



Visvesvaraya

College of Engineering & Technology

(Approved by AICTE, New Delhi & Govt. of T.S., Affiliated to JNTUH, Hyderabad.)
(Sponsored by : Jawahar Educational Society) (An ISO 9001 - 2018 Certified Institution)
M.P. Patelguda (V), Ibrahimpatnam (M), Ranga Reddy Dist - 501510, T.S.

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Teachers and students are aware of the stated Program and course outcomes of the Programs offered by the institution.

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PRINCIPAL

Visvesvaraya College of Engineering & Technology
M.P. Patelguda (V), Ibrahimpatnam (M),
R.R. Dist-501 510.



Visvesvaraya

College of Engineering & Technology

(Approved by AICTE, New Delhi & Govt. of T.S., Affiliated to JNTUH, Hyderabad.)



PROGRAM OUTCOMES (POs)

PO1: Engineering Knowledge: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.

PO2: Problem Analysis: Identify, formulate, research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.

PO3: Design/Development of Solutions: Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.

PO4: Conduct Investigations of Complex Problems: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.

PO5: Modern Tool Usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.

PO6: The Engineer and Society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.

PO7: Environment and Sustainability: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of need for sustainable development.

PO8: Ethics: Apply ethical principles and commit to professional ethics, responsibilities, and norms of the engineering practice.

PO9: Individual and Team Work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.



GPS Map Camera

Rangareddy, Telangana, India

CIVIL AND MECHANICAL BLOCK, VISVESVARAYA

COLLEGE OF ENGINEERING & TECHNOLOGY, VCET Rd,

Telangana 501510, India

Lat 17.223791°

Long 78.587252°

15/02/23 03:12 PM GMT +05:30

D. D. D.
PRINCIPAL

Visvesvaraya College of Engineering & Technology
M.P. Patelguda (V), Surakhimpet (M),
R.R. Dist-501 510.

B. Tech (EEE)
About Department
Vision & Mission
PEO, PSO, PO
HOD
Faculty
Labs

Program Educational Objectives (PEOs)

Electrical Engineering graduates will be

- PEO1: Able to utilize the acquired knowledge for analyzing and resolving practical Electrical Engineering problems.
- PEO2: Imbued with the aptitude for solving industry problems with the help of modern tools and design.
- PEO3: Equipped to involve in research, higher studies and to become entrepreneur that caters to the need of industry and society

Program Specific Outcomes (PSOs)

Electrical Engineering graduates will have the

- PSO1: Comprehensive knowledge of electrical systems, components and processes to address technical and engineering challenges in real life.
- PSO2: Aptitude to provide technical solutions to complex electrical engineering problem with the application of modern and appropriate tools for sustainable development

Program Outcomes (POs)

- PO 1: Ability to apply knowledge of mathematics, science and engineering, knowledge
- PO 2: Ability to design and conduct experiments, as well as to analyze and interpret data, Experimentation & Interpret/Engineering Analysis
- PO 3: Ability to design a system, component or process to meet desired needs within realistic constraints such as economic, environmental, social, Political, ethical, health and safety
- PO 4: Ability to identify, formulate and solve complex engineering problems
- PO 5: Ability to use techniques, skills and modern engineering tools necessary for engineering practice.
- PO 6: knowledge of contemporary issues, and non-contemporary issues, non technical issues, global awareness with society concern.



B. Tech (EEE)
About Department
Vision & Mission
PEO, PSO, PO
HOD
Faculty
Labs

VISION

To produce cutting edge Electrical and Electronics Engineers, innovators, researchers, and entrepreneurs with high human values to serve society, industry, nation and the world

MISSION

To provide comprehensive technical knowledge to student through quality teaching-learning to cope with challenges in Electrical and Electronics Engineering.

To enable students develop skills in solving complex engineering problems of current times and also provide a framework for promoting collaborative and multidisciplinary activities

To learn latest technologies and to create various opportunities for students of electrical and electronics engineering platform prevalent to industries

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B. Tech (Civil)
About Department
Vision & Mission
PEO, PSO, PO
HOD
Faculty
Labs

Department of Civil Engineering

Program Educational Objectives (PEOs)

Graduates of Civil Engineering programme should be able to,

PEO 1

: Professionally design and execute Civil Engineering projects, infrastructure development for the benefit of society.

PEO 2

: Successfully address technological and managerial challenges.

PEO 3: Graduates will have awareness of contemporary professional issues and support the engineering profession through participation in professional societies and/or educational institutions.

Program Specific Outcomes (PSOs)

Engineering Graduates will be able to:

PSO 1: Analysis and Design of structures, transportation systems, water resources and Ability to apply principles of Civil Engineering for the entire life cycle of the project ranging from initial design to the closure



B.Tech (Civil)

About Department

Vision & Mission

PEO, PSO, PO

HOD

Faculty

Labs

Department of Civil Engineering

VISION

To Produce Engineers having Professional and Leadership qualities with capacity to take up Professional and research assignments in Civil Engineering.

MISSION

To impart quality and real time education to the field of Civil Engineering. To deal with the contemporary issues and to cater to the societal needs.

To impart soft skills, leadership qualities & professional ethics among the students, to develop graduates to compete at the global level.

To encourage students to pursue higher education and take competitive exams.



B. Tech (ECE)	
About Department	
Vision & Mission	
PEO, PSO, PO	
HOD	
Faculty	

Department of Electronics & Communication Engineering

Vision

The vision of ECE department is to become pioneer in higher learning and research and to produce creative solution to societal needs

Mission

To provide excellence in education, research and public service
To provide quality education and to make the students entrepreneur and employable.

B.Tech (ECE)

About Department

Vision & Mission

PEO, PSO, PO

HOD

Faculty

Labs

Functional Committees

Department of Electronics & Communication Engineering

Programme Educational Objectives (PEOs)

The objectives of Electronics and Communication Engineering are to

PEO1: Recognize, synthesize and apply the acquired knowledge in basic sciences and mathematics in Electronics and Communication Engineering problems.

PEO2: To prepare and motivate students with recent technological developments related to core programming, databases and design of compilers.

PEO3: Graduates will be able to have lifelong learning attitude and improve the professional knowledge.

Programme Specific Outcomes(PSOs):

PSO1: The ability to absorb and apply fundamental knowledge of core Electronics and Communication Engineering subjects in the analysis, design and development of various types of integrated electronic systems.

PSO2: To analyse, design and develop solutions for the real time problems and to apply the technical knowledge in the design and development of various types of integrated electronic systems.


PRINCIPAL

Visvesvaraya College of Engineering & Technology
M.P. Patelguda (V), Ibrahimpatnam (M).
R.R. Dist-501 510.



B. Tech (CSM-AIML)
About Department
Vision & Mission
PEO, PSO, PO
HOD
Faculty
Labs
Functional Committees

Program Educational Objectives (PEOs)

A graduate of the CSE (ARTIFICIAL INTELLIGENCE & MACHINE LEARNING) Program should:

PEO 1: Students will demonstrate their ability to adapt to a rapidly changing environment by having learned and applied new skills and new technologies.

PEO 2: Apply appropriate theory, practices, and tools to the specification, design, implementation, maintenance, and evaluation of computing and artificial intelligence in the workplace.

PEO 3: Graduates will use their knowledge and skills to grow in their careers, to pursue higher studies and become entrepreneurs.

Program Specific Outcomes (PSOs)

A graduate of the CSE (ARTIFICIAL INTELLIGENCE & MACHINE LEARNING) Program will:

PSO 1: The ability to understand, analyse and demonstrate the knowledge of human cognition, Artificial Intelligence, Machine Learning and data engineering in terms of real world problems to meet the challenges of the future.

PSO 2: Graduates will be able to develop software applications and products in specialized areas of Artificial Intelligence and Machine Learning.

Program Outcomes (POs)

PO1: Engineering Knowledge: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.

PO2: Problem Analysis: Identify, formulate, research literature, and analyze complex engineering problems

Course Outcomes of Surveying and Geomatics

Sub: Surveying and Geomatics		Year/Sem: II-I	A.Y. 2021-22	Code: CE301PC
CE301PC.1	Apply the knowledge to calculate angles, distances and levels			
CE301PC.2	Identify data collection methods and prepare field notes			
CE301PC.3	Understand the working principles of survey instruments, measurement errors and corrective measures			
CE301PC.4	Interpret survey data and compute areas and volumes, levels by different type of equipment and relate the knowledge to the modern equipment and methodologies			
CE301PC.5	To prepare topographical map and contour map on an area.			

CO and PO Mapping Matrix

Sub: Surveying and Geomatics						Year/Sem: II-I		A.Y. 2021-22		Code: CE301PC		
CO'S	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CE301PC.1	3	2	1	1	-	-	-	-	-	-	-	-
CE301PC.2	2	3	3	2	2	-	-	-	-	-	-	-
CE301PC.3	3	1	2	3	-	2	2	-	-	3	-	-
CE301PC.4	3	3	3	3	-	-	-	-	-	-	-	-
CE301PC.5	2	2	2	2	-	-	-	-	-	-	-	-
AVERAGE	2.6	2.2	2.2	2.2	2	2	2	-	-	3	-	-

CO and PSO Mapping Matrix

CO'S	PSO1	PSO2
CE301PC.1	3	2
CE301PC.2	3	1
CE301PC.3	2	1
CE301PC.4	3	2
CE301PC.5	2	2
Average	2.6	1.6

Correlation Level 1, 2, or 3 as defined below.

