

Name of Faculty	Mrs. PIYALI SINHA
Subject Name	Construction Engineering & Management
Subject Code	CE (PC) 601

Course name	CO	Description
Construction Engineering & Management	CE(PC)601-1	An idea of how structures are built and projects are developed on the field
	CE(PC)601-2	An understanding of modern construction practices
	CE(PC)601-3	A good idea of basic construction dynamics- various stakeholders, project objectives, processes,resources required and project economics
	CE(PC)601-4	A basic ability to plan, control and monitor construction projects with respect to time and cost
	CE(PC)601-5	An idea of how to optimise construction projects based on costs
	CE(PC)601-6	An idea how construction projects are administered with respect to contract structures and issues.
	CE(PC)601-7	An ability to put forward ideas and understandings to others with effective communication processes

Program Outcome (PO):

Engineering Graduates will be able to:

- 1. Engineering Knowledge:** Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
- 2. Problem analysis:** Identify, formulate, research literature, and analyze complex engineering problems reaching substantiated conclusions using the first principles of mathematics, natural sciences, and engineering sciences.
- 3. 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.
- 4. 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.
- 5. 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.
- 6. 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.
- 7. 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.
- 8. Ethics:** Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
- 9. Individual and Team Work:** Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

10. **Communication:** Communicate effectively on complex engineering activities with the engineering community and with society at large, such as being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.

11. **Project Management and Finance:** Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.

12. **Life-long learning:** Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

Course Outcome Mapping to Program Outcome												
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CE(PC)601-1	1	3	-	1	1	1	3	-	3	-		2
CE(PC)601-2	2	1	3	2	1	3	2	1	1	1	3	2
CE(PC)601-3	-	3	-	3	2	1	-	1	2	3	2	2
CE(PC)601-4	1	2	3	2	-	2	-	3	2	2	-	1
CE(PC)601-5	1	2	3	2	2	1	2	-	2	-	1	2
CE(PC)601-6	2	3	-	2	1	3	1	2	3	-	1	2
CE(PC)601-7	3	1	2	1	2	-	1	1	2	1	1	1

Program Specific Outcome (PSO) :

Course name	PSO	Description
Environmental Engineering Laboratory	PSO1	Graduates will have strong fundamental knowledge in core topics of each subject of the University curriculum of Civil Engineering.
	PSO2	Graduates will have the ability to describe, analyse, and solve problems using mathematics and systematic problem-solving technique for core subjects of Civil Engineering.
	PSO3	Graduates will be able to patronize higher studies and technological practice in Civil Engineering.
	PSO4	Graduates will be able to keep pace with the modern construction techniques and management tools of Civil Engineering, either in industry or through entrepreneurship.

Course Outcome Mapping to Program Specific Outcome				
CO	PSO1	PSO2	PSO3	PSO4
CE(PC)601-1	1	3	-	-
CE(PC)601-2	1	-	3	2
CE(PC)601-3	-	3	-	3
CE(PC)601-4	2	3	2	3
CE(PC)601-5	2	2	3	2
CE(PC)601-6	2	2	-	2
CE(PC)601-7	2	-	3	2

Name of Faculty	Mr. Shouvik Sarkar
Subject Name	Foundation Engineering
Subject Code	CE (PE) 601-B

Course name	CO	Description
Foundation Engineering	CE(PE)601B.1	Determine the load carrying capacity of pile foundation
	CE(PE)601B.2	Compute the efficiency and settlement of pile group.
	CE(PE)601B.3	Understand different subsoil exploration methods and interpret field and laboratory test data to obtain design parameters for geotechnical analysis.
	CE(PE)601B.4	Correlate bearing capacity of shallow foundation from field test data.
	CE(PE)601B.5	Analyze and design sheet pile structure on the basis of earth pressure theories.
	CE(PE)601B.6	Understand and apply various types of ground improvement methods for solving complex geotechnical problems.

Program Outcome (PO):

Engineering Graduates will be able to:

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- 2. Problem analysis:** Identify, formulate, research literature, and analyze complex engineering problems reaching substantiated conclusions using the first principles of mathematics, natural sciences, and engineering sciences.
- 3. 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.
- 4. 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.
- 5. 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.
- 6. 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.
- 7. 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.
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- 9. Individual and Team Work:** Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

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12. **Life-long learning:** Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

Course Outcome Mapping to Program Outcome												
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CE(PE)601B-1	2	3	3	3	-	2	-	-	-	-	-	-
CE(PE)601B-2	2	3	3	3	-	2	2	-	-	-	-	1
CE(PE)601B-3	2	-	3	-	3	-	2	-	2	-	1	-
CE(PE)601B-4	2	3	-	-	3	-	2	-	-	-	-	2
CE(PE)601B-5	-	3	3	3	-	-	2	-	-	-	2	3
CE(PE)601B-6	-	3	3	3	-	2	3	-	-	-	2	3

Program Specific Outcome (PSO) :

Course name	PSO	Description
Foundation Engineering	PSO1	Graduates will have strong fundamental knowledge in core topics of each subject of the University curriculum of Civil Engineering.
	PSO2	Graduates will have the ability to describe, analyse, and solve problems using mathematics and systematic problem-solving technique for core subjects of Civil Engineering.
	PSO3	Graduates will be able to patronize higher studies and technological practice in Civil Engineering.
	PSO4	Graduates will be able to keep pace with the modern construction techniques and management tools of Civil Engineering, either in industry or through entrepreneurship.

Course Outcome Mapping to Program Specific Outcome				
CO	PSO1	PSO2	PSO3	PSO4
CE(PE)601B-1	1	2	2	3
CE(PE)601B-2	2	3	3	2
CE(PE)601B-3	2	2	2	3
CE(PE)601B-4	3	3	2	3
CE(PE)601B-5	1	2	3	2
CE(PE)601B-6	1	2	1	2

Name of Faculty	Mrs. ISHIKA GHOSH
Subject Name	DESIGN OF STEEL STRUCTURE
Subject Code	CE (PC) 604

Course name	CO	Description
DESIGN OF STEEL STRUCTURE	CE(PC)604-1	Identify the material properties of structural steel. Moreover, the students will identify different bolted and welded connections, analyse and design them for axial and eccentric loads.
	CE(PC)604-2	Design different steel sections subjected to axial compression and tension following Indian codes of practices.
	CE(PC)604-3	Comprehend the differences between laterally supported and unsupported flexure members. Designing of the flexure members using Indian codes of practice.
	CE(PC)604-4	Analyse and design rolled and built up compression members along with base connections subjected to axial compression, bending and tension.
	CE(PC)604-5	Calculate shear force and bending moment on rolled and built up girders, dimension the section and finally design it following Indian standard design guidelines.
	CE(PC)604-6	Identify different components of gantry system, calculate lateral and vertical loads acting on the system, dimension the components and design them.
	CE(PC)604-7	Design different components of an industrial building.

Program Outcome (PO):

Engineering Graduate will be able to:

1. Engineering knowledge: apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.

2. Problem analysis: identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.

3. 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.

4. 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.

5. 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.

6. 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.

7. Environment and sustainability: understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.

8. Ethics: apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.

9. Individual and team work: function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

10. Communication: communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.

11. Project management and finance: demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.

12. Life-long learning: recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

Course Outcome Mapping to Program Outcome												
CO	P O1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CE(PC)604-1	2	3	3	3	-	-	-	-	-	-	-	2
CE(PC) 604-2	2	3	3	3	-	-	-	-	-	-	-	-
CE(PC) 604-3	2	2	3	3	-	2	-	-	-	-	-	2
CE(PC) 604-4	3	3	3	3	-	-	-	-	-	-	-	-
CE(PC) 604-5	2	2	2	2	-	1	-	-	-	-	-	2
CE(PC) 604-6	2			2	-	2	-	-	-	-	-	-

Course name	Program Specific Outcome	Description
Design of Steel Structures	PSO1:	Graduates will have strong fundamental knowledge in core topics of each subject of the University curriculum of Civil Engineering.
	PSO2:	Graduates will have the ability to describe, analyse, and solve problems using mathematics and systematic problem-solving technique for core subjects of Civil Engineering.
	PSO3:	Graduates will be able to patronize higher studies and technological practice in Civil Engineering.
	PSO4:	Graduates will be able to keep pace with the modern construction techniques and management tools of Civil Engineering, either in industry or through entrepreneurship.

Course Outcome Mapping to Program Specific Outcome				
CO	PSO1	PSO2	PSO3	PSO4
CE(PC)604-1	2	3	3	-
CE(PC) 604-2	2	2	2	-
CE(PC) 604-3	2	-	2	-
CE(PC) 604-4	1	2	2	-
CE(PC) 604-5	2	2	2	-
CE(PC) 604-6	2	1	1	-

Name of Faculty	Mr. Swarnendu Shekhar Das
Subject Name	Water Resources Engineering Laboratory
Subject Code	CE(PC)693

Course name	CO	Description
Water Resources Engineering Laboratory	CE(PC)693.1	Delineate the watershed of any reservoir using DEM.
	CE(PC)693.2	Determine the average rainfall over a catchment.
	CE(PC)693.3	Use the raingauge properly for a specified purpose.
	CE(PC)693.4	Measure the rate of infiltration of water through the soil.
	CE(PC)693.5	Measure the sunshine hours in a particular day.

Program Outcome (PO):

Engineering Graduates will be able to:

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- 2. Problem analysis:** Identify, formulate, research literature, and analyze complex engineering problems reaching substantiated conclusions using the first principles of mathematics, natural sciences, and engineering sciences.
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Course Outcome Mapping to Program Outcome

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CE(PC)693.1	1	2	2	-	3	-	-	1	2	-	3	1
CE(PC)693.2	3	3	3	1	-	-	-	-	3	3	3	-
CE(PC)693.3	2	2	1	1	3	-	-	-	3	2	2	-
CE(PC)693.4	3	2	2	2	3	-	1	-	3	2	2	-
CE(PC)693.5	3	2	3	2	-	-	-	-	3	3	3	-

Program Specific Outcome (PSO) :

Course name	PSO	Description
Water Resources Engineering Laboratory	PSO1	Graduates will have strong fundamental knowledge in core topics of each subject of the University curriculum of Civil Engineering.
	PSO2	Graduates will have the ability to describe, analyse, and solve problems using mathematics and systematic problem-solving technique for core subjects of Civil Engineering.
	PSO3	Graduates will be able to patronize higher studies and technological practice in Civil Engineering.
	PSO4	Graduates will be able to keep pace with the modern construction techniques and management tools of Civil Engineering, either in industry or through entrepreneurship.

Course Outcome - Program Specific Outcome Mapping				
CO	PSO1	PSO2	PSO3	PSO4
CE(PC)693.1	3	2	2	2
CE(PC)693.2	3	2	2	3
CE(PC)693.3	3	3	3	3
CE(PC)693.4	2	-	3	-
CE(PC)693.5	3	2	2	3

Name of Faculty	Mrs. ISHIKA GHOSH
Subject Name	STEEL STRUCTURE DESIGN SESSIONAL
Subject Code	CE (PC) 694

Course name	CO	Description
STEEL STRUCTURE DESIGN SESSIONAL	CE(PC)694-1	Identify the material properties of structural steel. Moreover, the students will identify different bolted and welded connections, analyze and design them for axial and eccentric loads.
	CE(PC)694-2	Design different steel sections subjected to axial compression and tension following Indian codes of practices.
	CE(PC)694-3	Comprehend the differences between laterally supported and unsupported flexure members. Designing of the flexure members using Indian codes of practice.
	CE(PC)694-4	Analyze and design rolled and built up compression members along with base connections subjected to axial compression, bending and tension.
	CE(PC)694-5	Calculate shear force and bending moment on rolled and built up girders, dimension the section and finally design it following Indian standard design guidelines.
	CE(PC)694-6	Identify different components of gantry system, calculate lateral and vertical loads acting on the system, dimension the components and design them.
	CE(PC)694-7	Design different components of an industrial building.

Program Outcome (PO):

Engineering Graduate will be able to:

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3.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.

4.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.

5. 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.

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Course Outcome Mapping to Program Outcome												
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CE(PC)694-1	2	3	3	3	-	-	-	-	-	-	-	2
CE(PC)694-2	3	3	3	3	-	-	-	-	-	-	-	2
CE(PC)694-3	2	3	3	3	-	-	-	-	-	-	-	2
CE(PC)694-4	3	3	2	3	-	-	-	-	-	-	-	2
CE(PC)694-5	3	3	3	3	-	-	-	-	-	-	-	1
CE(PC)694-6	2	2	2	3	-	-	-	-	-	-	-	2
CE(PC)694-7	2	3	3	2	-	-	-	-	-	-	-	3

Program Specific Outcome(PSO):

Course name	Program Specific Outcome	Description
STEEL STRUCTURE DESIGN SESSIONAL	PSO1:	Graduates will have strong fundamental knowledge in core topics of each subject of the University curriculum of Civil Engineering.
	PSO2:	Graduates will have the ability to describe, analyse, and solve problems using mathematics and systematic problem-solving technique for core subjects of Civil Engineering.
	PSO3:	Graduates will be able to patronize higher studies and technological practice in Civil Engineering.
	PSO4:	Graduates will be able to keep pace with the modern construction techniques and management tools of Civil Engineering, either in industry or through entrepreneurship.

Course Outcome Mapping to Program Specific Outcome				
CO	PSO1	PSO2	PSO3	PSO4
CE(PC)694-1	2	1	3	-
CE(PC)694-2	2	-	-	2
CE(PC)694-3	2	2	3	1
CE(PC)694-4	1	3	1	-
CE(PC)694-5	1	3	2	1
CE(PC)694-6	1	2	2	2
CE(PC)694-7	1	2	3	1

Name of Faculty	Mr. YUVARAJ MONDAL
Subject Name	Hydraulic Structures
Subject Code	CE(PE)701C

Course name	CO	Description
Hydraulic Structures	CE (PE) 701C-1	Identify the characteristics of various types of dams and their selection procedure
	CE (PE) 701C-2	Perform the reconnaissance survey and, geophysical investigations necessary for selection of suitable dam site
	CE (PE) 701C-3	Estimate forces acting on a gravity dams and perform stability analysis.
	CE (PE) 701C-4	Estimate the seepage loss through embankment dams and suggest necessary remedial measures.
	CE (PE) 701C-5	Calculate the discharge through the overflow section and design the appropriate energy dissipation structures.

Program Outcome (PO):

Engineering Graduate will be able to:

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Course Outcome Mapping to Program Outcome												
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CE (PE) 701C-1	3	-	-	2	3	2	2	-	-	1	1	-
CE (PE) 701C-2	3	3	2	-	3	-	-	-	2	-	-	-
CE (PE) 701C-3	3	-	-	-	-	-	3	-	-	-	-	-
CE (PE) 701C-4	3	3	2	-	3	-	2	-	2	3	-	-
CE (PE) 701C-5	3	-	2	-	2	-	-	3	-	-	-	-

Program Specific Outcome (PSO):

Course name	Program Specific Outcome	Description
Hydraulic Structure	PSO1:	Graduates will have strong fundamental knowledge in core topics of each subject of the University curriculum of Civil Engineering.
	PSO2:	Graduates will have the ability to describe, analyse, and solve problems using mathematics and systematic problem-solving technique for core subjects of Civil Engineering.
	PSO3:	Graduates will be able to patronize higher studies and technological practice in Civil Engineering.
	PSO4:	Graduates will be able to keep pace with the modern construction techniques and management tools of Civil Engineering, either in industry or through entrepreneurship.

Course Outcome Mapping to Program Specific Outcome				
CO	PSO1	PSO2	PSO3	PSO4
CE(PC)701C-1	3	2	1	1
CE(PC)701C-2	2	1	-	2
CE(PC)701C-3	2	2	3	1
CE(PC)701C-4	2	3	1	-
CE(PC)701C-5	1	3	2	1

Name of Faculty	Mrs. ISHIKA GHOSH
Subject Name	PRESTRESSED CONCRETE
Subject Code	CE(PE)702A

Course name	CO	Description
Prestressed Concrete	CE(PE)702A-1	Learn the introduction of prestressed concrete member and its deflection properties
	CE(PE)702A-2	Develop the design criteria of prestressed concrete section for flexure and shear properties
	CE(PE)702A-3	Analyze the anchorage zone stress for post-tensioned members
	CE(PE)702A-4	Impart knowledge regarding the methods of Analysis of Statically Indeterminate Structures
	CE(PE)702A-5	Impart knowledge regarding the composite construction of Prestress and In-situ concrete.
	CE(PE)702A-6	Impart knowledge regarding Design of Prestressed concrete poles and sleepers and introduction of partial prestressing

Program Outcome (PO):

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2.Problem analysis: identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.

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11.Project management and finance: demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.

12. Life-long learning: recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CE(PE)702A-1	3	1	-	-	-	-	2	-	-	-	-	-
CE(PE)702A-2	2	3	3	2	-	-	-	-	-	-	1	1
CE(PE)702A-3	3	2	2	3	1	2	-	-	1	-	-	2
CE(PE)702A-4	2	3	3	2	-	-	-	-	-	-	-	-
CE(PE)702A-5	2	3	3	3	-	-	-	-	-	-	-	-
CE(PE)702A-6	2	2	2	3	-	1	2	-	-	-	-	2

Course name	Program Specific Outcome	Description
Prestressed Concrete	PSO1:	Graduates will have strong fundamental knowledge in core topics of each subject of the University curriculum of Civil Engineering.
	PSO2:	Graduates will have the ability to describe, analyse, and solve problems using mathematics and systematic problem-solving technique for core subjects of Civil Engineering.
	PSO3:	Graduates will be able to patronize higher studies and technological practice in Civil Engineering.
	PSO4:	Graduates will be able to keep pace with the modern construction techniques and management tools of Civil Engineering, either in industry or through entrepreneurship.

Course Outcome Mapping to Program Specific Outcome				
CO	PSO1	PSO2	PSO3	PSO4
CE(PE)702A-1	2	2	-	-
CE(PE)702A-2	3	3	3	-
CE(PE)702A-3	1	2	2	1
CE(PE)702A-4	2	2	1	-
CE(PE)702A-5	2	2	2	1
CE(PE)702A-6	2	3	2	-

Name of Faculty	Swarnendu Shekhar Das
Subject Name	Air and Noise Pollution
Subject Code	CE(PC)703A

Course name	CO	Description
Air and Noise Pollution	CE(PC)703A.1	Define the basic concepts and terminologies regarding air pollution and noise pollution
	CE(PC)703A.2	Describe the physics of air pollution and noise pollution
	CE(PC)703A.3	Apply the methods of air pollution and noise pollution measurements
	CE(PC)703A.4	Analyze different concepts of air and noise pollution solving mathematical problems
	CE(PC)703A.5	Compare air and noise quality with allowable standards and limits
	CE(PC)703A.6	Choose and design proper techniques for air pollution control and noise pollution control

Program Outcome (PO):

Engineering Graduates will be able to:

- 1. Engineering Knowledge:** Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
- 2. Problem analysis:** Identify, formulate, research literature, and analyze complex engineering problems reaching substantiated conclusions using the first principles of mathematics, natural sciences, and engineering sciences.
- 3. 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.
- 4. 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.
- 5. 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.
- 6. 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.
- 7. 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.
- 8. Ethics:** Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
- 9. Individual and Team Work:** Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

10. **Communication:** Communicate effectively on complex engineering activities with the engineering community and with society at large, such as being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.

11. **Project Management and Finance:** Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.

12. **Life-long learning:** Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

Course Outcome Mapping to Program Outcome												
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CE(PC)703A.1	2	3		1	1		2		3			2
CE(PC)703A.2			3					1	3		3	
CE(PC)703A.3	2	1			1	2						3
CE(PC)703A.4			3				3		2			
CE(PC)703A.5	2	3	3	1		2				3	3	
CE(PC)703A.6	3		2		3		1	2			2	3

Program Specific Outcome (PSO) :

Course name	PSO	Description
Air and Noise Pollution	PSO1	Graduates will have strong fundamental knowledge in core topics of each subject of the University curriculum of Civil Engineering.
	PSO2	Graduates will have the ability to describe, analyse, and solve problems using mathematics and systematic problem-solving technique for core subjects of Civil Engineering.
	PSO3	Graduates will be able to patronize higher studies and technological practice in Civil Engineering.
	PSO4	Graduates will be able to keep pace with the modern construction techniques and management tools of Civil Engineering, either in industry or through entrepreneurship.

Course Outcome Mapping to Program Specific Outcome				
CO	PSO1	PSO2	PSO3	PSO4
CE(PC)703A.1	1	2	-	3
CE(PC)703A.2	1	2	-	3
CE(PC)703A.3	1	2	-	-
CE(PC)703A.4	-	2	-	2
CE(PC)703A.5	1	2	-	3
CE(PC)703A.6	1	-	-	-

Name of Faculty	Mrs. ISHIKA GHOSH
Subject Name	Structural Analysis – I
Subject Code	CE (PC) 704

Course name	CO	Description
Structural Dynamics	CE(PE)704-1	Introduction of Structural Dynamics, Differential Equations in Civil Engineering.
	CE(PE)704-2	Undamped free Vibration, Natural. Period/Frequency, Energy in Free Vibration, Damped Free Vibration.
	CE(PE)704-3	Undamped Forced vibration, Amplitude & Phase Angle, Dynamic amplification factor for deflection (Rd).
	CE(PE)704-4	Resonant frequency and Half power bandwidth, Force Transmission and Isolation, Design of Vibration, Measuring Instruments.
	CE(PE)704-5	Time Stepping Methods, Central, Difference Method, Newmark's Method.
	CE(PE)704-6	Concept of Response Spectrum, Uses of Response Spectrum.

Program Outcome (PO):

Engineering Graduates will be able to:

- Engineering Knowledge:** Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
- Problem analysis:** Identify, formulate, research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.
- 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.
- 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.
- 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.
- 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.
- 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.

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

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

10. **Communication:** Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.

11. **Project Management and Finance:** Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.

12. **Life-long learning:** Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

Course Outcome Mapping to Program Outcome												
CO	PO 1	PO2	PO3	PO 4	PO 5	PO6	PO 7	PO8	PO9	PO1 0	PO1 1	PO12
CE(PE)704-1	1	2	-	1	2	2	1	-	1	2	1	-
CE(PE)704-2	3	3	3	2	2	-	3	3	3	3	3	3
CE(PE)704-3	2	2	-	2	1	3	-	3	-	-	2	1
CE(PE)704-4	3	2	1	3	2	1	-	3	-	2	1	
CE(PE)704-5	1	1	2	-	2	-	-	1	2	2	-	-
CE(PE)704-6	3	2	-	2	3	-	3	3	-	2	-	2

Course name	Program Specific Outcome	Description
Structural Dynamics	PSO1	Graduates will have strong fundamental knowledge in core topics of each subject of the University curriculum of Civil Engineering.
	PSO2	Graduates will have the ability to describe, analyse, and solve problems using mathematics and systematic problem-solving techniques for core subjects of Civil Engineering.
	PSO3	Graduates will be able to patronize higher studies and technological practice in Civil Engineering.
	PSO4	Graduates will be able to keep pace with the modern construction techniques and management tools of Civil Engineering, either in industry or through entrepreneurship.

Course Specific Outcome Mapping to Program Outcome				
CO	PSO1	PSO2	PSO3	PSO4
CE(PE)704-1	2	3	3	1
CE(PE)704-2	2	3	3	3
CE(PE)704-3	2	3	3	3
CE(PE)704-4	2	3	3	2
CE(PE)704-5	2	2	3	2
CE(PE)704-6	2	3	3	1

Name of Faculty	Mr. Subhadeep Mondal
Subject Name	Pavement Materials and Design
Subject Code	CE(PE)801D

Course name	CO	Description
Pavement Materials and Design	CE(PE)801D-1	Comprehend the material specifications and design factors of pavements
	CE(PE)801D-2	Analyze stresses in flexible and rigid pavements
	CE(PE)801D-3	Design of flexible and rigid pavements
	CE(PE)801D-4	Study the constructional operations and equipment
	CE(PE)801D-5	Comprehend the concept of strengthening of existing pavements and pavement management system

Program Outcome (PO):

Engineering Graduates will be able to:

- 1. Engineering Knowledge:** Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
- 2. Problem analysis:** Identify, formulate, research literature, and analyze complex engineering problems reaching substantiated conclusions using the first principles of mathematics, natural sciences, and engineering sciences.
- 3. 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.
- 4. 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.
- 5. 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.
- 6. 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.
- 7. 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.
- 8. Ethics:** Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
- 9. Individual and Team Work:** Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

10. **Communication:** Communicate effectively on complex engineering activities with the engineering community and with society at large, such as being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.

11. **Project Management and Finance:** Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.

12. **Life-long learning:** Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

Course Outcome Mapping to Program Outcome												
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CE(PE)801D-1	3	2	3	1	2	-	3	2	-	-	2	3
CE(PE)801D-2	3	3	3	-	-	-	-	-	-	-	-	2
CE(PE)801D-3	3	3	3	2	2	1	3	1	-	2	1	3
CE(PE)801D-4	2	-	-	-	3	2	2		3	-	3	2
CE(PE)801D-5	3	2	3	1	2	-	3	2	-	-	2	3

Program Specific Outcome (PSO) :

Course name	Program Specific Outcome	Description
Pavement Materials and Design	PSO1:	Graduates will have strong fundamental knowledge in core topics of each subject of the University curriculum of Civil Engineering.
	PSO2:	Graduates will have the ability to describe, analyse, and solve problems using mathematics and systematic problem-solving technique for core subjects of Civil Engineering.
	PSO3:	Graduates will be able to patronize higher studies and technological practice in Civil Engineering.
	PSO4:	Graduates will be able to keep pace with the modern construction techniques and management tools of Civil Engineering, either in industry or through entrepreneurship.

Course Outcome Mapping to Program Specific Outcome				
CO	PSO1	PSO2	PSO3	PSO4
CE(PE)801D-1	1	2	3	3
CE(PE)801D-2	3	2	-	2
CE(PE)801D-3	2	3	2	1
CE(PE)801D-4	2	2	1	-
CE(PE)801D-5	1	2	2	2

Name of Faculty	Sk Safin Imran Laskar
Subject Name	Structural Analysis - II
Subject Code	CE(PE)602B

Course name	CO	Description
Structural Analysis - II	CE(PC)602B.1	Apply the Slope Deflection and Moment Distribution Method to analyze indeterminate structures.
	CE(PC)602B.2	Develop and analyze the concept of suspension bridge and stiffness girders
	CE(PC)602B.3	Apply and analyze the concepts of curved beam analysis in hooks, rings and Bow girders.
	CE(PC)602B.4	Develop the concept bending in unsymmetrical beams.
	CE(PC)602B.5	Develop the fundamental concepts of plastic analysis using kinematic method and apply them in frames and continuous beam analysis.
	CE(PC)602B.6	Develop and analyze the portal frames using Portal and Cantilever method. Develop and analyze the indeterminate structures (continuous beams and frames) using flexibility and stiffness matrix method.

Program Outcome (PO):

Engineering Graduates will be able to:

- 1. Engineering Knowledge:** Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
- 2. Problem analysis:** Identify, formulate, research literature, and analyze complex engineering problems reaching substantiated conclusions using the first principles of mathematics, natural sciences, and engineering sciences.
- 3. 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.
- 4. 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.
- 5. 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.
- 6. 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.
- 7. 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.
- 8. Ethics:** Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.

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

10. Communication: Communicate effectively on complex engineering activities with the engineering community and with society at large, such as being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.

11. Project Management and Finance: Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.

12. Life-long learning: Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

Course Outcome Mapping to Program Outcome												
CO	P01	P02	P03	P04	P05	P06	P07	P08	P09	P010	P011	P012
CE(PE)602B-1	1	1	-	2	1	1	1	-	2	-	-	3
CE(PE)602B-2	3	-	2	2	1	3	1	2	2	-	3	3
CE(PE)602B-3	2	1	-	-	2	-	2	1	-	3	1	3
CE(PE)602B-4	3	2	3	2	3	3	3	-	2	-	2	3
CE(PE)602B-5	1	2	-	1	3	2	3	-	1	-	-	1
CE(PE)602B-6	3	2	3	3	3	-	-	3	-	2	-	3

Program Specific Outcome (PSO) :

Course name	PSO	Description
Structural Analysis – II	PSO1	Graduates will have strong fundamental knowledge in core topics of each subject of the University curriculum of Civil Engineering.
	PSO2	Graduates will have the ability to describe, analyse, and solve problems using mathematics and systematic problem-solving technique for core subjects of Civil Engineering.
	PSO3	Graduates will be able to patronize higher studies and technological practice in Civil Engineering.
	PSO4	Graduates will be able to keep pace with the modern construction techniques and management tools of Civil Engineering, either in industry or through entrepreneurship.

