3	3	2	2	2	2	2
CO2	3	3	3	3	3	3	3	2	3	3	2	2
CO3	3	3	3	3	3	3	3	2	3	3	3	3
CO4	3	3	3	3	3	3	3	2	3	3	3	3
CO5	3	3	3	3	3	3	3	2	2	3	3	3
Avg	3	3	3	3	3	3	3	2	3	3	2	3

CO - PSO MAPPING:

	PSO1	PSO2
CO1	3	3
CO2	3	3
CO3	3	3
CO4	3	3
CO5	3	3
Avg	3	3



VIDYA JYOTHI INSTITUTE OF TECHNOLOGY

Department of Computer Science & Engineering

Year & Sem: IV Year I Sem

Course name: Electrical Vehicles And Hybrid Vehicle

Course Code: OE

Regulation: R15

COURSE OUTCOMES:

After completing this course the student must demonstrate the knowledge and Ability to	
CO 1	Understand the components of electric vehicles and fundamentals of electric vehicles.
CO 2	Understand the types of batteries and principles of operation of Batteries.
CO 3	Understand the basic principles of electric motors which can be used in electric vehicles.
CO 4	Understand the transmission of the drive system and the components of transmission.
CO 5	Understand the concepts of hybrid vehicles and analyze the performance of hybrid vehicles.

CO -PO MAPPING:

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3	2	2	-	1	1	-	-	-	1	1
CO2	3	3	2	2	-	-	-	-	-	-	1	1
CO3	3	3	2	2	-	-	-	-	-	-	1	1
CO4	3	3	3	2	-	-	-	-	-	-	1	1
CO5	3	3	3	2	-	1	1	-	-	-	1	1
Avg	3	3	3	2	-	1	1	-	-	-	1	1

CO - PSO MAPPING:

	PSO1	PSO2
CO1	1	1
CO2	1	1
CO3	1	1
CO4	1	1
CO5	1	1
Avg	1	1



VIDYA JYOTHI INSTITUTE OF TECHNOLOGY

Department of Computer Science & Engineering

Year & Sem: IV Year I Sem

Course name: Optimization Techniques

Course Code: OE

Regulation: R15

COURSE OUTCOMES:

After completing this course the student must demonstrate the knowledge and Ability to	
CO 1	Understanding the concepts of optimization techniques.
CO 2	Compute the minimum transportation cost by different methods.
CO 3	Analyzing the waiting lines in terms of Queuing theory parameters.
CO 4	Applying the costing principles in identifying the minimum inventory.
CO 5	Evaluating the simulation process for various OR models.

CO -PO MAPPING:

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	2	1	-	2	-	-	-	-	-	2	-
CO2	2	3	2	-	3	-	-	-	-	-	3	-
CO3	3	2	1	-	3	-	-	-	-	-	3	-
CO4	2	2	2	-	2	-	-	-	-	-	2	-
CO5	3	3	2	-	2	-	-	-	-	-	3	-
Avg	2	2	2	-	2	-	-	-	-	-	3	-

CO - PSO MAPPING:

	PSO1	PSO2
CO1	1	-
CO2	2	-
CO3	3	-
CO4	2	-
CO5	1	-
Avg	2	-



VIDYA JYOTHI INSTITUTE OF TECHNOLOGY

Department of Computer Science & Engineering

Year & Sem: IV Year I Sem

Course name: Maintenance And Safety Engineering

Course Code: OE

Regulation: R15

COURSE OUTCOMES:

After completing this course the student must demonstrate the knowledge and Ability to

CO 1	Understanding the need for maintenance of a machine in an industry.
CO 2	Identifying various maintenance policies.
CO 3	Analyzing the cost and time concepts while implementing the maintenance.
CO 4	Evaluating the quality concepts for safety and maintenance of an equipment
CO 5	Appreciating the terms reliability and maintainability with reference the maintenance of an equipment.

CO -PO MAPPING:

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	1	2	2	1	1	-	-	-	-	1	2	-
CO2	1	2	3	1	1	-	-	-	-	2	1	-
CO3	2	1	3	2	2	-	-	-	-	2	2	-
CO4	2	2	2	1	1	-	-	-	-	2	1	-
CO5	1	1	3	2	2	-	-	-	-	1	2	-
Avg	1	2	2	1	1	-	-	-	-	1	2	-

CO - PSO MAPPING:

	PSO1	PSO2
CO1	-	-
CO2	-	-
CO3	-	-
CO4	-	-
CO5	-	-
Avg	-	-



VIDYA JYOTHI INSTITUTE OF TECHNOLOGY

Department of Computer Science & Engineering

Year & Sem: IV Year I Sem

Course name: Elements Of Civil Engineering

Course Code: OE

Regulation: R15

COURSE OUTCOMES:

After completing this course the student must demonstrate the knowledge and Ability to

CO 1	Understand Geological properties and Geotechnical aspect of civil engineering.
CO 2	Plan the concept of different building byelaws and planning principles.
CO 3	Analyse the concept of stress-strain and to identify the properties of the fluid changes treatment process.
CO 4	Apply modern tools of surveying and understand basic concepts of concrete.
CO 5	Evaluate the principles of highway geometric designs and types of pavements as per IRC standards.

CO -PO MAPPING:

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3	3	3	3	3	3	2	2	2	2	2
CO2	3	3	3	3	3	3	3	2	3	3	2	2
CO3	3	3	3	3	3	3	3	2	3	3	3	3
CO4	3	3	3	3	3	3	3	2	3	3	3	3
CO5	3	3	3	3	3	3	3	2	2	3	3	3
Avg	3	3	3	3	3	3	3	2	3	3	2	3

CO - PSO MAPPING:

	PSO1	PSO2
CO1	3	3
CO2	3	3
CO3	3	3
CO4	3	3
CO5	3	3
Avg	3	3



VIDYA JYOTHI INSTITUTE OF TECHNOLOGY

Department of Computer Science & Engineering

Year & Sem: IV Year I Sem

Course name: Introduction To Earthquake Engineering

Course Code: OE

Regulation: R15

COURSE OUTCOMES:

After completing this course the student must demonstrate the knowledge and Ability to

CO 1	Understand the Interior Earth' surface, fault attenuation, different wave propagation in Earthquake events.
CO 2	Classify different earthquake hazards and its effects.
CO 3	Examine the mechanical behavior of earth surface and its significance.
CO 4	Evaluate the quantification of Hazard effects - approach methods.
CO 5	Predict the vibration motion and how it influences the earth's surface.