1-Slight (Low)

2-Moderate (Medium)

3-Substantial (High)

“-“No Correlation

Course Outcomes of Engineering Geology

Sub: Engineering Geology Year/Sem: II-I A.Y. 2021-22 Code: CE302PC	
CE302PC.1	Site characterization and how to collect, analyze , and report geologic data using standards in engineering practice
CE302PC.2	The fundamentals of the engineering properties of Earth materials and fluids.
CE302PC.3	Rock mass characterization and the mechanics of planar rock slides and topples
CE302PC.4	Recognize geological structures in rock mass, their origin and their impact on civil engineering structures
CE302PC.5	Appreciate the importance of geo-explorations, geological maps and geological reports and develop an understanding for their utilization for safer, stable and economical civil structures.

CO and PO Mapping Matrix

Sub: Engineering Geology Year/Sem: II-I A.Y. 2021-22 Code: CE302PC												
CO'S	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CE302PC.1	2	3	2	1	1	1	1	-	-	-	1	2
CE302PC.2	3	2	3	2	2	2	-	-	-	1	-	3
CE302PC.3	3	1	1	3	3	2	2	-	-	-	2	3
CE302PC.4	3	2	2	3	2	3	1	-	-	-	-	1
CE302PC.5	1	3	3	2	2	2	1	-	-	-	-	2
AVERAGE	2.4	2.2	2.2	2.2	2	2	1.25	-	-	1	1.5	2.2

CO and PSO Mapping Matrix

CO'S	PSO1	PSO2
CE302PC.1	2	2
CE302PC.2	3	1
CE302PC.3	3	2
CE302PC.4	2	3
CE302PC.5	2	2
AVERAGE	2.4	2

Correlation Level 1, 2, or 3 as defined below.

1-Slight (Low)

2-Moderate (Medium)

3-Substantial (High)

“-No Correlation

Course Outcome of Strength of Materials-I

Sub: Strength of Materials-I		Year/Sem:II-IA.Y. 2021-22	Subject Code : CE303PC
CE303PC.1	Describe the concepts and principles, understand the theory of elasticity including strain/displacement and Hooke's law relationships; and perform calculations, related to the strength of structured and mechanical components		
CE303PC.2	Recognize various types loads applied on structural components of simple framing geometries and understand the nature of internal stresses that will develop within the components		
CE303PC .3	To evaluate the strains and deformation that will result due to the elastic stresses developed within the materials for simple types of loading		
CE303PC .4	Analyze various situations involving structural members subjected to plane stresses by application of Mohr's circle of stress		
CE303PC .5	Frame an idea to design a system, component, or process		

CO and PO Mapping Matrix

Sub: Strength of Materials-I				Year/Sem:II-IA.Y. 2021-22				Subject Code CE303PC				
CO'S	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CE303PC .1	3	3	3	3	2	1	-	-	2	-	1	3
CE303PC .2	2	3	3	3	3	-	-	-	2	-	2	2
CE303PC .3	3	2	3	3	2	2	-	-	2	-	-	2
CE303PC .4	3	3	3	3	2	-	-	-	-	-	-	1
CE303PC .5	3	1	2	3	1	-	-	-	2	1	-	3
AVERAGE	2.8	2.4	2.8	3	2	1.5	-	-	2	1	1.5	2.2

CO and PSO Mapping Matrix

CO'S	PSO1	PSO2
CE303PC .1	3	3
CE303PC .2	3	3
CE303PC .3	3	2
CE303PC .4	2	3
CE303PC .5	3	3
AVERAGE	2.8	2.8

Correlation Level 1, 2, or 3 as defined below.

1-Slight (Low)

2-Moderate (Medium)

3-Substantial (High)

“-“No Correlation

Course Outcomes of Fluid Mechanics

Sub: Fluid Mechanics Year/Sem: II-I A.Y. 2021-22 Subject Code : CE305PC	
CE305PC.1	Understand the broad principles of fluid statics, kinematics and dynamics
CE305PC.2	Understand definitions of the basic terms used in fluid mechanics and characteristics of fluids and its flow
CE305PC.3	Understand classifications of fluid flow
CE305PC.4	Be able to apply the continuity, momentum and energy principles
CE305PC.5	Calculate the force acting on submerged bodies

CO and PO Mapping Matrix

Sub: Fluid Mechanics Year/Sem: II-I A.Y. 2021-22 Subject Code : CE305PC												
CO'S	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CE305PC.1	2	2	1	1	2	-	-	-	2	1	-	1
CE305PC.2	2	2	2	3	2	1	-	-	2	1	-	-
CE305PC.3	3	2	1	2	3	-	-	-	2	1	-	2
CE305PC.4	3	2	3	2	1	3	-	-	2	1	-	3
CE305PC.5	2	3	3	2	1	-	-	-	2	1	-	3
AVERAGE	2.4	2.2	2	2	1.8	2	-	-	2	1	-	2.25

CO and PSO Mapping Matrix

CO'S	PSO1	PSO2
CE305PC.1	2	3
CE305PC.2	2	3
CE305PC.3	3	2
CE305PC.4	3	2
CE305PC.5	2	2
AVERAGE	2.4	2.4

Correlation Level 1, 2, or 3 as defined below.

1-Slight (Low)

2-Moderate (Medium)

3-Substantial (High)

“-No Correlation

Course Outcomes of Surveying Lab

Sub: Surveying Lab Year/Sem: II-I		A.Y. 2021-22	Code: CE306PC
CE306PC.1	Apply the principle of surveying for civil Engineering Applications		
CE306PC.2	Calculation of areas, drawing plans and contour maps using different measuring equipment at field level		
CE306PC.3	Write a technical laboratory report		
CE306PC.4	Determine the location of any point horizontally and vertically using		
CE306PC.5	Theoretical considerations in field and other engineering projects		

CO and PO Mapping Matrix

Sub: Surveying Lab Year/Sem: II-I		A.Y. 2021-22				Code: CE306PC						
CO'S	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CE306PC.1	3	3	3	3	1	-	1	-	-	-	-	-
CE306PC.2	2	2	2	3	2	-	1	-	-	-	1	-
CE306PC.3	2	3	3	1	2	2	-	-	-	-	3	3
CE306PC.4	2	2	2	3	1	-	1	-	-	-	-	2
CE306PC.5	3	3	1	3	1	-	1	-	-	-	-	3
AVERAGE	2.4	2.6	2.2	2.6	1.4	2.0	1.0	-	-	-	2.0	2.7

CO and PSO Mapping Matrix

CO'S	PSO1	PSO2
CE306PC.1	3	3
CE306PC.2	2	2
CE306PC.3	2	2
CE306PC.4	1	1
CE306PC.5	3	3
Average	2.2	2.2

Correlation Level 1, 2, or 3 as defined below.

1-Slight (Low)

2-Moderate (Medium)

3-Substantial (High)

“-No Correlation

Course Outcomes of Strength of Materials Lab

Sub: Strength of Materials Lab Year/Sem: II-IA.Y. 2021-22 Code: CE307PC	
CE307PC.1	Configure & operate a data acquisition system using various testing machines of solid materials
CE307PC.2	Compute and Analyze engineering values (e.g., stress or strain) from laboratory measurements
CE307PC.3	Write a technical laboratory report
CE307PC.4	Analyze the bending stress on different types of sections.
CE307PC.5	Understand deflection of different sections at different loading conditions

CO and PO Mapping Matrix

Sub: Strength of Materials Lab Year/Sem: II-IA.Y. 2021-22 Code: CE307PC												
CO'S	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CE307PC.1	3	2	1	-	1	-	-	-	-	-	2	3
CE307PC.2	3	2	1	-	3	-	3	-	-	-	1	3
CE307PC.3	3	2	1	3	2	-	-	-	-	-	-	-
CE307PC.4	3	2	3	2	1	-	3	-	-	-	3	2
CE307PC.5	2	3	3	3	-	-	-	-	-	-	-	-
AVERAGE	2.8	2.2	1.8	2.7	1.8	-	3.0	-	-	-	2.0	2.7

CO and PSO Mapping Matrix

CO'S	PSO1	PSO2
CE307PC.1	3	3
CE307PC.2	2	1
CE307PC.3	3	2
CE307PC.4	2	2
CE307PC.5	2	2
AVERAGE	2.4	2

Correlation Level 1, 2, or 3 as defined below.

1-Slight (Low)

2-Moderate (Medium)

3-Substantial (High)

“-No Correlation

Course Outcome of Engineering Geology Lab

Sub: Engineering Geology Lab Year/Sem: II-IA.Y. 2021-22 Subject Code: CE308PC	
CE308PC.1	Understands the method and ways of investigations required for Civil Engineering projects
CE308PC.2	Identify the various rocks, minerals depending on geological classifications
CE308PC.3	Will able to learn to couple geologic expertise with the engineering properties of rock and unconsolidated materials in the characterization of geologic sites for civil work projects
CE308PC.4	Write a technical laboratory report
CE308PC.5	Quantification of processes such as rock slides and settlement.