Course Outcome Mapping to Program Specific Outcome				
CO	PSO1	PSO2	PSO3	PSO4
CE(PE)602B-1	1	1	2	2
CE(PE)602B-2	2	2	-	3
CE(PE)602B-3	2	-	1	2
CE(PE)602B-4	1	1	3	-
CE(PE)602B-5	2	2	-	3
CE(PE)602B-6	2	3	1	3

Name of Faculty	Mr. ANIBRATA PAL
Subject Name	Structural Dynamics
Subject Code	CE(PE)-704A

Course name	CO	Description
Structural Dynamics	CE(PE)704A-1	Introduction of Structural Dynamics, Differential Equations in Civil Engineering.
	CE(PE)704A-2	Undamped free Vibration, Natural. Period/Frequency, Energy in Free Vibration, Damped Free Vibration.
	CE(PE)704A-3	Undamped Forced vibration, Amplitude & Phase Angle, Dynamic amplification factor for deflection (Rd).
	CE(PE)704A-4	Resonant frequency and Half power bandwidth, Force Transmission and Isolation, Design of Vibration, Measuring Instruments.
	CE(PE)704A-5	Time Stepping Methods, Central, Difference Method, Newmark's Method.
	CE(PE)704A-6	Concept of Response Spectrum, Uses of Response Spectrum.

Program Outcome (PO):

Engineering Graduates will be able to:

- Engineering Knowledge:** Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
- Problem analysis:** Identify, formulate, research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.
- 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.
- 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.
- 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.
- 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.
- 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.

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

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

10. **Communication:** Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.

11. **Project Management and Finance:** Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.

12. **Life-long learning:** Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

Course Outcome Mapping to Program Outcome												
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CE(PE)704A-1	1	2	-	1	2	2	1	-	1	2	1	-
CE(PE)704A-2	3	3	3	2	2	-	3	3	3	3	3	3
CE(PE)704A-3	2	2	-	2	1	3	-	3	-	-	2	1
CE(PE)704A-4	3	2	1	3	2	1	-	3	-	2	1	
CE(PE)704A-5	1	1	2	-	2	-	-	1	2	2	-	-
CE(PE)704A-6	3	2	-	2	3	-	3	3	-	2	-	2

Course name	Program Specific Outcome	Description
Structural Dynamics	PSO1	Graduates will have strong fundamental knowledge in core topics of each subject of the University curriculum of Civil Engineering.
	PSO2	Graduates will have the ability to describe, analyse, and solve problems using mathematics and systematic problem-solving techniques for core subjects of Civil Engineering.
	PSO3	Graduates will be able to patronize higher studies and technological practice in Civil Engineering.
	PSO4	Graduates will be able to keep pace with the modern construction techniques and management tools of Civil Engineering, either in industry or through entrepreneurship.

Course Specific Outcome Mapping to Program Outcome				
CO	PSO1	PSO2	PSO3	PSO4
CE(PE)704A-1	2	3	3	1
CE(PE)704A-2	2	3	3	3
CE(PE)704A-3	2	3	3	3
CE(PE)704A-4	2	3	3	2
CE(PE)704A-5	2	2	3	2
CE(PE)704A-6	2	3	3	1



Name of Faculty	Mr. Shouvik Sarkar
Subject Name	Soil Mechanics -I
Subject Code	CE (PC) 401

Course Name	CO	Description
Soil Mechanics- I	CE(PC)401.1	Classify soil as per grain size distribution curve and understand the index properties.
	CE(PC)401.2	Apply the concept of total stress, effective stress and pore water pressure for solving geotechnical problems.
	CE(PC)401.3	Assess the permeability of different types of soil and solve flow problems.
	CE(PC)401.4	Estimate the seepage loss, factor of safety against piping failure using flow net related to any hydraulic structure.
	CE(PC)401.5	Determine vertical stress on a horizontal plane within a soil mass subjected to different types of loading on the ground surface and also the maximum stressed zone or isobar below a loaded area.
	CE(PC)401.6	Apply the concept of shear strength to analyze different geotechnical problems and determine the shear strength parameters from lab and field tests.

Program Outcome (PO):

Engineering Graduates will be able to:

- 1. Engineering Knowledge:** Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
- 2. Problem analysis:** Identify, formulate, research literature, and analyze complex engineering problems reaching substantiated conclusions using the first principles of mathematics, natural sciences, and engineering sciences.
- 3. 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.
- 4. 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.
- 5. 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.
- 6. 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.
- 7. 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.
- 8. Ethics:** Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
- 9. Individual and Team Work:** Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

10. **Communication:** Communicate effectively on complex engineering activities with the engineering community and with society at large, such as being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.

11. **Project Management and Finance:** Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.

12. **Life-long learning:** Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

Course Outcome Mapping to Program Outcome												
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CE (PC) 401-1	2	2	-	-	3	-	2	-	-	-	-	-
CE (PC) 401-2	3	3	3	3	-	2	2	-	-	-	-	2
CE (PC) 401-3	2	3	-	3	3	3	3	-	-	-	-	3
CE (PC)401-4	-	3	3	-	3	-	2	-	-	-	2	-
CE (PC) 401-5	1	2	-	-	2	-	2	-	-	-	-	-
CE (PC) 401- 6	-	3	3	3	3	2	-	-	2	-	-	2

Program Specific Outcome (PSO) :

Course name	PSO	Description
Soil Mechanics -I	PSO1	Graduates will have strong fundamental knowledge in core topics of each subject of the University curriculum of Civil Engineering.
	PSO2	Graduates will have the ability to describe, analyse, and solve problems using mathematics and systematic problem-solving technique for core subjects of Civil Engineering.
	PSO3	Graduates will be able to patronize higher studies and technological practice in Civil Engineering.
	PSO4	Graduates will be able to keep pace with the modern construction techniques and management tools of Civil Engineering, either in industry or through entrepreneurship.

Course Outcome Mapping to Program Specific Outcome				
CO	PSO1	PSO2	PSO3	PSO4
CE (PC) 401-1	1	2	1	3
CE (PC) 401-2	1	2	-	3
CE (PC) 401-3	1	2	1	-
CE (PC)401-4	-	3	2	2
CE (PC) 401-5	1	2	-	3

Name of Faculty	Mr. Aniket Bhowmick
Subject Name	Environmental Engineering – I
Subject Code	CE(PC)402

Course name	CO	Description
Environmental Engineering – I	CE(PC)402.1	Define the basic concepts and terminologies of water supply engineering and solid waste management
	CE(PC)402.2	Describe different surface and groundwater sources; and composition and characteristics of municipal solid waste.
	CE(PC)402.3	Apply the methods of quantifying water requirement and MSW generation
	CE(PC)402.4	Solve different mathematical problems regarding different components of water supply systems, water supply networks and MSW management systems.
	CE(PC)402.5	Compare between different water samples based on their physical, chemical and biological characteristics.
	CE(PC)402.6	Design different unit processes and operations involved in water treatment and MSW management.

Program Outcome (PO):

Engineering Graduate will be able to:

1.Engineering knowledge: apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.

2.Problem analysis: identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.

3.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.

4.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.

5. 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.

6. 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.

7. Environment and sustainability: understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.

8. Ethics: apply ethical principles and commit to professional ethics and responsibilities and norms of

the engineering practice.

9. Individual and team work: function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

10. Communication: communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.

11. Project management and finance: demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.

12. Life-long learning: recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

Course Outcome Mapping to Program Outcome												
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CE(PC)402.1	1	-	2	1	2	2	-	-	2	1	-	-
CE(PC)402.2	2	1	-	-	2	-	1	-	2	2	-	1
CE(PC)402.3	2	1	2	1	-	-	2	2	-	1	-	1
CE(PC)402.4	3	2	-	3	2	-	2	-	3	3	-	2
CE(PC)402.5	3	-	3	3	-	3	-	3	2	2	-	3
CE(PC)402.6	1	-	2	-	1	1	2	2	-	1	2	-

Program Specific Outcome(PSO):

Course name	Program Specific Outcome	Description
Environmental Engineering - I	PSO1:	Graduates will have strong fundamental knowledge in core topics of each subject of the University curriculum of Civil Engineering.
	PSO2:	Graduates will have the ability to describe, analyse, and solve problems using mathematics and systematic problem-solving technique for core subjects of Civil Engineering.
	PSO3:	Graduates will be able to patronize higher studies and technological practice in Civil Engineering.
	PSO4:	Graduates will be able to keep pace with the modern construction techniques and management tools of Civil Engineering, either in industry or through entrepreneurship.

Course Outcome Mapping to Program Specific Outcome				
CO	PSO1	PSO2	PSO3	PSO4
CE(PC)402-1	2	1	3	-
CE(PC)402-2	2	-	-	2
CE(PC)402-3	2	2	3	1
CE(PC)402-4	1	3	1	-
CE(PC)402-5	1	3	2	1
CE(PC)402-6	1	2	2	2

Name of Faculty	Sk Safin Imran Laskar
Subject Name	Surveying and Geomatics
Subject Code	CE(PC)403

Course name	CO	Description
Surveying and Geomatics	CE(PC)403.1	Define and state the scope of surveying and geomatics in civil engineering.
	CE(PC)403.2	Understand the basic principles of surveying and geomatics engineering.
	CE(PC)403.3	Apply the different methods of surveying and geomatics to measure the features of interest.
	CE(PC)403.4	Analyze the traditional and advanced methods of surveying.
	CE(PC)403.5	Evaluate the different techniques of surveying and geomatics in solving real world problems
	CE(PC)403.6	Design and construct solutions for real world problems related to surveying and geomatics.

Program Outcome (PO):

Engineering Graduates will be able to:

- 1. Engineering Knowledge:** Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
- 2. Problem analysis:** Identify, formulate, research literature, and analyze complex engineering problems reaching substantiated conclusions using the first principles of mathematics, natural sciences, and engineering sciences.
- 3. 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.
- 4. 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.
- 5. 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.
- 6. 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.
- 7. 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.
- 8. Ethics:** Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
- 9. Individual and Team Work:** Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

10. **Communication:** Communicate effectively on complex engineering activities with the engineering community and with society at large, such as being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.

11. **Project Management and Finance:** Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.

12. **Life-long learning:** Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

Course Outcome mapping to Program Outcome												
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CE (PC) 403-1	3	3	-	2	2	-	2	-	-	-	-	-
CE (PC) 403-2	3	2	3	3	3	2	2	-	-	-	-	2
CE (PC) 403-3	2	3	2	3	3	3	3	-	-	2	-	3
CE (PC) 403-4	-	3	3	3	3	-	2	-	-	3	2	-
CE (PC) 403-5	3	2	3	-	1	-	2	-	-	3	-	-
CE (PC) 403- 6	-	3	2	2	3	2	-	-	2	-	2	2

Program Specific Outcome (PSO) :

Course name	PSO	Description
Surveying and Geomatics	PSO1	Graduates will have strong fundamental knowledge in core topics of each subject of the University curriculum of Civil Engineering.
	PSO2	Graduates will have the ability to describe, analyse, and solve problems using mathematics and systematic problem-solving technique for core subjects of Civil Engineering.
	PSO3	Graduates will be able to patronize higher studies and technological practice in Civil Engineering.
	PSO4	Graduates will be able to keep pace with the modern construction techniques and management tools of Civil Engineering, either in industry or through entrepreneurship.

Course Outcome mapping to Program Specific Outcome				
CO	PSO1	PSO2	PSO3	PSO4
CE (PC) 403-1	2	2	1	2
CE (PC) 403-2	3	3	2	3
CE (PC) 403-3	2	2	3	2
CE (PC) 403-4	1	-	2	-
CE (PC) 403-5	3	1	3	2
CE (PC) 403- 6	-	3	2	2

Name of Faculty	Mrs. ISHIKA GHOSH
Subject Name	CONCRETE TECHNOLOGY
Subject Code	CE(PC)404

Course name	CO	Description
CONCRETE TECHNOLOGY	CE(PC)404.1	Test all the required properties of concrete materials as per IS code.
	CE(PC)404.2	Compute the properties of concrete at fresh and hardened state.
	CE(PC)404.3	Design the concrete mix as per latest IS code methods.
	CE(PC)404.4	Ensure quality control while testing/ sampling.
	CE(PC)404.5	Design the special type of concrete for specific application purposes.
	CE(PC)404.6	Use the admixture as per requirement.

Program Outcome (PO):

Engineering Graduates will be able to:

- 1. Engineering Knowledge:** Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
- 2. Problem analysis:** Identify, formulate, research literature, and analyze complex engineering problems reaching substantiated conclusions using the first principles of mathematics, natural sciences, and engineering sciences.
- 3. 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.
- 4. 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.
- 5. 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.
- 6. 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.
- 7. 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.
- 8. Ethics:** Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
- 9. Individual and Team Work:** Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

10. **Communication:** Communicate effectively on complex engineering activities with the engineering community and with society at large, such as being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.

11. **Project Management and Finance:** Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.

12. **Life-long learning:** Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

Course Outcome mapping to Program Outcome

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CE(PC)404 -1	2	-	-	-	3	-	1	-	-	-	-	3
CE(PC)404 -2	3	-	-	-	3	2	-	-	-	-	2	3
CE(PC)404 -3	2	3	3	3	-	2	2	-	-	-	3	3
CE(PC)404 -4	2	-	-	-	3	2	2	-	2	-	3	3
CE(PC)404 -5	2	3	3	3	2	2	3	-	-	-	3	-
CE(PC)404 -6	2	-	2	-	-	-	2	-	-	-	3	3

Program Specific Outcome (PSO) :

Course name	PSO	Description
CONCRETE TECHNOLOGY	PSO1	Graduates will have strong fundamental knowledge in core topics of each subject of the University curriculum of Civil Engineering.
	PSO2	Graduates will have the ability to describe, analyse, and solve problems using mathematics and systematic problem-solving technique for core subjects of Civil Engineering.
	PSO3	Graduates will be able to patronize higher studies and technological practice in Civil Engineering.
	PSO4	Graduates will be able to keep pace with the modern construction techniques and management tools of Civil Engineering, either in industry or through entrepreneurship.

Course Outcome mapping to Program Specific Outcome

CO	PSO1	PSO2	PSO3	PSO4
CE(PC)404 -1	2	1	2	-
CE(PC)404 -2	2	3	2	1
CE(PC)404 -3	2	2	-	3
CE(PC)404 -4	3	-	-	2
CE(PC)404 -5	1	2	2	3
CE(PC)404 -6	2	2	2	-

Name of Faculty	Sk Safin Imran Laskar
Subject Name	Surveying & Geomatics Laboratory
Subject Code	CE(PC)493

Course name	CO	Description
Surveying & Geomatics Laboratory	CE(PC)493.1	State the interdependency and advancement of different surveying methods
	CE(PC)493.2	Comprehend the working principles of different surveying and geomatics instruments and experiments
	CE(PC)493.3	Execute the different methods of surveying and geomatics to measure the features of interest
	CE(PC)493.4	Examine the results obtained from the surveying and geomatics experiments
	CE(PC)493.5	Critically appraise the different techniques of surveying and geomatics in measuring and assessing the features of interest
	CE(PC)493.6	Design and construct solutions for real world problems related to surveying and geomatics.

Program Outcome (PO):

Engineering Graduates will be able to:

- 1. Engineering Knowledge:** Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
- 2. Problem analysis:** Identify, formulate, research literature, and analyze complex engineering problems reaching substantiated conclusions using the first principles of mathematics, natural sciences, and engineering sciences.
- 3. 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.
- 4. 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.
- 5. 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.
- 6. 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.
- 7. 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.

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

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

10. **Communication:** Communicate effectively on complex engineering activities with the engineering community and with society at large, such as being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.

11. **Project Management and Finance:** Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.

12. **Life-long learning:** Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

Course Outcome mapping to Program Outcome												
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CE (PC) 493-1	1						1			1		
CE (PC) 493-2	2	1		2		1	2	1				
CE (PC) 493-3	1	3			1	1		1	2	1	1	
CE (PC) 493-4	2	1	1		1							
CE (PC) 493-5	2	2	1						1		2	
CE (PC) 493-6	2	2	1	1	2		1				2	

Program Specific Outcome (PSO) :

Course name	PSO	Description
Surveying and Geomatics Laboratory	PSO1	Graduates will have strong fundamental knowledge in core topics of each subject of the University curriculum of Civil Engineering.
	PSO2	Graduates will have the ability to describe, analyse, and solve problems using mathematics and systematic problem-solving technique for core subjects of Civil Engineering.
	PSO3	Graduates will be able to patronize higher studies and technological practice in Civil Engineering.
	PSO4	Graduates will be able to keep pace with the modern construction techniques and management tools of Civil Engineering, either in industry or through entrepreneurship.

Course Outcome mapping to Program Specific Outcome				
CO	PSO1	PSO2	PSO3	PSO4
CE (PC) 493-1	2	1	2	-
CE (PC) 493-2	3	2	2	2
CE (PC) 493-3	1	2	-	1
CE (PC) 493-4	3	1	2	-
CE (PC) 493-5	1	-	1	2
CE (PC) 493-6	3	2	2	1

Name of Faculty	Mrs. ISHIKA GHOSH
Subject Name	Concrete Technology Laboratory
Subject Code	CE (PC) 494

Course Name	PO	Description
Concrete Technology Laboratory	CE(PC)494-1	Demonstrate the method and findings of tension and compression tests on concrete
	CE(PC)494-2	Understand the concepts of different test on hardened concrete.
	CE(PC)494-3	Understand the concepts of different test on hardened concrete.
	CE(PC)494-4	Find out the mix proportion of high grade of concrete.
	CE(PC)494-5	Measure the workability of concrete mix.
	CE(PC)494-6	Know about the quality of concrete.

Program Outcome (PO):

Engineering Graduates will be able to:

- 1. Engineering Knowledge:** Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
- 2. Problem analysis:** Identify, formulate, research literature, and analyze complex engineering problems reaching substantiated conclusions using the first principles of mathematics, natural sciences, and engineering sciences.
- 3. 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.
- 4. 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.
- 5. 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.
- 6. 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.
- 7. 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.
- 8. Ethics:** Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
- 9. Individual and Team Work:** Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
- 10. Communication:** Communicate effectively on complex engineering activities with the engineering community and with society at large, such as being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.

11. **Project Management and Finance:** Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.

12. **Life-long learning:** Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

Course Outcome mapping to Program Outcome												
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CE(PC)494-1	3	2	2	-	3	3	2	-	-	-	-	2
CE(PC)494-2	3	3	1	-	1	2	2	-	-	-	-	-
CE(PC)494-3	3	1	2	-	1	2		-	-	-	-	-
CE(PC)494-4	2	2	2	2	3	-	1	-	-	-	-	-
CE(PC)494-5	2	2	2	1	-	2	2	-	-	-	-	-
CE(PC)494-6	2	3	2	2	1	2	2	-	-	-	-	2

Program Specific Outcome (PSO) :

Course Name	Program Specific Outcome (PSO)	Description
Concrete Technology Laboratory	PSO1:	Graduates will have strong fundamental knowledge in core topics of each subject of the University curriculum of Civil Engineering.
	PSO2:	Graduates will have the ability to describe, analyses, and solve problems using mathematics and systematic problem-solving technique for core subjects of Civil Engineering.
	PSO3:	Graduates will be able to patronize higher studies and technological practice in Civil Engineering.
	PSO4:	Graduates will be able to keep pace with the modern construction techniques and management tools of Civil Engineering, either in industry or through entrepreneurship.

Course Outcome Mapping to Program Specific Outcome				
CO	PSO1	PSO2	PSO3	PSO4
CE(PC)494-1	2	1	2	3
CE(PC)494-2	1	2	2	3
CE(PC)494-3	2	3	3	1
CE(PC)494-4	3	1	2	3
CE(PC)494-5	2	3	1	2
CE(PC)494-6	3	2	2	3

Name of Faculty	Mrs. Ishika Ghosh
Subject Name	Design of RC Structures
Subject Code	CE (PC) 501

Course name	CO	Description
Design of RC Structures	CE(PC)501-1	Understand material properties & design methodologies for reinforced concrete structures.
	CE(PC)501-2	Assess different type of loads & prepare layout for reinforced concrete structures.
	CE(PC)501-3	Identify & apply the applicable industrial design codes relevant to design of reinforced concrete members.
	CE(PC)501-4	Analyze and design various structural elements of reinforced concrete building like beam, slab, column, footing, and staircase.
	CE(PC)501-5	Assessment of serviceability criteria for reinforced concrete beam and slab.
	CE(PC)501-6	Prepare structural drawings and detailing and produce design calculations and drawing in appropriate professional format.

Program Outcome (PO):

Engineering Graduate will be able to:

1.Engineering knowledge: apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.

2.Problem analysis: identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.

3.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.

4.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.

5. 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.

6. 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.

7. Environment and sustainability: understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.

8. Ethics: apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.

9. Individual and team work: function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

10.Communication: communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.

11. Project management and finance: demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.

12. Life-long learning: recognize the need for, and have the preparation and ability to engage independent and life-long learning in the broadest context of technological change.

Course Outcome Mapping to Program Outcome												
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CE(PC)501-1	2	2	-	-	2	2	-	-	1	-	-	2
CE(PC)501-2	3	2	3	3	2	2	-	2	-	-	-	1
CE(PC)501-3	3	3	3	3	1	2	-	-	-	-	-	3
CE(PC)501-4	3	3	3	3	2	3	1	-	3	-	-	3
CE(PC)501-5	1	2	2	2	2	-	3	2	-	-	-	1
CE(PC)501-6	1	3	3	3	-	-	-	-	-	-	-	2

Course name	Program Specific Outcome	Description
Design of RC Structures	PSO1:	Graduates will have strong fundamental knowledge in core topics of each subject of the University curriculum of Civil Engineering.
	PSO2:	Graduates will have the ability to describe, analyse, and solve problems using mathematics and systematic problem-solving technique for core subjects of Civil Engineering.
	PSO3:	Graduates will be able to patronize higher studies and technological practice in Civil Engineering.
	PSO4:	Graduates will be able to keep pace with the modern construction techniques and management tools of Civil Engineering, either in industry or through entrepreneurship.

Course Outcome Mapping to Program Specific Outcome				
CO	PSO1	PSO2	PSO3	PSO4
CE(PC)501-1	1	2	1	3
CE(PC)501-2	2	3	1	3
CE(PC)501-3	2	3	3	2
CE(PC)501-4	3	3	2	1
CE(PC)501-5	2	2	2	1
CE(PC)501-6	3	2	1	1

Name of Faculty	PIYALI SINHA
Subject Name	Engineering Hydrology
Subject Code	CE(PC)502

Course name	CO	Description
ENGINEERING HYDROLOGY	CE(PC)502-1	To study the source, occurrence, movement and distribution of water which is a prime resource for development of a nation.
	CE(PC)502-2	To learn about the functioning of reservoirs and estimation of storage capacities.
	CE(PC)502-3	To learn about flood hazards, estimation of design floods for various structures and methods of estimating effects of passage of floods through rivers and reservoirs.
	CE(PC)502-4	To know the basic principles of measurement of flow in rivers.

Program Outcome (PO):

Engineering Graduates will be able to:

- 1. Engineering Knowledge:** Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
- 2. Problem analysis:** Identify, formulate, research literature, and analyze complex engineering problems reaching substantiated conclusions using the first principles of mathematics, natural sciences, and engineering sciences.
- 3. 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.
- 4. 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.
- 5. 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.
- 6. 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.
- 7. 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.

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

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

10. **Communication:** Communicate effectively on complex engineering activities with the engineering community and with society at large, such as being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.

11. **Project Management and Finance:** Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.

12. **Life-long learning:** Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

CO-PO MAPPING

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CE(PC)502-1	2	3	3	3	1	-	2	-	-	-	1	2
CE(PC)502-2	3	3	3	3	-	-	2	-	1	-	-	3
CE(PC)502-3	2	2	3	3	2	-	2	1	-	1	-	-
CE(PC)502-4	1	3	3	3	-	1	2	1	-	-	-	1

Program Specific Outcome (PSO) :

Course name	PSO	Description
Engineering Hydrology	PSO1	Graduates will have strong fundamental knowledge in core topics of each subject of the University curriculum of Civil Engineering.
	PSO2	Graduates will have the ability to describe, analyse, and solve problems using mathematics and systematic problem-solving technique for core subjects of Civil Engineering.
	PSO3	Graduates will be able to patronize higher studies and technological practice in Civil Engineering.
	PSO4	Graduates will be able to keep pace with the modern construction techniques and management tools of Civil Engineering, either in industry or through entrepreneurship.

Course Outcome - Program Specific Outcome Mapping				
CO	PSO1	PSO2	PSO3	PSO4
CE(PC)502-1	2	2	3	3
CE(PC)502-2	2	2	2	3
CE(PC)502-3	2	2	2	2
CE(PC)502-4	3	2	2	2

Name of Faculty	Mrs. ISHIKA GHOSH
Subject Name	Structural Analysis – I
Subject Code	CE (PC) 503

Course name	CO	Description
Structural Analysis – I	CE(PC)503-1	Distinguish between stable and unstable and statically determinate and indeterminate structures.
	CE(PC)503-2	Apply equations of equilibrium to structures and compute the reactions.
	CE(PC)503-3	Calculate the internal forces in cable and arch type structures.
	CE(PC)503-4	Evaluate and draw the influence lines for reactions, shears and bending moments in beams due to moving loads.
	CE(PC)503-5	Use approximate methods for analysis of statically indeterminate structures.
	CE(PC)503-6	Calculate the deflections of truss structures and beams.

Program Outcome (PO):

Engineering Graduates will be able to:

- 1. Engineering Knowledge:** Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
- 2. Problem analysis:** Identify, formulate, research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.
- 3. 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.
- 4. 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.
- 5. 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.
- 6. 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.
- 7. 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.
- 8. Ethics:** Apply ethical principles and commit to professional ethics and responsibilities

and norms of the engineering practice.

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

10. **Communication:** Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.

11. **Project Management and Finance:** Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.

12. **Life-long learning:** Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

Course Outcome Mapping to Program Outcome												
CO	PO 1	PO2	PO3	PO 4	PO 5	PO6	PO 7	PO8	PO9	PO1 0	PO1 1	PO12
CE(PC)503-1	1	2	-	1	2	2	1	-	1	2	1	-
CE(PC)503-2	3	3	3	2	2	-	3	3	3	3	3	3
CE(PC)503-3	2	2	-	2	1	3	-	3	-	-	2	1
CE(PC)503-4	3	2	1	3	2	1	-	3	-	2	1	
CE(PC)503-5	1	1	2	-	2	-	-	1	2	2	-	-
CE(PC)503-6	3	2	-	2	3	-	3	3	-	2	-	2

Course name	Program Specific Outcome	Description
Structural Analysis – I	PSO1	Graduates will have strong fundamental knowledge in core topics of each subject of the University curriculum of Civil Engineering.
	PSO2	Graduates will have the ability to describe, analyse, and solve problems using mathematics and systematic problem-solving techniques for core subjects of Civil Engineering.
	PSO3	Graduates will be able to patronize higher studies and technological practice in Civil Engineering.
	PSO4	Graduates will be able to keep pace with the modern construction techniques and management tools of Civil Engineering, either in industry or through entrepreneurship.