CO -PO MAPPING:

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	2	1	-	1	3	3	1	-	-	-	1
CO2	3	3	2	-	1	2	1	1	-	-	-	-
CO3	3	2	2	-	-	1	1	-	-	-	-	-
CO4	3	3	3	-	1	2	2	-	-	-	-	-
CO5	3	2	2	-	1	2	1	-	-	-	-	1
Avg	3	2	2	-	1	2	2	1	-	-	-	1

CO - PSO MAPPING:

	PSO1	PSO2
CO1	3	3
CO2	3	3
CO3	3	3
CO4	3	3
CO5	3	3
Avg	3	3



VIDYA JYOTHI INSTITUTE OF TECHNOLOGY

Department of Computer Science & Engineering

Year & Sem: IV Year I Sem

Course name: Fundamentals Of Entrepreneurship

Course Code:OE

Regulation: R15

COURSE OUTCOMES:

After completing this course the student must demonstrate the knowledge and Ability to	
CO 1	To provide awareness about entrepreneurship
CO 2	To develop idea generation, creative and innovative skills among students
CO 3	To self-motivate the students by making aware of different opportunities by exploring themselves by discussing successful growth/failure stories
CO 4	To learn to start an enterprise and design business plans those are suitable for funding by considering all dimensions of business.
CO 5	To understand entrepreneurial process by way of studying different case studies.

CO -PO MAPPING:

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	-	-	-	-	-	-	3	-	-	-	2	2
CO2	-	3	3	-	3	2	-	-	-	-	3	3
CO3	-	-	-	-	-	2	2	-	-	-	3	3
CO4	-	-	-	-	-	-	2	2	-	-	2	3
CO5	-	2	-	-	-	2	2	2	-	-	3	2
Avg	-	3	3	-	3	2	2	2	-	-	3	3

CO - PSO MAPPING:

	PSO1	PSO2
CO1	2	2
CO2	3	3
CO3	3	3
CO4	2	3
CO5	3	2
Avg	3	3



VIDYA JYOTHI INSTITUTE OF TECHNOLOGY
Department of Computer Science & Engineering

Year & Sem: IV Year I Sem

Course name: Mobile Application Development Lab

Course Code:A17593

Regulation: R15

COURSE OUTCOMES:

After completing this course the student must demonstrate the knowledge and Ability to	
CO 1	Understand the concept of J2ME.
CO 2	Design a User interface for a mobile application using J2ME.
CO 3	Create a mobile application for small computing devices.
CO 4	Apply the concepts of JDBC & Embedded SQL for Database Connection.
CO 5	Understand the generic connection framework.

CO -PO MAPPING:

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3	3	3	3	1	3	2	3	3	2	3
CO2	2	3	3	3	3	1	2	1	2	2	2	2
CO3	3	3	3	3	3	1	3	1	2	3	2	3
CO4	3	3	3	3	3	1	3	1	3	3	2	3
CO5	3	2	2	2	2	1	1	1	2	2	2	3
Avg	3	3	3	3	3	1	2	1	3	3	2	3

CO - PSO MAPPING:

	PSO1	PSO2
CO1	3	3
CO2	2	2
CO3	3	3
CO4	3	3
CO5	3	3
Avg	3	3



VIDYA JYOTHI INSTITUTE OF TECHNOLOGY

Department of Computer Science & Engineering

Year & Sem: IV Year I Sem

Course name: Hadoop & Big Data Lab

Course Code:A17594

Regulation: R15

COURSE OUTCOMES:

After completing this course the student must demonstrate the knowledge and Ability to	
CO 1	Understand java programs required for developing map reduce programs in Hadoop.
CO 2	Analyze Installation of Hadoop environment and learn Unix file system commands.
CO 3	Impart Knowledge of map reduce paradigm to solve complex problems.
CO 4	Implement best practices Hadoop programming tool PIG in Hadoop ecosystem.
CO 5	Apply HIVE scripting in Hadoop eco system.

CO -PO MAPPING:

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3	3	3	3	3	3	2	3	3	2	2
CO2	3	3	3	3	3	3	3	2	3	3	2	3
CO3	3	3	3	3	3	3	3	2	3	3	3	3
CO4	3	3	3	3	3	3	3	2	3	3	3	3
CO5	3	3	3	3	3	3	3	2	2	3	3	3
Avg	3	3	3	3	3	3	3	2	3	3	2	3

CO - PSO MAPPING:

	PSO1	PSO2
CO1	3	3
CO2	3	3
CO3	3	3
CO4	3	3
CO5	3	3
Avg	3	3



VIDYA JYOTHI INSTITUTE OF TECHNOLOGY

Department of Computer Science & Engineering

Year & Sem: IV Year I Sem

Course name: Internet of Things Lab

Course Code:A17595

Regulation: R15

COURSE OUTCOMES:

After completing this course the student must demonstrate the knowledge and Ability to	
CO 1	Describe various IoT enabled technologies.
CO 2	Understand the concepts of M2M with necessary protocols.
CO 3	Illustrate Python programming for IoT
CO 4	Examine the Python programming with Raspberry PI
CO 5	Design web applications for IoT

CO -PO MAPPING:

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3	3	3	3	2	1	1	2	1	2	2
CO2	3	3	3	3	3	2	1	1	2	1	2	2
CO3	3	3	3	3	3	2	1	2	3	2	2	2
CO4	3	3	3	3	3	2	1	2	3	3	2	2
CO5	3	3	3	3	3	2	1	3	3	3	2	2
Avg	3	3	3	3	3	2	1	3	3	2	2	2

CO - PSO MAPPING:

	PSO1	PSO2
CO1	3	3
CO2	3	3
CO3	3	3
CO4	3	3
CO5	3	3
Avg	3	3



IV – II



VIDYA JYOTHI INSTITUTE OF TECHNOLOGY

Department of Computer Science & Engineering

Year & Sem: IV Year II Sem

Course name: Design Patterns

Course Code:A18543

Regulation: R15

COURSE OUTCOMES:

After completing this course the student must demonstrate the knowledge and ability to	
CO1	Understand the Design patterns in software applications.
CO2	Discuss the Creational Patterns.
CO3	Categorize the Structural Pattern.
CO4	Investigate Behavioral Patterns.
CO5	Construct the good design pattern structures.

CO -PO MAPPING:

	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	3	3	1	2	1	2	1	1	3	3	2	3
CO 2	3	2	3	3	2	1	1	2	3	3	2	3
CO 3	3	2	3	3	3	2	1	1	3	3	2	3
CO 4	3	2	3	2	3	2	2	2	2	3	2	3
CO 5	2	2	2	1	2	1	1	2	2	2	2	2
Avg	3	2	3	2	3	2	1	2	3	3	2	3

CO - PSO MAPPING:

	PSO1	PSO2
CO1	3	3
CO2	3	2
CO3	2	3
CO4	3	3
CO5	3	3
Avg	3	3



VIDYA JYOTHI INSTITUTE OF TECHNOLOGY

Department of Computer Science & Engineering

Year & Sem: IV Year II Sem

Course Name: E-Commerce

Course Code: A18544

Regulation: R15

COURSE OUTCOMES:

After completing this course the student must demonstrate the knowledge and ability to	
CO1	Identify the anatomy of E-commerce applications.
CO2	Categorize different electronic payment systems.
CO3	Examine supply chain management.
CO4	Analyze the various marketing strategies for an online business.
CO5	Design strategies for E-commerce catalogues.