CO and PO Mapping Matrix

Sub: Engineering Geology Lab Year/Sem:II-IA.Y. 2021-22 Subject Code: CE308PC													
CO'S	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	
CE308PC .1	3	2	2	2	2	-	1	-	1	-	1	-	
CE308PC .2	3	3	2	3	2	-	1	-	2	2	-	-	
CE308PC .3	2	2	2	1	3	-	3	-	2	2	-	-	
CE308PC .4	2	2	2	2	1	-	1	-	-	3	2	2	
CE308PC .5	3	2	2	2	1	-	1	-	1	-	1	2	
AVERAGE	2.6	2.2	2.0	2.0	1.8	-	1.4	-	1.5	2.3	1.3	2.0	

CO and PSO Mapping Matrix

CO'S	PSO1	PSO2
CE308PC .1	3	3
CE308PC .2	1	2
CE308PC .3	3	2
CE308PC .4	3	1
CE308PC .5	3	3
AVERAGE	2.6	2.2

Correlation Level 1, 2, or 3 as defined below.

1-Slight (Low)

2-Moderate (Medium)

3-Substantial (High)

“-“No Correlation

Course Outcomes of Basic Electrical and Electronics Engineering

Sub: Basic Electrical and Electronics Engineering Year/Sem: II-II A.Y. 2021-22 Code: EE401ES	
EE401ES.1	Analyze and solve electrical circuits using network laws and theorems
EE401ES.2	To understand and analyze basic electric and magnetic circuits
EE401ES.3	To study the working principles of electrical machines
EE401ES.4	To understand components of low voltage electrical installations
EE401ES.5	To identify and characterize diodes and various types of transistors

CO and PO Mapping Matrix

Sub: Basic Electrical and Electronics Engineering Year/Sem: II-II A.Y. 2021-22 Code:EE401ES												
CO'S	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
EE401ES.1	2	2	1	1	-	-	-	-	-	-	-	1
EE401ES.2	2	2	2	2	-	-	-	-	-	-	-	2
EE401ES.3	2	3	2	2	-	-	-	-	-	-	-	3
EE401ES.4	3	3	3	3	-	-	-	-	-	-	-	3
EE401ES.5	3	3	3	3	-	-	-	-	-	-	-	3
AVERAGE	2.4	2.6	2.2	2.2	-	-	-	-	-	-	-	2.4

CO and PSO Mapping Matrix

CO'S	PSO1	PSO2
EE401ES.1	2	2
EE401ES.2	2	2
EE401ES.3	2	2
EE401ES.4	2	2
EE401ES.5	2	2
AVERAGE	2	2

Correlation Level 1, 2, or 3 as defined below.

1-Slight (Low)

2-Moderate (Medium)

3-Substantial (High)

“-No Correlation



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Course Outcomes of Basic Mechanical Engineering for Civil Engineers

Sub : Basic Mechanical Engineering for Civil Engineers Year/Sem: II-II A.Y. 2021-22	
Subject Code : CE402ES	
CE402ES.1	Basic machine elements.
CE402ES.2	Sources of Energy and Power Generation.
CE402ES.3	Various manufacturing processes.
CE402ES.4	Power transmission elements, material handling equipment
CE402ES.5	Basic principle of lathe, drilling, milling, grinding machine, operations performed.

CO and PO Mapping Matrix

Sub: Basic Mechanical Engineering for Civil Engineers Year/Sem: II-II A.Y. 2021-22 Subject Code:CE402ES												
CO'S	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CE402ES.1	3	2	-	-	-	-	-	-	-	-	-	-
CE402ES.2	2	3	-	-	-	-	-	-	-	-	-	-
CE402ES.3	-	2	3	-	-	-	-	-	-	-	-	-
CE402ES.4	2	3	-	-	-	-	-	-	-	-	-	-
CE402ES.5	-	2	3	-	-	-	-	-	-	-	-	-
AVERAGE	2.3	2.4	3.0	-	-	-	-	-	-	-	-	-

CO and PSO Mapping Matrix

CO'S	PSO1	PSO2
CE402ES.1	3	-
CE402ES.2	3	-
CE402ES.3	3	-
CE402ES.4	3	-
CE402ES.5	3	-
AVERAGE	3	-

Correlation Level 1, 2, or 3 as defined below.

1-Slight (Low)

2-Moderate (Medium)

3-Substantial (High)

“-“No Correlation

PROGRAM LEVEL CO-PO MAPPING

Code	Subject	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
	I B. TECH I SEMESTER												
MA101BS	Mathematics - I	1.3	1.3	1.46	-	1.05	-	-	-	-	1.05	-	-
CH102BS	Chemistry	1.11	1.11	1.11	1.01	0.89	0.98	0.86	-	1.02	-	1.11	0.65
EE103ES	Basic Electrical Engineering	1.08	0.93	0.31	0.31	0.15	0.31	0.15	0.31	-	0.31	0.15	0.15
ME105ES	Engineering Workshop	1.42	1.42	1.56	-	1.28	1.27	-	-	1.42	-	-	-
EN105HS	English	0.89	0.89	1.11	-	0.62	-	-	-	-	0.58	-	-
CH106BS	Engineering Chemistry Lab	1.21	1.08	1.11	-	1.02	0.99	-	-	-	1.11	-	-
EN107HS	English Language and Communication Skills Lab	1.32	1.32	1.7	-	0.94	-	-	-	-	0.76	-	-
EE108ES	Basic Electrical Engineering Lab	1.06	1.42	2.13	1.77	1.6	1.24	1.24	0.71	0.71	0.35	1.06	1.24
	I B. TECH II SEMESTER												
MA201BS	Mathematics - II	1.28	1.28	1.56	-	0.85	-	-	-	-	0.85	-	-
AP202BS	Applied Physics	0.92	0.89	-	-	0.8	-	-	-	0.18	0.67	-	0.62
CS203ES	Programming for Problem Solving	2.2	2.2	2.6	2	1.4	-	1	-	-	-	-	-
ME204ES	Engineering Graphics	1.25	1.25	1.59	-	0.91	-	-	-	-	0.91	-	-
AP205BS	Applied Physics Lab	0.92	0.89	-	-	0.8	-	-	-	0.18	0.67	-	0.62

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CS206ES	Programming for Problem Solving Lab	2.2	2.2	2.6	2	1.4	-	1	-	-	-	-	-
*MC209ES	Environmental Science	0.75	1.13	1.13	-	0.75	-	-	-	0.37	-	-	-
	II B. TECH I SEMESTER												
CS301S	Analog and Digital Electronics	2.8	2.6	3	1.8	2.2	1.6	1	-	0.8	1.2	0.8	2.4
CS302PC	Data Structures	2.8	2.8	2.8	2.4	2	2.4	2.4	-	2	-	-	2
MA303BS	Computer Oriented Statistical Methods	3	2	1	2	2	-	-	-	-	-	-	1
CS304PC	Computer Organization and Architecture	3	2	1	2	2	-	-	-	-	-	-	1
CS305PC	Object Oriented Programming using C++	2.8	2.8	2.8	2.4	2	2.4	2.4	-	2	-	-	2
CS306ES	Analog and Digital Electronics Lab	2.8	2.6	3	1.8	2.2	1.6	1	-	0.8	1.2	0.8	2.4
CS307PC	Data Structures Lab	2.8	2.6	3	1.8	2.2	1.6	1	-	0.8	1.2	0.8	2.4
CS308PC	IT Workshop Lab	2	1.8	0.4	0.4	0.8	0.6	-	-	-	-	0.4	2
CS309PC	C++ Programming Lab	2.8	2.6	3	1.8	2.2	1.6	1	-	0.8	1.2	0.8	2.4
*MC309	Gender Sensitization Lab												
	II B. TECH II SEMESTER												
CS401PC	Discrete Mathematics	2.4	2.4	1.4	1.6	-	1	0.8	-	0.2	0.6	1	1
SM402MS	Business Economics & Financial Analysis	3	2	1	2	2	-	-	-	-	-	-	1
CS403PC	Operating Systems	2.4	2.2	2.8	2	2.8	2	2	-	2	2.6	-	-