Course Specific Outcome Mapping to Program Outcome				
CO	PSO1	PSO2	PSO3	PSO4
CE(PC)503-1	2	3	3	1
CE(PC)503-2	2	3	3	3
CE(PC)503-3	2	3	3	3
CE(PC)503-4	2	3	3	2
CE(PC)503-5	2	2	3	2
CE(PC)503-6	2	3	3	1

Name of Faculty	Mr. Shouvik Sarkar
Subject Name	Soil Mechanics - II
Subject Code	CE (PC) 504

Course name	CO	Description
Soil Mechanics -II	CE (PC) 504.1	Assess the compaction and consolidation characteristics of soil for solving geotechnical problems.
	CE (PC) 504.2	Calculate earth pressure on rigid retaining walls on the basis of classical earth pressure theories.
	CE (PC) 504.3	Analyze and design rigid retaining walls (cantilever types) from geotechnical engineering consideration.
	CE (PC) 504.4	Evaluate the bearing capacity of shallow foundation by applying established theory.
	CE (PC) 504.5	Estimate settlement in soils by different methods.
	CE (PC) 504.6	Compute safety of dams and embankments on the basis of various methods of slope stability analysis.

Program Outcome (PO):

Engineering Graduates will be able to:

1. **Engineering Knowledge:** Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
2. **Problem analysis:** Identify, formulate, research literature, and analyze complex engineering problems reaching substantiated conclusions using the first principles of mathematics, natural sciences, and engineering sciences.
3. **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.
4. **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.
5. **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.
6. **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.
7. **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.
8. **Ethics:** Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
9. **Individual and Team Work:** Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

10. **Communication:** Communicate effectively on complex engineering activities with the engineering community and with society at large, such as being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.

11. **Project Management and Finance:** Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.

12. **Life-long learning:** Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

Course Outcome Mapping to Program Outcome												
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CE (PC) 504-1	2	2	3	2	2	3	1	-	2	-	-	1
CE (PC) 504-2	2	3	3	2	2	2	2	-	3	-	-	-
CE (PC) 504-3	2	3	3	2	2	2	3	-	2	-	-	-
CE (PC) 504-4	2	3	3	3	3	2	2	1	2	-	2	1
CE (PC) 504-5	2	3	2	1	2	2	2	-	2	-	2	1
CE (PC) 504- 6	3	2	3	2	3	2	2	-	2	-	2	1

Program Specific Outcome (PSO):

Course name	PSO	Description
Soil Mechanics - II	PSO1	Graduates will have strong fundamental knowledge in core topics of each subject of the University curriculum of Civil Engineering.
	PSO2	Graduates will have the ability to describe, analyse, and solve problems using mathematics and systematic problem-solving technique for core subjects of Civil Engineering.
	PSO3	Graduates will be able to patronize higher studies and technological practice in Civil Engineering.
	PSO4	Graduates will be able to keep pace with the modern construction techniques and management tools of Civil Engineering, either in industry or through entrepreneurship.

Course Outcome Mapping to Program Specific Outcome				
CO	PSO1	PSO2	PSO3	PSO4
CE(PC)504-1	1	2	1	3
CE(PC)504-2	1	2	2	3
CE(PC)504-3	2	3	3	1
CE(PC)504-4	3	1	1	3
CE(PC)504-5	1	3	2	2
CE(PC)504-6	3	2	2	3

Name of Faculty	Mr. Aniket Bhowmick
Subject Name	Environmental Engineering – II
Subject Code	CE(PC)505

Course name	CO	Description
Environmental Engineering – II	CE(PC)505.1	Define the basic concepts and terminologies of waste water engineering and hazardous waste management
	CE(PC)505.2	Describe different home plumbing systems for water supply and wastewater disposal
	CE(PC)505.3	Apply the methods of quantifying sanitary sewage and storm sewage
	CE(PC)505.4	Solve different mathematical problems regarding different components of sewerage system
	CE(PC)505.5	Compare between different wastewater samples based on their physical, chemical and biological characteristics
	CE(PC)505.6	Design different unit processes and operations involved in waste water treatment

Program Outcome (PO):

Engineering Graduate will be able to:

1.Engineering knowledge: apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.

2.Problem analysis: identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.

3.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.

4.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.

5. 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.

6. 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.

7. Environment and sustainability: understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.

8. Ethics: apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.

9. Individual and team work: function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

10.Communication: communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.

11.Project management and finance: demonstrate knowledge and understanding of the engineering and

management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.

12. Life-long learning: recognize the need for, and have the preparation and ability to engage independent and life-long learning in the broadest context of technological change.

Course Outcome Mapping to Program Outcome												
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CE(PC)505.1	2	3	-	1	1	-	-	-	3	-	-	2
CE(PC)505.2	2	-	3	2	1	-	-	1	3	-	3	2
CE(PC)505.3	2	3	-	1	2	1	-	1	-	-	-	2
CE(PC)505.4	2	3	3	2	2	1	2	-	2	-	-	2
CE(PC)505.5	2	3	3	1	-	-	-	-	-	3	3	2
CE(PC)505.6	3	2	3	1	-	3	-	2	2	-	1	-

Program Specific Outcome (PSO):

Course name	Program Specific Outcome	Description
Environmental Engineering - II	PSO1:	Graduates will have strong fundamental knowledge in core topics of each subject of the University curriculum of Civil Engineering.
	PSO2:	Graduates will have the ability to describe, analyse, and solve problems using mathematics and systematic problem-solving technique for core subjects of Civil Engineering.
	PSO3:	Graduates will be able to patronize higher studies and technological practice in Civil Engineering.
	PSO4:	Graduates will be able to keep pace with the modern construction techniques and management tools of Civil Engineering, either in industry or through entrepreneurship.

Course Outcome Mapping to Program Specific Outcome				
CO	PSO1	PSO2	PSO3	PSO4
CE(PC)505.1	2	2	-	-
CE(PC)505.2	3	3	3	-
CE(PC)505.3	1	2	2	1
CE(PC)505.4	2	2	1	-
CE(PC)505.5	2	2	2	1
CE(PC)505.6	2	3	2	-

Name of Faculty	Mr. ANIBRATA PAL
Subject Name	RC Design Sessional
Subject Code	CE (PC) 591

Course name	CO	Description
RC Design Sessional	CE(PC)591-1	Understand material properties and design methodologies for reinforced concrete structures.
	CE(PC)591-2	Assess different type of loads and prepare layout for reinforced concrete structures.
	CE(PC)591-3	Identify and apply the applicable industrial design codes relevant to the design of reinforced concrete members.
	CE(PC)591-4	Analyze and design various structural elements of reinforced concrete building like beam, slab, column, footing, and staircase.
	CE(PC)591-5	Assessment of serviceability criteria for reinforced concrete beam and slab.
	CE(PC)591-6	Prepare structural drawings and detailing and produce design calculations and drawing in appropriate professional format.

Program Outcome (PO):

Engineering Graduate will be able to:

1.Engineering knowledge: apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.

2.Problem analysis: identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.

3.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.

4.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.

5. 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.

6. 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.

7. Environment and sustainability: understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.

8. Ethics: apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.

9. Individual and team work: function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

10.Communication: communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.

11. Project management and finance: demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.

12. Life-long learning: recognize the need for, and have the preparation and ability to engage independent and life-long learning in the broadest context of technological change.

Course Outcome Mapping to Program Outcome												
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CE(PC)591-1	2	3	3	3	-	-	-	-	-	-	-	2
CE(PC)591-2	2	3	3	3	-	-	-	-	-	-	-	-
CE(PC)591-3	2	2	3	3	-	2	-	-	-	-	-	2
CE(PC)591-4	3	3	3	3	-	-	-	-	-	-	-	-
CE(PC)591-5	2	2	2	2	-	1	-	-	-	-	-	2
CE(PC)591-6	2			2	-	2	-	-	-	-	-	-

Course name	Program Specific Outcome	Description
RC Design Sessional	PSO1:	Graduates will have strong fundamental knowledge in core topics of each subject of the University curriculum of Civil Engineering.
	PSO2:	Graduates will have the ability to describe, analyse, and solve problems using mathematics and systematic problem-solving technique for core subjects of Civil Engineering.
	PSO3:	Graduates will be able to patronize higher studies and technological practice in Civil Engineering.
	PSO4:	Graduates will be able to keep pace with the modern construction techniques and management tools of Civil Engineering, either in industry or through entrepreneurship.

Course Outcome Mapping to Program Specific Outcome				
CO	PSO1	PSO2	PSO3	PSO4
CE(PC)591-1	2	3	3	-
CE(PC)591-2	2	2	2	-
CE(PC)591-3	2	-	2	-
CE(PC)591-4	1	2	2	-
CE(PC)591-5	2	2	2	-
CE(PC)591-6	2	1	1	-

Name of Faculty	Mr. Shouvik Sarkar
Subject Name	Soil Mechanics Laboratory
Subject Code	CE (PC) 594

Course name	CO	Description
Soil Mechanics Laboratory	CE (PC) 594-1	Identify different types of soil by visual inspection.
	CE (PC) 594-2	Determine natural moisture content & specific gravity of various types soil.
	CE (PC) 594-3	Estimate in-situ density by core cutter method and sand replacement method.
	CE (PC) 594-4	Analyze grain size distribution and Atterberg limits for soil.
	CE (PC) 594-5	Perform laboratory tests to determine permeability and compaction characteristics of soil.
	CE (PC) 594-6	Determine shear strength parameters of soil by unconfined compression test, vane shear test, direct shear test & tri-axial test
	CE (PC) 594-7	Determine California Bearing Ratio(CBR) of soil.

Program Outcome (PO):

Engineering Graduates will be able to:

- 1. Engineering Knowledge:** Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
- 2. Problem analysis:** Identify, formulate, research literature, and analyze complex engineering problems reaching substantiated conclusions using the first principles of mathematics, natural sciences, and engineering sciences.
- 3. 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.
- 4. 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.
- 5. 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.
- 6. 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.
- 7. 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.
- 8. Ethics:** Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
- 9. Individual and Team Work:** Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

10. **Communication:** Communicate effectively on complex engineering activities with the engineering community and with society at large, such as being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.

11. **Project Management and Finance:** Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.

12. **Life-long learning:** Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

Course Outcome Mapping to Program Outcome												
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CE(PC)594-1	2	3	3	3	-	2	-	-	-	-	-	-
CE(PC)594-2	2	3	3	3	-	2	2	-	-	-	-	1
CE(PC)594-3	2	-	3	-	3	-	2	-	2	-	1	-
CE(PC)594-4	2	3	-	-	3	-	2	-	-	-	-	2
CE(PC)594-5	-	3	3	3	-	-	2	-	-	-	2	3
CE(PC)594-6	-	3	3	3	-	2	3	-	-	-	2	3

Program Specific Outcome (PSO) :

Course name	PSO	Description
Soil Mechanics Laboratory	PSO1	Graduates will have strong fundamental knowledge in core topics of each subject of the University curriculum of Civil Engineering.
	PSO2	Graduates will have the ability to describe, analyse, and solve problems using mathematics and systematic problem-solving technique for core subjects of Civil Engineering.
	PSO3	Graduates will be able to patronize higher studies and technological practice in Civil Engineering.
	PSO4	Graduates will be able to keep pace with the modern construction techniques and management tools of Civil Engineering, either in industry or through entrepreneurship.

Course Outcome Mapping to Program Specific Outcome				
CO	PSO1	PSO2	PSO3	PSO4
CE(PC)594-1	1	2	1	3
CE(PC)594-2	1	2	2	3
CE(PC)594-3	2	3	3	1
CE(PC)594-4	3	1	1	3
CE(PC)594-5	1	3	2	2
CE(PC)594-6	3	2	2	3

Name of Faculty	Subhadeep Mondal
Subject Name	Transportation Engineering Laboratory
Subject Code	CE(PC)596

Course name	CO	Description
Transportation Engineering Laboratory	CE(PC)596-1	Identify engineering properties of aggregate
	CE(PC)596-2	Identify the grade & properties of bitumen
	CE(PC)596-3	Demonstration on Stripping value and Loss on heating tests of bitumen, Benkelman Beam and Bump Integrator test

Program Outcome (PO):

Engineering Graduates will be able to:

- 1. Engineering Knowledge:** Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
- 2. Problem analysis:** Identify, formulate, research literature, and analyze complex engineering problems reaching substantiated conclusions using the first principles of mathematics, natural sciences, and engineering sciences.
- 3. 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.
- 4. 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.
- 5. Modern Tool Usage:** Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modelling to complex engineering activities with an understanding of the limitations.
- 6. 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.
- 7. 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.
- 8. Ethics:** Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
- 9. Individual and Team Work:** Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
- 10. Communication:** Communicate effectively on complex engineering activities with the engineering community and with society at large, such as being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.

11. **Project Management and Finance:** Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.

12. **Life-long learning:** Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

Course Outcome Mapping to Program Outcome												
CO	P01	P02	P03	P04	P05	P06	P07	P08	P09	P010	P011	P012
CE(PC)596-1	2	-	1	1	1	2	2	-	2	-	1	1
CE(PC)596-2	2	1	2	1	-	2	-	-	-	2	1	-
CE(PC)596-3	2	1	3	1	2	1	-	-	1	1	2	1

Program Specific Outcome (PSO):

Course name	PSO	Description
Transportation Engineering Laboratory	PSO1	Graduates will have strong fundamental knowledge in core topics of each subject of the University curriculum of Civil Engineering.
	PSO2	Graduates will have the ability to describe, analyse, and solve problems using mathematics and systematic problem-solving technique for core subjects of Civil Engineering.
	PSO3	Graduates will be able to patronize higher studies and technological practice in Civil Engineering.
	PSO4	Graduates will be able to keep pace with the modern construction techniques and management tools of Civil Engineering, either in industry or through entrepreneurship.

Course Outcome Mapping to Program Specific Outcome				
CO	PSO1	PSO2	PSO3	PSO4
CE(PC)596-1	3	1	1	1
CE(PC)596-2	3	1	1	1
CE(PC)596-3	2	1	1	1

Name of Faculty	Mr. Anibrata Pal
Subject Name	Computer-aided Civil Engineering Drawing
Subject Code	CE(ES)392

Course name	CO	Description
Computer-aided Civil Engineering Drawing	CE(ES)392 -1	Demonstrate basic concepts of the AUTOCAD software.
	CE(ES)392 -2	Manipulate drawings through editing and plotting techniques.
	CE(ES)392 -3	Understand and demonstrate dimensioning concepts and also techniques.
	CE(ES)392 -4	Exercise on several tools (layers, dimensions, texting etc.)
	CE(ES)392 -5	Draw building components like walls, lintels, doors and windows using CAD software.
	CE(ES)392 -6	Draw a plan of building and dimensioning.

Program Outcome (PO):

Engineering Graduates will be able to:

- 1. Engineering Knowledge:** Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
- 2. Problem analysis:** Identify, formulate, research literature, and analyze complex engineering problems reaching substantiated conclusions using the first principles of mathematics, natural sciences, and engineering sciences.
- 3. 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.
- 4. 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.

5. **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.

6. **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.

7. **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.

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

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

10. **Communication:** Communicate effectively on complex engineering activities with the engineering community and with society at large, such as being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.

11. **Project Management and Finance:** Demonstrate knowledge and understanding of the engineering and management principles and apply these to one’s own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.

12. **Life-long learning:** Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

CO-PO MAPPING

Course Outcome Mapping to Program Outcome												
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CE(ES)392 -1	3	2	2		2	2	-	-	-	-	2	3
CE(ES)392 -2	2	2	3	3	2	-	-	-	-	-	-	3
CE(ES)392 -3	2	2	3	-	-	-	-	-	-	-	1	3
CE(ES)392 -4	3	-	-	-	3	-	-	-	-	-	-	2
CE(ES)392 -5	2	2	2	2	3	1	2	1	3	-	2	2
CE(ES)392 -6	2	2	2	2	3	1	2	1	3	-	2	2

Program Specific Outcome (PSO) :

Course name	PSO	Description
Computer-aided Civil Engineering Drawing	PSO1	Graduates will have strong fundamental knowledge in core topics of each subject of the University curriculum of Civil Engineering.
	PSO2	Graduates will have the ability to describe, analyse, and solve problems using mathematics and systematic problem-solving technique for core subjects of Civil Engineering.
	PSO3	Graduates will be able to patronize higher studies and technological practice in Civil Engineering.
	PSO4	Graduates will be able to keep pace with the modern construction techniques and management tools of Civil Engineering, either in industry or through entrepreneurship.

Course Outcome - Program Specific Outcome Mapping				
CO	PSO1	PSO2	PSO3	PSO4
CE(ES)392 -1	2	2	2	3
CE(ES)392 -2	2	2	3	3
CE(ES)392 -3	1	2	2	3
CE(ES)392 -4	2	3	2	3
CE(ES)392 -5	2	3	2	2
CE(ES)392 -6	3	2	3	2

Name of Faculty	Mr. Yuvraj Mondal
Subject Name	Introduction to Fluid Mechanics
Subject Code	CE(ES)401

Coursename	CO	Description
Introduction to Fluid Mechanics	CE(ES)401-1	define basic terms, values and laws in the areas of fluids properties, statics, kinematics and dynamics of fluids, and hydraulic design of pipe systems;
	CE(ES)401-2	describe methods of implementing fluid mechanics laws and phenomena while analyzing the operational parameters of hydraulic problems;
	CE(ES)401-3	Practically apply tables and diagrams, and equations that define associated laws
	CE(ES)401-4	Calculate and optimize operational parameters of hydraulic problems;
	CE(ES)401-5	Explain the correlation between different operational parameters;
	CE(ES)401-6	Select engineering approach to problem solving based on the acquired physics and mathematical knowledge.

Program Outcome (PO):

Engineering Graduates will be able to:

- 1. Engineering Knowledge:** Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
- 2. Problem analysis:** Identify, formulate, research literature, and analyze complex engineering problems reaching substantiated conclusions using the first principles of mathematics, natural sciences, and engineering sciences.
- 3. 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.
- 4. 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.
- 5. 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.
- 6. 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.
- 7. 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.
- 8. Ethics:** Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
- 9. Individual and Team Work:** Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

10. **Communication:** Communicate effectively on complex engineering activities with the engineering community and with society at large, such as being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.

11. **Project Management and Finance:** Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.

12. **Life-long learning:** Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

Course Outcome Mapping to Program Outcome												
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CE(ES)401-1	3	2	3	1	2	-	3	2	-	-	2	3
CE(ES)401-2	3	3	3	-	-	-	-		-	-	-	2
CE(ES)401-3	3	3	3	1	2	1	3	1	-	2	1	3
CE(ES)401-4	2	-	-	-	3	2	2		3	-	3	2
CE(ES)401-5	3	2	3	1	2	-	3	2	-	-	2	3
CE(ES)401-6	3	3	3	2	3	2	3	1	-	2	1	3

Program Specific Outcome (PSO) :

Course name	Program Specific Outcome	Description
Introduction to Fluid mechanics	PSO1:	Graduates will have strong fundamental knowledge in core topics of each subject of the University curriculum of Civil Engineering.
	PSO2:	Graduates will have the ability to describe, analyse, and solve problems using mathematics and systematic problem-solving technique for core subjects of Civil Engineering.
	PSO3:	Graduates will be able to patronize higher studies and technological practice in Civil Engineering.
	PSO4:	Graduates will be able to keep pace with the modern construction techniques and management tools of Civil Engineering, either in industry or through entrepreneurship.

Course Outcome Mapping to Program Specific Outcome				
CO	PSO1	PSO2	PSO3	PSO4
CE(ES)401-1	1	2	3	3
CE(ES)401-2	3	-	3	2
CE(ES)401-3	1	2	3	2
CE(ES)401-4	2	-	-	3
CE(ES)401-5	3	2	3	1
CE(ES)401-6	3	2	3	1

Name of Faculty	Mrs. Labani Nandi
Subject Name	Introduction to Solid Mechanics
Subject Code	CE(ES)402

Coursename	CO	Description
Introduction to Solid Mechanics	CE(ES)402-1	To identify the equilibrium conditions and elastic properties of axially loaded bars through stress-strain and force-displacement curves.
	CE(ES)402-2	To identify the principal plane and principal stresses through Mohr circle.
	CE(ES)402-3	To calculate the hoop and meridional stresses in thin cylinders and spherical shells.
	CE(ES)402-4	To identify different degrees of freedoms for support conditions like hinge, roller and fixed constraints.
	CE(ES)402-5	To calculate the bending moment, shear force and deflection of beams for uniformly distributed, concentrated, linearly varying and external concentrated moment.
	CE(ES)402-6	To calculate the member forces in a plane truss using Method of Joint and Method of Section.
	CE(ES)402-7	To identify torsional moment and twist on a circular shaft and calculate the shear stress.
	CE(ES)402-8	To know the concepts of strain energy due to axial load, bending and shear.
	CE(ES)402-9	To calculate the buckling load of columns using Euler's theory for different support constraints

Program Outcome (PO):

Engineering Graduates will be able to:

- 1. Engineering Knowledge:** Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
- 2. Problem analysis:** Identify, formulate, research literature, and analyze complex engineering problems reaching substantiated conclusions using the first principles of mathematics, natural sciences, and engineering sciences.
- 3. 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.
- 4. 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.
- 5. 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.
- 6. 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.
- 7. 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.

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

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

10. **Communication:** Communicate effectively on complex engineering activities with the engineering community and with society at large, such as being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.

11. **Project Management and Finance:** Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.

12. **Life-long learning:** Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

Course Outcome Mapping to Program Outcome												
CO	P01	P02	P03	P04	P05	P06	P07	P08	P09	P010	P011	P012
CE(ES)402-1	2	1	2	1	0	0	1	3	2	2	2	3
CE(ES)402-2	3	3	3	3	3	0	1	3	3	2	2	3
CE(ES)402-3	2	3	3	2	2	1	2	2	3	2	2	3
CE(ES)402-4	3	3	3	3	3	2	2	3	3	3	3	3
CE(ES)402-5	3	3	3	3	3	2	3	3	3	3	3	3
CE(ES)402-6	3	3	3	3	3	2	3	3	3	3	3	3
CE(ES)402-7	3	2	3	3	2	2	2	3	2	3	2	3
CE(ES)402-8	3	3	3	3	2	2	2	3	2	3	2	3
CE(ES)402-9	3	3	3	3	3	3	1	3	3	3	3	3

Program Specific Outcome (PSO) :

Course name	Program Specific Outcome	Description
Introduction to Solid Mechanics	PSO1:	Graduates will have strong fundamental knowledge in core topics of each subject of the University curriculum of Civil Engineering.
	PSO2:	Graduates will have the ability to describe, analyse, and solve problems using mathematics and systematic problem-solving technique for core subjects of Civil Engineering.
	PSO3:	Graduates will be able to patronize higher studies and technological practice in Civil Engineering.
	PSO4:	Graduates will be able to keep pace with the modern construction techniques and management tools of Civil Engineering, either in industry or through entrepreneurship.

Course Outcome Mapping to Program Specific Outcome				
CO	PSO1	PSO2	PSO3	PSO4
CE(ES)402-1	1	2	3	3
CE(ES)402-2	3	-	3	2
CE(ES)402-3	1	2	3	2
CE(ES)402-4	2	-	-	3

CE(ES)402-5	3	2	3	1
CE(ES)402-6	3	2	3	1
CE(ES)402-7	3	2	3	3
CE(ES)402-8	3	3	3	2
CE(ES)402-9	3	3	3	2

Name of Faculty	Mr. Yuvraj Mondal
Subject Name	Fluid Mechanics Laboratory
Subject Code	CE(ES)491

Coursename	CO	Description
Fluid Mechanics Laboratory	CE (ES) 491-1	To prepare the Coefficient of discharge, calibration of the notch and orifice meter.
	CE (ES) 491-2	Evaluate the performance of pump and turbine.
	CE (ES) 491-3	Calculate the various hydraulic coefficients.
	CE (ES) 491-4	Examine the minor losses through pipes.
	CE (ES) 491-5	Inspect the water surface profile due to formation of hydraulic jump.
	CE (ES) 491-6	Inspect the water surface profile for flow over Broad crested weir.

Program Outcome (PO):

Engineering Graduates will be able to:

- 1. Engineering Knowledge:** Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
- 2. Problem analysis:** Identify, formulate, research literature, and analyze complex engineering problems reaching substantiated conclusions using the first principles of mathematics, natural sciences, and engineering sciences.
- 3. 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.
- 4. 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.
- 5. 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.
- 6. 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.
- 7. 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.
- 8. Ethics:** Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
- 9. Individual and Team Work:** Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

10. **Communication:** Communicate effectively on complex engineering activities with the engineering community and with society at large, such as being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.

11. **Project Management and Finance:** Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.

12. **Life-long learning:** Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

Course Outcome Mapping to Program Outcome												
CO	P01	P02	P03	P04	P05	P06	P07	P08	P09	P010	P011	P012
CE (ES) 491-1	3	2	-	-	-	1	-	-	2	1	-	1
CE (ES) 491-2	3	2	-	-	-	1	-	-	2	1	-	1
CE (ES) 491-3	3	2	-	-	-	1	-	-	2	1	-	1
CE (ES) 491-4	3	2	-	-	-	1	-	-	2	1	-	1
CE (ES) 491-5	3	2	-	-	-	1	-	-	2	1	-	1
CE (ES) 491-6	3	2	-	-	-	1	-	-	2	1	-	1

Program Specific Outcome (PSO) :

Course name	Program Specific Outcome	Description
Fluid Mechanics Laboratory	PSO1:	Graduates will have strong fundamental knowledge in core topics of each subject of the University curriculum of Civil Engineering.
	PSO2:	Graduates will have the ability to describe, analyse, and solve problems using mathematics and systematic problem-solving technique for core subjects of Civil Engineering.
	PSO3:	Graduates will be able to patronize higher studies and technological practice in Civil Engineering.
	PSO4:	Graduates will be able to keep pace with the modern construction techniques and management tools of Civil Engineering, either in industry or through entrepreneurship.

Course Outcome Mapping to Program Specific Outcome				
CO	PSO1	PSO2	PSO3	PSO4
CE (ES) 491-1	1	2	3	3
CE (ES) 491-2	3	-	3	2
CE (ES) 491-3	1	2	3	2
CE (ES) 491-4	2	-	-	3
CE (ES) 491-5	3	2	3	1
CE (ES) 491-6	3	2	3	1

Name of Faculty	Mrs. ISHIKA GHOSH
Subject Name	Soil Mechanics Laboratory
Subject Code	CE (ES) 492

Course name	CO	Description
Soil Mechanics Laboratory	CE(ES)492-1	Demonstrate the method and findings of tension and compression tests on ductile, brittle materials and explain the method of bending tests on mild steel beam and concrete beam.
	CE(ES)492-2	Demonstrate the method and findings of Torsion test on mild steel circular bar, concrete beam.
	CE(ES)492-3	Interpret the concept of hardness and explain the procedure and findings of Brinnel and Rockwell tests.
	CE(ES)492-4	Demonstrate the concept, procedure and calculation of spring constant and execute its use in Civil Engineering.
	CE(ES)492-5	Demonstrate the method and findings of Izod and Charpy impact tests.
	CE(ES)492-6	Explain the concepts of fatigue test.

Program Outcome (PO):

Engineering Graduates will be able to:

- Engineering Knowledge:** Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
- Problem analysis:** Identify, formulate, research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.
- 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.
- 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.
- 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.
- 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.
- 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.

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

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

10. **Communication:** Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.

11. **Project Management and Finance:** Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.

12. **Life-long learning:** Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

Course Outcome Mapping to Program Outcome												
CO	PO 1	PO2	PO3	PO 4	PO 5	PO6	PO 7	PO8	PO9	PO1 0	PO1 1	PO12
CE(ES)492-1	1	2	-	1	2	2	1	-	1	2	1	-
CE(ES)492-2	3	3	3	2	2	-	3	3	3	3	3	3
CE(ES)492-3	2	2	-	2	1	3	-	3	-	-	2	1
CE(ES)492-4	3	2	1	3	2	1	-	3	-	2	1	
CE(ES)492-5	1	1	2	-	2	-	-	1	2	2	-	-
CE(ES)492-6	3	2	-	2	3	-	3	3	-	2	-	2

Course name	PSO	Description
Soil Mechanics Laboratory	PSO1	Graduates will have strong fundamental knowledge in core topics of each subject of the University curriculum of Civil Engineering.
	PSO2	Graduates will have the ability to describe, analyse, and solve problems using mathematics and systematic problem-solving technique for core subjects of Civil Engineering.
	PSO3	Graduates will be able to patronize higher studies and technological practice in Civil Engineering.
	PSO4	Graduates will be able to keep pace with the modern construction techniques and management tools of Civil Engineering, either in industry or through entrepreneurship.