CO -PO MAPPING:

	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	3	2	1	2	2	1	2	2	2	1	3	2
CO 2	2	2	3	2	3	3	2	3	2	2	3	2
CO 3	2	2	2	3	3	3	2	3	2	3	2	2
CO 4	1	3	3	2	3	2	2	2	2	2	2	3
CO 5	3	3	3	3	3	2	2	2	2	2	3	3
Avg	2	2	2	2	3	2	2	2	2	2	3	2

CO - PSO MAPPING:

	PSO1	PSO2
CO1	3	3
CO2	3	3
CO3	3	3
CO4	3	3
CO5	3	3
Avg	3	3



VIDYA JYOTHI INSTITUTE OF TECHNOLOGY

Department of Computer Science & Engineering

Year & Sem: IV Year II Sem

Course Name: Semantic Web & Social Networks

Course Code: A18545

Regulation: R15

COURSE OUTCOMES:

After completing this course the student must demonstrate the knowledge and ability to	
CO1	Understand knowledge representation for the Semantic Web Intelligence
CO2	Identify the role of Ontologies in the semantic web.
CO3	Learn Ontology Engineering.
CO4	Develop Semantic Web Applications and Services.
CO5	Create OWL-S Ontology for Web Services.

CO -PO MAPPING:

	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	3	3	3	3	3	2	1	1	1	2	2	2
CO 2	3	3	3	3	3	2	1	1	1	2	2	2
CO 3	3	3	3	3	3	2	1	1	1	2	2	2
CO 4	3	3	3	3	3	2	1	2	2	3	2	2
CO 5	3	3	3	3	3	2	1	2	2	3	2	2
Avg	3	3	3	3	3	2	1	1	1	2	2	2

CO - PSO MAPPING:

	PSO1	PSO2
CO1	3	3
CO2	3	3
CO3	3	3
CO4	3	3
CO5	3	3
Avg	3	3



II – I



VIDYA JYOTHI INSTITUTE OF TECHNOLOGY

Department of Computer Science & Engineering

Year & Sem: II Year I Semester

Course name: Probability And Statistics

Course Code: A13014

Regulation: R18

COURSE OUTCOMES:

After completing this course the student must demonstrate the knowledge and Ability to	
CO 1	To differentiate among random variables involved in the probability models which are useful for all branches of engineering.
CO 2	Derive relationship among variety of performance measures using probability distributions.
CO 3	Acquire elementary knowledge of parametric and non parametric tests and understand the use of observing state analysis for predicting future conditions.
CO 4	Identify and examine situations that generate using problems and able to solve the tests of ANOVA for classified data.
CO 5	Apply proper measurement, Indicators and techniques of correlation and Regression analysis.

CO -PO MAPPING:

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3	2	2	1	1	1	-	2	1	2	3
CO2	3	3	2	2	1	1	1	-	2	1	2	3
CO3	3	3	3	2	1	1	2	-	1	2	3	2
CO4	3	3	3	2	3	1	1	-	2	3	2	2
CO5	3	3	3	2	-	1	2	-	1	2	2	2
Avg	3	3	3	2	1	1	2	-	2	2	2	2

CO - PSO MAPPING:

	PSO1	PSO2
CO1	2	1
CO2	2	1
CO3	2	1
CO4	2	1
CO5	2	1
Avg	2	1



VIDYA JYOTHI INSTITUTE OF TECHNOLOGY

Department of Computer Science & Engineering

Year & Sem: II Year I Semester

Course name: Mathematical Foundations of Computer science

Course Code: A13504

Regulation: R18

COURSE OUTCOMES:

After completing this course the student must demonstrate the knowledge and Ability to	
CO 1	To evaluate elementary mathematical arguments and identify fallacious reasoning (not just fallacious conclusions).
CO 2	Solve discrete mathematics problems that involve: computing permutations and combinations of a set.
CO 3	Analyze and deduce problems involving recurrence relations and generating functions.
CO 4	Perform operations on discrete structures such as sets, functions, relations and sequences.
CO 5	Apply Graph theory models to solve problems of Computer Science & Engineering.

CO -PO MAPPING:

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3	3	3	2	2	-	1	-	1	-	3
CO2	3	3	3	3	2	2	-	1	-	1	-	3
CO3	3	3	3	3	2	3	-	-	-	1	-	3
CO4	3	3	3	3	2	3	-	-	-	1	-	3
CO5	3	3	3	3	2	2	2	1	2	1	-	3
Avg	3	3	3	3	2	2	2	1	2	1	-	3

CO - PSO MAPPING:

	PSO1	PSO2
CO1	3	3
CO2	3	3
CO3	3	3
CO4	3	3
CO5	3	3
Avg	3	3



VIDYA JYOTHI INSTITUTE OF TECHNOLOGY

Department of Computer Science & Engineering

Year & Sem: II Year I Semester

Course name: Data Structures

Course Code: A13505

Regulation: R18

COURSE OUTCOMES:

After completing this course the student must demonstrate the knowledge and Ability to

CO 1	Analyze the representation of various data structures and implement the mechanisms of Stacks and Queues with their applications..
CO 2	Implement the operations like searching, insertion, deletions and traversing mechanisms on Binary Trees.
CO 3	Implement various advance concepts of trees with real time applications.
CO 4	Implement various algorithms on graph data structures, including finding the minimum spanning tree, shortest path with real time applications, etc.
CO 5	Outline the concepts of hashing, collision and its resolution methods using hash function.

CO -PO MAPPING:

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3	3	3	3	-	-	-	-	-	2	1
CO2	3	3	3	3	3	-	-	-	-	-	2	1
CO3	3	3	3	3	3	-	-	-	-	-	2	1
CO4	3	3	3	3	3	-	-	-	-	-	2	1
CO5	3	3	3	3	3	-	-	-	-	-	2	1
Avg	3	3	3	3	3	-	-	-	-	-	2	1

CO - PSO MAPPING:

	PSO1	PSO2
CO1	3	3
CO2	3	3
CO3	3	3
CO4	3	3
CO5	3	3
Avg	3	3



VIDYA JYOTHI INSTITUTE OF TECHNOLOGY

Department of Computer Science & Engineering

Year & Sem: II Year I Semester

Course name: Digital Logic Design

Course Code: A13406

Regulation: R18

COURSE OUTCOMES:

After completing this course the student must demonstrate the knowledge and Ability to	
CO 1	Manipulate numeric information in different forms, e.g. different bases, signed integers, various codes such as ASCII, Gray and BCD.
CO 2	Manipulate simple Boolean expressions using the theorems and postulates of Boolean algebra and to minimize combinational functions.
CO 3	Design and analyze small combinational circuits
CO 4	To use standard combinational functions/building blocks to build larger more complex circuits.
CO 5	Design and analyze small sequential circuits and devices and to use standard sequential Functions/building blocks to build larger more complex circuits.