CS404PC	Database Management Systems	2.4	2.2	2.8	2	2.8	2	2	-	2	2.6	-	-
CS405PC	Java Programming	2.8	3	3	2.2	2	1.6	1.8	-	1.6	0.8	-	2.8
CS406PC	Operating Systems Lab	3	2.6	3	2.2	1.6	-	1.4	-	-	-	-	3
CS407PC	Database Management Systems Lab	2.4	2.2	2.8	2	2.8	-	2	-	2	-	-	2
CS408PC	Java Programming Lab	3	2.6	3	2.2	1.6	-	1.4	-	-	-	-	3
*MC409	Constitution of India	2	1	2	1	-	-	-	1	-	-	2	2
	III B. TECH I SEMESTER												
CS501PC	Formal Languages & Automata Theory	2	2.8	2.2	1.6							1	1
CS502PC	Software Engineering	2.2	2.5	2	2.2	-	2	-	-	2.4	-	2.4	2
CS503PC	Computer Networks	3	2.4	2.2	1.4	1	1.2	-	-	-	-	-	2.6
CS504PC	Web Technologies	1.6	1	3									1
CS513PE	Data Analytics	2.6	2.6	2.4	1.8	1.6	0.8	1.2	-	-	0.4	0.2	-
CS524PE	Distributed Databases	2.6	2	1	1.4	2	-	-	-	-	-	-	2.4
CS505PC	Software Engineering Lab	2	1.7	1.7	2	2.8	-	3	3	-	3	3	3
CS506PC	Computer Networks & Web Technologies Lab	3	2.6	2.6	1.6	1.6	1.2	1.4	-	-	-	-	2.6
EN508HS	Advanced Communication Skills Lab	3	2.6	3	2.2	1.6	-	1.4	-	-	-	-	3
*MC510	Intellectual Property Rights	-	1	1	2	-	1	1.4	2	1	2	2	1

III B. TECH II SEMESTER															
CS601PC	Machine Learning	2.4	2.4	2.6	-	-	1.4	1.2	-	-	-	-	1.6	1	
CS602PC	Compiler Design	2.2	2.2	2.8	1.2	1.6	1.2	-	1.2	-	1.6	-	1.2		
CS603PC	Design and Analysis of Algorithms	2	2.4	2.4	2	1.2	1	-	-	0.8	-	-	2		
CS615PE	Software Testing Methodologies	2.8	2.2	2.2	2	1.8				2.4	2	2.4	2.4		
	Disaster Preparedness & Planning Management	3	2.6	3	2.2	1.6	-	1.4	-	-	-	-	3		
CS604PC	Machine Learning Lab	2.2	2.2	2.8	1.2	1.6	1.2	-	-	-	1.6	-	-		
CS605PC	Compiler Design Lab	2.2	2.2	2.8	1.2	1.6	1.2	-	-	-	1.6	-	-		
	Software Testing Methodologies Lab	2.6	1.8	2.2	2	1.8	-	-	-	2.2	2	2	2.4		
*MC609	Environmental Science	1.6	2.2	1.8	2.2	2.8	2.4	2.2	2	2.2	1.6	2.2	2		
IV B. TECH I SEMESTER															
CS701PC	Cryptography & Network Security	3	2.8	2.2	2.4	1.4	1.8	0.6	-	0.4	0.4	0.4	1		
CS702PC	Data Mining	2.75	2	1	-	2	-	-	1	-	-	-	1		
CS714PE	Cloud Computing	3	1.8	2									1		
CS725PE	Software Process & Project Management	3	1.4	2.6								1.6	-		
	Principles of Entrepreneurship	3	2.6	3	2.2	1.6	-	1.4	-	-	-	-	3		
CS703PC	Cryptography & Network Security Lab	3	2.2	1.8	2	1.2	1.6	-	-	-	-	-	1		
CS704PC	Industrial Oriented Mini Project/ Summer Internship	7.15	1.75	1.75	1.6	2.5	1	-	-	2	2	1.6	2		

CS705PC	Seminar	1	2.2	1.75	1.75	2	2	2	-	3	2	1.6	3
CS706PC	Project Stage - I	1	2.2	1.75	1.75	2	2	2	-	3	2	1.6	3
	IV B. TECH II SEMESTER												
CE800OE	Environmental Impact Assessment (Open Elective-III)	1	2.2	1.75	1.75	2	2	2	-	3	2	1.6	3
SM801MS	Organizational Behaviour	1	2.2	1.75	1.75	2	2	2	-	3	2	1.6	3
CS812PE	Distributed Systems	3	2.6	1.2	-	1.6	-	-	-	-	-	-	2
EE801PC	Project Stage - II	3	3	3	3	2.6	2.3	2.6	2.6	3	3	3	3
	AVERAGE	2.0	1.8	1.8	1.4	1.4	1.0	1.1	0.6	1.1	1.0	1.0	1.6

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PROGRAM LEVEL CO-PSO MAPPING

Code	Subject	PSO1	PSO2
	I B. TECH I SEMESTER		
MA101BS	Mathematics - I	0.24	0.24
CH102BS	Chemistry	0.25	0.12
EE103ES	Basic Electrical Engineering	0.62	0.54
ME105ES	Engineering Workshop	0.25	0.25
EN105HS	English	0.12	0.12
CH106BS	Engineering Chemistry Lab	0.12	0.12
EN107HS	English Language and Communication Skills Lab	0.19	0.19
EE108ES	Basic Electrical Engineering Lab	1.24	1.42
	I B. TECH II SEMESTER		
MA201BS	Mathematics - II	0.14	0.14
AP202BS	Applied Physics	1.25	1.25
CS203ES	Programming for Problem Solving	1.8	1.2
ME204ES	Engineering Graphics	0.11	0.11
AP205BS	Applied Physics Lab	1.25	1.25
CS206ES	Programming for Problem Solving Lab	1.8	1.2


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*MC209ES	Environmental Science	-	-
	II B. TECH I SEMESTER		
CS301S	Analog and Digital Electronics	2.6	2
CS302PC	Data Structures	1.6	1.6
MA303BS	Computer Oriented Statistical Methods	2	1.4
CS304PC	Computer Organization and Architecture	2	1.4
CS305PC	Object Oriented Programming using C++	1.6	1.6
CS306ES	Analog and Digital Electronics Lab	2.6	2
CS307PC	Data Structures Lab	2.6	2
CS308PC	IT Workshop Lab	0.8	1.4
CS309PC	C++ Programming Lab	2.6	2
*MC309	Gender Sensitization Lab		
	II B. TECH II SEMESTER		
CS401PC	Discrete Mathematics	1.6	1
SM402MS	Business Economics & Financial Analysis	2	1.4
CS403PC	Operating Systems	2.4	2.4
CS404PC	Database Management Systems	2.4	2.4

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CS405PC	Java Programming	2.2	2.2
CS406PC	Operating Systems Lab	3	2
CS407PC	Database Management Systems Lab	2.4	2
CS408PC	Java Programming Lab	3	2
*MC409	Constitution of India	1.6	1.6
	III B. TECH I SEMESTER		
CS501PC	Formal Languages & Automata Theory	2	2.2
CS502PC	Software Engineering	2.5	2.2
CS503PC	Computer Networks	2.2	1.4
CS504PC	Web Technologies	3	2
CS513PE	Data Analytics	2.6	2.2
CS524PE	Distributed Databases	2.6	2
CS505PC	Software Engineering Lab	-	3
CS506PC	Computer Networks & Web Technologies Lab	2.4	2
EN508HS	Advanced Communication Skills Lab	3	2
*MC510	Intellectual Property Rights	-	1.8
	III B. TECH II SEMESTER		


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CS601PC	Machine Learning	1.6	1.6
CS602PC	Compiler Design	1	1
CS603PC	Design and Analysis of Algorithms	2.2	2
CS615PE	Software Testing Methodologies	2.6	2.4
	Disaster Preparedness & Planning Management	3	2
CS604PC	Machine Learning Lab	1	1
CS605PC	Compiler Design Lab	1	1
	Software Testing Methodologies Lab	2.4	2.2
*MC609	Environmental Science	2	2.4
	IV B. TECH I SEMESTER		
CS701PC	Cryptography & Network Security	2.8	1.2
CS702PC	Data Mining	2	1.6
CS714PE	Cloud Computing	3	2
CS725PE	Software Process & Project Management	2.4	1.6
	Principles of Entrepreneurship	3	2
CS703PC	Cryptography & Network Security Lab	2.8	1.4
CS704PC	Industrial Oriented Mini Project/ Summer Internship	2	2
CS705PC	Seminar	2.6	


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CS706PC	Project Stage - I	2.6	3
	IV B. TECH II SEMESTER		
CE800OE	Environmental Impact Assessment (Open Elective-III)	2.6	
SM801MS	Organizational Behaviour	2.6	
CS812PE	Distributed Systems	2.6	1.2
EE801PC	Project Stage - II	3	2.8
	AVERAGE	1.7	1.3


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2.6.1 Attainment of Program outcomes and course outcomes are evaluated by the institution.