**Course Specific Outcome Mapping to
Program Outcome**

CO	PSO1	PSO2	PSO3	PSO4
CE(ES)492-1	2	3	3	1
CE(ES)492-2	2	3	3	3
CE(ES)492-3	2	3	3	3
CE(ES)492-4	2	3	3	2
CE(ES)492-5	2	2	3	2
CE(ES)492-6	2	3	3	1



Name of Faculty	PIYALI SINHA
Subject Name	ENGINEERING GEOLOGY LAB
Subject Code	CE(ES)493

Course name	CO	Description
ENGINEERING GEOLOGY LAB	CE(ES)493.1	Identification of minerals in hand specimen
	CE(ES)493.2	Identification of igneous rocks in hand specimen
	CE(ES)493.3	Identification of sedimentary rocks in hand specimen
	CE(ES)493.4	Identification of metamorphic rocks in hand specimen
	CE(ES)493.5	Study of crystals with the help of crystal models
	CE(ES)493.6	Study of geologic structures with the help of models
	CE(ES)493.7	Interpretation of geological maps: horizontal, vertical, unclinal, folded and faulted structures
	CE(ES)493.8	Microscopic study of rocks and minerals

Program Outcome (PO):

Engineering Graduates will be able to:

- 1. Engineering Knowledge:** Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
- 2. Problem analysis:** Identify, formulate, research literature, and analyze complex engineering problems reaching substantiated conclusions using the first principles of mathematics, natural sciences, and engineering sciences.
- 3. 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.
- 4. 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.

5. **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.

6. **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.

7. **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.

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

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

10. **Communication:** Communicate effectively on complex engineering activities with the engineering community and with society at large, such as being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.

11. **Project Management and Finance:** Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.

12. **Life-long learning:** Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

CO-PO MAPPING

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CE(ES)493.1	1	3	-	1	1	1	-	-	3	-	-	2
CE(ES)493.2	1	-	3	2	1	-	2	1	1	1	3	2
CE(ES)493.3	2	3	-	1	2	1	-	1	-	-	-	2
CE(ES)493.4	1	2	3	2	-	1	-	3	2	2	-	-
CE(ES)493.5	2	-	3	2	2	1	2		2	3	-	2
CE(ES)493.6	2	3	-	1	1	3	-	1	3	-	1	2
CE(ES)493.7	1	1	-	1	2	-	1	1	2	1	1	1
CE(ES)493.8	2	1	1	1	1	2	2	1	1	2	1	-

Program Specific Outcome (PSO) :

Course name	PSO	Description
ENGINEERING GEOLOGY LAB	PSO1	Graduates will have strong fundamental knowledge in core topics of each subject of the University curriculum of Civil Engineering.
	PSO2	Graduates will have the ability to describe, analyse, and solve problems using mathematics and systematic problem-solving technique for core subjects of Civil Engineering.
	PSO3	Graduates will be able to patronize higher studies and technological practice in Civil Engineering.
	PSO4	Graduates will be able to keep pace with the modern construction techniques and management tools of Civil Engineering, either in industry or through entrepreneurship.

Course Outcome - Program Specific Outcome Mapping				
CO	PSO1	PSO2	PSO3	PSO4
CE(ES)493.1	3	2	-	2
CE(ES)493.2	2	2	-	3
CE(ES)493.3	2	2	3	2
CE(ES)493.4	3	3	2	2
CE(ES)493.5	3	2	2	3
CE(ES)493.6	-	2	3	3
CE(ES)493.7	2	3	2	2
CE(ES)493.8	2	2	3	3

Name of Faculty	PIYALI SINHA
Subject Name	Introduction to civil engineering
Subject Code	CE(HS)302

Course name	CO	Description
Introduction to civil engineering	CE(HS)302.1	Prepare students for successful engineering or management careers in architecture, engineering, and construction industry or related multidisciplinary fields.
	CE(HS)302.2	Provide employers with a well-educated workforce that is ready and able to perform valuable civil and construction engineering and managerial services immediately after graduation.
	CE(HS)302.3	Encourage the growth of knowledge-based industry and stimulate economic growth in India and abroad.

Program Outcome (PO):

Engineering Graduates will be able to:

- 1. Engineering Knowledge:** Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
- 2. Problem analysis:** Identify, formulate, research literature, and analyze complex engineering problems reaching substantiated conclusions using the first principles of mathematics, natural sciences, and engineering sciences.
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- 4. 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.
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7. **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.

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11. **Project Management and Finance:** Demonstrate knowledge and understanding of the engineering and management principles and apply these to one’s own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.

12. **Life-long learning:** Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

CO-PO MAPPING

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CE(HS)302 .1	1	3	-	1	3	2	-	2	-	2	3	2
CE(HS)302 .2	3	-	2	3	1	-	1	-	1	3	-	1
CE(HS)302 .3	2	-	1	2	2	3	3	1	-	3	1	3

Program Specific Outcome (PSO) :

Course name	PSO	Description
Introduction to civil engineering	PSO1	Graduates will have strong fundamental knowledge in core topics of each subject of the University curriculum of Civil Engineering.
	PSO2	Graduates will have the ability to describe, analyse, and solve problems using mathematics and systematic problem-solving technique for core subjects of Civil Engineering.
	PSO3	Graduates will be able to patronize higher studies and technological practice in Civil Engineering.
	PSO4	Graduates will be able to keep pace with the modern construction techniques and management tools of Civil Engineering, either in industry or through entrepreneurship.

Course Outcome - Program Specific Outcome Mapping				
CO	PSO1	PSO2	PSO3	PSO4
CE(HS)302.1	2	2	3	2
CE(HS)302.2	3	2	2	2
CE(HS)302.3	3	3	3	2
Attainment	2.6	2.3	2.6	2

Name of Faculty	PIYALI SINHA
Subject Name	CIVIL ENGG. -SOCIETAL AND GLOBAL IMPACT
Subject Code	CE(HS)401

Course name	CO	Description
CIVIL ENGG. SOCIETAL AND GLOBAL IMPACT	CE(HS)401-1	The impact which Civil Engineering projects have on the Society at large and on the global arena and using resources efficiently and effectively.
	CE(HS)401-2	The extent of Infrastructure, its requirements for energy and how they are met: past, present and future
	CE(HS)401-3	The Sustainability of the Environment, including its Aesthetics,
	CE(HS)401-4	The potentials of Civil Engineering for Employment creation and its Contribution to the GDP
	CE(HS)401-5	The Built Environment and factors impacting the Quality of Life
	CE(HS)401-6	The precautions to be taken to ensure that the above-mentioned impacts are not adverse but beneficial.
	CE(HS)401-7	Applying professional and responsible judgement and take a leadership role;

Program Outcome (PO):

Engineering Graduates will be able to:

- 1. Engineering Knowledge:** Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
- 2. Problem analysis:** Identify, formulate, research literature, and analyze complex engineering problems reaching substantiated conclusions using the first principles of mathematics, natural sciences, and engineering sciences.
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- 4. 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.

5. **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.

6. **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.

7. **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.

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

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

10. **Communication:** Communicate effectively on complex engineering activities with the engineering community and with society at large, such as being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.

11. **Project Management and Finance:** Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.

12. **Life-long learning:** Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

CO-PO MAPPING

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CE(HS)401-1	2	3	-	1	1	1	-	-	3	-	-	2
CE(HS)401-2	1	-	3	2	1	-	2	1	1	1	3	2
CE(HS)401-3	2	3	-	1	2	1	-	1	-	-	-	2
CE(HS)401-4	1	2	3	2	-	1	-	3	2	2	-	-
CE(HS)401-5	2	-	3	2	2	1	2		2	-	-	2
CE(HS)401-6	2	3	-	1	1	3	-	1	3	-	1	2
CE(HS)401-7	2	1	-	1	2	-	-	1	2	1	1	1

Program Specific Outcome (PSO) :

Course name	PSO	Description
CIVIL ENGG. – SOCIAL AND GLOBAL IMPACT	PSO1	Graduates will have strong fundamental knowledge in core topics of each subject of the University curriculum of Civil Engineering.
	PSO2	Graduates will have the ability to describe, analyse, and solve problems using mathematics and systematic problem-solving technique for core subjects of Civil Engineering.
	PSO3	Graduates will be able to patronize higher studies and technological practice in Civil Engineering.
	PSO4	Graduates will be able to keep pace with the modern construction techniques and management tools of Civil Engineering, either in industry or through entrepreneurship.

Course Outcome Mapping to Program Specific Outcome				
CO	PSO1	PSO2	PSO3	PSO4
CO1	2	2	-	1
CO2	2	2	2	2
CO3	2	2	3	2
CO4	3	2	-	3
CO5	2	2	3	3
CO6	3	3	-	3

Name of Faculty	Mr. Swarnendu Shekhar Das
Subject Name	Groundwater Contamination
Subject Code	CE(OE)801D

Coursename	CO	Description
Groundwater Contamination	CE(OE)801D-1	To be able to understand the principles and theories regarding groundwater contamination with.
	CE(OE)801D-2	To be able to formulate the various remedial measures for ground water contamination.

Program Outcome (PO):

Engineering Graduates will be able to:

- 1. Engineering Knowledge:** Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
- 2. Problem analysis:** Identify, formulate, research literature, and analyze complex engineering problems reaching substantiated conclusions using the first principles of mathematics, natural sciences, and engineering sciences.
- 3. 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.
- 4. 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.
- 5. 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.
- 6. 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.
- 7. 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.
- 8. Ethics:** Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
- 9. Individual and Team Work:** Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
- 10. Communication:** Communicate effectively on complex engineering activities with the engineering community and with society at large, such as being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.
- 11. Project Management and Finance:** Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.

12. **Life-long learning:** Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

Course Outcome Mapping to Program Outcome												
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CE(OE)801D-1	3	2	3	1	2	-	3	2	-	-	2	3
CE(OE)801D-2	3	3	3	-	-	-	-	-	-	-	-	2

Program Specific Outcome (PSO) :

Course name	Program Specific Outcome	Description
Pavement Materials and Design	PSO1:	Graduates will have strong fundamental knowledge in core topics of each subject of the University curriculum of Civil Engineering.
	PSO2:	Graduates will have the ability to describe, analyse, and solve problems using mathematics and systematic problem-solving technique for core subjects of Civil Engineering.
	PSO3:	Graduates will be able to patronize higher studies and technological practice in Civil Engineering.
	PSO4:	Graduates will be able to keep pace with the modern construction techniques and management tools of Civil Engineering, either in industry or through entrepreneurship.

Course Outcome Mapping to Program Specific Outcome				
CO	PSO1	PSO2	PSO3	PSO4
CE(OE)801D-1	1	2	3	3
CE(OE)801D-2	3	-	3	2

Name of Faculty	Mr. Anibrata Pal
Subject Name	Earthquake Engineering
Subject Code	CE(OE)802-B

Course name	CO	Description
Earthquake Engineering	CE(OE)802B.1	Understand the Seismology.
	CE(OE)802B.2	Study the response spectrum of undamped free vibrations in various types of structures.
	CE(OE)802B.3	Analyse <i>mathematically</i> dynamically rigid blocks.
	CE(OE)802B.4	Evaluate the performance of vibration control.
	CE(OE)802B.5	Inelastic Response of Structures for Earthquake Forces
	CE(OE)802B.6	Response Analysis for Specific Ground Motion

Program Outcome (PO):

Engineering Graduates will be able to:

- 1. Engineering Knowledge:** Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
- 2. Problem analysis:** Identify, formulate, research literature, and analyze complex engineering problems reaching substantiated conclusions using the first principles of mathematics, natural sciences, and engineering sciences.
- 3. 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.
- 4. 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.
- 5. 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.
- 6. 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.
- 7. 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.
- 8. Ethics:** Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
- 9. Individual and Team Work:** Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

10. **Communication:** Communicate effectively on complex engineering activities with the engineering community and with society at large, such as being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.

11. **Project Management and Finance:** Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.

12. **Life-long learning:** Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

Course Outcome Mapping to Program Outcome												
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CE (OE)802B-1	2	2	3	2	2	3	1	-	2	-	-	1
CE (OE)802B-2	2	3	3	2	2	2	2	-	3	-	-	-
CE (OE)802B-3	2	3	3	2	2	2	3	-	2	-	-	-
CE (OE)802B-4	2	3	3	3	3	2	2	1	2	-	2	1
CE (OE)802B-5	2	3	2	1	2	2	2	-	2	-	2	1
CE (OE)802B-6	3	2	3	2	3	2	2	-	2	-	2	1

Program Specific Outcome (PSO) :

Course name	PSO	Description
Earthquake Engineering	PSO1	Graduates will have strong fundamental knowledge in core topics of each subject of the University curriculum of Civil Engineering.
	PSO2	Graduates will have the ability to describe, analyse, and solve problems using mathematics and systematic problem-solving technique for core subjects of Civil Engineering.
	PSO3	Graduates will be able to patronize higher studies and technological practice in Civil Engineering.
	PSO4	Graduates will be able to keep pace with the modern construction techniques and management tools of Civil Engineering, either in industry or through entrepreneurship.

Course Outcome Mapping to Program Specific Outcome				
CO	PSO1	PSO2	PSO3	PSO4
CE(OE)802B.1	1	2	1	3
CE(OE)802B.2	1	2	1	2
CE(OE)802B.3	1	2	2	1
CE(OE)802B.4	1	-	-	-
CE(OE)802B.5	2	2	3	3
CE(OE)802B.6	-	1	1	2

Name of Faculty	Subhadeep Mondal
Subject Name	Transportation Engineering
Subject Code	CE(PC)506

Course name	CO	Description
Transportation Engineering	CE(PC)506-1	Understand the knowledge of planning, design and the fundamental properties of highway materials in highway engineering.
	CE(PC)506-2	Apply the knowledge of geometric design and draw appropriate conclusion.
	CE(PC)506-3	Interpret the concept of different methods in design, construction of the pavement.
	CE(PC)506-4	Interpret traffic parameters by applying the knowledge in traffic planning and intersection design.

Program Outcome (PO):

Engineering Graduates will be able to:

- 1. Engineering Knowledge:** Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
- 2. Problem analysis:** Identify, formulate, research literature, and analyze complex engineering problems reaching substantiated conclusions using the first principles of mathematics, natural sciences, and engineering sciences.
- 3. 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.
- 4. 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.
- 5. Modern Tool Usage:** Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modelling to complex engineering activities with an understanding of the limitations.
- 6. 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.
- 7. 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.
- 8. Ethics:** Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
- 9. Individual and Team Work:** Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

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11. **Project Management and Finance:** Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.

12. **Life-long learning:** Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

Course Outcome Mapping to Program Outcome												
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CE(PC)506-1	2	-	1	1	3	2	2	-	1	-	1	3
CE(PC)506-2	3	1	2	2		2	-	-	-	2	3	1
CE(PC)506-3	2	1	3	1	2	1	-	-	1	1	2	1
CE(PC)506-4	1	2	3	2	1	2	-	-	-	2	2	1

Program Specific Outcome (PSO):

Course name	PSO	Description
Transportation Engineering	PSO1	Graduates will have strong fundamental knowledge in core topics of each subject of the University curriculum of Civil Engineering.
	PSO2	Graduates will have the ability to describe, analyse, and solve problems using mathematics and systematic problem-solving technique for core subjects of Civil Engineering.
	PSO3	Graduates will be able to patronize higher studies and technological practice in Civil Engineering.
	PSO4	Graduates will be able to keep pace with the modern construction techniques and management tools of Civil Engineering, either in industry or through entrepreneurship.

Course Outcome Mapping to Program Specific Outcome				
CO	PSO1	PSO2	PSO3	PSO4
CE(PC)506-1	3	2	2	2
CE(PC)506-2	3	1	3	1
CE(PC)506-3	3	1	3	3
CE(PC)506-4	3	2	3	2

Name of Faculty	Mr. Yuvaraj Mondal
Subject Name	Environmental Engineering Laboratory
Subject Code	CE(PC)595

Course name	CO	Description
Environmental Engineering Laboratory	CE(PC)595.1	Experiment various physical characteristics for given sample of water and wastewater
	CE(PC)595.2	Determine various chemical characteristics for given sample of water and wastewater
	CE(PC)595.3	Examine the bacteriological characteristics for given sample of water and wastewater
	CE(PC)595.4	Examine the suitability of a few treatment options for a given sample of water and wastewater
	CE(PC)595.5	Compare the determined quality parameters with standards to decide on the suitability of use for the tested water and disposal of tested wastewater

Program Outcome (PO):

Engineering Graduates will be able to:

- 1. Engineering Knowledge:** Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
- 2. Problem analysis:** Identify, formulate, research literature, and analyze complex engineering problems reaching substantiated conclusions using the first principles of mathematics, natural sciences, and engineering sciences.
- 3. 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.
- 4. 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.
- 5. 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.
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- 7. 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.
- 8. Ethics:** Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
- 9. Individual and Team Work:** Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

10. **Communication:** Communicate effectively on complex engineering activities with the engineering community and with society at large, such as being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.

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12. **Life-long learning:** Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

Course Outcome Mapping to Program Outcome												
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CE(PC)595.1	1	2	2	-	3	-	-	1	2	-	3	1
CE(PC)595.2	3		-	1	-	3	-	-	3	3	3	-
CE(PC)595.3	-	2	-	1	-	3	-	-	-	-	2	-
CE(PC)595.4	-	3	-	-	-	-	1	-	-	-	2	2
CE(PC)595.5	3	2	3	-	-	-	-	-	3	3	3	2

Program Specific Outcome (PSO) :

Course name	PSO	Description
Environmental Engineering Laboratory	PSO1	Graduates will have strong fundamental knowledge in core topics of each subject of the University curriculum of Civil Engineering.
	PSO2	Graduates will have the ability to describe, analyse, and solve problems using mathematics and systematic problem-solving technique for core subjects of Civil Engineering.
	PSO3	Graduates will be able to patronize higher studies and technological practice in Civil Engineering.
	PSO4	Graduates will be able to keep pace with the modern construction techniques and management tools of Civil Engineering, either in industry or through entrepreneurship.

Course Outcome Mapping to Program Specific Outcome				
CO	PSO1	PSO2	PSO3	PSO4
CE(PC)595.1	1	2	-	3
CE(PC)595.2	1	2	-	3
CE(PC)595.3	1	2	-	-
CE(PC)595.4	-	2	-	2
CE(PC)595.5	1	2	-	3

Name of Faculty	Aniket Bhowmick
Subject Name	Engineering Economics, Estimation & Costing
Subject Code	CE(PC)602

Course name	CO	Description
Engineering Economics, Estimation & Costing	CE(PC)602.1	Have an idea of Economics in general, Economics of India particularly for public sector agencies and private sector businesses
	CE(PC)602.2	Be able to perform and evaluate present worth, future worth and annual worth analyses on one of more economic alternatives.
	CE(PC)602.3	Be able to carry out and evaluate benefit/cost, life cycle and breakeven analyses on one or more economic alternatives.
	CE(PC)602.4	Be able to understand the technical specifications for various works to be performed for a project and how they impact the cost of a structure.
	CE(PC)602.5	Be able to quantify the worth of a structure by evaluating quantities of constituents, derive their cost rates and build up the overall cost of the structure.
	CE(PC)602.6	Be able to understand how competitive bidding works and how to submit a competitive bid proposal.

Program Outcome (PO):

Engineering Graduates will be able to:

- 1. Engineering Knowledge:** Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
- 2. Problem analysis:** Identify, formulate, research literature, and analyze complex engineering problems reaching substantiated conclusions using the first principles of mathematics, natural sciences, and engineering sciences.
- 3. 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.
- 4. 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.
- 5. 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.
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12. **Life-long learning:** Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

Course Outcome Mapping to Program Outcome												
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CE(PC)602.1	2	1		3				1			3	3
CE(PC)602.2	1		1		3	3			2	2		3
CE(PC)602.3		1		2				2			3	2
CE(PC)602.4	2	2		2		3			1			3
CE(PC)602.5		1		2				2			3	
CE(PC)602.6	1	2					2					3

Program Specific Outcome (PSO) :

Course name	PSO	Description
Engineering Economics, Estimation & Costing	PSO1	Graduates will have strong fundamental knowledge in core topics of each subject of the University curriculum of Civil Engineering.
	PSO2	Graduates will have the ability to describe, analyse, and solve problems using mathematics and systematic problem-solving technique for core subjects of Civil Engineering.
	PSO3	Graduates will be able to patronize higher studies and technological practice in Civil Engineering.
	PSO4	Graduates will be able to keep pace with the modern construction techniques and management tools of Civil Engineering, either in industry or through entrepreneurship.

Course Outcome Mapping to Program Specific Outcome				
CO	PSO1	PSO2	PSO3	PSO4
CE(PC)602.1	1	2	-	3
CE(PC)602.2	1	2	-	3
CE(PC)602.3	1	2	-	-
CE(PC)602.4	-	2	-	2
CE(PC)602.5	1	2	-	3
CE(PC)602.6	1	-	-	-

Name of Faculty	Mr. Swarnendu Shekhar Das
Subject Name	Water Resources Engineering
Subject Code	CE(PC)603

Course name	CO	Description
Water Resources Engineering	CE(PC)603.1	Understand the fundamentals of flow in open channels.
	CE(PC)603.2	Understand the concepts of irrigation.
	CE(PC)603.3	Estimate the quantity of water required by different crops in different seasons, and accordingly the irrigation water requirement.
	CE(PC)603.4	Design channels and other irrigation structures required for irrigation, drainage, soil conservation, flood control and other water-management projects.
	CE(PC)603.5	Learn about groundwater resources, aquifers and wells.

Program Outcome (PO):

Engineering Graduates will be able to:

- 1. Engineering Knowledge:** Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
- 2. Problem analysis:** Identify, formulate, research literature, and analyze complex engineering problems reaching substantiated conclusions using the first principles of mathematics, natural sciences, and engineering sciences.
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Course Outcome Mapping to Program Outcome												
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CE(PC)603.1	2	3	-	1	1	-	-		3	-	-	2
CE(PC)603.2	2	-	3	2	1	-	-	1	3	-	3	2
CE(PC)603.3	2	3	-	1	2	1	-	1		-	-	2
CE(PC)603.4	2	3	3	2	2	1	2	-	2	-	-	2
CE(PC)603.5	2	3	3	1	-	-	-	-	--	3	3	2

Program Specific Outcome (PSO) :

Course name	Program Specific Outcome	Description
Water Resources Engineering	PSO1:	Graduates will have strong fundamental knowledge in core topics of each subject of the University curriculum of Civil Engineering.
	PSO2:	Graduates will have the ability to describe, analyse, and solve problems using mathematics and systematic problem-solving technique for core subjects of Civil Engineering.
	PSO3:	Graduates will be able to patronize higher studies and technological practice in Civil Engineering.
	PSO4:	Graduates will be able to keep pace with the modern construction techniques and management tools of Civil Engineering, either in industry or through entrepreneurship.

Course Outcome Mapping to Program Specific Outcome				
CO	PSO1	PSO2	PSO3	PSO4
CE(PC)603-1	3	2	3	2
CE(PC)603-2	2	2	1	2
CE(PC)603-3	2	3	-	1
CE(PC)603-4	2	2	1	2
CE(PC)603-5	-	2	-	1

Name of Faculty	Aniket Bhowmick
Subject Name	Quantity Survey Estimation and Valuation Sessional
Subject Code	CE(PC)695

Course name	CO	Description
Quantity Survey Estimation and Valuation Sessional	CE(PC)695.1	An introduction to quantity surveying
	CE(PC)695.2	The capability to know analysis and schedule of rates
	CE(PC)695.3	The ability to know specification of materials
	CE(PC)695.4	An understanding about specification of works
	CE(PC)695.5	The introduction to valuation

Program Outcome (PO):

Engineering Graduates will be able to:

- 1. Engineering Knowledge:** Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
- 2. Problem analysis:** Identify, formulate, research literature, and analyze complex engineering problems reaching substantiated conclusions using the first principles of mathematics, natural sciences, and engineering sciences.
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- 9. Individual and Team Work:** Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
- 10. Communication:** Communicate effectively on complex engineering activities with the engineering community and with society at large, such as being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.

11. **Project Management and Finance:** Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.

12. **Life-long learning:** Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

Course Outcome Mapping to Program Outcome												
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CE(PC)695.1	2	1		3				1			3	3
CE(PC)695.2	1		1		3	3			2	2		3
CE(PC)695.3		1		2				2			3	2
CE(PC)695.4	2	2		2		3			1			3
CE(PC)695.5		1		2				2			3	

Program Specific Outcome (PSO) :

Course name	PSO	Description
Quantity Survey Estimation and Valuation Sessional	PSO1	Graduates will have strong fundamental knowledge in core topics of each subject of the University curriculum of Civil Engineering.
	PSO2	Graduates will have the ability to describe, analyse, and solve problems using mathematics and systematic problem-solving technique for core subjects of Civil Engineering.
	PSO3	Graduates will be able to patronize higher studies and technological practice in Civil Engineering.
	PSO4	Graduates will be able to keep pace with the modern construction techniques and management tools of Civil Engineering, either in industry or through entrepreneurship.

Course Outcome Mapping to Program Specific Outcome				
CO	PSO1	PSO2	PSO3	PSO4
CE(PC)695.1	1	2	-	3
CE(PC)695.2	1	2	-	3
CE(PC)695.3	1	2	-	-
CE(PC)695.4	-	2	-	2
CE(PC)695.5	1	2	-	3

Regent Education and Research Foundation Group of Institutions

AY – 2022-23

Academic Year	2022 – 23 (EVEN)
Department	EEE
Year / Semester	4th Year/8th Sem
Name of Faculty	Shreyasi Sengupta
Subject Name	Sensors and Transducers
Subject Code	OE-EEE-801D
Target Marks (%)	50%
No. of students achieved target marks	55
Total no. of students attempted	63
Percentage of students above target marks	86.66

Attainment Level (Theory)	Percentage
Level 1	1.58
Level 2	11.11
Level 3	87.3
Attainment of CO	
CO1	3
CO2	3
CO3	3
CO4	3
CO5	3
CO6	3

Course name	CO	Description
OE-EEE-801D	CO1	Explain the basic principle of operation of Transducers and Sensors.
	CO2	Distinguish different sensors and transducers.
	CO3	Identify suitable transducer by comparing different industrial standards and procedures for measurement of physical parameters
	CO4	Estimate the performance of different transducers.
	CO5	Design real life electronics and instrumentation measurement systems.
	CO6	Apply smart sensors, bio-sensors, PLC and Internet of things to different applications.