CO -PO MAPPING:

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3	3	2	2	2	-	-	2	1	2	3
CO2	3	3	3	2	3	2	-	-	3	2	3	1
CO3	3	3	2	3	1	1	-	1	3	2	3	3
CO4	3	2	3	3	3	1	-	1	1	2	1	3
CO5	3	2.75	2.75	2.5	2.5	1	-	1	2.25	1.75	2.25	2.25
Avg	3	3	3	3	3	1	-	1	2	2	2	2

CO - PSO MAPPING:

	PSO1	PSO2
CO1	3	2
CO2	3	2
CO3	3	2
CO4	3	2
CO5	3	2
Avg	3	2



VIDYA JYOTHI INSTITUTE OF TECHNOLOGY

Department of Computer Science & Engineering

Year & Sem: II Year I Semester

Course name: OOP

Course Code: A13506

Regulation: R18

COURSE OUTCOMES:

After completing this course the student must demonstrate the knowledge and Ability to	
CO 1	Describe importance concepts of Object Oriented Programming.
CO 2	Develop the applications using Object Oriented Programming through C++.
CO 3	Implements the concepts of inheritance and polymorphism.
CO 4	Apply the IO Streams and files to develop a program for real time problems.
CO 5	Apply advanced features like templates and exception handling to make programs supporting reusability and sophistication.

CO -PO MAPPING:

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3	3	2	2	1	1	1	-	-	2	2
CO2	3	3	3	2	2	-	-	1	1	2	2	2
CO3	3	3	3	3	1	1	-	1	2	1	2	2
CO4	3	3	2	2	2	-	-	1	1	1	2	2
CO5	3	2	3	2	2	1	1	2	-	2	2	3
Avg	3	3	3	2	2	1	1	1	1	2	2	2

CO - PSO MAPPING:

	PSO1	PSO2
CO1	3	2
CO2	3	3
CO3	3	2
CO4	3	3
CO5	3	3
Avg	3	3



VIDYA JYOTHI INSTITUTE OF TECHNOLOGY

Department of Computer Science & Engineering

Year & Sem: II Year I Semester

Course name: EDC

Course Code: A13401

Regulation: R18

COURSE OUTCOMES:

After completing this course the student must demonstrate the knowledge and Ability to

CO 1	Understand and Analyze the different types of diodes, operation and its characteristics.
CO 2	To analyze and design diode application circuits like rectifiers, filters.
CO 3	Understand and Analyze the operation and characteristics of BJT and FET.
CO 4	Design and analyze the DC bias circuitry of BJT and FET.
CO 5	Design biasing circuits using diodes and transistors.

CO -PO MAPPING:

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3	3	3	1	2	-	-	2	-	-	-
CO2	3	3	2	3	1	3	-	2	2	-	-	-
CO3	2	2	3	2	1	3	-	2	2	-	-	-
CO4	2	2	2	2	1	2	-	-	2	-	-	-
CO5	3	2	2	2	1	3	-	-	2	2	-	-
Avg	3	2	2	2	1	3	-	-	2	2	-	-

CO - PSO MAPPING:

	PSO1	PSO2
CO1	3	3
CO2	3	3
CO3	3	3
CO4	3	3
CO5	3	3
Avg	3	3



VIDYA JYOTHI INSTITUTE OF TECHNOLOGY

Department of Computer Science & Engineering

Year & Sem: II Year I Semester

Course name: DS LAB

Course Code: A13585

Regulation: R18

COURSE OUTCOMES:

After completing this course the student must demonstrate the knowledge and Ability to	
CO 1	Develop the programs on stack and its applications.
CO 2	Demonstrate the operations on trees.
CO 3	Demonstrate the implementations of various advanced trees.
CO 4	Design and implementation of programs on BST and graph traversals.
CO 5	Understand the C++ program structure and also basics of C++ programming.

CO -PO MAPPING:

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3	3	3	3	2	-	-	2	2	1	3
CO2	3	3	3	3	3	2	-	-	2	2	1	3
CO3	3	3	3	3	3	2	-	-	2	2	1	3
CO4	3	3	3	3	3	2	-	-	2	2	1	3
CO5	3	3	3	3	3	2	-	-	2	2	1	3
Avg	3	3	3	3	3	2	-	-	2	2	1	3

CO - PSO MAPPING:

	PSO1	PSO2
CO1	3	3
CO2	3	3
CO3	3	3
CO4	3	3
CO5	3	3
Avg	3	3



VIDYA JYOTHI INSTITUTE OF TECHNOLOGY

Department of Computer Science & Engineering

Year & Sem: II Year I Semester

Course name: ED&C&DLD LAB

Course Code: A13483

Regulation: R18

COURSE OUTCOMES:

After completing this course the student must demonstrate the knowledge and Ability to

CO 1	To verify Various logic gates and flip flops.
CO 2	To Understand and evaluate the counter IC's and shift registers.
CO 3	To Understand and show the characteristics and applications of Diode
CO 4	To identify and produce the characteristics and applications of transistors
CO 5	To identify and produce the characteristics and applications of FETs

CO -PO MAPPING:

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	3	3	3	3	-	-	1	2	3	3	-
CO2	3	3	2	3	3	-	-	1	2	3	3	-
CO3	3	3	2	3	3	-	-	-	2	3	3	-
CO4	3	3	2	3	3	-	-	1	2	3	3	-
CO5	3	3	2	3	3	-	-	-	2	3	3	-
Avg	3	3	2	3	3	-	-	1	2	3	3	-

CO - PSO MAPPING:

	PSO1	PSO2
CO1	2	3
CO2	2	3
CO3	2	3
CO4	2	3
CO5	2	3
Avg	2	3



II - II



VIDYA JYOTHI INSTITUTE OF TECHNOLOGY

Department of Computer Science & Engineering

Year & Sem: II year II Sem

Course name: DESIGN AND ANALYSIS OF ALGORITHMS

Course Code:A14507

Regulation: R 15

COURSE OUTCOMES:

After completing this course the student must demonstrate the knowledge and ability to	
CO1	Analyze the efficiency of algorithms.
CO2	Develop algorithms divide & conquer, greedy and related problems.
CO3	Examine the performance of Dynamic programming.
CO4	Explain performance of algorithm using Backtracking.
CO5	Analyze NP-Hard and NP-Complete problems.

CO -PO MAPPING:

	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	3	3	-	2	2	-	-	-	-	3	-	3
CO 2	3	3	3	3	2	-	-	-	-	-	1	-
CO 3	3	3	3	3	2	2	-	-	-	-	1	-
CO 4	3	3	3	3	2	2	-	-	-	-	1	-
CO 5	3	3	3	-	-	-	1	-	-	-	2	-
Avg	3	3	3	3	2	2	1	-	-	3	1	3

CO - PSO MAPPING:

	PSO1	PSO2
CO1	3	2
CO2	3	2
CO3	3	2
CO4	3	2
CO5	3	2
Avg	3	2



VIDYA JYOTHI INSTITUTE OF TECHNOLOGY

Department of Computer Science & Engineering

Year & Sem: II Year II Sem

Course name: Computer Organization

Course Code: A14508

Regulation: R18

COURSE OUTCOMES:

After completing this course the student must demonstrate the knowledge and ability to	
CO 1	Understanding the basic organization of computer and different instruction formats and addressing modes.
CO 2	Analyze the concept of pipelining, segment registers and pin diagram of CPU.
CO 3	Write simple programs on assembly language.
CO 4	Evaluate various modes of data transfer between CPU and I/O devices.
CO 5	Examine various inter connection structures of multi processors.