S.No.	Subject	Page No.
1	Attainment Procedure of POs and COs with Sample data	2-20
2	Sample CO-PO attainment of an Academic Year	21-23
3	Sample CO-PSO attainment of an Academic Year	24-26


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ATTAINMENT OF COURSE OUTCOMES

Assessment Process adopted for attainment of course outcomes for various courses:

Tools used for assessment:

Marks allocation by University: The division of marks given by university, and weightages in arriving at the attainment of CO are given below. The CO assessment is carried out through CIE and SEE with the following proportions:

Table: Weightage of Marks for CIE: SEE

Type of Course	Internal Marks(CIE)	External Marks(SEE)	Total Marks	Net CO attainment level as per weightage
Theory	25	75	100	$0.25 \times \text{CIE Level} + 0.75 \times \text{SEE Level}$
Laboratory	25	75	100	$0.25 \times \text{CIE Level} + 0.75 \times \text{SEE Level}$
Seminar	100		100	CIE Level
Industrial Oriented Mini Project/ Summer internship	25	75	100	$0.25 \times \text{CIE Level} + 0.75 \times \text{SEE Level}$
Project Stage - I	100		100	CIE Level
Project Stage-II	25	75	100	$0.25 \times \text{CIE Level} + 0.75 \times \text{SEE Level}$
Mandatory Course	100		100	CIE Level


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Based on combined marks (i.e., CIE+SEE) obtained by the candidate, Letter grades are awarded as shown below and corresponding Grade Points are also shown in table

% of Marks Secured in a Subject/Course (Class Intervals)	Letter Grade (UGC Guidelines)	Grade Points
Greater than or equal to 90%	O (Outstanding)	10
80 and less than 90%	A+ (Excellent)	9
70 and less than 80%	A (Very Good)	8
60 and less than 70%	B+ (Good)	7
50 and less than 60%	B (Average)	6
40 and less than 50%	C (Pass)	5
Below 40%	F (Fail)	0
Absent	Ab	0

Table: Letter grades with respect to academic Performance

For attainment of course outcomes

- Final Letter grades obtained by each student in the course are made available by university.
- These Letter grades must be converted to marks as shown in below table

% of Marks Secured in a Subject	Letter Grade	Corresponding Marks
Greater than or equal to 90%	O	1 *Max SEE Marks
80 and less than 90%	A+	0.89* Max SEE Marks
70 and less than 80%	A	0.79* Max SEE Marks
60 and less than 70%	B+	0.69* Max SEE Marks
50 and less than 60%	B	0.59* Max SEE Marks
40 and less than 50%	C	0.49* Max SEE Marks
Below 40%	F	0.39* Max SEE Marks

Table: Conversion of Letter grades into corresponding marks

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- Frequency of Data Collection

The data required for calculating attainments is to be gathered. Each course instructor maintains the data required like Internal Marks mid wise and External Marks of their respective course. The frequency of data collection for each assessment tool is shown in a table.

Assessment Tool	Frequency
University Examination	Once a semester
Mid Examination	Twice a semester
Assignments	Twice a semester
Internal/External Lab Examination	Once a semester

Table: Data Frequency

Attainment of CO's for Theory Courses:

Attainment of theory courses calculated based on student performance in Continuous Internal Evaluation (CIE) and Semester End Examination (SEE)

$$\text{Overall CO attainment} = 0.25 * \text{CIE Level} + 0.75 * \text{SEE Level}$$

These values of the CO levels for the course are then used for mapping the PO attainments, using the array of target PO values for the course. The procedure adapted for calculating the attainment of Course Outcomes for a Theory course is described with an example for the course Power System Operation and Control.


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Table: Mid-1 Internal Examination Attainment

Sl.No	Roll Number	Question No.				Objective	Assignment
		1	2	3	4		
Maximum Marks		5	5	5	5	10	5
1	19BT1A0201			5	5	3	5
2	19BT1A0202	3	4			2	5
3	19BT1A0203			5	5	5	5
4	19BT1A0204			5	5	3	5
5	20BT5A0201					9	5
28	20BT5A0225			5	4	7	5
29	20BT5A0226				5	4	5
30	20BT5A0227			5	5	0	5
31	20BT5A0228			4	4	3	5
32	20BT5A0229	2		4		3	5

No. of students attempted	6	3	20	18	32	32
Max Marks Question wise	5	5	5	5	10	5
Threshold 50%	2.5	2.5	2.5	2.5	5	2.5
No. of Students above threshold	5	3	20	18	12	32
% of Students>Target Score	83.34	100	100	100	37.5	100
Attainment Level	3	3	3	3	1	3

Attainment Level 1: 40% students score more than threshold
Attainment Level 2: 50% students score more than threshold
Attainment Level 3: 60% students score more than threshold

Course Outcome Mapping with each Question						
CO's	Question No				Objective	Assignment
	1	2	3	4		
Course outcome - 1	y				y	y
Course outcome - 2		y	y		y	y
Course outcome - 3				y	y	y
Course outcome - 4						
Course outcome - 5						


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Course Outcome Attainment based on Exam Questions in terms of percentage of total students when mapped to each question						
CO's	Question No				Objective	Assignment
	1	2	3	4		
Course outcome - 1	3				1	3
Course outcome - 2		3	3		1	3
Course outcome - 3				3	1	3
Course outcome - 4						
Course outcome - 5						

Course Outcome Attainment based on Exam Questions in terms of percentage of total students when mapped to each question				
CO's	Subjective	Objective	Assignment	Attainment Level
Course outcome - 1	3.00	1.00	3.00	2.33
Course outcome - 2	3.00	1.00	3.00	2.33
Course outcome - 3	3.00	1.00	3.00	2.33
Course outcome - 4				
Course outcome - 5				


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Table: Mid-2 Internal Examination Attainment

Sl.No	Roll Number	Question No.				Objective	Assignment
		1	2	3	4		
Maximum Marks		5	5	5	5	10	5
1	19BT1A0201	5			5	10	5
2	19BT1A0202	1			1	7	5
3	19BT1A0203			5	5	8	5
4	19BT1A0204			5	5	6	5
5	20BT5A0201		5		5	6	5
28	20BT5A0225	5	5			10	5
29	20BT5A0226	5	5			5	5
30	20BT5A0227	5	5			5	5
31	20BT5A0228	5			5	10	5
32	20BT5A0229	5			5	9	5

No. of students attempted	11	19	9	23	32	32
Max Marks Question wise	5	5	5	5	10	5
Threshold 50%	2.5	2.5	2.5	2.5	5	2.5
No. of Students above threshold	8	16	6	18	29	32
% of Students>Target Score	72.73	84.22	66.67	78.27	90.63	100
Attainment Level	3	3	3	3	3	3

Attainment Level 1: 40% students score more than threshold
Attainment Level 2: 50% students score more than threshold
Attainment Level 3: 60% students score more than threshold

Course Outcome Mapping with each Question						
CO's	Question No				Objective	Assignment
	1	2	3	4		
Course outcome - 1						
Course outcome - 2						
Course outcome - 3	y				y	y
Course outcome - 4		y	y		y	y
Course outcome - 5				y	y	y

DParm

Course Outcome Attainment based on Exam Questions in terms of percentage of total students when mapped to each question						
CO's	Question No				Objective	Assignment
	1	2	3	4		
Course outcome - 1						
Course outcome - 2						
Course outcome - 3	3				3	3
Course outcome - 4		3	3		3	3
Course outcome - 5				3	3	3

Course Outcome Attainment based on Exam Questions in terms of percentage of total students when mapped to each question				
CO's	Subjective	Objective	Assignment	Attainment Level
Course outcome - 1				
Course outcome - 2				
Course outcome - 3	3.00	3.00	3.00	3.00
Course outcome - 4	3.00	3.00	3.00	3.00
Course outcome - 5	3.00	3.00	3.00	3.00


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External Examination Attainment

S.NO.	HALLTICKET NO	TOTAL(Max. Score:75)
1	19BT1A0201	27
2	19BT1A0202	4
3	19BT1A0203	51
4	19BT1A0204	40
5	20BT5A0201	28
27	20BT5A0225	41
28	20BT5A0226	33
29	20BT5A0227	16
30	20BT5A0228	14
31	20BT5A0229	15

No. of students who attempted the subject	31
Max. Marks	75
Thresold 40%	30
No. of students who scored more than the target score	13
Percentage of students who scored more than target score	41.94
Overall External Attainment level	1

Attainment Level 1: 40% students score more than threshold
Attainment Level 2: 50% students score more than threshold
Attainment Level 3: 60% students score more than threshold


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Table: Overall Attainment for Power System Operation and Control (EE604PC)

Course Outcomes	1st Internal Exam	2nd Internal Exam	Internal Exam(Avg.)	University Exam	Overall Attainment
Course outcome - 1	2.33	-	2.33	1.00	1.33
Course outcome - 2	2.33	-	2.33	1.00	1.33
Course outcome - 3	2.33	3.00	2.67	1.00	1.42
Course outcome - 4	-	3.00	3.00	1.00	1.5
Course outcome - 5	-	3.00	3.00	1.00	1.5
Average			2.67	1.00	1.42

Similarly CO attainment is calculated for all theory courses for corresponding academic years respectively.

CO attainment level for courses other than Theory:

a) Laboratory:

Continuous Internal Evaluation:

The internal evaluation is based on session wise performance of experiment and viva voce, Observation, record and internal examination. The final internal marks are considered for CIE, and CO level for CIE attainment is decided upon the percentage of students who score more than 50% of the maximum internal marks, i.e., 12.5 out of 25 is used to decide the CO attainment level and is uniform for all CO's.