Direct CO-PO-PSO attainment

Course Outcome Mapping to Program Specific Outcome & Program Specific Outcome

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4
CO1	-	-	-	-	-	2	-	-	-	-	-	-	1	2	1	2
CO2	-	-	-	-	-	-	3	-	-	-	-	-	1	3	1	2
CO3	-	-	-	-	-	1	-	-	-	-	-	-	1	2	1	3
CO4	-	-	-	-	-	2	-	-	-	-	-	-	1	2	2	1
CO5	-	-	-	-	-	-	2	-	-	-	-	-	1	2	1	1
CO6	-	-	-	-	-	2	-	-	-	-	-	-	1	1	1	1
Attainment	0	0	0	0	0	1.166	0.833	0	0	0	0	0	1	2	1	3

1: Slight (Low)

2: Moderate (Medium)

3: Substantial (High)



Regent Education and Research Foundation Group of Institutions

AY – 2022-23

Academic Year	2022 – 23 (EVEN)
Department	EEE
Year / Semester	2nd/ 4th
Name of Faculty	Suman Kr Dey
Subject Name	Electric Machine - I
Subject Code	PC-EEE401
Target Marks (%)	50%
No. of students achieved target marks	31
Total no. of students attempted	56
Percentage of students above target marks	55.36

Attainment Level (Theory)	Percentage
Level 1	14.29
Level 2	30.36
Level 3	55.36
Attainment of CO	
CO1	3
CO2	3
CO3	3
CO4	3
CO5	3
CO6	3

Course name	CO	Description
Electric Machine - I	PC-EEE-401.1	describe the arrangement of winding of AC machines
	PC-EEE-401.2	explain the principle of operation of Induction machines, Synchronous machines and special machines
	PC-EEE-401.3	solve numerical problems of Induction machines, Synchronous machines and Special machines.
	PC-EEE-401.4	estimate the parameters and efficiency of Induction machines and Synchronous machines
	PC-EEE-401.5	determine the characteristics of Induction machines and Synchronous machines.
	PC-EEE-401.6	select appropriate methods for starting, braking and speed control of Induction machines

Course Outcome Mapping to Program Outcome & Program Specific Outcome																
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PS O1	PS O2	PS O3	PSO 4
1	3			2	1								3	3	1	2
2	2		3										3	2	3	3
3	2	3	1										3	2	2	2
4	1	2	3										3	3	2	1
5	2		3										3	2	1	2
6	1	2	3										3	1	2	2
Attainment	1.833	1.167	2.167	0.333	0.167								3	2.4	1.8	2

1: Slight (Low)

2: Moderate (Medium)

3: Substantial (High)

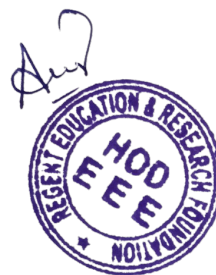


Year / Semester	3rd/ 5th
Name of Faculty	Suman Kr Dey
Subject Name	Electric Machine - I Laboratory
Subject Code	PC-EEE-491
Target Marks (%)	50%
No. of students achieved target marks	54
Total no. of students attempted	56
Percentage of students above target marks	96.43
Attainment Level (Practical)	Percentage
Level 1	3.57
Level 2	0.00
Level 3	96.43
Attainment of CO	
CO1	3
CO2	3
CO3	3
CO4	3
CO5	3
CO6	3

Course name	CO	Description
ELECTRIC MACHINE-I	PC-EEE-491.1	Identify appropriate equipment and instruments for the experiment.
	PC-EEE-491.2	test the instrument for application to the experiment.
	PC-EEE-491.3	construct circuits with appropriate instruments and safety precautions.
	PC-EEE-491.4	validate different characteristics of DC machine, methods of speed control of DC motor and parallel operation of the transformer.
	PC-EEE-491.5	work effectively in a team

Direct CO PO PSO attainment

Course Outcome Mapping to Program Outcome & Program Specific Outcome																
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PS O1	PS O2	PS O3	PSO 4
1	2		3			1							3	3	1	2
2			3	2		1							3	2	3	3
3			3			2							3	2	2	2
4		1		3		2							3	3	2	1
5								2	3		1		3	2	1	2
Attainment	0.4	0.2	1.8	1		1.2		0.2	0.6		0.2		3	2.4	1.8	2



Regent Education and Research Foundation Group of Institutions

AY – 2022-23

Academic Year	2022 – 23 (Even)
Department	EEE
Year / Semester	2nd/ 4th
Name of Faculty	Prodip Mozumdar
Subject Name	Digital Electronics
Subject Code	PC-EEE-402
Target Marks (%)	50%
No. of students achieved target marks	35
Total no. of students attempted	64
Percentage of students above target marks	54.69%

Attainment Level (Theory)	Percentage
Level 1	18.75%
Level 2	26.56%
Level 3	54.69%
Attainment of CO	
CO1	3
CO2	3
CO3	3
CO4	3
CO5	3

Course name	CO	Description
EEE	CO1	Describe the function of different building blocks of digital electronics, semiconductor memories and programmable logic devices
	CO2	Explain the principle of operation of combinational and sequential digital circuits, A/D and D/A converter
	CO3	Solve numerical problems of Boolean algebra, number system, combinational & sequential digital circuits and A/D and D/A converter.
	CO4	Specify applications of combinational and sequential digital circuits.
	CO5	Determine specifications of different digital circuits
	CO6	Design combinational and sequential digital circuits

Direct CO- PO-PSO attainment

Course Outcome Mapping to Program Outcome and PSO																
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	
1	2	2											1	2	2	
2		3	2	2							3		1	2	2	
3	2				1								2	1	2	
4				2		1	2						2	2	3	
5					2	1							1	1	3	
6			2	1									2	2	3	
Attainment	0.6	0.8	0.6	0.8	0.4	0.3	0.3				0.5		1.5	1.6	2.5	

1: Slight (Low)

2: Moderate (Medium)

3: Substantial (High)



Regent Education and Research Foundation Group of Institutions
AY – 2022-23

Academic Year	2022 – 23 (ODD)
Department	EEE
Year / Semester	2nd/4th
Name of Faculty	Mr. Arkadeep Mondal
Subject Name	Electrical & Electronics Measurement
Subject Code	PC-EEE-403
Target Marks (%)	50%
No. of students achieved target marks	27
Total no. of students attempted	56
Percentage of students above target marks	48.21%

Attainment Level (Theory)	Percentage
Level 1	16.07%
Level 2	35.71%
Level 3	48.21%
Attainment of CO	
CO-1	3
CO-2	3
CO-3	3
CO-4	3
CO-5	3
CO-6	3

Course name	CO	Description
Electrical & Electronics Measurement	PC-EEE-403.1	explain the terms accuracy, precision, resolution, speed of response, errors in measurement, loading effect
	PC-EEE-403.2	describe methods of measurement of power, energy by instruments and resistance, capacitance and inductance by bridges and potentiometer
	PC-EEE-403.3	explain the principle of operation of analog meters, instrument transformer, digital multimeter, digital voltmeter, digital frequency meter, signal generator, strain gauge, LVDT and temperature transducers
	PC-EEE-403.4	explain the different building block, principle of operation of oscilloscope and measurement techniques of voltage, current, frequency and phase by oscilloscope
	PC-EEE-403.5	explain the different building block, principle of operation of oscilloscope and measurement techniques of voltage, current, frequency and phase by oscilloscope
	PC-EEE-403.6	specify applications of analog and digital measuring instruments, sensors and transducers

Direct CO PO PSO attainment

Course Outcome Mapping to Program Outcome & Program Specific Outcome																
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4
1	2	2		2	1			2	2				3	3	1	2
2	1	2		2				1	2				3	2	3	3
3	2	2	3					2	2	3			3	2	2	2
4	2	2	1	3	1	2	2	2	2	1			3	3	2	1
5	1	2	2	3				1	2	2			3	2	1	2
6	2		2	2				2		2			3	1	2	2
Attainment	1.67	2	2	2.4	1	2	2	1.67	2	2			3	2.16	1.83	2

1: Slight (Low)

2: Moderate (Medium)

3: Substantial (High)



Year / Semester	2 nd /4 th
Name of Faculty	Mr. Arkadeep Mondal
Subject Name	Electrical & Electronics Measurement Lab
Subject Code	PC-EEE-493
Target Marks (%)	50%
No. of students achieved target marks	54
Total no. of students attempted	56
Percentage of students above target marks	96.43%
Attainment Level (Practical)	Percentage
Level 1	3.57%
Level 2	0.00
Level 3	96.43%
Attainment of CO	
CO1	3
CO2	3
CO3	3
CO4	3
CO5	3

Course name	CO	Description
Electrical & Electronics Measurement Lab (PC-EEE-493)	CO1	Identify appropriate equipment and instruments for the experiment
	CO2	Test the instrument for application to the experiment
	CO3	Construct circuits with appropriate instruments and safety precautions
	CO4	Evaluate and adjust the precision and accuracy of AC energy meter, moving iron and dynamometer type ammeter, voltmeter and wattmeter by potentiometer
	CO5	Measure voltage, current, power, energy, phase, frequency, resistance, inductance, capacitance 6. work effectively in a team

Direct CO PO PSO attainment

Course Outcome Mapping to Program Outcome & Program Specific Outcome																
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4
1	2	2		2	1			2	2				3	3	1	2
2	1	2		2				1	2				3	2	3	3
3	2	2	3					2	2	3			3	2	2	2
4	2	2	1	3	1	2	2	2	2	1			3	3	2	1
5	1	2	2	3				1	2	2			3	2	1	2
Attainment	1.6	2	2	2.5	1	2	2	1.6	2	2			3	2.4	1.8	2

1: Slight (Low)

2: Moderate (Medium)

3: Substantial (High)



Regent Education and Research Foundation Group of Institutions

AY – 2022-23

Academic Year	2022 – 23 (Even)
Department	EEE
Year / Semester	2nd/ 4th
Name of Faculty	Prodip Mozumdar
Subject Name	Digital Electronics Lab
Subject Code	PC-EEE-492
Target Marks (%)	50%
No. of students achieved target marks	63
Total no. of students attempted	64
Percentage of students above target marks	98.44%

Attainment Level (Theory)	Percentage
Level 1	1.56%
Level 2	0%
Level 3	98.44%
Attainment of CO	
CO1	3
CO2	3
CO3	3
CO4	3
CO5	3

Course name	CO	Description
EEE	CO1	Identify appropriate equipment and instrument of the experiments.
	CO2	Test the instruments for application to the experiments
	CO3	Construct decoder, multiplexer, adder and subtractor with appropriate instruments and precaution
	CO4	Realize R-S ,J-K and D Type Flip-Flop, Universal register with gates, multiplexer and Flip-Flops and synchronous and asynchronous up-down counter.
	CO5	Validate the operation of code conversion circuits
	CO6	work effectively in a team

Direct CO- PO-PSO attainment

Course Outcome Mapping to Program Outcome and PSO															
CO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO1 0	PO1 1	PO1 2	PSO 1	PSO 2	PSO 3
1	2	2											1	1	2
2		3	2	2							3		1	2	2
3	2				1								1	2	1
4				2		1	2						1	1	1
5					2	1							1	1	2
6			2	1									1	2	1
Attainment	0.6	0.8	0.6	0.8	0.4	0.3	0.3				0.6		1	1.5	1.5

1: Slight (Low)

2: Moderate (Medium)

3: Substantial (High)



Academic Year	2022 – 23 (EVEN)
Department	EEE
Year / Semester	3 RD / 6TH
Name of Faculty	SANDEEP CHAKRABORTY
Subject Name	POWER SYSTEM-II
Subject Code	PC-EEE-601
Target Marks (%)	50%
No. of students achieved target marks	26
Total no. of students attempted	55
Percentage of students above target marks	47.27

Attainment Level (Theory)	Percentage
Level 1	20.00
Level 2	32.73
Level 3	47.27
Attainment of CO	
CO1	3
CO2	3
CO3	3
CO4	3
CO5	3
CO6	3
CO7	3

Course name	CO	Description
POWER SYSTEM-II	CO1	Represent power system components in line diagrams
	CO2	determine the location distribution substation
	CO3	Determine the performance of power system with the help of load flow studies.
	CO4	Analyses faults in Electrical systems
	CO5	Determine the stability of Power system.
	CO6	Explain principle of operation of different power system protection equipment's.
	CO7	Solve numerical problems related to representation, load flow, faults, stability and protection of

Direct CO-PO-PSO attainment

Course Outcome Mapping to Program Outcome & Program Specific Outcome																
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4
CO1	2												2	1	3	2
CO2						2							1	2	2	3
CO3			3										3	2	3	1
CO4			3										2	3	1	2
CO5							2						3	1	2	3
CO6		3											2	1	2	3
CO7	3															
Attainment	0.7	0.4	0.85			0.28	0.28						1.86	1.43	1.86	2.00



Year / Semester	3 RD / 6 TH
Name of Faculty	SANDEEP CHAKRABORTY
Subject Name	POWER SYSTEM-II LAB
Subject Code	PC-EEE-691
Target Marks (%)	50%
No. of students achieved target marks	54
Total no. of students attempted	55
Percentage of students above target marks	98.18
Attainment Level (Theory Sessional)	Percentage
Level 1	1.82
Level 2	0.00
Level 3	98.18
Attainment of CO	
CO1	3
CO2	3
CO3	3
CO4	3
CO5	3
CO6	3
CO7	3

Course name	CO	Description
POWER ELECTRONICS LABORATORY	CO1	Identify appropriate equipment and instruments for the experiment.
	CO2	Test the instruments for application to the experiment
	CO3	Construct circuits with appropriate instruments and safety precautions.
	CO4	validate the characteristics of under voltage relay, over current relay, earth fault relay, on load time delay relay, off load time delay relay, CT and PT.
	CO5	Validate the protection scheme of Generator, Motor and feeder.
	CO6	Apply software tools to find bus voltage, currents and power flows throughout the electrical system.
	CO7	Work effectively in a team.

Direct CO-PO-PSO attainment

Course Outcome Mapping to Program Outcome & Program Specific Outcome																
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4
1	1												2	1	3	2
2						3							1	2	2	3
3			2										3	2	3	1
4			3										2	3	1	2
5							3						3	1	2	3
6		2											2	1	2	3
7	3															
Attainment	0.57	0.28	0.7			0.4	0.4						1.85	1.42	1.85	1.00

1: Slight (Low)

2: Moderate (Medium)

3: Substantial (High)



Regent Education and Research Foundation Group of Institutions

AY – 2022-23

Academic Year	2022 – 23 (Even)
Department	EEE
Year / Semester	4th/ 8th
Name of Faculty	Prodip Mozumdar
Subject Name	Digital Signal Processing
Subject Code	PC-EEE-801
Target Marks (%)	50%
No. of students achieved target marks	36
Total no. of students attempted	60
Percentage of students above target marks	60%

Attainment Level (Theory)	Percentage
Level 1	10%
Level 2	30%
Level 3	60%
Attainment of CO	
CO1	3
CO2	3
CO3	3
CO4	3
CO5	3

Course name	CO	Description
EEE	CO1	Represent signals mathematically in continuous and discrete-time and in the frequency domain
	CO2	Analyse discrete-time systems using z-transform
	CO3	Explain the Discrete-Fourier Transform (DFT) and the FFT algorithms
	CO4	Design digital filters for various applications
	CO5	Apply digital signal processing for the analysis of real-life signals

Direct CO- PO-PSO attainment

Course Outcome Mapping to Program Outcome and PSO																
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4
1	2	2			2								1	2	1	
2		3	2	2		1							1	2	1	
3	2	1			1								1	2	1	
4			1	3		1	2						2	2	1	
5	1				2	1							2	2	1	
6		1	2	1									1	2	1	
Attainment	0.8	1.2	0.8	1	0.8	0.5	0.3						1.3	2	1	

1: Slight (Low)

2: Moderate (Medium)

3: Substantial (High)



Regent Education and Research Foundation Group of Institutions

AY – 2022-23

Academic Year	2022 – 23 (Even)
Department	EEE
Year / Semester	4th/ 8th
Name of Faculty	Prodip Mozumdar
Subject Name	Digital Signal Processing
Subject Code	PC-EEE-891
Target Marks (%)	50%
No. of students achieved target marks	61
Total no. of students attempted	63
Percentage of students above target marks	96.83%

Attainment Level (Theory)	Percentage
Level 1	3.17%
Level 2	0%
Level 3	96.83%
Attainment of CO	
CO1	3
CO2	3
CO3	3
CO4	3
CO5	3

Course name	CO	Description
EEE	CO1	Identify appropriate simulator / equipments and instruments for the experiments
	CO2	Test the simulator / instruments for application to the experiment
	CO3	Construct algorithms /circuits with appropriate simulator/ instruments and safety precaution
	CO4	Verify different algorithms and operation in the laboratory
	CO5	Analyse experimental data obtained in the laboratory
	CO6	Design combinational and sequential digital circuits

Direct CO- PO-PSO attainment

Course Outcome Mapping to Program Outcome and PSO																
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4
1	2	2			1	1							1	2	1	
2		3	2	2									1	2	1	
3	2	1	1		1								1	2	2	
4				2		1	2						1	2	2	
5		2			2	1							1	2	1	
6			2	1									1	2	2	
Attainment	0.6	1	0.8	0.8	0.6	0.5	0.3						1	2	1.5	

1: Slight (Low)

2: Moderate (Medium)

3: Substantial (High)



Year / Semester	4 TH /8 TH
Name of Faculty	MRINMOY DAS
Subject Name	UTILIZATION OF ELECTRIC POWER
Subject Code	PE-EEE 801A
Target Marks (%)	50%
No. of students achieved target marks	55
Total no. of students attempted	63
Percentage of students above target marks	87.30
Attainment Level (Practical)	Percentage
Level 1	4.76
Level 2	7.94
Level 3	87.30
Attainment of CO	
CO1	3
CO2	3
CO3	3
CO4	3
CO5	3

Course name	CO	Description
UTILIZATION OF ELECTRIC POWER	PE-EEE 801A.1	Explain the fundamentals of illumination and different lighting schemes
	PE-EEE 801A.2	Explain the fundamental of Electrolytic processes, Electric heating and Welding
	PE-EEE 801A.3	Able to select appropriate lighting, heating and welding techniques for specific applications
	PE-EEE 801A.4	Apply different electrolysis process for different applications
	PE-EEE 801A.5	Explain the principle of different aspect of Electric traction and control of traction motor

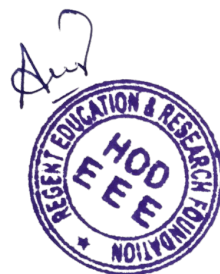
Direct CO-PO-PSO attainment

Course Outcome Mapping to Program Outcome & Program Specific Outcomes																
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4
PE-EEE 801A.1	3				3						1	2	3		1	2
PE-EEE 801A.2	3	2			3		2						3		1	1
PE-EEE 801A.3	3	2		2	2	3				1	2	2		3		1
PE-EEE 801A.4				3	2	1				2	2	1		3		1
PE-EEE 801A.5	3			3	3	2							1	1		2
Attainment	2.40	0.80	0.00	1.60	2.60	1.20	0.40	0.00	0.00	0.60	1.00	1.00	1.40	1.40	0.40	1.40

1: Slight (Low)

2: Moderate (Medium)

3: Substantial (High)



Regent Education and Research Foundation Group of Institutions

AY – 2022-23

Academic Year	2022 – 23 (EVEN)
Department	EE
Year / Semester	4th Year/8th Sem
Name of Faculty	Shreyasi Sengupta
Subject Name	Sensors and Transducers
Subject Code	OE-EE-801D
Target Marks (%)	50%
No. of students achieved target marks	52
Total no. of students attempted	60
Percentage of students above target marks	86.66

Attainment Level (Theory)	Percentage
Level 1	1.66
Level 2	11.66
Level 3	86.66
Attainment of CO	
CO1	3
CO2	3
CO3	3
CO4	3
CO5	3
CO6	3

Course name	CO	Description
OE-EE-801D	CO1	Explain the basic principle of operation of Transducers and Sensors.
	CO2	Distinguish different sensors and transducers.
	CO3	Identify suitable transducer by comparing different industrial standards and procedures for measurement of physical parameters
	CO4	Estimate the performance of different transducers.
	CO5	Design real life electronics and instrumentation measurement systems.
	CO6	Apply smart sensors, bio-sensors, PLC and Internet of things to different applications.

Direct CO-PO-PSO attainment

Course Outcome Mapping to Program Specific Outcome & Program Specific Outcome															
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	-	-	-	-	-	2	-	-	-	-	-	-	1	2	1
CO2	-	-	-	-	-	-	3	-	-	-	-	-	1	3	1
CO3	-	-	-	-	-	1	-	-	-	-	-	-	1	2	1
CO4	-	-	-	-	-	2	-	-	-	-	-	-	1	2	2
CO5	-	-	-	-	-	-	2	-	-	-	-	-	1	2	1
CO6	-	-	-	-	-	2	-	-	-	-	-	-	1	1	1
Attainment	0	0	0	0	0	1.166	0.833	0	0	0	0	0	1	2	1

1: Slight (Low)

2: Moderate (Medium)

3: Substantial (High)



Regent Education and Research Foundation Group of Institutions

AY – 2022-23

Academic Year	2022 – 23 (ODD)
Department	EEE
Year / Semester	3rd Year/6th Sem
Name of Faculty	PRABAL KUMAR BASAK
Subject Name	MICROPROCESSOR & MICRO CONTROLLER
Subject Code	PE-EEE-602
Target Marks (%)	50%
No. of students achieved target marks	10
Total no. of students attempted	55
Percentage of students above target marks	18.18

Attainment Level (Theory)	Percentage
Level 1	50.91
Level 2	30.91
Level 3	18.18
Attainment of CO	
CO1	1
CO2	1
CO3	1
CO4	1
CO5	1
CO6	1

Course name	CO	Description
MICRO PROCESSOR & MICRO CONTROLLER	EEE602.1	Explain the architecture of 8086 and 8051
	EEE602.2	Do assembly language programming of 8086, 8051
	EEE602.3	Interface different peripheral with 8086 and 8051
	EEE602.4	Develop micro processor/ microcontroller based systems
	EEE602.5	Compare microprocessor, microcontroller, PIC and ARM processors

Direct CO-PO-PSO attainment

Course Outcome Mapping to Program Outcome & Program Specific Outcome

CO	PO 1	PO 2	PO 3	PO 4	PO 5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4
1	1	2	2	2	3	2			2		1		3	3	1	2
2	2	3	1	3	1			2					2	1	3	1
3	3	1	3	2	2	3				3		2	1	2	1	2
4	2	2	2	1	1	2			1		3		2	3	2	2
5	1	3	1	2	2								3	2	1	1
Attainment	2.4	2.2	1.8	2	1.8	1.4		0.4	0.6	0.6	0.8	0.4	2.2	2.2	1.6	1.6

1: Slight (Low)

2: Moderate (Medium)

3: Substantial (High)



Regent Education and Research Foundation Group of Institutions

AY – 2022-23

Academic Year	2022 – 23 (EVEN)
Department	EEE
Year / Semester	3rd Year/6th Sem
Name of Faculty	PRABAL KUMAR BASAK
Subject Name	MICROPROCESSOR & MICRO CONTROLLER LAB
Subject Code	PE-EEE-692
Target Marks (%)	50%
No. of students achieved target marks	54
Total no. of students attempted	55
Percentage of students above target marks	98.18

Attainment Level (Theory)	Percentage
Level 1	1.82
Level 2	0
Level 3	98.18
Attainment of CO	
CO1	3
CO2	3
CO3	3
CO4	3
CO5	3
CO6	3

Course name	CO	Description
MICROPROCESSOR & MICRO CONTROLLER LAB	PC-EEE-692.1	Identify appropriate equipment and instruments for the experiment.
	PC-EEE-692.2	Test the instrument for application to the experiment.
	PC-EEE-692.3	Construct circuits with appropriate instruments and safety precautions.
	PC-EEE-692.4	Program 8086 for arithmetic operation, sorting of array, searching for a number in a string and string manipulation.
	PC-EEE-692.5	Interface ADC/DAC, 8255, 8251 to 8086 and LCD, keyboard to 8051
	PC-EEE-692.6	Program 8051 using arithmetic, logical and bit manipulation instructions of 8051.
	PC-EEE-692.7	Work effectively in a team

Direct CO-PO-PSO attainment

Course Outcome Mapping to Program Outcome & Program Specific Outcome

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4
1			1		2								3	3	1	2
2		3	3		2								2	1	3	1
3			1										1	2	1	2
4	3	3			2								2	3	2	1
5	2	3	1	3									2	1	3	1
6		3	1	3									3	2	2	3
7	2	2		1	1								2	1	3	3
Attainment	1	2	1	1	1								2.14	1.86	2.14	1.86

1: Slight (Low)
(High)

2: Moderate (Medium)

3: Substantial

Sanjib Pal



Regent Education and Research Foundation Group of Institutions

AY – 2022-23

Academic Year	2022 – 23 (Even)
Department	EE
Year / Semester	3rd/ 6th
Name of Faculty	Prodip Mozumdar
Subject Name	Digital Signal Processing
Subject Code	OE-EE-601A
Target Marks (%)	50%
No. of students achieved target marks	15
Total no. of students attempted	61
Percentage of students above target marks	24.59%

Attainment Level (Theory)	Percentage
Level 1	45.9%
Level 2	29.51%
Level 3	24.59%
Attainment of CO	
CO1	1
CO2	1
CO3	1
CO4	1
CO5	1

Course name	CO	Description
EE	CO1	Represent signals mathematically in continuous and discrete-time and in the frequency domain
	CO2	Analyse discrete-time systems using z-transform
	CO3	Explain the Discrete-Fourier Transform (DFT) and the FFT algorithms
	CO4	Design digital filters for various applications
	CO5	Apply digital signal processing for the analysis of real-life signals

Direct CO- PO-PSO attainment

Course Outcome Mapping to Program Outcome and PSO															
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
1	2	2		1									2	1	1
2		3	2	2									2	1	1
3	2		2				2						2	1	1
4				2		2	2						2	1	2
5	1	3			2	1							2	1	2
6			2	1									2	1	2
Attainment	0.8	1.3	1	1	0.3	0.5	0.6						2	1	1.5

1: Slight (Low)

2: Moderate (Medium)

3: Substantial (High)



Regent Education and Research Foundation Group of Institutions

AY – 2022-23

Academic Year	2022 – 23 (Even)
Department	EE
Year / Semester	2nd/ 4th
Name of Faculty	Prodip Mozumdar
Subject Name	Digital Electronics
Subject Code	PC-EE-402
Target Marks (%)	50%
No. of students achieved target marks	35
Total no. of students attempted	64
Percentage of students above target marks	54.69%

Attainment Level (Theory)	Percentage
Level 1	18.75%
Level 2	26.56%
Level 3	54.69%
Attainment of CO	
CO1	3
CO2	3
CO3	3
CO4	3
CO5	3

Course name	CO	Description
EE	CO1	Describe the function of different building blocks of digital electronics, semiconductor memories and programmable logic devices
	CO2	Explain the principle of operation of combinational and sequential digital circuits, A/D and D/A converter
	CO3	Solve numerical problems of Boolean algebra, number system, combinational & sequential digital circuits and A/D and D/A converter.
	CO4	Specify applications of combinational and sequential digital circuits.
	CO5	Determine specifications of different digital circuits
	CO6	Design combinational and sequential digital circuits

Direct CO- PO-PSO attainment

Course Outcome Mapping to Program Outcome and PSO															
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
1	2	2											1	2	2
2		3	2	2							3		1	2	2
3	2				1								2	1	2
4				2		1	2						2	2	3
5					2	1							1	1	3
6			2	1									2	2	3
Attainment	0.6	0.8	0.6	0.8	0.4	0.3	0.3				0.5		1.5	1.6	2.5

1: Slight (Low)

2: Moderate (Medium)

3: Substantial (High)



Regent Education and Research Foundation Group of Institutions
AY – 2022-23

Academic Year	2022 – 23 (ODD)
Department	EE
Year / Semester	2nd/4th
Name of Faculty	Mr. Sanjib Pal
Subject Name	Electrical & Electronics Measurement
Subject Code	PC-EE-403
Target Marks (%)	50%
No. of students achieved target marks	41
Total no. of students attempted	64
Percentage of students above target marks	64.06%

Attainment Level (Theory)	Percentage
Level 1	9.38
Level 2	0.00
Level 3	64.06
Attainment of CO	
CO-1	3
CO-2	3
CO-3	3
CO-4	3
CO-5	3
CO-6	3

Course name	CO	Description
Electrical & Electronics Measurement	PC-EE-403.1	explain the terms accuracy, precision, resolution, speed of response, errors in measurement, loading effect
	PC-EE-403.2	describe methods of measurement of power, energy by instruments and resistance, capacitance and inductance by bridges and potentiometer
	PC-EE-403.3	explain the principle of operation of analog meters, instrument transformer, digital multimeter, digital voltmeter, digital frequency meter, signal generator, strain gauge, LVDT and temperature transducers
	PC-EE-403.4	explain the different building block, principle of operation of oscilloscope and measurement techniques of voltage, current, frequency and phase by oscilloscope
	PC-EE-403.5	explain the different building block, principle of operation of oscilloscope and measurement techniques of voltage, current, frequency and phase by oscilloscope
	PC-EE-403.6	specify applications of analog and digital measuring instruments, sensors and transducers

Direct CO PO PSO attainment

Course Outcome Mapping to Program Outcome & Program Specific Outcome															
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
1	2	2		2	1			2	2				3	3	1
2	1	2		2				1	2				3	2	3
3	2	2	3					2	2	3			3	2	2
4	2	2	1	3	1	2	2	2	2	1			3	3	2
5	1	2	2	3				1	2	2			3	2	1
6	2		2	2				2		2			3	1	2
Attainment	1.67	2	2	2.4	1	2	2	1.67	2	2			3	2.16	1.83

1: Slight (Low)

2: Moderate (Medium)

3: Substantial (High)