CO-PO MAPPING:

	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	3	3	3	3	3	1	3	2	3	3	2	3
CO 2	2	3	3	3	3	1	2	1	2	2	2	2
CO 3	3	3	3	3	3	1	3	1	2	3	2	3
CO 4	3	3	3	3	3	1	3	1	3	3	2	3
CO 5	3	2	2	2	2	1	1	1	2	2	2	3
Avg.	3	3	3	3	3	1	2	1	3	3	2	3

CO - PSO MAPPING:

	PSO1	PSO2
CO1	3	3
CO2	2	2
CO3	3	3
CO4	3	3
CO5	3	3
Avg.	3	3



VIDYA JYOTHI INSTITUTE OF TECHNOLOGY

Department of Computer Science & Engineering

Year & Sem: II Year II Sem

Course name: DBMS

Course Code:A14509

Regulation: R18

COURSE OUTCOMES:

After completing this course the student must demonstrate the knowledge and ability to	
CO1	Design Entity-Relationship Model for enterprise level databases.
CO2	Develop the database and provide restricted access to different users of database and formulate the Complex SQL queries.
CO3	Analyze various Relational Formal Query Languages and various Normal forms to carry out Schema refinement.
CO4	Use of suitable Indices and Hashing mechanisms for real time implementation.
CO5	Ability to analyze various concurrency control protocols and working principles of recovery algorithms.

CO -PO MAPPING:

	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	3	3	3	2	2	-	3	1	-	-	2	2
CO 2	3	3	3	2	2	-	-	1	1	2	3	2
CO 3	3	3	3	3	1	-	-	1	-	1	2	2
CO 4	3	3	3	2	2	-	-	1	1	2	3	2
CO 5	3	3	3	3	2	1	1	2	-	2	2	2
Avg	3	3	3	2	2	1	3	1	1	2	2	2

CO - PSO MAPPING:

	PSO1	PSO2
CO1	3	2
CO2	3	3
CO3	3	2
CO4	3	3
CO5	3	3
Avg	3	3



VIDYA JYOTHI INSTITUTE OF TECHNOLOGY

Department of Computer Science & Engineering

Year & Sem: II Year II Sem

Course name: Software Engineering

Course Code:A14510

Regulation: R18

COURSE OUTCOMES:

After completing this course the student must demonstrate the knowledge and ability to	
CO1	Choose a process model to apply for given project requirements.
CO2	Analyze and apply the framework activities for a given project.
CO3	Design various system models for a given scenario.
CO4	Design and apply various testing techniques.
CO5	Understand metrics for Process and Products.

CO -PO MAPPING:

	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	3	3	1	2	1	2	1	1	3	3	2	3
CO 2	3	2	3	3	2	1	1	2	3	3	2	3
CO 3	3	2	3	3	3	2	1	1	2	3	2	3
CO 4	3	2	3	2	3	2	2	2	2	3	2	3
CO5	2	2	2	1	2	-	-	2	2	2	2	2
Avg	3	2	3	3	3	2	1	2	2	3	2	3

CO - PSO MAPPING:

	PSO1	PSO2
CO1	3	3
CO2	3	2
CO3	2	3
CO4	3	3
CO5	3	3
Avg	3	3



VIDYA JYOTHI INSTITUTE OF TECHNOLOGY

Department of Computer Science & Engineering

Year & Sem: II Year II Sem

Course name: Java Programming

Course Code:A14511

Regulation: R18

COURSE OUTCOMES:

After completing this course the student must demonstrate the knowledge and ability to	
CO1	Understand OOP concepts to apply basic Java constructs.
CO2	Analyze different forms of inheritance and handle different kinds of file I/O.
CO3	Evaluate the usage of Exception Handling and Multithreading in complex Java programs.
CO4	Contrast different GUI layouts and design GUI applications.
CO5	Construct a full-fledged Java GUI application and Applet with database connectivity.

CO -PO MAPPING:

	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	3	3	3	3	3	2	1	1	3	1	1	2
CO 2	3	3	3	3	3	2	1	1	3	1	1	2
CO 3	3	3	3	3	3	2	1	1	3	2	1	2
CO 4	3	3	3	3	3	2	1	1	3	2	1	2
CO5	3	3	3	3	3	2	1	1	3	2	1	2
Avg	3	3	3	3	3	2	1	1	3	1	1	2

CO - PSO MAPPING:

	PSO1	PSO2
CO1	3	2
CO2	3	2
CO3	3	2
CO4	3	2
CO5	3	2
Avg	3	2



VIDYA JYOTHI INSTITUTE OF TECHNOLOGY

Department of Computer Science & Engineering

Year & Sem: II Year II Sem

Course name: Environmental Studies

Course Code: A14016

Regulation: R18

COURSE OUTCOMES:

After completing this course the student must demonstrate the knowledge and ability to	
CO1	Explain the importance of Ecosystem.
CO2	Identify the importance of Renewable and Non-Renewable Resources.
CO3	Awareness on the Variety of Living organism and the need to conserve them.
CO4	Evaluate the sustainable developments towards Pollution free environment
CO5	Understand the Environmental Policies Management Plan and Regulations.

CO -PO MAPPING:

	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	1	2	1	2	1	1	2	2	1	1	2	2
CO 2	3	2	1	2	2	2	1	1	1	2	2	2
CO 3	3	1	1	1	1	1	1	1	1	2	2	2
CO 4	3	1	1	1	1	1	1	1	1	2	2	2
CO5	3	1	1	1	1	1	1	1	1	2	2	2
Avg	3	1	1	1	1	1	1	1	1	2	2	2

CO - PSO MAPPING:

	PSO1	PSO2
CO1	3	2
CO2	2	3
CO3	3	3
CO4	2	3
CO5	2	2
Avg	2	3



VIDYA JYOTHI INSTITUTE OF TECHNOLOGY

Department of Computer Science & Engineering

Year & Sem: II Year II Sem

Course name: Java Programming Lab

Course Code:A14586

Regulation: R18

COURSE OUTCOMES:

After completing this course the student must demonstrate the knowledge and ability to	
CO1	Apply basic Java constructs and OOP to solve mathematical problems.
CO2	Apply Inheritance in Java programs to implement File input/output.
CO3	Analyze Exception Handling code and Multithreading concepts in advanced Java programs.
CO4	Design different GUI applications using GUI layouts.
CO5	Apply Applet development and Database connectivity to build GUI applications.