Semester End University Examination Evaluation (SEE):

SEE Lab exam is evaluated for 75 marks. In SEE of the lab, % of students who score over 40% of the maximum marks, i.e. 30 out of 75 marks, is used to decide the CO attainment level and is uniform for all CO's.

b) Seminar:

For seminars, the assessment is based only on internal evaluation. The marks obtained in seminar is used to decide the % of students who scored more than 50% of maximum marks, and this % is used for determining corresponding CO attainment level. This Attainment level is construed as uniform for all COs of the course.

c) Industry Oriented Mini Project:

For Industry Oriented Mini Project, the assessment is based only on External evaluation. The marks obtained in Industry Oriented Mini Project is used to decide the % of students who scored

more than 40% of maximum marks, and this % is used for determining corresponding CO attainment level. This Attainment level is construed as uniform for all COs of the course.

d) Project:

Continuous Internal Evaluation:

The internal marks for project (25) are the total of marks allotted in Project review, final presentation, and by project guide. The final internal marks are considered for CIE, and CO level for CIE attainment is decided upon the percentage of students who score more than 50% of the maximum internal marks, i.e., 12.5 out of 25 is used to decide the CO attainment level and is uniform for all COs.

Semester End University Examination Evaluation (SEE):

The external evaluation is by award of Grade (Excellent/Very Good/Satisfactory /Poor). These grades are considered for SEE, and CO level for SEE attainment is decided upon the percentage of students who got Excellent/Very Good/Good to the number of students appeared is used to decide the CO attainment level and is uniform for all COs. The average value of the CO levels for the course are then used for mapping the PO attainments, using the array of target PO values for the course.


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Attainment of Program Outcomes and Program Specific Outcomes.

Direct assessment of POs and PSOs for a course is obtained by mapping the respective CO value of Course Outcome attainment with the mapping of the target or expected POs and PSOs for the course. The procedure adapted for calculating the attainment of Course Outcomes for a Theory course is described with an example for the course Power System Operation and Control. The CO values arrived from CIE and SEE for the course Power System Operation and Control (EE604PC) for academic year 2021-22 is

Table: CO values of Power System Operation and Control

EE604PC	CO1	CO2	CO3	CO4	CO5
	1.33	1.33	1.42	1.5	1.5

The Mapping POs for particular COs for the course CS7S IPC are given below,

Table: CO-PO Mapping of EE604PC course

Sub : Power System Operation and Control Year/Sem: III-II A.Y. 2021-22 Subject Code : EE604PC												
CO'S	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
EE604PC.1	2	3	2	2	1	1	1	-	2	1	2	1
EE604PC.2	2	3	2	2	1	1	1	-	2	2	2	1
EE604PC.3	3	3	3	2	2	1	1	-	2	1	2	1
EE604PC.4	3	2	3	2	2	1	1	-	2	1	2	1
EE604PC.5	3	2	3	2	2	1	1	-	2	1	1	1
AVERAGE	2.6	2.6	2.6	2	1.6	1	1	-	2	1.2	1.8	1

Table: CO-PSO Mapping of EE604PC course

CO'S	PSO1	PSO2
EE604PC.1	2	3
EE604PC.2	2	3
EE604PC.3	2	3
EE604PC.4	2	3
EE604PC.5	2	3
AVERAGE	2	3

Mapping value for combination of CO1-PO1 is 2.

Then the attainment value is $1.33 \times 2/3 = 0.88$

Mapping value for combination of CO2-PO5 is 1.

Then the attainment value is $1.33 \times 1/3 = 0.44$

Other POs are mapped similarly.

The Complete PO Attainment mapping for the course EE604PC is shown below.

Table: PO Attainment from Course Outcomes

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
Course outcome - 1	0.89	1.33	0.89	0.89	0.44	0.44	0.44	0.00	0.89	0.44	0.89	0.44	0.89	1.33
Course outcome - 2	0.89	1.33	0.89	0.89	0.44	0.44	0.44	0.00	0.89	0.89	0.89	0.44	0.89	1.33
Course outcome - 3	1.42	1.42	1.42	0.95	0.95	0.47	0.47	0.00	0.95	0.47	0.95	0.47	0.95	1.42
Course outcome - 4	1.50	1.00	1.50	1.00	1.00	0.50	0.50	0.00	1.00	0.50	1.00	0.50	1.00	1.50
Course outcome - 5	1.50	1.00	1.50	1.00	1.00	0.50	0.50	0.00	1.00	0.50	0.50	0.50	1.00	1.50
COs Average	1.24	1.22	1.24	0.94	0.77	0.47	0.47	0.00	0.94	0.56	0.84	0.47	0.94	1.42

The PO/PSO attainment values so obtained from their direct component for the course. The direct components for all the courses are obtained similarly and tabulated. The average for each PO/PSO gives the values attained directly.

Indirect Component:

The PO/PSOs are attained indirectly by taking different surveys. These surveys are also having equal weightage for Overall PO/PSO attainment.

1. Program Exit Survey
2. Alumni Survey
3. Employer Feedback Survey

Frequency of Data Collection:

Table: Data frequency

Assessment Tools	Frequency of Data Collection
Program Exit Survey	Once in a Year
Alumni Survey	Once in a Year
Employer Feedback Survey	Once in a Year

Indirect Assessment Tools:

- Alumni Survey: A feedback is collected on POs & PSOs from alumni students. It contributes towards the weightage of PO and PSO attainment. This survey is conducted by Alumni coordinator with the passed-out students. Alumni coordinator collects both Alumni feedback forms filled by passed out student.
- Employer Feedback Survey: A feedback is collected on Vision & Mission, PEOs, and Pos & PSOs. It is an indirect assessment tool which contributes towards the weightage of PO and PSOs. It is conducted after one year of service completed by the graduates from joining those respective organizations.
- Program Exit Survey: The Program graduate exit survey is collected at the end of the program. The objective of the survey is to know the level of confidence of each POs & PSOs that a graduate possesses by the end of the program.



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Ph : 08414 - 252677
(O) : 77299 89434
Website : www.vcethyd.ac.in
e-mail : vcethr@gmail.com



FEEDBACK FROM ALUMNI

Thanking you for taking time to respond to this survey for Alumni. Your ideas and opinions are very important to our programs and our efforts to continuously improve these programs. You may use available blank space at the end for comments.

Alumni Name	D. Prashanth Kumar (17BT1A0201)
Year of Graduation	2021
Branch	EEE
Present Address	
Email-Id	
Present Occupation (Please send appointment letter copy to the HOD at the earliest)	
Whether Undergone Higher Education: YES/NO. (If YES, please send Admission details at the earliest)	

Please answer the following questions	Evaluation on following scale		
	Excellent	Good	Satisfactory
	3	2	1
1. How effectively the engineering knowledge is helpful in your real life?	☒	☐	☐
2. How far did you apply mathematical formulas and algorithmic principles to design and implement computer-based system?	☒	☐	☐
3. How far your studies helped you to meet the specific needs of society?	☒	☐	☐

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4. How far you can apply studies in research-oriented way to investigate complex problems?	☒	☐	☐
5. Did you acquire your knowledge to meet modern engineering tools and current technologies?	☒	☐	☐
6. How far you can serve the society with your computer-based knowledge?	☒	☐	☐
7. How far your engineering skills did help you to sustain in global environment for career achievement?	☒	☐	☐
8. Did your studies inculcate the professional ethics for a successful career?	☒	☐	☐
9. How effectively your activities in the college helped you to work in diverse team as an individual/leader?	☒	☐	☐
10. How far your efforts on academic projects helped you to meet real time presentations/documentations and enhance your overall communication skills?	☒	☐	☐
11. How far you have knowledge on engineering and management principles which helped you to manage the projects as a leader/team?	☒	☐	☐
12. How far are you ready to recognize and prepare for technological changes to sustain in real world?	☒	☐	☐
13. Have you learnt Comprehensive Knowledge of Electrical Systems, Components and Processes to address technical and Engineering Challenges in Real Life?	☒	☐	☐
14. Have you learnt Aptitude to Provide Technical Solutions to Complex Electrical Engineering Problem with the Application of Modern and Appropriate Tools for Sustainable Development?	☒	☐	☐

Suggestions/Comments:

- Your feedback is tremendously useful to improve VCET learning environment.
- Thank you for taking the time to answer our questions. Your feedback is tremendously valuable to us.

Date: 17-9-22

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e-mail : vcethr@gmail.com



FEEDBACK FROM EMPLOYER

VCET will follow the Outcome Based Education. The outcome assessment has through the survey. Need your answers the following questioner for valued consideration. Requesting you to spend some time to answer the questioner.