Year / Semester	2 nd /4 th
Name of Faculty	Mr. Sanjib Pal
Subject Name	Electrical & Electronics Measurement Lab
Subject Code	PC-EE-493
Target Marks (%)	50%
No. of students achieved target marks	63
Total no. of students attempted	64
Percentage of students above target marks	98.44%
Attainment Level (Practical)	Percentage
Level 1	1.56%
Level 2	0.00
Level 3	98.44%
Attainment of CO	
CO1	3
CO2	3
CO3	3
CO4	3
CO5	3

Course name	CO	Description
Electrical & Electronics Measurement Lab	CO1	Identify appropriate equipment and instruments for the experiment
	CO2	Test the instrument for application to the experiment
	CO3	Construct circuits with appropriate instruments and safety precautions
	CO4	Evaluate and adjust the precision and accuracy of AC energy meter, moving iron and dynamometer type ammeter, voltmeter and wattmeter by potentiometer
	CO5	Measure voltage, current, power, energy, phase, frequency, resistance, inductance, capacitance 6. work effectively in a team

Direct CO PO PSO attainment

Course Outcome Mapping to Program Outcome & Program Specific Outcome															
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
1	2	2		2	1			2	2				3	3	1
2	1	2		2				1	2				3	2	3
3	2	2	3					2	2	3			3	2	2
4	2	2	1	3	1	2	2	2	2	1			3	3	2
5	1	2	2	3				1	2	2			3	2	1
6	2		2	2				2		2			3		2
Attainment	1.67	2	2	2.4	1	2	2	1.67	2	2			2.5	2.5	1.67

1: Slight (Low)

2: Moderate (Medium)

3: Substantial (High)



Regent Education and Research Foundation Group of Institutions

AY – 2022-23

Academic Year	2022 – 23 (Even)
Department	EE
Year / Semester	2nd/ 4th
Name of Faculty	Prodip Mozumdar
Subject Name	Digital Electronics Lab
Subject Code	PC-EE-492
Target Marks (%)	50%
No. of students achieved target marks	63
Total no. of students attempted	64
Percentage of students above target marks	98.44%

Attainment Level (Theory)	Percentage
Level 1	1.56%
Level 2	0%
Level 3	98.44%
Attainment of CO	
CO1	3
CO2	3
CO3	3
CO4	3
CO5	3

Course name	CO	Description
EE	CO1	Identify appropriate equipment and instrument of the experiments.
	CO2	Test the instruments for application to the experiments
	CO3	Construct decoder, multiplexer, adder and subtractor with appropriate instruments and precaution
	CO4	Realize R-S ,J-K and D Type Flip-Flop, Universal register with gates, multiplexer and Flip-Flops and synchronous and asynchronous up-down counter.
	CO5	Validate the operation of code conversion circuits
	CO6	work effectively in a team

Direct CO- PO-PSO attainment

Course Outcome Mapping to Program Outcome and PSO															
CO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO1 0	PO1 1	PO1 2	PSO 1	PSO 2	PSO 3
1	2	2											1	1	2
2		3	2	2							3		1	2	2
3	2				1								1	2	1
4				2		1	2						1	1	1
5					2	1							1	1	2
6			2	1									1	2	1
Attainment	0.6	0.8	0.6	0.8	0.4	0.3	0.3				0.6		1	1.5	1.5

1: Slight (Low)

2: Moderate (Medium)

3: Substantial (High)



Academic Year	2022 – 23 (EVEN)
Name of Faculty	MRINMOY DAS
Subject Name	UTILIZATION OF ELECTRIC POWER
Subject Code	PC-EE 801
Target Marks (%)	50%
No. of students achieved target marks	36
Total no. of students attempted	60
Percentage of students above target marks	60
Subject Name	UTILIZATION OF ELECTRIC POWER
Subject Code	PC-EE 801

Attainment Level (Theory)	Percentage
Level 1	10.00
Level 2	30.00
Level 3	60.00
Attainment of CO	
CO1	3
CO2	3
CO3	3
CO4	3
CO5	3
CO6	3

Course name	CO	Description
UTILIZATION OF ELECTRIC POWER	PC-EE 801.1	Explain the fundamentals of illumination and different lighting schemes
	PC-EE 801.2	Explain the fundamental of Electrolytic processes, Electric heating and Welding
	PC-EE 801.3	Able to select appropriate lighting, heating and welding techniques for specific applications
	PC-EE 801.4	Apply different electrolysis process for different applications
	PC-EE 801.5	Explain the principle of different aspect of Electric traction and control of traction motor
	PC-EE 801.1	Explain the fundamentals of illumination and different lighting schemes

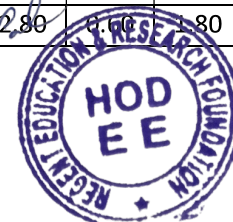
Direct CO-PO-PSO attainment

Course Outcome Mapping to Program Outcome & Program Specific Outcomes															
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
PC-EE 801.1	3				3						1	2	3		2
PC-EE 801.2	3	2			3		2						3	1	2
PC-EE 801.3	3	2		2	2	3				1	2	2	3	2	3
PC-EE 801.4				3	2	1				2	2	1	2		
PC-EE 801.5	3			3	3	2							3		2
Attainment	2.40	0.80	0.00	1.60	2.60	1.20	0.40	0.00	0.00	0.60	1.00	1.00	2.80	1.80	1.80

1: Slight (Low)

2: Moderate (Medium)

3: Substantial (High)



Regent Education and Research Foundation Group of Institutions

AY – 2022-23

Academic Year	2022 – 23 (EVEN)
Year / Semester	3rdYr/6th SEM
Name of Faculty	ENAKSHMI NANDI
Subject Name	MICROPROCESSOR & MICRO CONTROLLER
Subject Code	PC-EE-602
Target Marks (%)	50%
No. of students achieved target marks	19
Total no. of students attempted	61
Percentage of students above target marks	31.15
Attainment Level (Theory Sessional)	Percentage
Level 1	27.87
Level 2	40.98
Level 3	31.15
Attainment of CO	
CO1	2
CO2	2
CO3	2
CO4	2
CO5	2

Course name	CO	Description
MICROPROCESSOR & MICRO CONTROLLER	PC-EE-602.1	Explain the architecture of 8086 and 8051
	PC-EE-602.2	Do assembly language programming of 8086, 8051
	PC-EE-602.3	Interface different peripheral with 8086 and 8051
	PC-EE-602.4	Develop microprocessor/ microcontroller-based system
	PC-EE-602.5	Compare microprocessor, microcontroller, PIC and ARM processors

Direct C0-PO-PSO attainment

Course Outcome Mapping to Program Outcome & Program Specific Outcome															
CO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO1 0	PO1 1	PO1 2	PSO 1	PSO 2	PSO 3
1	1	1	3	3									2	3	1
2	3	3	3	3		2							1	2	3
3		3	3	3		1							3	3	1
4		3	3	3	3								2	1	2
5	1		3	3	2	2							2	2	1
Attainment	1	2	3	3	1	1							2	2.2	1.6

1: Slight (Low)

2: Moderate (Medium)

3: Substantial (High)



Regent Education and Research Foundation Group of Institutions

AY – 2022-23

Academic Year	2022 – 23 (EVEN)
Department	EE
Year / Semester	3rd Year/6th Sem
Name of Faculty	ENAKSHMI NANDI
Subject Name	MICROPROCESSOR & MICRO CONTROLLER LAB
Subject Code	PE-EE-692
Target Marks (%)	50%
No. of students achieved target marks	58
Total no. of students attempted	61
Percentage of students above target marks	95.08

Attainment Level (Theory)	Percentage
Level 1	4.92
Level 2	0
Level 3	95.08
Attainment of CO	
CO1	3
CO2	3
CO3	3
CO4	3
CO5	3
CO6	3

Course name	CO	Description
MICROPROCESSOR & MICRO CONTROLLER LAB	PC-EE-692.1	Identify appropriate equipment and instruments for the experiment.
	PC-EE-692.2	Test the instrument for application to the experiment.
	PC-EE-692.3	Construct circuits with appropriate instruments and safety precautions.
	PC-EE-692.4	Program 8086 for arithmetic operation, sorting of array, searching for a number in a string and string manipulation.
	PC-EE-692.5	Interface ADC/DAC, 8255, 8251 to 8086 and LCD, keyboard to 8051
	PC-EE-692.6	Program 8051 using arithmetic, logical and bit manipulation instructions of 8051.
	PC-EE-692.7	Work effectively in a team

Direct CO-PO-PSO attainment

Course Outcome Mapping to Program Outcome & Program Specific Outcome															
CO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO1 0	PO1 1	PO1 2	PSO 1	PSO 2	PSO 3
1			1		2								2	3	1
2		3	3		2								1	2	3
3			1										3	2	3
4	3	3			2								2	1	2
5	2	3	1	3									3	2	1
6		3	1	3									2	1	2
7	2	2		1	1								1	3	2
Attainment	1	2	1	1	1								2	2	2

1: Slight (Low)

2: Moderate (Medium)

3: Substantial (High)



Regent Education and Research Foundation Group of Institutions

AY – 2022-23

Academic Year	2022 – 23 (EVEN)
Department	EE
Year / Semester	3rd /6th
Name of Faculty	Ashmita Guha Chowdhury
Subject Name	Digital Control System
Subject Code	PE-EE-601A
Target Marks (%)	50%
No. of students achieved target marks	10
Total no. of students attempted	61
Percentage of students above target marks	16.39

Attainment Level (Theory)	Percentage
Level 1	40.98%
Level 2	42.62%
Level 3	16.39%
Attainment of CO	
CO1	2
CO2	2
CO3	2
CO4	2
CO5	2
CO6	2

Course name	CO	Description
	CO1	explain the principle of sampling and reconstruction of analog signal.
	CO2	perform Z-transformation and inverse Z-transformation of systems.
	CO3	analyze and design digital control systems.
	CO4	design compensators for digital control system to achieve desired specifications
	CO5	represent digital control systems using state space models.
	CO6	Analyze and design of discrete time control systems using z transform

Direct CO-PO & PSO attainment

Course Outcome Mapping to Program Outcome & Program specific outcome															
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
1				1									2	1	2
2	2	2											2	3	1
3			2	1									3	2	3
4			1				2						3	2	2
5	2	1		2									2	1	2
6	2	2		2									1	2	3
Attainmnt	1	0.8	0.5	1			2						2.1	1.8	2.1

1: Slight (Low)

2: Moderate (Medium)

3: Substantial (High)



Regent Education and Research Foundation Group of Institutions

AY – 2022-23

Academic Year	2022 – 23 (EVEN)
Department	EE
Year / Semester	2nd/ 4th
Name of Faculty	Bidyut Kumar Ghosh
Subject Name	Electric Machine - I
Subject Code	PC-EE 401
Target Marks (%)	50%
No. of students achieved target marks	56
Total no. of students attempted	64
Percentage of students above target marks	87.50

Attainment Level (Theory)	Percentage
Level 1	0.00
Level 2	12.50
Level 3	87.50
Attainment of CO	
CO1	3
CO2	3
CO3	3
CO4	3
CO5	3
CO6	3

Course name	CO	Description
Electric Machine - I	PC-EE-401.1	describe the arrangement of winding of AC machines
	PC-EE-401.2	explain the principle of operation of Induction machines, Synchronous machines and special machines
	PC-EEE-401.3	solve numerical problems of Induction machines, Synchronous machines and Special machines.
	PC-EE-401.4	estimate the parameters and efficiency of Induction machines and Synchronous machines
	PC-EE-401.5	determine the characteristics of Induction machines and Synchronous machines.
	PC-EE-401.6	select appropriate methods for starting, braking and speed control of Induction machines

Course Outcome Mapping to Program Outcome & Program Specific Outcome

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
1	3			2	1								3	3	1
2	2		3										3	2	3
3	2	3	1										3	2	2
4	1	2	3										3	3	2
5	2		3										3	2	1
6	1	2	3										3	1	2
Attainment	1.833	1.167	2.167	0.333	0.167								3	2.4	1.8

1: Slight (Low)

2: Moderate (Medium)

3: Substantial (High)



Year / Semester	3rd/ 5th
Name of Faculty	Bidyut Kumar Ghosh
Subject Name	Electric Machine – I Laboratory
Subject Code	PC-EE 401
Target Marks (%)	50%
No. of students achieved target marks	63
Total no. of students attempted	64
Percentage of students above target marks	98.44
Attainment Level (Practical)	Percentage
Level 1	1.56
Level 2	0.00
Level 3	98.44
Attainment of CO	
CO1	3
CO2	3
CO3	3
CO4	3
CO5	3
CO6	3

Course name	CO	Description
ELECTRIC MACHINE-I	PC-EE-491.1	Identify appropriate equipment and instruments for the experiment.
	PC-EE-491.2	test the instrument for application to the experiment.
	PC-EE-491.3	construct circuits with appropriate instruments and safety precautions.
	PC-EE-491.4	validate different characteristics of DC machine, methods of speed control of DC motor and parallel operation of the transformer.
	PC-EE-491.5	work effectively in a team

Direct CO PO PSO attainment

Course Outcome Mapping to Program Outcome & Program Specific Outcome															
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
1	2		3			1							3	3	1
2			3	2		1							3	2	3
3			3			2							3	2	2
4		1		3		2							3	3	2
5								2	3		1		3	2	1
Attainment	0.4	0.2	1.8	1		1.2		0.2	0.6		0.2		3	2.4	1.8

Sanjib Pal



Regent Education and Research Foundation Group of Institutions

AY – 2022-23

Academic Year	2022 – 23 (ODD)
Department	CSE
Year / Semester	2nd/3rd
Name of Faculty	Mr. Amartya Ghosh
Subject Name	Data Structure & Algorithms
Subject Code	PCC-CS301
Target Marks (%)	50%
No. of students achieved target marks	45
Total no. of students attempted	63
Percentage of students above target marks	71.42

Attainment Level (Theory)	Percentage
Level 1	3.17
Level 2	25.39
Level 3	71.42
Attainment of CO	
CO1	3
CO2	3
CO3	3
CO4	3
CO5	3
CO6	3

Course name	CO	Description
Data Structure & Algorithms	PCC-CS301.CO1	Construct algorithms from problems.
	PCC-CS301.CO2	Understand the basics of abstract datatypes.
	PCC-CS301.CO3	Categorize the property of linear and non-linear data structures.
	PCC-CS301.CO4	Learn the use of Tree and graph
	PCC-CS301.CO5	Compare different shorting and searching methods.
	PCC-CS301.CO6	Learn the use of hashing.

Direct PO attainment

Data Structure and Algorithms Course Outcome mapping to Program Outcome														
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
PCCCS301.1	3	3	3	3	2	1	1	1	1	1	2	2	3	3
PCCCS301.2	3	3	3	3	-	1	1	1	1	1	2	2	3	3
PCCCS301.3	3	3	3	3	-	-	-	-	1	1	-	2	2	2
PCCCS301.4	3	3	3	3	-	-	-	-	1	1	-	2	2	2
PCCCS301.5	3	3	3	3	-	-	-	-	1	1	-	2	2	2
Attainment	3	3	3	3	2	1	1	1	1	1	2	2	2.33	2.33

Year / Semester	2nd/3rd
Name of Faculty	Hari Narayan Khan
Subject Name	Analog and Digital Electronics
Subject Code	ESC301
Target Marks (%)	50%
No. of students achieved target marks	40
Total no. of students attempted	63
Percentage of students above target marks	63.49206
Attainment Level (Practical)	Percentage
Level 1	7.936508
Level 2	28.57143
Level 3	63.49206
Attainment of CO	
CO1	3
CO2	3
CO3	3
CO4	3
CO5	3
CO6	3

Course Name	Course Outcomes	Details
Analog and Digital Electronics	ESC 301.CO1	Explain Different Classes of Amplifiers - (Class-A, B, AB and C, power, efficiency; Summarize the basic concepts of Feedback and Oscillation. Demonstrate Phase Shift, Wein Bridge oscillators Astable & Monostable Multivibrators; Schmitt Trigger circuits, 555 Timer.
	ESC 301.CO2	Define the basic concepts of Boolean algebra, binary number system.1's and 2's complement methods, Binary arithmetic. Define the representation in SOP and POS forms;
	ESC 301.CO3	Demonstrate the concept of Minimization of logic using algebraic and k-map. Build various combinational circuits like Adder and Subtractor circuits, Encoder, Decoder, Comparator, Multiplexer, De-Multiplexer and Parity Generator.
	ESC 301.CO4	Explain Sequential Circuits - Basic Flip-flop & Latch, Flip-flops -SR,JK, D, T and JK Master-slave Flip Flops.
	ESC 301.CO5	Build Registers (SISO, SIPO, PIPO, PISO) Ring counter, Johnsoncounter, Synchronous and Asynchronous counters, Mod N Counter.
	ESC 301.CO6	Explain A/D and D/A conversion techniques – Basic concepts(D/A :R-2-R only A/D: successive approximation). Explain Logic families- TTL, ECL, MOS and CMOS - basic concepts.

Direct PO attainment

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
ESC 301.CO1	3	-	-	-	-	-	-	-	-	-	-	3	3	3
ESC 301.CO2	3	3	2	2	-	-	-	-	-	1	-	3	3	3
ESC 301.CO3	3	2	2	2	1	-	-	-	-	1	-	3	3	3
ESC 301.CO4	3	3	3	2	3	-	-	-	-	1	1	3	3	3
ESC 301.CO5	3	3	2	2	2	-	-	-	-	-	2	3	3	3
ESC 301.CO6	3	2	1	1	-	-	-	-	-	-	2	3	3	3
Attainment	3	2.6	2	1.8	2	0	0	0	0	1	1	3	3	3

Year / Semester	2nd/3rd
Name of Faculty	Mr. Subhajit Roy/ Ms. Pragati Ghosh
Subject Name	Computer Organisation
Subject Code	PCC-CS302
Target Marks (%)	50%
No. of students achieved target marks	37
Total no. of students attempted	63
Percentage of students above target marks	58.73016
Attainment Level (Theory Sessional)	Percentage
Level 1	6.349206
Level 2	34.92063
Level 3	58.73016
Attainment of CO	
CO1	3
CO2	3
CO3	3
CO4	3
CO5	3
CO6	3

Course name	CO	Description
Computer Organisation	PCC-CS302.CO1	Illustrate the history of modern computers and the Von Neumann architecture.
	PCC-CS302.CO2	Demonstrate basic number systems, Binary numbers, Representation of signed and unsigned numbers, Floating point representation.
	PCC-CS302.CO3	Define addressing modes, instruction formats.
	PCC-CS302.CO4	Distinguish the organization of various parts of a system memory hierarchy i.e. cache memory, virtual memory etc.
	PCC-CS302.CO5	Classify basics of systems topics like, single-cycle (MIPS), multi-cycle (MIPS), parallel, pipelined, superscalar, and RISC/CISC architectures.
	PCC-CS302.CO6	Define different control unit operations and I/O organization.

Direct PO attainment

Computer Organization Course Outcome mapping to Program Outcome														
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO2	PSO2
CO1	3	3	3	3	2	-	-	-	-	-	-	-	3	2
CO2	3	3	3	3	3	-	-	-	-	-	1	-	3	2
CO3	3	3	3	1	3	-	-	-	-	-	2	-	1	3
CO4	3	2	3	3	2	-	-	-	-	-	1	-	2	3
CO5	3	2	3	3	-	-	-	-	-	-	2	2	3	3
CO6	3	3	3	2	3	-	-	-	-	-	3	3	3	3
Attainment	3	2.67	3	2.5	2.6	0	0	0	0	0	1.8	2.5	2.5	2.33

Year / Semester	3 rd /5 th
Name of Faculty	Mr. Atanu Kumar Das
Subject Name	Software Engineering
Subject Code	ESC501
Target Marks (%)	50%
No. of students achieved target marks	58
Total no. of students attempted	63
Percentage of students above target marks	96.66666667
Attainment Level (Theory Sessional)	Percentage
Level 1	0
Level 2	1.666666667
Level 3	96.66666667
Attainment of CO	
CO1	3
CO2	3
CO3	3
CO4	3
CO5	3
CO6	3

Course Name	Course Outcomes	Details
Software Engineering	ESC501.CO1	Identify and define the various phases of lifecycle for agiven project and the appropriate process model depending on the user requirements in order to develop a costeffective software product.
	ESC501.CO2	Distinguish between a structure chart and a flow chart andidentify the activities carried out during transform.
	ESC501.CO3	Choose between the coding style (structured or OO) andPerform Code review, Code analysis, build process
	ESC501.CO4	Judge appropriate software testing techniques to thequality of a software product at modules, integration, and system granularity levels.
	ESC501.CO5	Apply the principles, processes and main knowledge areasfor Software Project Management
	ESC501.CO6	Design different types of UML diagram with knowledgewhen and why use a particular type of dig based on the software product requirements

Direct PO attainment

Software Engineering Course Outcome mapping to Program Outcome														
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	3	3	3	2	2	1	-	-	-	-	2	3	3	2
CO2	3	3	2	2	2	-	1	-	-	1	-	3	3	2
CO3	3	1	3	2	2	1	-	-	-	-	-	3	2	2
CO4	3	2	2	2	3	2	-	-	-	-	1	3	3	3
CO5	3	3	2	2	3	-	1	1	-	-	2	3	3	3
CO6	3	3	2	2	3	-	-	-	-	-	2	3	2	2
Attainment	3	2.5	2.33	2	2.5	1.33	1	1	0	1	1.75	3.00	2.66	2.33

1: Slight (Low)

2: Moderate (Medium)

3: Substantial (High)

Year / Semester	3 rd /5 th
Name of Faculty	Amartya Ghosh
Subject Name	Compiler Design
Subject Code	PCCCS501
Target Marks (%)	50%
No. of students achieved target marks	50
Total no. of students attempted	59
Percentage of students above target marks	83.33333
Attainment Level (Theory Sessional)	Percentage
Level 1	0
Level 2	15
Level 3	83.33333
Attainment of CO	
CO1	3
CO2	3
CO3	3
CO4	3
CO5	3
CO6	3

Compiler Design	PCC-CS501.CO2	Identify different methods of lexical analysis
	PCC-CS501.CO3	Design top-down and bottom-up parsers
	PCC-CS501.CO4	Identify synthesized and inherited attributes
	PCC-CS501.CO5	Develop syntax directed translation schemes
	PCC-CS501.CO6	Develop algorithms to generate code for a target machine.

Direct CO-PO-PSO attainment

Course Outcome Mapping to Program Outcome														
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	3	3	3	3	2	-	-	2	2	3	2	2	3	1
CO2	3	3	3	3	3	1	-	-	2	2	1	2	3	2
CO3	3	3	3	1	3	-	2	1	3	-	-	2	3	2
CO4	3	3	3	3	-	2	2	2	3	3	2	2	3	2
CO5	3	3	3	3	2	-	-	3	-	2	2	2	3	2
CO6	3	3	3	2	3	-	-	3	2	2	2	3	3	3
Attainment	3	3	3	2.5	2.6	1.5	2	2.2	2.4	2.4	1.8	2.6	2.83	2

Year / Semester	3 rd /5 th
Name of Faculty	Arup Mallick
Subject Name	Operating Systems
Subject Code	PCCCS502
Target Marks (%)	50%
No. of students achieved targetmarks	39
Total no. of students attempted	59
Percentage of students above target marks	65
Attainment Level (Theory Sessional)	Percentage
Level 1	1.666667
Level 2	31.66667
Level 3	65
Attainment of CO	
CO1	3
CO2	3
CO3	3
CO4	3
CO5	3

Course name	CO	Description
Operating Systems	PCC-CS502.CO1	Demonstrate the concepts of Operating System Services, System calls, structure and types.
	PCC-CS502.CO2	Discuss processes and threads for multiprogramming and multi-threading.
	PCC-CS502.CO3	Develop algorithms for process scheduling for a given specification of CPU utilization, Throughput, Turnaround Time, Waiting Time, Response
	PCC-CS502.CO4	Explain algorithmic solutions to process synchronization problems for Inter-Process communication
	PCC-CS502.CO5	Analyse the necessary conditions for Deadlock avoidance and prevention to solve them.
	PCC-CS502.CO6	Explain Memory management, Virtual Memory, I/O Hardware, File and Disk Management system.

Direct CO-PO-PSO attainment

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	3	1	1	1	-	2	2	3	2	3	-	2	3	3
CO2	3	2	1	1	2	-	-	3	3	1	1	3	3	2
CO3	3	2	3	1	1	-	-	2	3	2	2	2	3	2
CO4	3	3	3	2	-	-	-	3	3	2	2	2	3	2
CO5	3	2	1	1	3	-	-	2	3	1	2	2	3	2
CO6	3	2	2	1	-	-	-	2	2	-	2	1	3	2
AVG.	3	2	1.83	1.167	2	2	2	2.5	2.667	1.8	1.8	2	3.00	2.17

Year / Semester	3 rd /5 th
Name of Faculty	Gopal Paul
Subject Name	Object Oriented Programming
Subject Code	PCCCS503
Target Marks (%)	50%
No. of students achieved target marks	50
Total no. of students attempted	52
Percentage of students above target marks	86.66667

Attainment Level (Theory Sessional)	Percentage
Level 1	0
Level 2	11.66667
Level 3	86.66667
Attainment of CO	
CO1	3
CO2	3
CO3	3
CO4	3
CO5	3
CO6	3

Course name	CO	Description
Object Oriented Programming	PCC-CS503.CO1	Describe classes, objects, members of a class and relationships among them needed for a specific problem. Explain the features of object-oriented principles such as encapsulation, polymorphism and composition of systems based on object identity. Analyze the concepts of inheritance and its application in OO design with different design patterns. Discuss simple abstract data types and design implementations using abstraction functions to document them.
	PCC-CS503.CO2	Apply some common object-oriented design patterns and give examples of their use. Describe classes, objects, members of a class and relationships among them needed for a specific problem.
	PCC-CS503.CO3	Explain the features of object-oriented principles such as encapsulation, polymorphism and composition of systems based on object identity. Analyze the concepts of inheritance and its application in OO design with different design patterns. Discuss simple abstract data types and design implementations using abstraction functions to document them.
	PCC-CS503.CO4	Apply some common object-oriented design patterns and give examples of their use. Design applications with an event-driven graphical user interface. Describe classes, objects, members of a class and relationships among them needed for a specific problem.
	PCC-CS503.CO5	Explain the features of object-oriented principles such as encapsulation, polymorphism and composition of systems based on object identity. Analyze the concepts of inheritance and its application in OO design with different design patterns.
	PCC-CS503.CO6	Discuss simple abstract data types and design implementations using abstraction functions to document them. Apply some common object-oriented design patterns and give examples of their use.

Direct CO-PO-PSO attainment

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	3	3	1	2	-	-	-	2	-	-	2	2	2	1
CO2	3	3	1	3	-	-	-	1	-	-	2	2	2	3
CO3	3	3	2	3	-	-	-	3	-	-	2	2	3	2
CO4	3	3	2	3	-	-	-	3	-	-	2	2	3	2
CO5	3	3	-	1	-	-	-	2	2	2	2	2	2	1
CO6	3	3	-	3	-	-	-	3	2	2	2	2	3	2
Attainment	3	3	1.5	2.5	0	0	0	2.33	2	2	2	2	2.5	1.83

Year / Semester	3 rd /5 th
Name of Faculty	Mr. Hari Nayaran Khan
Subject Name	Computer Graphics
Subject Code	IT501D
Target Marks (%)	50%
No. of students achieved target marks	50
Total no. of students attempted	49
Percentage of students above target marks	81.66667
Attainment Level (Theory Sessional)	Percentage
Level 1	0
Level 2	16.66667
Level 3	81.66667
Attainment of CO	
CO1	3
CO2	3
CO3	3
CO4	3
CO5	3
CO6	3

Course name	CO	Description
Computer Graphics	PEC- IT501D.CO1	Explain the basics of computer graphics, different graphics systems and applications of computer graphics.
	PEC- IT501D.CO2	Explore the background and standard line and circle drawing algorithms.
	PEC- IT501D.CO3	Exposure of various transformation approaches and its comparative analysis.
	PEC- IT501D.CO4	Illustrate Projection and clipping with explore different techniques.
	PEC- IT501D.CO5	Outline the concepts of parametric conditions and properties of bezier curves, bezier surfaces.
	PEC- IT501D.CO6	Apply design principles to create different curves and explore hidden lines and surface techniques.