CO -PO MAPPING:

	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	3	3	3	3	3	-	1	1	3	-	1	2
CO 2	3	3	3	3	3	-	1	1	3	-	1	2
CO 3	3	3	3	3	3	-	1	1	3	1	1	2
CO 4	3	3	3	3	3	-	1	1	3	1	-	2
CO5	3	3	3	3	3	-	1	1	3	1	-	2
Avg	3	3	3	3	3	-	1	1	3	1	1	2

CO - PSO MAPPING:

	PSO1	PSO2
CO1	3	2
CO2	3	2
CO3	3	2
CO4	3	2
CO5	3	2
Avg	3	2



VIDYA JYOTHI INSTITUTE OF TECHNOLOGY

Department of Computer Science & Engineering

Year & Sem: II Year II Sem

Course name: DBMS LAB

Course Code:A14587

Regulation: R18

COURSE OUTCOMES:

After completing this course the student must demonstrate the knowledge and ability to	
CO1	Apply SQL statements including DDL, DML and DCL statements to perform different operations.
CO2	Design different views of tables for different users.
CO3	Apply various integrity Constraints on the database tables.
CO4	Apply the Normalization techniques to the data base for consistency.
CO5	Implement PLSQL concepts like cursors, procedures and triggers.

CO -PO MAPPING:

	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO1	3	3	3	2	2	-	3	1	1	-	2	2
CO2	3	3	3	2	3	-	-	1	1	2	3	2
CO3	3	3	3	3	2	1	-	1	2	1	2	2
CO4	3	3	3	2	2	-	3	1	1	-	2	2
CO5	3	3	3	2	3	-	-	1	1	2	3	2
Avg	3	3	3	2	2	1	3	1	1	2	3	2

CO - PSO MAPPING:

	PSO1	PSO2
CO1	3	2
CO2	3	2
CO3	3	2
CO4	3	2
CO5	3	2
Avg	3	2



III – I



VIDYA JYOTHI INSTITUTE OF TECHNOLOGY

Department of Computer Science & Engineering

Year & Sem: III Year I Sem

Course name: Linux Programming

Course Code: A15512

Regulation: R18

COURSE OUTCOMES:

After completing this course the student must demonstrate the knowledge and ability to	
CO1	Understand and make effective use of Linux utilities.
CO2	Able to write shell scripts to solve the problems.
CO3	Develop the skills necessary for file system and directory handling.
CO4	Learn the concepts of process and signal system calls.
CO5	Implement inter process communication mechanisms.

CO -PO MAPPING:

	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	3	3	2	2	2	-	3	1	-	-	2	2
CO 2	3	3	3	2	2	-	-	1	1	2	3	2
CO 3	3	3	3	3	1	-	-	1	-	1	2	2
CO 4	3	3	3	2	2	-	-	1	1	2	3	2
CO 5	3	3	3	3	2	1	1	2	-	2	2	2
Avg	3	3	3	2	2	1	2	1	1	2	2	2

CO - PSO MAPPING:

	PSO1	PSO2
CO1	3	2
CO2	3	2
CO3	3	2
CO4	3	2
CO5	3	2
Avg	3	2



VIDYA JYOTHI INSTITUTE OF TECHNOLOGY

Department of Computer Science & Engineering

Year & Sem: III Year I Sem

Course name: Computer Networks

Course Code: A15513

Regulation: R18

COURSE OUTCOMES:

After completing this course the student must demonstrate the knowledge and Ability to	
CO 1	Understand the concept of network reference models.
CO 2	Analyze various connecting devices of a network and describe multichannel access protocols.
CO 3	Analysis of routing algorithm and congestion algorithms and classify IPV4 addressing scheme.
CO 4	Understand Transport layer protocols.
CO 5	Discuss Application layer protocols.

CO -PO MAPPING:

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	3	3	3	3	2	3	1	2	3	3	3
CO2	2	3	3	3	3	2	2	1	3	3	3	2
CO3	2	3	3	3	3	2	1	1	2	3	2	3
CO4	2	3	3	3	3	2	1	1	3	3	2	3
CO5	2	3	3	3	3	2	1	1	2	3	2	3
Avg	2	3	3	3	3	2	2	1	2	3	2	3

CO - PSO MAPPING:

	PSO1	PSO2
CO1	2	2
CO2	3	3
CO3	3	2
CO4	3	2
CO5	2	2
Avg	3	2



VIDYA JYOTHI INSTITUTE OF TECHNOLOGY

Department of Computer Science & Engineering

Year & Sem: III Year I Sem

Course name: Operating Systems

Course Code:A15514

Regulation: R18

COURSE OUTCOMES:

After completing this course the student must demonstrate the knowledge and Ability to	
CO 1	Understanding the operating system concepts and process management.
CO 2	Analyze process scheduling and synchronization.
CO 3	Understand memory management concepts.
CO 4	Illustrate File system implementation and mass storage structure.
CO 5	Analyze deadlock mechanisms.

CO -PO MAPPING:

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3	1	1	1	-	-	-	-	1	-	1	1
CO2	3	3	2	2	3	3	1	2	1	-	1	1
CO3	3	1	1	2	3	2	2	2	1	-	1	1
CO4	3	2	1	2	2	3	2	2	1	2	1	1
CO5	3	3	1	2	3	2	3	2	1	-	1	1
Avg	3	2	1	2	2	2	2	2	1	2	1	1

CO - PSO MAPPING:

	PSO1	PSO2
CO1	3	3
CO2	3	3
CO3	3	3
CO4	3	3
CO5	3	3
Avg	3	3



VIDYA JYOTHI INSTITUTE OF TECHNOLOGY

Department of Computer Science & Engineering

Year & Sem: III Year I Sem

Course name: FLAT

Course Code:A15515

Regulation: R18

COURSE OUTCOMES:

After completing this course the student must demonstrate the knowledge and ability to	
CO1	Analyze and design Finite state machine for solving problems of computer science.
CO2	Design regular grammars for Finite Automata.
CO3	Analyze context free grammars and push down automata.
CO4	Find the solutions for the problems of computer science using Turing Machines.
CO5	Analyze Chomsky Hierarchy and computability theory.

CO -PO MAPPING:

	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	3	3	3	1	1	1	1	-	1	1	1	1
CO 2	3	3	2	2	2	1	2	2	1	1	1	1
CO 3	3	3	2	3	2	1	2	2	1	1	1	1
CO 4	3	3	2	2	2	1	2	2	-	1	1	2
CO5	3	3	3	3	3	2	2	2	2	2	2	2
Avg	3	3	2	2	2	1	2	2	1	1	1	1

CO - PSO MAPPING:

	PSO1	PSO2
CO1	1	2
CO2	1	2
CO3	1	2
CO4	1	2
CO5	3	3
Avg	1	2



VIDYA JYOTHI INSTITUTE OF TECHNOLOGY

Department of Computer Science & Engineering

Year & Sem: III Year I Sem

Course name: Human Computer Interaction

Course Code:A15518

Regulation: R18

COURSE OUTCOMES:

After completing this course the student must demonstrate the knowledge and ability to	
CO1	Understand the capabilities of both humans and computers from the viewpoint of human information processing.
CO2	Analyze the design process and use the design rules.
CO3	Identify and analyze the user models and theories.
CO4	Compare different mobile applications and analyze mobile design.
CO5	Design the web interface using drag and drop, overlays etc.