Employee Name	HCL
Mailing Address	

Please answer the following questions	POs & PSOs	Evaluation on following scale		
		Excellent 3	Good 2	Satisfactory 1
1. How do you find our students in applying the knowledge of mathematics, science in the 'solution of complying engineering problems?	PO1: Engineering Knowledge	✓		
	PO2: Problem Analysis	✓		
	PO3: Development of Solution	✓	.	
	PO4: Investigations of Complex Problems	✓		
	PO5: Modern Tools Usage	✓		
	PO6: Engineer & Society		✓	
2. How capable are our students to learn new skills?	PO7: Environment & Sustainability		✓	
3. How do you rate our students with respect to their ethical and moral values	PO8: Ethics		✓	

DRoman
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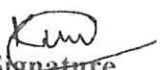
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4. How do you rate our students with respect to individual and team work?	PO9: Individual & Teamwork	✓		
5. How do you rate our students with respect to communication skills?	PO10: Communication		✓	
6. How capable are our students in managing the given task?	PO11: Finance & Project Management	✓		
7. How do you find our curriculum with respect to industry?	PO12: Lifelong Learning	✓		
8. How do you rate our students' capabilities in development of real time projects?	PSO1: Comprehensive Knowledge of Electrical Systems, Components and Processes to address technical and Engineering Challenges in Real Life	✓		
9. How do you rate our students in giving solutions to problems with varying complexities?	PSO2: Aptitude to Provide Technical Solutions to Complex Electrical Engineering Problem with the Application of Modern and Appropriate Tools for Sustainable Development		✓	

Suggestions/Comments:

- Your feedback is tremendously useful to improve VCET learning environment.
- Thank you for taking the time to answer our questions. Your feedback is tremendously valuable to us.

Date: 20-01-2019


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FEEDBACK FROM EXIT STUDENTS

Registration Number	18BT1A0101
Name of the Student	A. PRASANNA
Program Name	
Phone Number	
Email-Id	

Thanking you for taking time to respond to this survey. Your ideas and opinions are very important to help the authorities for improving the methodology of teaching and learning process. Tick mark against the appropriate square block.

Please answer the following questions	Evaluation on following scale		
	Excellent	Good	Satisfactory
	3	2	1
1. Can you apply the basic principles of mathematics, science, and engineering to solve the complex engineering problems?	☒	☐	☐
2. How effectively do you analyze the problems of engineering?	☒	☐	☐
3. Can you design solutions for complex problems from your academic knowledge for sustainable growth?	☒	☐	☐
4. How far you can investigate a problem by utilizing research-based knowledge and methods which you have learnt from academics in research-oriented way?	☒	☐	☐
5. Have you learnt about current technologies and modern engineering tools?	☒	☐	☐

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6. Can you serve the society with your knowledge achieved from your studies?	☒	☐	☐
7. Have you learnt any basic skills to survive in the society?	☒	☐	☐
8. Have you come to know ethical values from academics?	☒	☐	☐
9. Will your efforts in academic projects help you out to work in diverse teams?	☒	☐	☐
10. How far your academics helped you to enhance your communication skills?	☒	☐	☐
11. How did you demonstrate and apply the knowledge acquired from your academics at the time of project documentation and implementation?	☒	☐	☐
12. Can you learn independently throughout your life for career development?	☒	☐	☐
13. Have you learnt Comprehensive Knowledge of Electrical Systems, Components and Processes to address technical and Engineering Challenges in Real Life?	☒	☐	☐
14. Have you learnt Aptitude to Provide Technical Solutions to Complex Electrical Engineering Problem with the Application of Modern and Appropriate Tools for Sustainable Development?	☒	☐	☐

Suggestions/Comments:

- Your feedback is tremendously useful to improve VCET learning environment.
- Thank you for taking the time to answer our questions. Your feedback is tremendously valuable to us.

Date: 17-9-22


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Program Level Course - PO Attainment - 2021-22

S.No	Code	Subject	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
		I B. TECH I SEMESTER												
1	MA101BS	Mathematics - I	1.3	1.3	1.46	-	1.05	-	-	-	-	1.05	-	-
2	CH102BS	Engineering Physics	0.98	0.8	-	-	0.8	-	-	-	0.5	0.58	0.17	0.62
3	EE103ES	Programming for Problem Solving	2.2	2.2	2.6	2	1.4	-	1	-	-	-	-	-
4	ME105ES	Engineering Graphics	1.25	1.25	1.59	-	0.91	-	-	-	-	0.91	-	-
5	EN105HS	Engineering Physics Lab	0.92	0.89	-	-	0.8	-	-	-	0.18	0.67	-	0.62
6	CH106BS	Programming for Problem Solving Lab	2.2	2.2	2.6	2	1.4	-	1	-	-	-	-	-
		I B. TECH II SEMESTER												
7	MA201BS	Environmental Science	0.75	1.13	1.13	-	0.75	-	-	-	-	0.37	-	-
8	AP202BS	Mathematics - II	1.28	1.28	1.56	-	0.85	-	-	-	-	0.85	-	-
9	CS203ES	Chemistry	1.11	1.11	1.11	1.01	0.89	0.98	0.86	-	1.02	-	1.11	0.65
10	ME204FS	Engineering Mechanics	1.36	1.13	1.47	-	1.02	-	-	-	-	1.36	-	-
11	AP205BS	Engineering Workshop	1.42	1.42	1.56	-	1.28	1.27	-	-	1.42	-	-	-
12		English	0.89	0.89	1.11	-	0.62	-	-	-	-	0.58	-	-
13		Engineering Chemistry Lab	1.21	1.08	1.11	-	1.02	0.99	-	-	-	1.11	-	-
14	CS206ES	English Language and Communication Skills Lab	1.32	1.32	1.7	-	0.94	-	-	-	-	0.76	-	-
		II B. TECH I SEMESTER												
15	EE301ES	Surveying and Geomatics	2.36	2.56	2.16	2.56	1.38	1.97	0.98	-	-	-	1.97	2.63
16	EE302PC	Engineering Geology	2.36	2.16	2.16	2.16	1.97	1.97	1.23	-	-	0.98	1.48	2.16
17	EE303PC	Strength of Materials-I	1.61	1.38	1.61	1.73	1.15	0.58	-	-	1.15	0.58	0.58	1.38
18	EE304PC	Probability and Statistics	1.37	1.25	1.14	1.14	1.03	1.14	-	-	1.14	0.57	-	1.28
19	EE305PC	Fluid Mechanics	1.87	1.72	1.56	1.56	1.4	1.56	-	-	1.56	0.78	-	1.76
20	EE306PC	Surveying Lab	2.37	2.57	2.17	2.57	1.38	1.97	0.99	-	-	-	1.97	2.63
21	EE307PC	Strength of Materials Lab	2.76	2.17	1.78	2.63	1.73	-	2.96	-	-	-	1.97	2.63
22	EE308PC	Engineering Geology Lab	2.57	2.17	1.97	1.97	1.78	-	1.38	-	1.48	2.31	1.32	1.97
		II B. TECH II SEMESTER												

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23	MA401BS	Basic Electrical and Electronics Engineering	2.38	2.57	2.18	2.18	-	-	-	-	-	-	-	2.38
24	EE402PC	Basic Mechanical Engineering for Civil Engineers	1.39	1.28	1.16	1.16	1.04	1.16	-	-	1.16	0.58	-	1.31
25	EE403PC	Building Materials, Construction and Planning	1.6	1.48	1.37	1.37	0.86	0.86	0.91	-	1.14	0.95	1.57	1.14
26	EE404PC	Strength of Materials-II	1.86	1.71	1.55	1.4	1.4	0.97	1.3	-	-	1.71	1.09	1.55
27	EE405PC	Hydraulics & Hydraulic Machinery	1.52	1.37	1.52	1.37	1.52	1.71	1.52	-	1.9	1.52	1.52	1.67
28	EE406PC	Structural Analysis-I	2	1.85	2	2	1.39	-	-	-	-	0.77	1.93	1.93
29	EE407PC	Computer aided Civil Engineering Drawing	2.76	2.76	1.38	2.17	1.97	2.96	2.96	-	2.76	2.37	-	2.57
30		Basic Electrical and Electronics Engineering Lab	2.38	2.58	2.19	2.19	-	-	-	-	-	-	-	2.38
31	EE408PC	Hydraulics & Hydraulic Machinery Lab	1.53	1.58	1.98	1.39	2.18	2.18	1.73	-	2.18	2.18	1.49	2.18
		III B. TECH I SEMESTER												
32	EE501PE	Structural Analysis-II	1.52	1.28	1.28	1.28	1.17	1.17	1.17	-	-	1.75	-	-
33	EE502PE	Geotechnical Engineering	1.39	1.28	1.28	1.28	1.16	1.16	0.73	-	-	0.58	0.87	1.28
34	EE503PE	Structural Engineering-I	1.39	1.7	2.01	1.55	1.39	-	-	-	1.7	-	1.39	1.86
35	EE512PE	Transportation Engineering	2.73	2.54	2.15	1.95	1.76	1.37	0.98	-	-	-	1.47	2.15
36	SM504MS	Concrete Technology	1.39	1.39	1.51	1.51	1.28	1.28	1.16	-	1.74	0.58	-	1.39
37	EE505PC	Engineering Economics and Accountancy	1.74	1.62	1.74	1.04	1.16	0.58	0.58	-	0.58	1.16	0.58	1.16
38	EE506PC	Highway Engineering and Concrete Technology Lab	2.95	2.95	2.95	1.97	2.36	1.38	-	-	-	-	-	2.75
39	EE507PC	Geotechnical Engineering Lab	2.97	2.97	2.97	1.98	2.38	1.39	-	-	-	-	-	2.77
40	EN508HS	Advanced Communication Skills Lab	1.76	1.76	2.24	-	1.28	-	-	-	-	1.28	-	-
		III B. TECH II SEMESTER												
41	CE600OE	Hydrology & Water Resources Engineering	2.18	2.03	2.03	1.72	1.95	1.76	1.76	-	-	-	2.03	2.03
42	EE613PE	Environmental Engineering	2.35	2.35	2.74	2.7	2.45	2.29	1.96	-	2.21	2.45	2.62	1.96
43	EE601PC	Foundation Engineering	1.62	1.62	1.28	1.39	-	-	-	-	1.62	1.51	1.74	1.51
44	EE602PC	Structural Engineering-II	1.74	-	1.28	1.28	1.62	1.51	-	-	1.39	1.74	1.74	1.6
45	EE603PC	Prestressed Concrete	1.62	1.62	1.62	1.74	1.6	1.74	1.74	-	1.74	1.62	1.74	1.74