Direct CO-PO-PSO attainment

Computer Graphics Course Outcome mapping to Program Outcome														
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	3	3	-	-	-	-	-	-	-	-	-	-	-	-
CO2	-	-	-	-	-	-	-	-	-	-	-	-	2	-
CO3	-	2	-	-	-	-	-	-	2	-	-	-	-	-
CO4	-	-	-	-	-	-	-	-	-	-	-	-	-	2
CO5	-	-	2	3	3	-	-	-	-	-	-	-	-	-
CO6	3	-	-	-	3	-	-	-	3	-	-	3	-	2
Attainment	3	2.5	2	3	3	0	0	0	2.5	0	0	3	2	2

Year / Semester	3 rd /7 th
Name of Faculty	Subhankar Ghosh
Subject Name	Cloud Computing
Subject Code	PECCS701B
Target Marks (%)	50%
No. of students achieved target marks	50
Total no. of students attempted	50
Percentage of students above target marks	80.64516
Attainment Level (Theory Sessional)	Percentage
Level 1	3.225806
Level 2	16.12903
Level 3	80.64516
Attainment of CO	
CO1	3
CO2	3
CO3	3
CO4	3
CO5	3
CO6	3

Course name	CO	Description
Cloud Computing	PECCS701B.CO1	Understand the concepts and terminologies of Cloud computing and virtualization.
	PECCS701B.CO2	Understand the Cloud computing architecture and the Anekacloud computing platform.
	PECCS701B.CO3	Understand programming applications with Thread and Task-based application models.
	PECCS701B.CO4	Understand Data intensive computing and Map-Reduce programming model.
	PECCS701B.CO5	Explain technical aspects of popular multimedia web applications, including VoD and VoIP

Direct PO attainment

Cloud Computing Course Outcome Mapping to Program Outcome														
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	3	2	1	1	1	2	–	–	1	1	–	1	1	2
CO2	3	2	2	1	2	1	–	2	2	1	1	1	1	1
CO3	3	2	2	2	2	2	1	1	2	1	1	2	–	1
CO4	3	2	1	2	2	2	1	1	2	1	1	2	–	1
CO5	3	2	2	–	1	1	2	1	1	2	1	2	1	2
CO6	3	2	2	3	2	2	2	1	1	1	2	2	2	–
Attainment	3.00	2.00	1.67	1.80	1.67	1.67	1.50	1.20	1.50	1.17	1.20	1.67	1.25	1.40

Year / Semester	3 rd /7 th
Name of Faculty	Indrajit Dawn
Subject Name	Cyber Security
Subject Code	PECCS702E
Target Marks (%)	50%
No. of students achieved target marks	50
Total no. of students attempted	56
Percentage of students above target marks	90.32258
Attainment Level (Theory Sessional)	Percentage
Level 1	1.612903
Level 2	8.064516
Level 3	90.32258
Attainment of CO	
CO1	3
CO2	3
CO3	3
CO4	3
CO5	3
CO6	3

Course name	CO	Description
Cyber Security	PECCS702E.CO1	Students will Have general knowledge on cyber legal literacy.
	PECCS702E.CO2	Students will be able to Understand computer ethics, policies, and fundamental duties.
	PECCS702E.CO3	Students will be able to Understand the concepts of Intellectual property to protect the traditional knowledge
	PECCS702E.CO4	Students will be able to Get aware of Indian IT Acts and Standards

Direct CO-PO-PSO attainment

Course Outcome Mapping to Program Outcome														
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1					1	2		3	1	1	1	2	3	-
CO2					1	2		3	1		1	2	3	1
CO3					1	2		3	1	1	1	2	1	2
CO4						2		3				2	2	3
Attainment					1	2		3	1	1	1	2	2.25	2

Year / Semester	3 rd /7 th
Name of Faculty	Subhankar Ghosh
Subject Name	Multimedia Systems
Subject Code	OECCS7 01B
Target Marks (%)	50%
No. of students achieved targetmarks	50
Total no. of students attempted	56
Percentage of students above target marks	90.32258
Attainment Level (Theory Sessional)	Percentage
Level 1	1.612903
Level 2	8.064516
Level 3	90.32258
Attainment of CO	
CO1	3
CO2	3
CO3	3
CO4	3
CO5	3
CO6	3

Course name	CO	Description
Multimedia Systems	OEC- CS701B.CO1	Learn technical aspect of Multimedia Systems
	OEC- CS701B.CO2	Understand the standards available for different audio, video Image and text applications
	OEC- CS701B.CO3	Design various available storage model for multimedia and can give a comparison study between them
	OEC- CS701B.CO4	Compare between different available multimedia document architecture
	OEC- CS701B.CO5	Explain technical aspects of popular multimedia web applications, including Vo D and VoIP
	OEC- CS701B.CO6	Develop multimedia application and analyze the performance of the same

Direct CO-PO-PSO attainment

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	-	-	-	-	-	-	-	-	-	-	-	-	-	1
CO2	-	-	-	2	-	-	-	-	-	-	-	-	-	-
CO3	-	-	-	2	1	-	-	-	-	-	-	-	-	-
CO4	-	-	-	2	1	-	-	-	-	-	-	-	1	-
CO5	-	-	-	2	1	-	-	-	-	-	-	-	1	-
CO6	-	-	3	2	1	-	-	-	-	-	-	-	1	2
Attainment	0	0	3	2	1	0	0	0	0	0	0	0	1	1.5

1: Slight (Low)

2: Moderate (Medium)

3: Substantial (High)

**Department of
Electronics and Communication
Engineering**

Regent Education and Research Foundation Group of Institutions

AY – 2022-23

Year / Semester	3rd
Name of Faculty	Ms. Suparna Panchanan
Subject Name	Electronics Device
Subject Code	EC301
Target Marks (%)	50%
No. of students achieved target marks	52
Total no. of students attempted	59
Percentage of students above target marks	88%
Attainment Level (Theory)	Percentage
Level 1	4
Level 2	8
Level 3	88
Attainment of CO	
EC301.1	3
EC301.2	3
EC301.3	2
EC301.4	2
EC301.5	1
EC301.6	2

Course name	CO	Description
EC301	EC301.1	Distinguish the conduction techniques in semiconductor materials.
	EC301.2	Analyse characteristics of Semiconductor diodes and solve problems.
	EC301.3	Analyse characteristics of bipolar Transistors and solve problems.
	EC301.4	Analyse characteristics of MOS Transistors and solve problems.

EC301.5	Classify and Analyse different Opto-electronic devices.
EC301.6	Understanding the fabrication techniques

Direct CO-PO-PSO attainment

Course Outcome Mapping to Program Outcome & Program Specific Outcome															
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
EC301.1	3	2											3	2	1
EC301.2		2	1	1									3	2	1
EC301.3	1	3											3	2	2
EC301.4	1	2		1									3	1	1
EC301.5	1	2											3	2	1
EC301.6	1	3											3	1	2
Attainment	1.16	2.3	0.16	0.3									3	1.66	1.33

Year / Semester	3rd
Name of Faculty	Ms. Suparna Panchanan
Subject Name	Electronics Device Lab
Subject Code	EC391
Target Marks (%)	50%
No. of students achieved target marks	100%
Total no. of students attempted	59
Percentage of students above target marks	100%
Attainment Level (Practical)	Percentage
Level 1	
Level 2	
Level 3	100
Attainment of CO	
EC 391.1	3
EC 391.2	3
EC 391.3	2
EC 391.4	2

Course name	CO	Description
EC391	EC391.1	To involve the students in hand on experience in using laboratory equipment.
	EC391.2	To help the students to understand the characteristics of BJT and MOSFET.
	EC391.3	They will be able to find out the parameters from the graph.
	EC391.4	Study the characteristics of Phototransistor, LDR and LED.

Direct CO-PO-PSO attainment

Course Outcome Mapping to Program Outcome & Program Specific Outcome															
CO	PO 1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
EC391.1	1	1											3	2	1
EC391.2													3	1	1
EC391.3			2	1									3	2	1
EC391.4	1		1	2									3	2	1
Attainment	0.5	0.25	0.75	0.75									3	1.75	1

1: Slight (Low)

2: Moderate (Medium)

3: Substantial (High)

Regent Education and Research Foundation Group of Institutions

AY – 2022-23

Academic Year	2022 – 23 (ODD)
Department	Electronics and Communication Engineering
Year / Semester	2nd year/3rd Semester
Name of Faculty	Mr. Sukdeb Saha
Subject Name	Digital System Design
Subject Code	EC 302
Target Marks (%)	50%
No. of students achieved target marks	50
Total no. of students attempted	59
Percentage of students above target marks	85%

Attainment Level (Theory)	Percentage
Level 1	
Level 2	15%
Level 3	85%
Attainment of CO	
CO1	3
CO2	3
CO3	3
CO4	2

Course name	CO	Description
Digital System Design	EC302.1	Design and analyze combinational logic circuits
	EC302.2	Design & analyze modular combinational circuits with MUX/DEMUX, Decoder, Encoder
	EC302.3	Design & analyze synchronous sequential logic circuits

	EC302.4	Became able to know various types of components-ADC and DAC , memory elements and the timing circuits to generate different waveforms and also the different logic families involved in the digital system
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Direct CO-PO-PSO attainment

Course Outcome Mapping to Program Outcome & Program Specific Outcome															
CO	PO 1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
EC302.1	2	2	1	2	1								3	2	1
EC302.2	2	3	2	1	1								3	2	1
EC302.3	3	2	3	2	1								3	2	1
EC302.4	2	1	3	2	1								2	2	1
Attainment	2.25	2	2.25	1.75	1								2.75	2	1

Year / Semester	2022 – 23 (ODD)
Name of Faculty	Mr. Sukdeb Saha
Subject Name	Digital System Design Lab
Subject Code	EC 392
Target Marks (%)	50%
No. of students achieved target marks	59
Total no. of students attempted	59
Percentage of students above target marks	100%
Attainment Level (Practical)	Percentage
Level 1	
Level 2	
Level 3	100%
Attainment of CO	
CO1	3
CO2	3
CO3	3
CO4	3
CO5	3

Course name	CO	Description
Digital System	EC392.1	Ability to learn the basics of gates.
	EC392.2	Ability to construct basic combinational circuits and verify their

Design Lab		functionalities
	EC392.3	Apply the design procedures to design basic sequential circuits
	EC392.4	Ability to learn about counters and shift Register
	EC392.5	Ability to understand the basic digital circuits and to verify their operation

Direct CO-PO-PSO attainment

Course Outcome Mapping to Program Outcome & Program Specific Outcome															
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
EC392.1	3	2	2	1	1								3	2	2
EC392.2	2	2	3	2	1								3	2	1
EC392.3	2	2	2	1	1								3	1	1
EC392.4	2	3	1	1	1								3	2	1
EC392.5	2	1	1	2	1								3	2	1
Attainment	2.2	2	1.8	1.4	1								3	1.8	1.2

1: Slight (Low)

2: Moderate (Medium)

3: Substantial (High)

Regent Education and Research Foundation Group of Institutions

AY – 2022-23

Academic Year	2022 – 23 (ODD)
Department	Electronics and Communication Engineering
Year / Semester	2nd Year/3rd Semester
Name of Faculty	Dr.HimeliChakrabarti
Subject Name	Signals and Systems
Subject Code	EC 303
Target Marks (%)	50%
No. of students achieved target marks	55
Total no. of students attempted	64
Percentage of students above target marks	85%

Attainment Level (Theory)	Percentage
Level 1	
Level 2	15%
Level 3	85%
Attainment of CO	

CO1	3
CO2	3
CO3	3
CO4	3
CO5	3

Course name	CO	Description
Signals and Systems	EC303.1	Describe different kinds of signals and systems and their operations
	EC303.2	Interpret the concept of sampling theorem and its applications
	EC303.3	Demonstrate different kind of transformation of the signals
	EC303.4	Identify the properties of transformation of the signals
	EC303.5	Recognize and formulate the problems based on the transformation of the signals

Direct CO-PO-PSO attainment

Course Outcome Mapping to Program Outcome & Program Specific Outcome															
CO	PO 1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
EC303.1	2	2			1								3	2	1
EC303.2	3	3	2	1	1								3	2	1
EC303.3	1	1	2		1								3	1	1
EC303.4	3	3	2	1	1								3	2	1
EC303.5	3	3	2	1	1								3	2	1
Attainment	2.4	2.4	2	0.6	1								3	1.8	1

Regent Education and Research Foundation Group of Institutions

AY – 2022-23

Academic Year	2022 – 23 (ODD)
Department	Electronics and Communication Engineering
Year / Semester	2nd year/3rd Semester
Name of Faculty	Mr. Sukdeb Saha
Subject Name	Network Theory
Subject Code	EC 304
Target Marks (%)	50%
No. of students achieved target marks	47
Total no. of students attempted	59
Percentage of students above target marks	80%

Attainment Level (Theory)	Percentage
Level 1	
Level 2	20%
Level 3	80%
Attainment of CO	
CO1	3
CO2	3
CO3	2
CO4	3
CO5	2

Course name	CO	Description
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Network Theory	EC304.1	Understand basics electrical circuits with nodal and mesh analysis.
	EC304.2	Appreciate electrical network theorems.
	EC304.3	Apply Laplace Transform for steady state and transient analysis.
	EC305.4	Determine different network functions.
	EC306.5	Appreciate the frequency domain techniques.

Direct CO-PO-PSO attainment

Course Outcome Mapping to Program Outcome & Program Specific Outcome															
CO	PO 1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
EC304.1	2	2	1	1	1								3	2	1
EC304.2	2	2	1	1	1								3	2	1
EC304.3	2	2	2	1	1								3	1	1
EC305.4	2	1	2	2	0								3	2	1
EC306.5	1	2	1	1	1								3	2	1
Attainment	1.8	1.8	1.4	1.2	0.8								3	1.8	1

1: Slight (Low)

2: Moderate (Medium)

3: Substantial (High)

Regent Education and Research Foundation Group of Institutions

AY – 2022-23

Academic Year	2022 – 23 (ODD)
Department	Electronics and Communication Engineering
Year / Semester	2nd year/3rd Semester
Name of Faculty	Dr. Saurav Ganguly
Subject Name	Probability & Statistics (BS)
Subject Code	BSM301
Target Marks (%)	50%
No. of students achieved target marks	48
Total no. of students attempted	59
Percentage of students above target marks	81%

Attainment Level (Theory)	Percentage
Level 1	
Level 2	19%
Level 3	81%
Attainment of CO	
CO1	3
CO2	3
CO3	2
CO4	3
CO5	3
CO6	2

Course name	CO	Description
Probability & Statistics (BS)	BSM301.1	The ideas of probability and random variables and various discrete and continuous probability distributions and their properties.
	BSM301.2	Find the means and variances of the discrete random variables X and Y using their joint probability mass function.
	BSM301.3	To learn about the Bivariate distribution.
	BSM301.4	The basic ideas of statistics including measures of central tendency, correlation and regression
	BSM301.5	Analyze statistical data graphically using frequency distributions and cumulative frequency distributions.
	BSM301.6	The statistical methods of studying data samples.

Direct CO-PO-PSO attainment

Course Outcome Mapping to Program Outcome & Program Specific Outcome															
CO	PO 1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
BSM301.1	2	2	1	2	1								3	2	1
BSM301.2	2	3	2	1	1								3	2	2
BSM301.3	3	2	3	2	1								3	3	1
BSM301.4	2	1	3	2	1								3	2	1
BSM301.5	2	1	2	2	1								3	2	1
BSM301.6	2	2	2	1	1								3	1	1
Attainment	2.16	1.83	2.16	1.66	1								3	2	1.16

1: Slight (Low)

2: Moderate (Medium)

3: Substantial (High)

Regent Education and Research Foundation Group of Institutions

AY – 2022-23

Academic Year	2022 – 23 (ODD)
Department	Electronics and Communication Engineering
Year / Semester	2nd year/3rd Semester
Name of Faculty	Dr. Saurav Ganguly
Subject Name	Probability & Statistics (BS)
Subject Code	BSM301
Target Marks (%)	50%
No. of students achieved target marks	48
Total no. of students attempted	59
Percentage of students above target marks	81%

Attainment Level (Theory)	Percentage
Level 1	
Level 2	19%
Level 3	81%
Attainment of CO	
CO1	3
CO2	3
CO3	2
CO4	3
CO5	3
CO6	2

Course name	CO	Description
Probability & Statistics (BS)	BSM301.1	The ideas of probability and random variables and various discrete and continuous probability distributions and their properties.
	BSM301.2	Find the means and variances of the discrete random variables X and Y using their joint probability mass function.
	BSM301.3	To learn about the Bivariate distribution.
	BSM301.4	The basic ideas of statistics including measures of central tendency, correlation and regression
	BSM301.5	Analyze statistical data graphically using frequency distributions and cumulative frequency distributions.
	BSM301.6	The statistical methods of studying data samples.

Direct CO-PO-PSO attainment

Course Outcome Mapping to Program Outcome & Program Specific Outcome															
CO	PO 1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
BSM301.1	2	2	1	2	1								3	2	1
BSM301.2	2	3	2	1	1								3	3	1
BSM301.3	3	2	3	2	1								3	2	1
BSM301.4	2	1	3	2	1								3	2	1
BSM301.5	2	1	2	2	1								2	2	1
BSM301.6	2	2	2	1	1								3	2	1
Attainment	2.16	1.83	2.16	1.66	1								2.83	2.16	1

1: Slight (Low)

2: Moderate (Medium)

3: Substantial (High)

Regent Education and Research Foundation Group of Institutions

AY – 2022-23

Academic Year	2022 – 23 (ODD)
Department	ECE
Year / Semester	2022/5th
Name of Faculty	Pulak Mazumder
Subject Name	Electromagnetic waves
Subject Code	EC501
Target Marks (%)	50%
No. of students achieved target marks	61
Total no. of students attempted	63
Percentage of students above target marks	100%

Attainment Level (Theory)	Percentage
Level 1	3%
Level 2	
Level 3	97%
Attainment of CO	

CO1	3
CO2	3
CO3	3
CO4	3
CO5	3
CO6	3

Cours e name	CO	Description
Electr omag netic waves	EC501.1	Understand characteristics and wave propagation on high frequency transmission lines
	EC501.2	Carryout impedance transformation on TL
	EC501.3	Use sections of transmission line sections for realizing circuit elements
	EC501.4	Characterize uniform plane wave
	EC501.5	Calculate reflection and transmission of waves at media interface
	EC501.6	Understand principle of radiation and radiation characteristics of an antenna

Direct CO-PO-PSO attainment

Course Outcome Mapping to Program Outcome & Program Specific Outcome															
CO	PO 1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
1	2	1	2	2	1								3	2	1
2	1	2	1	1	1								3	2	2
3	2	1	2	1	2								3	1	1
4	2	1	1	2	1								3	2	1
5	2	1	2	1									3	1	1
6	3	1											3	1	1
Attainment	2	1,2	1.6	1.4	1.25								3	1.5	1.16

Year / Semester	2022 – 23 (ODD)
Name of Faculty	Pulak Mazumder
Subject Name	Electromagnetic waves Lab
Subject Code	EC501
Target Marks (%)	50%
No. of students achieved target marks	63
Total no. of students attempted	63
Percentage of students above target marks	100%
Attainment Level (Practical)	Percentage
Level 1	
Level 2	
Level 3	100%
Attainment of CO	
CO1	3
CO2	3
CO3	3
CO4	3

CO5	3
CO6	3

Course name	CO	Description
	EC591.1	Radiation Pattern of dipole antenna.
	EC591.2	Radiation Pattern of a folded-dipole antenna.
	EC591.3	Radiation pattern of a 3-element Yagi-Uda Antenna.
	EC591.4	Study of Smith chart on Matlab platform.
	EC591.5	Plotting of Standing Wave Pattern along a transmission line when the line is opencircuited, short-circuited and terminated by a resistive load at the load end.
	EC591.6	Beam width, gain and radiation pattern of a 3-element, 5-element and 7-element. Yagi-Uda antenna - Comparative study.
	EC591.7	Input Impedance of a terminated coaxial line using shift in minima technique.

Direct CO-PO-PSO attainment

Course Outcome Mapping to Program Outcome & Program Specific Outcome															
CO	PO 1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
1	1	2	1	1	1								3	2	1
2	2	1	2	1	2								3	2	1
3	2	1	1	2	1								3	1	1
4	2	1	2	1	2								3	2	1
5	3	2	1	2	1								3	2	1
6	1	2	2	1	1								3	2	1
Attainment	1.8	1.5	1.5	1.3	1.3								3	1.83	1

1: Slight (Low)

2: Moderate (Medium)

3: Substantial (High)

Regent Education and Research Foundation Group of Institutions

AY – 2022-23

Academic Year	2022 – 23 (ODD)
Department	ECE
Year / Semester	3rd/5th
Name of Faculty	Dr. Saurav Ganguly
Subject Name	Computer Architecture
Subject Code	EC-502

Target Marks (%)	50%
No. of students achieved target marks	53
Total no. of students attempted	63
Percentage of students above target marks	85 %

Attainment Level (Theory)	Percentage
Level 1	
Level 2	15 %
Level 3	85 %
Attainment of CO	
CO1	3
CO2	3
CO3	3
CO4	2
CO5	2

Course name	CO	Description
Computer Architecture	EC-502.1	Learn how computer work
	EC-502.2	Know basic principles of computer's working
	EC-502.3	Analyze the performance of computers
	EC-502.4	Know how computers are designed and built
	EC-502.5	Understand issues affecting modern process(caches, pipelines etc)

Direct CO-PO-PSO attainment

Course Outcome Mapping to Program Outcome & Program Specific Outcome															
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
EC-502.1	2	2	1	1	1								3	2	1
EC-502.2	1	2	1	2	1								3	2	1
EC-502.3	1	2	2		1								3	1	1
EC-502.4	2	1	2	2	1								3	1	1
EC-502.5	2	2	2	1	1								3	1	1
Attainment	1.6	1.8	1.6	1.2	1								3	1.4	1

1: Slight (Low)

2: Moderate (Medium)

3: Substantial (High)

Regent Education and Research Foundation Group of Institutions

AY – 2022-23

Year / Semester	3rd Year/ 5th Semester
Name of Faculty	Dr.HimeliChakrabarti
Subject Name	Digital Communication and stochastic process
Subject Code	EC503
Target Marks (%)	50%
No. of students achieved target marks	54
Total no. of students attempted	63
Percentage of students above target marks	85%
Attainment Level (Practical)	Percentage
Level 1	
Level 2	15%
Level 3	85%
Attainment of CO	
CO1	2
CO2	3
CO3	3
CO4	3

Course name	CO	Description
Digital Communication and stochastic process	EC503.1	Understand the concept of Stochastic Process in Communication System
	EC503.2	Represent various signals in different mathematical forms
	EC503.3	Analyze baseband transmission mode of digital data
	EC503.4	Analyze different carrier modulation techniques considering noise aspects

Direct CO-PO-PSO attainment

Course Outcome Mapping to Program Outcome & Program Specific Outcome															
CO	PO 1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
EC503.1	2	2	1	2	1								3	2	1
EC503.2	2	3	2	1	1								3	1	1
EC503.3	3	2	3	2	1								3	1	1
EC503.4	2	1	2	2	1								3	2	1
Attainment	2.25	2	2	1.75	1								3	1.5	1

Year / Semester	3rd Year/ 5th Semester
Name of Faculty	Dr.HimeliChakrabarti
Subject Name	Digital Communication Lab
Subject Code	EC592
Target Marks (%)	50%
No. of students achieved target marks	63

Total no. of students attempted	64
Percentage of students above target marks	100%
Attainment Level (Theory Sessional)	Percentage
Level 1	
Level 2	
Level 3	100%
Attainment of CO	
CO1	3
CO2	3
CO3	3
CO4	3

Course name	CO	Description
Digital Communication Lab	EC592.1	Demonstrate the performance of Analog to Digital Conversion techniques.
	EC592.2	Analyze different Digital Modulation & Demodulation schemes
	EC592.3	Design Multiplexing & Demultiplexing scheme
	EC592.4	Design Different coding techniques

Direct CO-PO-PSO attainment

Course Outcome Mapping to Program Outcome & Program Specific Outcome															
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
EC592.1		2			2								3	2	1
EC592.2		2			2								3	1	1
EC592.3				2	2								3	1	1
EC592.4		3			3								3	1	1
Attainment		1.75		0.5	2.25								3	1.25	1

1: Slight (Low)

2: Moderate (Medium)

3: Substantial (High)

AY – 2022-23

Academic Year	2022 – 23 (ODD)
Department	ECE
Year / Semester	2022/5th
Name of Faculty	Dipankar Biswas
Subject Name	Digital Signal Processing
Subject Code	EC504
Target Marks (%)	50%
No. of students achieved target marks	61
Total no. of students attempted	63
Percentage of students above target marks	100%

Attainment Level (Theory)	Percentage
Level 1	3%
Level 2	
Level 3	97%
Attainment of CO	
CO1	3
CO2	3
CO3	3
CO4	3
CO5	3
CO6	3

Course name	CO	Description
	EC504.1	Remember the basic idea of signals and system

Digital Signal Processi ng	EC504.2	Understand the fundamental concepts of DSP theory such as sampling theory, discrete frequency and Z-transform
	EC504.3	Analyze the response of an LTI system to different signals
	EC504.4	Develop an understanding of DTFT, DFT, and FFT
	EC504.5	Understand signal flow graph and block diagram representations of different equations that realize digital filters
	EC504.1	Remember the basic idea of signals and system

Direct CO-PO-PSO attainment

Course Outcome Mapping to Program Outcome & Program Specific Outcome															
CO	PO 1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
1	2	2	1	1	1								3	2	1
2	2	2	1	2	1								3	1	1
3	2	2	2	2	1								3	1	1
4	2	2	2	2	1								3	2	1
5	2	2	1	1									3	2	1
Attainment	2	2	1.4	1.6	0.8								3	1.6	1

1: Slight (Low)

2: Moderate (Medium)

3: Substantial (High)

Year / Semester	2022 – 23 (ODD)
Name of Faculty	Dipankar Biswas
Subject Name	Digital Signal Processing Lab
Subject Code	EC504
Target Marks (%)	50%

No. of students achieved target marks	63
Total no. of students attempted	63
Percentage of students above target marks	100%
Attainment Level (Practical)	Percentage
Level 1	
Level 2	
Level 3	100%
Attainment of CO	
CO1	3
CO2	3
CO3	3
CO4	3
CO5	3
CO6	3

Course name	CO	Description
Digital Signal Processing	EC594.1	Sampled sinusoidal signal, various sequences and different arithmetic operations.
	EC594.2	Convolution of two sequences using graphical methods and using commands verification of the properties of convolution.
	EC594.3	Z-transform of various sequences - verification of the properties of Z-transform
	EC594.4	DFTs / IDFTs using matrix multiplication and also using commands.
	EC594.5	Twiddle factors - verification of the properties.
	EC594.6	FIR filter design using rectangular, Hamming and Blackman windows.

Direct CO-PO-PSO attainment

Course Outcome Mapping to Program Outcome & Program Specific Outcome															
CO	PO 1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
1	1	2	1	1	1								3	1	1
2	2	1	2	1	2								3	1	1
3	2	1	1	2	1								2	1	1
4	2	1	2	1	2								3	2	1
5	3	2	1	2	1								3	1	1
6	1	2	2	1	1								3	1	1
Attainment	1.8	1.5	1.5	1.3	1.3								2.83	1.16	1

1: Slight (Low)

2: Moderate (Medium)

3: Substantial (High)

Regent Education and Research Foundation Group of Institutions

AY – 2022-23

Academic Year	2022 – 23 (ODD)
Department	ECE
Year / Semester	3rd/5th
Name of Faculty	MR. Milan Mazumdar
Subject Name	Power Electronics
Subject Code	PE-EC505C
Target Marks (%)	50%
No. of students achieved target marks	50
Total no. of students attempted	63
Percentage of students above target marks	80 %

Attainment Level (Theory)	Percentage
Level 1	
Level 2	20 %
Level 3	80 %
Attainment of CO	
CO1	3
CO2	3
CO3	3
CO4	2

Course name	CO	Description
Power Electronics	EC505C.1	Build and test circuits using power devices such as SCR.
	EC505C.2	Analyze and design controlled rectifier, DC to DC converters, DC to AC inverters.
	EC505C.3	Learn how to analyze these inverters and some basic applications.
	EC505C.4	Design SMPS.
	EC505C.5	Recognize the role of power electronics play in the improvement of energy usage efficiency and the applications of power electronics in emerging areas.