CO -PO MAPPING:

	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	3	1	2	1	2	2	1	-	2	2	1	2
CO 2	3	1	2	1	3	2	-	1	3	3	3	3
CO 3	3	2	2	2	2	3	2	2	3	2	2	3
CO 4	3	1	3	2	3	2	2	1	3	3	3	3
CO 5	3	1	3	3	3	-	2	1	3	3	3	3
Avg	3	1	2	2	3	2	2	1	3	3	2	3

CO - PSO MAPPING:

	PSO1	PSO2
CO1	2	3
CO2	3	2
CO3	3	3
CO4	3	3
CO5	3	3
Avg	3	3



VIDYA JYOTHI INSTITUTE OF TECHNOLOGY

Department of Computer Science & Engineering

Year & Sem: III Year I Sem

Course name: Introduction to Microcontroller & Applications.

Course Code: OE

Regulation: R18

COURSE OUTCOMES:

After completing this course the student must demonstrate the knowledge and ability to	
CO1	Describe the architecture of 8051 with its special function registers
CO2	Interpret the internal organization of 8051 with its unique features.
CO3	Infer and give examples about the various addressing modes, instruction formats and instructions of 8051.
CO4	Construct the hardware and software interaction with each other using programming.
CO5	Summarize the features of the advanced architecture using ARM controller.

CO -PO MAPPING:

	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	2	3	3	2	2	-	-	-	-	-	-	-
CO 2	2	3	3	2	2	-	-	-	-	-	-	-
CO 3	3	3	3	3	3	-	-	-	-	-	-	-
CO 4	3	3	3	3	3	3	2	-	2	2	2	3
CO 5	3	3	3	3	2	-	-	-	2	-	2	3
Avg	3	3	3	3	3	3	2	-	2	-	2	3

CO - PSO MAPPING:

	PSO1	PSO2
CO1	3	2
CO2	3	2
CO3	3	2
CO4	3	2
CO5	3	2
Avg	3	2



VIDYA JYOTHI INSTITUTE OF TECHNOLOGY

Department of Computer Science & Engineering

Year & Sem: III Year I Sem

Course name: Basic Electronics & Instrumentation

Course Code:OE

Regulation: R18

COURSE OUTCOMES:

After completing this course the student must demonstrate the knowledge and ability to	
CO1	Summarize the concepts of different Diode devices with its characteristics.
CO2	Summarize the concepts of different Transistor devices with its characteristics.
CO3	Describe the fundamental concepts and basic principle of meters.
CO4	Categorize different transducers and their working principles
CO5	Explain different bridges and understand how different physical parameters can beacquired.

CO -PO MAPPING:

	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	3	3	3	3	1	-	2	-	2	1	-	3
CO 2	3	3	3	3	1	-	2	-	2	1	-	3
CO 3	3	3	3	3	1	-	2	-	2	1	-	3
CO 4	3	3	3	3	1	-	2	-	2	1	-	3
CO 5	3	3	3	3	1	-	2	-	2	1	-	3
Avg	3	3	3	3	1	-	2	-	2	1	-	3

CO - PSO MAPPING:

	PSO1	PSO2
CO1	2	2
CO2	2	2
CO3	2	1
CO4	1	1
CO5	1	2
Avg	2	2



VIDYA JYOTHI INSTITUTE OF TECHNOLOGY

Department of Computer Science & Engineering

Year & Sem: III Year I Sem

Course name: Non-Conventional Energy Sources

Course Code:OE

Regulation: R18

COURSE OUTCOMES:

After completing this course the student must demonstrate the knowledge and ability to	
CO1	Realize the importance of renewable energy sources for energy planning.
CO2	Understand the value of solar energy potential and exploit the solar energy for real world applications.
CO3	Understand the potential of wind energy, types of wind mills, performance characteristics and Betz criteria.
CO4	Analyze the potential of both tidal and ocean thermal energies and learn the extraction methods.
CO5	Know the potential of Geothermal, Bio-mass energies and learn relevant extraction methods.

CO -PO MAPPING:

	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	3	1	3	3	-	3	3	-	-	-	-	-
CO 2	3	3	3	3	1	2	2	-	-	-	-	-
CO 3	3	2	2	3	-	2	2	-	-	1	-	-
CO 4	3	3	3	3	1	2	2	1	-	-	1	-
CO 5	3	2	3	3	1	2	2	1	-	1	1	-
Avg	3	3	3	3	1	2	2	1	-	1	1	-

CO - PSO MAPPING:

	PSO1	PSO2
CO1	2	2
CO2	3	2
CO3	2	2
CO4	3	3
CO5	2	2
Avg	2	2



VIDYA JYOTHI INSTITUTE OF TECHNOLOGY

Department of Computer Science & Engineering

Year & Sem: III Year I Sem

Course name: Elements of Mechanical Engineering

Course Code: OE

Regulation: R18

COURSE OUTCOMES:

After completing this course the student must demonstrate the knowledge and ability to	
CO1	Understand the basic concepts of mechanical engineering.
CO2	Applying principles of engineering mechanics in mechanism and machines
CO3	Develop manufacturing methods to produce engineering components.
CO4	Evaluating alternative designs for the engineering components
CO5	Comparing various standards relevant to automobiles.

CO -PO MAPPING:

	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	3	-	-	-	-	-	-	-	-	-	-	-
CO 2	2	2	-	-	-	-	-	-	-	-	-	-
CO 3	3	-	3	-	-	-	-	-	-	-	-	-
CO 4	2	-	-	-	-	-	-	-	-	-	-	-
CO 5	2	-	-	2	-	-	-	-	-	-	-	-
Avg	2	2	3	2	-	3	-	-	-	-	-	-

CO - PSO MAPPING:

	PSO1	PSO2
CO1	-	2
CO2	-	3
CO3	-	2
CO4	-	2
CO5	-	2
Avg	-	2



VIDYA JYOTHI INSTITUTE OF TECHNOLOGY

Department of Computer Science & Engineering

Year & Sem: III Year I Sem

Course name: Product Engineering

Course Code:OE

Regulation: R18

COURSE OUTCOMES:

After completing this course the student must demonstrate the knowledge and ability to	
CO1	Identifying scheduling techniques for project management.
CO2	Designing the products and their life cycles.
CO3	Generating the products with different material requirements.
CO4	Conceptualization the products with their drawings for standardization.
CO5	Evaluating the life of the products by conducting various tests.