46	EE604PC	Fundamentals of management for Engineers	1.74	1.74	-	1.74	1.74	1.74	-	1.74	1.74	1.74	1.74
47	EE605PC	Environmental Engineering Lab	2.94	2.94	2.94	2.94	-	2.74	2.55	2.74	2.55		2.55
		IV B. TECH I SEMESTER											
48	EE712PE	Estimation, Costing and Project Management	1.72	2.03	1.87	2.08	2.18	2.03	2.03	1.87	2.03	2.03	1.87
49	EE721PE	Ground Improvement Techniques	1.74	1.74	-	1.39	1.74	1.74	1.74	1.74	1.62	1.62	1.74
50	SM701MS	Irrigation & Hydraulic Structures	1.49	1.61	0.57	1.38	1.61	1.38	1.72	1.49	1.72	1.72	1.72
51	EE701PC	Principles of Entrepreneurship	2.93	2.93	-	-	2.93	2.93	2.93	2.93	2.93	2.93	2.93
52	EE702PC	Professional Practice law & Ethics	2.93	2.93	-	-	2.93	2.93	2.93	2.93	2.93	2.93	2.93
53	EE703PC	of Industrial Oriented Mini Project	2.99	2.99	2.79	2.79	2.99	2.99	2.99	2.99	2.99	2.99	2.99
54	EE704PC	Seminar	2.99	2.99	2.99	2.99	2.99	2.99	2.99	2.99	2.99	2.39	2.79
		IV B. TECH II SEMESTER											
55	CE800OE	Environmental Impact Assessment	2.56	2.56	2.95	1.97	2.95	2.75	2.95	2.95	2.95	2.56	2.95
56	EE811PE	Airports, Railways and Waterways	2.54	2.54	2.93	1.95	2.93	2.73	2.93	2.93	2.93	2.54	2.93
57	EE822PE	Non-Conventional Source of Energy	1.7	1.7	1.36	1.13	1.7	1.7	1.59	1.59	1.7	1.59	1.59
58	EE801PC	Project Stage-II	2.98	2.98	2.98	2.98	2.98	2.98	2.98	2.98	2.98	2.98	2.98
		SUM	111.48	107.95	97.34	79.55	87.14	66.79	58.42	60.44	68.27	63.11	89.17
		PO ATTAINMENT LEVEL (2021-22)											
		AERAGE DIRECT ATTAINMENT	1.92	1.89	1.87	1.89	1.56	1.71	1.72	1.83	1.55	1.75	1.98
		DIRECT ATTAINMENT (80% of AERAGE DIRECT ATTAINMENT)	1.54	1.52	1.50	1.52	1.24	1.37	1.37	1.47	1.24	1.40	1.59
		INDIRECT AATAINMENT	1.21	1.03	1.09	1.00	1.03	1.24	1.18	1.14	1.15	1.14	1.10
		INDIRECT AATAINMENT (20% of INDIRECT ATTAINMENT)	0.24	0.21	0.22	0.20	0.21	0.25	0.24	0.23	0.23	0.23	0.22
		OVERALL PO ATTAINMENT(80+20)	1.78	1.72	1.72	1.71	1.45	1.62	1.61	1.69	1.47	1.63	1.81

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Program Level Course - PSO Attainment - 2021-22

S. No	Code	Subject	PSO1	PSO2
		I B. TECH I SEMESTER		
1	MA101BS	<i>Mathematics - I</i>	0.24	0.24
2	CH102BS	<i>Engineering Physics</i>	0.25	0.25
3	EE103ES	<i>Programming for Problem Solving</i>	1.8	1.2
4	ME105ES	<i>Engineering Graphics</i>	0.11	0.11
5	EN105HS	<i>Engineering Physics Lab</i>	1.25	1.25
6	CH106BS	<i>Programming for Problem Solving Lab</i>	1.8	1.2
		I B. TECH II SEMESTER		
7	MA201BS	<i>Environmental Science</i>	-	-
8	AP202BS	<i>Mathematics - II</i>	0.14	0.14
9	CS203ES	<i>Chemistry</i>	0.25	0.12
10	ME204ES	<i>Engineering Mechanics</i>	0.75	0.75
11	AP205BS	<i>Engineering Workshop</i>	0.25	0.25
12		<i>English</i>	0.12	0.12
13		<i>Engineering Chemistry Lab</i>	0.12	0.12
14	CS206ES	<i>English Language and Communication Skills Lab</i>	0.19	0.19
		II B. TECH I SEMESTER		
15	EE301ES	<i>Surveying and Geomatics</i>	2.36	2.56
16	EE302PC	<i>Engineering Geology</i>	2.36	1.97
17	EE303PC	<i>Strength of Materials-I</i>	1.61	1.61
18	EE304PC	<i>Probability and Statistics</i>	1.37	1.37
19	EE305PC	<i>Fluid Mechanics</i>	1.87	1.87
20	EE306PC	<i>Surveying Lab</i>	2.37	2.57
21	EE307PC	<i>Strength of Materials Lab</i>	2.37	1.97
22	EE308PC	<i>Engineering Geology Lab</i>	2.57	2.17
		II B. TECH II SEMESTER		
23	MA401BS	<i>Basic Electrical and Electronics Engineering</i>	1.98	1.98

24	EE402PC	Basic Mechanical Engineering for Civil Engineers	1.39	1.39
25	EE403PC	Building Materials, Construction and Planning	1.37	1.37
26	EE404PC	Strength of Materials-II	1.86	1.71
27	EE405PC	Hydraulics & Hydraulic Machinery	1.52	1.67
28	EE406PC	Structural Analysis-I	1.69	2
29	EE407PC	Computer aided Civil Engineering Drawing	2.76	2.57
30		Basic Electrical and Electronics Engineering Lab	1.99	1.99
31	EE408PC	Hydraulics & Hydraulic Machinery Lab	1.98	2.97
		III B. TECH I SEMESTER		
32	EE501PE	Structural Analysis-II	1.52	0.93
33	EE502PE	Geotechnical Engineering	1.39	1.16
34	EE503PE	Structural Engineering-I	1.86	1.55
35	EE512PE	Transportation Engineering	2.54	1.95
36	SM504MS	Concrete Technology	1.62	0.81
37	EE505PC	Engineering Economics and Accountancy	1.74	1.39
38	EE506PC	Highway Engineering and Concrete Technology Lab	2.16	2.75
39	EE507PC	Geotechnical Engineering Lab	2.23	1.78
40	EN508HS	Advanced Communication Skills Lab	0.8	0.8
		III B. TECH II SEMESTER		
41	CE600OE	Hydrology & Water Resources Engineering	1.56	1.4
42	EE613PE	Environmental Engineering	2.16	2.45
43	EE601PC	Foundation Engineering	1.16	1.74
44	EE602PC	Structural Engineering-II	1.28	1.51
45	EE603PC	Prestressed Concrete	1.39	1.39
46	EE604PC	Fundamentals of management for Engineers	1.16	1.74
47	EE605PC	Environmental Engineering Lab	2.35	2.74
		IV B. TECH I SEMESTER		
48	EE712PE	Estimation, Costing and Project Management	1.87	2.18
49	EE721PE	Ground Improvement Techniques	1.28	1.74
50	SM701MS	Irrigation & Hydraulic Structures	1.26	1.38


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51	EE701PC	Principles of Entrepreneurship		1.95	2.93
52	EE702PC	Professional Practice law & Ethics		1.95	2.93
53	EE703PC	of Industrial Oriented Mini Project		2.39	2.99
54	EE704PC	Seminar		2.99	2.99
		IV B. TECH II SEMESTER			
55	CE800OE	Environmental Impact Assessment		2.16	2.75
56	EE811PE	Airports, Railways and Waterways		2.15	2.93
57	EE822PE	Non-Conventional Source of Energy		1.13	1.59
58	EE801PC	Project Stage-II		2.19	2.98
		SUM		88.94	93.17
		PO ATTAINMENT LEVEL (2021-22)			
		AERAGE DIRECT ATTAINMENT		1.56	1.63
		DIRECT ATTAINMENT (80% of AERAGE DIRECT ATTAINMENT)		1.25	1.31
		INDIRECT AATTAINMENT		1.21	1.21
		INDIRECT AATTAINMENT (20% of INDIRECT ATTAINMENT)		0.24	0.24
		OVERALL PO ATTAINMENT(80+20)		1.49	1.55


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