CO -PO MAPPING:

	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	2	1	3	1	-	-	-	-	-	-	-	-
CO 2	3	2	2	2	2	2	2	1	-	-	-	-
CO 3	3	2	2	2	-	-	-	-	-	-	-	-
CO 4	2	2	2	2	-	-	-	-	-	-	-	-
CO 5	2	1	3	1	-	-	-	-	-	-	-	2
Avg	2	2	2	2	2	2	2	1	-	-	-	2

CO - PSO MAPPING:

	PSO1	PSO2
CO1	-	-
CO2	2	-
CO3	-	-
CO4	-	-
CO5	2	-
Avg	2	-



VIDYA JYOTHI INSTITUTE OF TECHNOLOGY

Department of Computer Science & Engineering

Year & Sem: III Year I Sem

Course name: Smart City

Course Code:OE

Regulation: R18

COURSE OUTCOMES:

After completing this course the student must demonstrate the knowledge and ability to	
CO1	Understand the necessity of smart infrastructure and to promote cities that provide quality of life to citizens.
CO2	Explain technology-based solution on smart mobility.
CO3	Illustrate & introduce the smart and sustainable waste and water management for smart cities.
CO4	Evaluate economical models for smart infrastructure solution.
CO5	Create healthy and waste ridden environment.

CO -PO MAPPING:

	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	3	2	1	1		1	2	2	2	1		2
CO 2	3	3	3	2	3	2	2	1	2	2	1	2
CO 3	2	2	3	3	3	3	3	2	3	1		3
CO 4	2	2	1	2	2	1	3	2	1	1		2
CO 5	1	2	1			1	1		2	1	2	
Avg	2	2	2	2	3	2	2	2	2	1	2	2

CO - PSO MAPPING:

	PSO1	PSO2
CO1	3	3
CO2	2	3
CO3	1	1
CO4	1	1
CO5	1	2
Avg	2	2



VIDYA JYOTHI INSTITUTE OF TECHNOLOGY

Department of Computer Science & Engineering

Year & Sem: III Year I Sem

Course name: Remote Sensing & GIS

Course Code: OE

Regulation: R18

COURSE OUTCOMES:

After completing this course the student must demonstrate the knowledge and ability to	
CO1	Select the type of remote sensing technique / data for required purpose.
CO2	Identify the earth surface features from satellite images.
CO3	Analyze the energy interactions in the atmosphere and earth surface features.
CO4	Prepare thematic maps.
CO5	Interpretations of satellite data for various applications.

CO -PO MAPPING:

	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	-	3	-	3	2	3	2	-	2	2	-	2
CO 2	3	1	-	2	2	-	3	-	1	-	-	2
CO 3	3	2	2	1	2	-	2	-	-	3	-	2
CO 4	1	3	3	2	3	2	2	-	2	2	2	3
CO 5	2	2	-	3	2	2	2	-	1	-	-	2
Avg	2	2	3	2	2	2	2	-	1	2	2	2

CO - PSO MAPPING:

	PSO1	PSO2
CO1	2	3
CO2	3	2
CO3	1	2
CO4	1	2
CO5	2	1
Avg	2	2



VIDYA JYOTHI INSTITUTE OF TECHNOLOGY

Department of Computer Science & Engineering

Year & Sem: III Year I Sem

Course name: Total Quality Management

Course Code:OE

Regulation: R18

COURSE OUTCOMES:

After completing this course the student must demonstrate the knowledge and ability to	
CO1	To explore the quality framework in production and operational aspects.
CO2	To evaluate the role of quality in product design and analysis.
CO3	To analyze quality in process improvement and modern production management tools.
CO4	To understand the role of TQM tools and techniques in elimination of wastages and reduction of defects.
CO5	To analyze the requirements of quality management system.

CO -PO MAPPING:

	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	2	1	3	2	2	-	-	-	3	3	2	3
CO 2	-	-	3	3	2	-	-	-	3	-	1	3
CO 3	2	-	2	2	2	-	-	-	3	-	-	3
CO 4	-	-	3	-	3	-	3	-	-	-	-	-
CO 5	-	-	2	-	-	-	3	1	3	2	-	-
Avg	2	1	3	2	2	2	3	1	3	2	2	3

CO - PSO MAPPING:

	PSO1	PSO2
CO1	-	2
CO2	2	2
CO3	2	2
CO4	2	2
CO5	-	2
Avg	2	2



VIDYA JYOTHI INSTITUTE OF TECHNOLOGY

Department of Computer Science & Engineering

Year & Sem: III Year I Sem

Course name: Operating Systems & Computer Networks Lab Through Linux

Course Code:A15588

Regulation: R18

COURSE OUTCOMES:

After completing this course the student must demonstrate the knowledge and ability to	
CO1	Implement Data link layer framing methods.
CO2	Implement various algorithms for error detection and correction.
CO3	Simulate various routing algorithms.
CO4	Implement CPU scheduling algorithms.
CO5	Simulate various page replacement techniques and file allocation methods.
CO6	Implement deadlock avoidance and prevention algorithms

CO -PO MAPPING:

	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	3	3	3	3	3	3	2	2	2	1	2	2
CO 2	3	3	3	3	3	3	2	2	2	1	2	2
CO 3	3	3	3	3	2	2	2	2	2	1	2	2
CO 4	3	3	3	3	3	3	2	2	2	1	2	2
CO 5	3	3	3	3	2	2	2	2	2	1	2	2
CO6	3	3	3	3	3	3	2	2	2	1	2	2
Avg	3	3	3	3	3	3	2	2	2	1	2	2

CO - PSO MAPPING:

	PSO1	PSO2
CO1	3	3
CO2	3	3
CO3	3	3
CO4	3	3
CO5	3	3
CO6	3	3



VIDYA JYOTHI INSTITUTE OF TECHNOLOGY

Department of Computer Science & Engineering

Avg	3	3
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VIDYA JYOTHI INSTITUTE OF TECHNOLOGY

Department of Computer Science & Engineering

Year & Sem: III Year I Sem

Course name: Advanced Communication Skills Lab

Course Code: A15089

Regulation: R18

COURSE OUTCOMES:

After completing this course the student must demonstrate the knowledge and ability to	
CO1	Develop sound communication skills in various situations with the help of (enriched) vocabulary.
CO2	Practice reading techniques for a faster and better comprehension.
CO3	Exhibit strong writing skills to express ideas effectively.
CO4	Demonstrate effective presentation skills.
CO5	Use appropriate verbal and non-verbal skills for a successful career.

CO -PO MAPPING:

	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	-	-	-	-	-	-	-	-	-	3	-	3
CO 2	-	-	-	-	-	-	-	-	-	3	-	3
CO 3	-	-	-	-	-	-	-	-	-	3	-	3
CO 4	-	-	-	-	-	-	-	-	2	3	-	3
CO 5	-	-	-	-	-	-	-	-	2	3	-	3
Avg	-	-	-	-	-	-	-	-	2	3	-	3

CO - PSO MAPPING:

	PSO1	PSO2
CO1	3	3
CO2	3	3
CO3	3	3
CO4	3	3
CO5	3	3
Avg	3	3



VIDYA JYOTHI INSTITUTE OF TECHNOLOGY

Department of Computer Science & Engineering