Direct CO-PO-PSO attainment

Course Outcome Mapping to Program Outcome & Program Specific Outcome															
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
EC505C.1	2	2	1	1									3	1	1
EC505C.2	1	2	1	2									3	2	1
EC505C.3	1	2	2		1								3	1	1
EC505C.4	2	1	2	2	1								3	2	1
EC505C.5	1	2	2	1		1							3	2	1
Attainment	1.4	1.8	1.6	1.2	0.5	0.2							3	1.6	1

Direct PO attainment

1: Slight (Low)

2: Moderate (Medium)

3: Substantial (High)

Regent Education and Research Foundation Group of Institutions

AY – 2022-23

Academic Year	2022 – 23 (ODD)
Department	ECE
Year / Semester	4th/7th
Name of Faculty	MR. Milan Mazumdar
Subject Name	Microwave Theory and Technique
Subject Code	PE-EC701A
Target Marks (%)	50%
No. of students achieved target marks	32
Total no. of students attempted	41
Percentage of students above target marks	80 %

Attainment Level (Theory)	Percentage
Level 1	
Level 2	20 %

Level 3	80 %
Attainment of CO	
CO1	3
CO2	3
CO3	3
CO4	2

Course name	CO	Description
Microwave Theory and Technique.	PE-EC701A.1	Understand various microwave system components their properties.
	PE-EC701A.2	Appreciate that during analysis/ synthesis of microwave systems, the different mathematical treatment is required compared to general circuit analysis..
	PE-EC701A.3	Understand various Microwave Measurements.
	PE-EC701A.4	Design microwave systems for different practical application.

Direct CO-PO-PSO attainment

Course Outcome Mapping to Program Outcome & Program Specific Outcome															
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
PE-EC701A.1	2	2	1	1									3	2	1
PE-EC701A.2	1	2	1	2									3	2	1
PE-EC701A.3	1	2	2	1	1								3	1	1
PE-EC701A.4	2	1	2	2	1								3	1	1
Attainment	1.5	1.75	1.5	1.5	0.5								3	1.5	1

1: Slight (Low)

2: Moderate (Medium)

3: Substantial (High)

Regent Education and Research Foundation Group of Institutions

AY – 2022-23

Academic Year	2022 – 23 (ODD)
Department	ECE
Year / Semester	4th/7th
Name of Faculty	Dr. SAURAV GANGULY

Subject Name	Adaptive Signal Processing
Subject Code	PE-EC702A
Target Marks (%)	50%
No. of students achieved target marks	35
Total no. of students attempted	41
Percentage of students above target marks	85 %

Attainment Level (Theory)	Percentage
Level 1	
Level 2	15 %
Level 3	85 %
Attainment of CO	
CO1	3
CO2	3
CO3	3

Course name	CO	Description
Microwave Theory and Technique.	PE-EC702A.1	Understand the non-linear control and the need and significance of changing the control parameters w.r.t. real-time situation.
	PE-EC702A.2	Mathematically represent the 'adaptability requirement'.
	PE-EC702A.3	Understand the mathematical treatment for the modelling and design of the signal processing systems.

Direct CO-PO-PSO attainment

Course Outcome Mapping to Program Outcome & Program Specific Outcome															
CO	PO 1	PO2	PO 3	PO4	PO 5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
PE-EC702A.1	2	2	1	2	1										
PE-EC702A.2	1	2	1	2											
PE-EC702A.3	1	2	2	1	1										
Attainment	1.33	2	1.33	1.6	0.66										

1: Slight (Low)

2: Moderate (Medium)

3: Substantial (High)

Regent Education and Research Foundation Group of Institutions

AY – 2022-23

Academic Year	2022 – 23 (ODD)
Department	ECE
Year / Semester	7thsem
Name of Faculty	Ms. Suparna Panchanan
Subject Name	Embedded System
Subject Code	PE-EC703A
Target Marks (%)	50%
No. of students achieved target marks	35
Total no. of students attempted	41
Percentage of students above target marks	85

Attainment Level (Theory)	Percentage
Level 1	5
Level 2	10
Level 3	85
Attainment of CO	
PE-EC 704B.1	3
PE-EC 704B.2	3
PE-EC 704B.3	2
PE-EC 704B.4	2

PE-EC 704B.5	2
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Course name	CO	Description
PE-EC 704B	PE-EC 704B.1	Acquire basic knowledge of microcontrollers and other hardware components used in embedded systems.
	PE-EC 704B.2	Acquire basic knowledge about the fundamentals of Computer architecture.
	PE-EC 704B.3	Ability to understand the RTOS and its functions.
	PE-EC 704B.4	Illustrate and apply different IO protocols.
	PE-EC 704B.5	Ability to understand the requirement of software and hardware in an embedded system.

Direct CO-PO-PSO attainment

Course Outcome Mapping to Program Outcome & Program Specific Outcome															
CO	PO 1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
EC 704B.1	3	1											3	2	1
EC 704B.2	2	1											3	2	1
EC 704B.3		3	2										3	1	1
EC 704B.4	1	2		1									3	1	1
EC 704B.5	1		2										3	2	1
Attainment	1.4	1.4	0.8	0.2									3	1.6	1

1: Slight (Low)

2: Moderate (Medium)

3: Substantial (High)

Regent Education and Research Foundation Group of Institutions

AY – 2022-23

Academic Year	2022 – 23 (ODD)
Department	ECE
Year / Semester	7thsem
Name of Faculty	Mr. Dipayan Mazumder
Subject Name	Web Technology

Subject Code	OE-EC704A
Target Marks (%)	50%
No. of students achieved target marks	36
Total no. of students attempted	41
Percentage of students above target marks	87

Attainment Level (Theory)	Percentage
Level 1	
Level 2	13
Level 3	87
Attainment of CO	
CO1	3
CO2	3
CO3	2
CO4	2
CO5	2
CO6	3

Course name	CO	Description
OE-EC704A	OE-EC704A.1	Design good web pages using different tags, tables, forms, frames and style sheets supported by HTML.
	OE-EC704A.2	Implement, compile, test and run Java programs, comprising more than one class, to address a particular software problem.
	OE-EC704A.3	Demonstrate the ability to employ various types of selection statements and iteration statements in a Java program.
	OE-EC704A.4	Be able to leverage the object-oriented features of Java language using abstract class and interface.
	OE-EC704A.5	Be able to handle errors in the program using exception handling techniques of Java.
	OE-EC704A.6	Design applets as per the requirements with event handling facility.

Direct CO-PO-PSO attainment

Course Outcome Mapping to Program Outcome & Program Specific Outcome															
CO	PO 1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
OE-EC704A.1	3	1	2										3	2	1
OE-EC704A.2	2	1		1									3	1	1
OE-EC704A.3		3	2										3	1	2
OE-EC704A.4	1	2		1									3	1	1
OE-EC704A.5	1		2	1									3	2	1
OE-EC704A.6	2	1											3	1	1
Attainment	1.5	1.33	1	0.5									3	1.33	1.16

1: Slight (Low)

2: Moderate (Medium)

3: Substantial (High)

Regent Education and Research Foundation Group of Institutions

AY – 2022-23

Academic Year	2022 – 23 (EVEN)
Department	Electronics and Communication Engineering
Year / Semester	2nd year/4th Semester
Name of Faculty	Mr. Sukdeb Saha
Subject Name	Analog Communication
Subject Code	EC 401
Target Marks (%)	50%
No. of students achieved target marks	40
Total no. of students attempted	57
Percentage of students above target marks	70%

Attainment Level (Theory)	Percentage
Level 1	20%
Level 2	10%
Level 3	70%
Attainment of CO	
CO1	3
CO2	3
CO3	3
CO4	2
CO5	2

Course name	CO	Description
Analog Communication	EC401.1	Recollect the nature of continuous wave and signals
	EC401.2	Understand modulation and different generation and detection of amplitude modulation
	EC401.3	Compute and assess angle modulation
	EC401.4	Analysis multiplexing technique and point out random signals
	EC401.5	Synthesis and integrate analog communication system and develop a system design

Direct CO-PO-PSO attainment

Course Outcome Mapping to Program Outcome & Program Specific Outcome															
CO	PO 1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
EC401.1	2	2	0	0									3	2	1
EC401.2	2	2	0	0									2	2	1
EC401.3	2	3	3	2									3	2	1
EC401.4	2	3	2	2									2	1	1
EC401.5	2	2	0	2									3	1	1
Attainment	2	2.4	1	1.2									2.6	1.6	1

Year / Semester	2022 – 23 (EVEN)
Name of Faculty	Mr. Sukdeb Saha
Subject Name	Analog Communication Lab
Subject Code	EC 491
Target Marks (%)	50%
No. of students achieved target marks	57
Total no. of students attempted	57
Percentage of students above target marks	100%
Attainment Level (Practical)	Percentage
Level 1	
Level 2	
Level 3	100%

Attainment of CO	
CO1	3
CO2	3
CO3	3
CO4	3
CO5	3

Course name	CO	Description
Analog Communication Lab	EC401.1	Analysis and design of various modulation and demodulation techniques
	EC401.2	Analyze and demonstrate a good background in analyzing the block diagram of communication system.
	EC401.3	Illustrates how the mathematical concepts bend the analog communication process
	EC401.4	Acquaint with formulate the frequency modulation and angle modulation signals
	EC401.5	Discriminate the design skills to illustrate the electronic component and method to implement different communication systems.

Direct CO-PO-PSO attainment

Course Outcome Mapping to Program Outcome & Program Specific Outcome															
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
EC401.1	2	2	2	1									3	2	1
EC401.2	2	2	2	1									3	1	1
EC401.3	2	1	1	1									3	2	1
EC401.4	2	2	1	0									3	2	1
EC401.5	1	1	1	2									2	2	1
Attainment	1.8	1.6	1.8	1									2.8	1.8	1

1: Slight (Low)

2: Moderate (Medium)

3: Substantial (High)

Regent Education and Research Foundation Group of Institutions

AY – 2022-23

Academic Year	2022 – 23 (EVEN)
Department	ECE
Year / Semester	2th/4th
Name of Faculty	Mrs. Munmoon Chaki
Subject Name	Analog Circuits

Subject Code	EC-402
Target Marks (%)	50%
No. of students achieved target marks	48
Total no. of students attempted	59
Percentage of students above target marks	80 %

Attainment Level (Theory)	Percentage
Level 1	
Level 2	20 %
Level 3	80 %
Attainment of CO	
CO1	3
CO2	3
CO3	3
CO4	2

Course name	CO	Description
Analog Circuits	EC402.1	Understand the characteristics of diodes and transistors.
	EC402.2	Design and analyze various rectifier and amplifier circuits.
	EC402.3	Design sinusoidal and non-sinusoidal oscillators.
	EC402.4	Understand the functioning of OP-AMP and design OP-AMP based circuits.
	EC402.5	Application of Analog Circuits.

Course Outcome Mapping to Program Outcome & Program Specific Outcome															
CO	PO 1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
EC402.1	2	2	1	1									3	2	2
EC402.2	1	2	1	2									3	2	1
EC402.3	1	2	2		1								3	2	1
EC402.4	2	1	2	2	1								3	2	1
EC402.5	1	2	2	1		1							3	2	2
Attainment	1.4	1.8	1.6	1.2	0.4	0.2							3	2	1.4

Year / Semester	2nd/4th
Name of Faculty	Mrs. Munmoon Chaki
Subject Name	Analog Electronics Circuits Lab
Subject Code	EC-492
Target Marks (%)	50%
No. of students achieved target marks	56
Total no. of students attempted	56
Percentage of students above target marks	100%
Attainment Level (Practical)	Percentage
Level 1	
Level 2	
Level 3	100%
Attainment of CO	
CO1	3
CO2	3
CO3	3
CO4	3
CO5	3

CO6	3
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Course name	CO	Description
Analog Electronic Circuits Lab	EC492.1	Design and test rectifiers, clipping circuits, clamping circuits and voltage regulators.
	EC492.2	Compute the parameters from the characteristics of JFET and MOSFET devices.
	EC492.3	Design, test and evaluate BJT amplifiers in CE configuration.
	EC492.4	Design and test JFET/MOSFET amplifiers.
	EC492.5	Design and test a power amplifier.
	EC492.6	Design and test various types of oscillators.

Direct CO-PO-PSO attainment

Course Outcome Mapping to Program Outcome & Program Specific Outcome															
CO	PO 1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
EC492.1	2	2	1	1									3	2	1
EC492.2	1	2	1	2									3	1	1
EC492.3	1	2	2		1								3	1	1
EC492.4	2	1	2	2	1								3	2	1
EC492.5	2	2	1	1	2								3	1	1
EC492.6	2	2	1	1	2								3	1	1
Attainment	1.7	1.8	1.3	1.2	1								3	1.33	1

1: Slight (Low)

2: Moderate (Medium)

3: Substantial (High)

Regent Education and Research Foundation Group of Institutions

AY – 2022-23

Year / Semester	4thsem
Name of Faculty	Dr. Suparna Panchanan
Subject Name	Microprocessor & Microcontroller
Subject Code	EC403
Target Marks (%)	50%
No. of students achieved target marks	50
Total no. of students attempted	57
Percentage of students above target marks	87
Attainment Level (Theory)	Percentage
Level 1	3
Level 2	10
Level 3	87
Attainment of CO	
EC403.1	2
EC403.2	3
EC403.3	2
EC403.4	2
EC403.5	2
EC403.6	3

Course name	CO	Description
EC403	EC403.1	Able to correlate the architecture, instructions, timing diagrams,

	addressing modes, memory interfacing, interrupts, data communication of 8085.
EC403.2	Able to interpret the 8086 microprocessor-Architecture, Pin details, memory segmentation, addressing modes, basic instructions, and interrupts.
EC403.3	Recognize 8051 microcontroller hardware, input/output pins, ports, external memory, counters and timers, instruction set, addressing modes, serial data i/o, and interrupts.
EC403.4	Apply instructions for assembly language programs of 8085, 8086 and 8051.
EC403.5	Interfacing with peripheral
EC403.6	Ideate about the RISC & ARM

Direct CO-PO-PSO attainment

Course Outcome Mapping to Program Outcome & Program Specific Outcome															
CO	PO 1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
EC403.1	1	2	2	1									3	2	2
EC403.2	1	2	2										3	1	1
EC403.3	1	2	2										3	1	1
EC403.4		2											3	1	1
EC403.5			3										3	2	1
EC403.6	1	1	1										3	1	1
Attainment	0.6	1.5	1.6	0.16									3	1.33	1.16

Year / Semester	4thsem
Name of Faculty	Dr. Suparna Panchanan
Subject Name	Microprocessor & Microcontroller Lab
Subject Code	EC493
Target Marks (%)	50%

No. of students achieved target marks	100%
Total no. of students attempted	57
Percentage of students above target marks	100%
Attainment Level (Practical)	Percentage
Level 1	
Level 2	
Level 3	100
Attainment of CO	
EC493.1	3
EC493.2	3
EC493.3	2
EC493.4	2

Course name	CO	Description
EC493	EC493.1	Understand the basic instruction set
	EC493.2	Develop the programming skill
	EC493.3	Interfacing with other peripherals.
	EC493.4	Familiarization with 8051

Direct CO-PO-PSO attainment

Course Outcome Mapping to Program Outcome & Program Specific Outcome															
CO	PO 1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
EC493.1	2	1											3	2	1
EC493.2			1	2									3	1	1
EC493.3		3		2									3	1	1
EC493.4	1												3	2	1
Attainment	0.75	1	0.25	1									3	1.5	1

1: Slight (Low)

2: Moderate (Medium)

3: Substantial (High)

Regent Education and Research Foundation Group of Institutions

AY – 2022-23

Year / Semester	4thsem
Name of Faculty	Mr. Chiranjit Roy
Subject Name	Biology for Engineers
Subject Code	ESCS401
Target Marks (%)	50%
No. Of students achieved target marks	47
Total no. Of students attempted	57
Percentage of students above target marks	82%
Attainment Level (Theory)	Percentage
Level 1	
Level 2	18%
Level 3	82%
Attainment of CO	
BS-B401.1	2
BS-B401.2	3
BS-B401.3	2
BS-B401.4	3
BS-B401.5	3

Course name	CO	Description
ESB401	BS-B401.1	For a given algorithms analyze worst-case running times of algorithms based on asymptotic analysis and justify the correctness of algorithms.

BS-B401.2	Describe the greedy paradigm and explain when an algorithmic design situation calls for it. For a given problem develop the greedy algorithms.
BS-B401.3	Describe the divide-and-conquer paradigm and explain when an algorithmic design situation calls for it. Synthesize divide-and-conquer algorithms. Derive and solve recurrence relation.
BS-B401.4	Describe the dynamic-programming paradigm and explain when an algorithmic design situation calls for it. For a given problems of dynamic-programming and approximation.
BS-B401.5	Develop the dynamic programming algorithms, and analyze it to determine its computational complexity.

Direct CO-PO-PSO attainment

Course Outcome Mapping to Program Outcome & Program Specific Outcome															
CO	PO 1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
BS-B401.1	2	2	2	1									3	2	1
BS-B401.2	1	2	2										3	1	1
BS-B401.3	2	2	2	1									3	1	1
BS-B401.4	1	1											3	2	1
BS-B401.5	2	2	1	2									3	1	1
Attainment	1.6	1.8	1.4	0.8									3	1.4	1

1: Slight (Low)

2: Moderate (Medium)

3: Substantial (High)

Regent Education and Research Foundation Group of Institutions

AY – 2022-23

Year / Semester	4thsem
Name of Faculty	Miss Pragati Ghosh
Subject Name	Design & Analysis of Algorithm (ES)
Subject Code	ESCS401
Target Marks (%)	50%
No. Of students achieved target marks	50
Total no. Of students attempted	57
Percentage of students above target marks	87%
Attainment Level (Theory)	Percentage
Level 1	
Level 2	13%
Level 3	87%
Attainment of CO	
ESCS401.1	2

ESCS401.2	3
ESCS401.3	2
ESCS401.4	2
ESCS401.5	2
ESCS401.6	3
ESCS401.7	3

Course name	CO	Description
ESCS401	ESCS401.1	For a given algorithms analyze worst-case running times of algorithms based on asymptotic analysis and justify the correctness of algorithms.
	ESCS401.2	Describe the greedy paradigm and explain when an algorithmic design situation calls for it. For a given problem develop the greedy algorithms.
	ESCS401.3	Describe the divide-and-conquer paradigm and explain when an algorithmic design situation calls for it. Synthesize divide-and-conquer algorithms. Derive and solve recurrence relation.
	ESCS401.4	Describe the dynamic-programming paradigm and explain when an algorithmic design situation calls for it. For a given problems of dynamic-programming and approximation.
	ESCS401.5	Develop the dynamic programming algorithms, and analyze it to determine its computational complexity.
	ESCS401.6	For a given model engineering problem model it using graph and write the corresponding algorithm to solve the problems.
	ESCS401.7	Explain the ways to analyze randomized algorithms (expected running time, probability of error).

Direct CO-PO-PSO attainment

Course Outcome Mapping to Program Outcome & Program Specific Outcome															
CO	PO 1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
ESCS401.1	1	2	2	1									3	2	1
ESCS401.2	1	2	2	2									3	1	1
ESCS401.3	1	2	2	1									3	1	1
ESCS401.4	1	2		2									3	2	1
ESCS401.5	2	3	3	2									3	1	1
ESCS401.6	1	1	1	1									3	1	1
ESCS401.7	2		1	1									3	1	1
Attainme	1.2	1.71	1.42	0.42									3	1.28	1

1: Slight (Low)

2: Moderate (Medium)

3: Substantial (High)

Regent Education and Research Foundation Group of Institutions

AY – 2022-23

Academic Year	2022 – 23 (EVEN)
Department	Electronics and Communication Engineering
Year / Semester	2nd year/4th Semester
Name of Faculty	Mr. Sukdeb Saha
Subject Name	Analog Communication
Subject Code	EC 401
Target Marks (%)	50%
No. of students achieved target marks	40
Total no. of students attempted	57
Percentage of students above target marks	70%

Attainment Level (Theory)	Percentage
Level 1	20%
Level 2	10%
Level 3	70%
Attainment of CO	
CO1	3
CO2	3
CO3	3
CO4	2
CO5	2

Course name	CO	Description
Analog Communication	EC401.1	Recollect the nature of continuous wave and signals
	EC401.2	Understand modulation and different generation and detection of amplitude modulation
	EC401.3	Compute and assess angle modulation
	EC401.4	Analysis multiplexing technique and point out random signals
	EC401.5	Synthesis and integrate analog communication system and develop a system design

Direct CO-PO-PSO attainment

Course Outcome Mapping to Program Outcome & Program Specific Outcome															
CO	PO 1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
EC401.1	2	2	0	0									3	2	1
EC401.2	2	2	0	0									3	1	1
EC401.3	2	3	3	2									3	2	1
EC401.4	2	3	2	2									3	1	1
EC401.5	2	2	0	2									3	1	1
Attainment	2	2.4	1	1.2									3	1.4	1

Year / Semester	2022 – 23 (EVEN)
Name of Faculty	Mr. Sukdeb Saha
Subject Name	Analog Communication Lab
Subject Code	EC 491
Target Marks (%)	50%
No. of students achieved target marks	57
Total no. of students attempted	57
Percentage of students above target marks	100%
Attainment Level (Practical)	Percentage
Level 1	
Level 2	
Level 3	100%

Attainment of CO	
CO1	3
CO2	3
CO3	3
CO4	3
CO5	3

Course name	CO	Description
Analog Communication Lab	EC401.1	Analysis and design of various modulation and demodulation techniques
	EC401.2	Analyze and demonstrate a good background in analyzing the block diagram of communication system.
	EC401.3	Illustrates how the mathematical concepts bend the analog communication process
	EC401.4	Acquaint with formulate the frequency modulation and angle modulation signals
	EC401.5	Discriminate the design skills to illustrate the electronic component and method to implement different communication systems.

Direct CO-PO-PSO attainment

Course Outcome Mapping to Program Outcome & Program Specific Outcome															
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
EC392.1	2	2	2	1									3	2	1
EC392.2	2	2	2	1									3	1	1
EC392.3	2	1	1	1									3	2	1
EC392.4	2	2	1	0									3	2	1
EC392.5	1	1	1	2									3	2	1
Attainment	1.8	1.6	1.8	1									3	1.8	1

Direct PO attainment

1: Slight (Low)

2: Moderate (Medium)

3: Substantial (High)

Regent Education and Research Foundation Group of Institutions

AY – 2022-23

Academic Year	2022 – 23 (EVEN)
Department	ECE
Year / Semester	2th/4th
Name of Faculty	Mrs. Munmoon Chaki
Subject Name	Analog Circuits

Subject Code	EC-402
Target Marks (%)	50%
No. of students achieved target marks	48
Total no. of students attempted	59
Percentage of students above target marks	80 %

Attainment Level (Theory)	Percentage
Level 1	
Level 2	20 %
Level 3	80 %
Attainment of CO	
CO1	3
CO2	3
CO3	3
CO4	2

Course name	CO	Description
Analog Circuits	EC402.1	Understand the characteristics of diodes and transistors.
	EC402.2	Design and analyze various rectifier and amplifier circuits.
	EC402.3	Design sinusoidal and non-sinusoidal oscillators.
	EC402.4	Understand the functioning of OP-AMP and design OP-AMP based circuits.
	EC402.5	Application of Analog Circuits.

Direct PO attainment

Course Outcome Mapping to Program Outcome & Program Specific Outcome															
CO	PO 1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
EC402.1	2	2	1	1									3	2	1
EC402.2	1	2	1	2									3	1	1
EC402.3	1	2	2		1								2	2	1
EC402.4	2	1	2	2	1								3	2	1
EC402.5	1	2	2	1		1							3	1	1
Attainment	1.4	1.8	1.6	1.2	0.4	0.2							2.8	1.6	1

Year / Semester	2nd/4th
Name of Faculty	Mrs. Munmoon Chaki
Subject Name	Analog Electronics Circuits Lab
Subject Code	EC-492
Target Marks (%)	50%
No. of students achieved target marks	56
Total no. of students attempted	56
Percentage of students above target marks	100%
Attainment Level (Practical)	Percentage
Level 1	
Level 2	
Level 3	100%
Attainment of CO	
CO1	3
CO2	3
CO3	3
CO4	3
CO5	3

CO6	3
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Course name	CO	Description
Analog Electronic Circuits Lab	EC492.1	Design and test rectifiers, clipping circuits, clamping circuits and voltage regulators.
	EC492.2	Compute the parameters from the characteristics of JFET and MOSFET devices.
	EC492.3	Design, test and evaluate BJT amplifiers in CE configuration.
	EC492.4	Design and test JFET/MOSFET amplifiers.
	EC492.5	Design and test a power amplifier.
	EC492.6	Design and test various types of oscillators.

Direct CO-PO-PSO attainment

Course Outcome Mapping to Program Outcome & Program Specific Outcome															
CO	PO 1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
EC492.1	2	2	1	1									3	2	1
EC492.2	1	2	1	2									3	1	1
EC492.3	1	2	2		1								3	1	1
EC492.4	2	1	2	2	1								3	2	1
EC492.5	2	2	1	1	2								3	1	1
EC492.6	2	2	1	1	2								3	2	1
Attainment	1.7	1.8	1.3	1.2	1								3	1.5	1

1: Slight (Low)

2: Moderate (Medium)

3: Substantial (High)

Regent Education and Research Foundation Group of Institutions

AY – 2022-23

Year / Semester	4thsem
Name of Faculty	Dr. Suparna Panchanan
Subject Name	Microprocessor & Microcontroller
Subject Code	EC403
Target Marks (%)	50%
No. of students achieved target marks	50
Total no. of students attempted	57
Percentage of students above target marks	87
Attainment Level (Theory)	Percentage
Level 1	3
Level 2	10
Level 3	87
Attainment of CO	
EC403.1	2
EC403.2	3
EC403.3	2
EC403.4	2
EC403.5	2
EC403.6	3

Course name	CO	Description
EC403	EC403.1	Able to correlate the architecture, instructions, timing diagrams,

	addressing modes, memory interfacing, interrupts, data communication of 8085.
EC403.2	Able to interpret the 8086 microprocessor-Architecture, Pin details, memory segmentation, addressing modes, basic instructions, and interrupts.
EC403.3	Recognize 8051 microcontroller hardware, input/output pins, ports, external memory, counters and timers, instruction set, addressing modes, serial data i/o, and interrupts.
EC403.4	Apply instructions for assembly language programs of 8085, 8086 and 8051.
EC403.5	Interfacing with peripheral
EC403.6	Ideate about the RISC & ARM

Direct CO-PO-PSO attainment

Course Outcome Mapping to Program Outcome & Program Specific Outcome															
CO	PO 1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
EC403.1	1	2	2	1									3	2	1
EC403.2	1	2	2										3	1	1
EC403.3	1	2	2										2	1	1
EC403.4		2											3	1	1
EC403.5			3										3	1	1
EC403.6	1	1	1										3	1	1
Attainment	0.6	1.5	1.6	0.16									2.83	1.16	1

Year / Semester	4thsem
Name of Faculty	Dr. Suparna Panchanan
Subject Name	Microprocessor & Microcontroller Lab
Subject Code	EC493
Target Marks (%)	50%

No. of students achieved target marks	100%
Total no. of students attempted	57
Percentage of students above target marks	100%
Attainment Level (Practical)	Percentage
Level 1	
Level 2	
Level 3	100
Attainment of CO	
EC493.1	3
EC493.2	3
EC493.3	2
EC493.4	2

Course name	CO	Description
EC493	EC493.1	Understand the basic instruction set
	EC493.2	Develop the programming skill
	EC493.3	Interfacing with other peripherals.
	EC493.4	Familiarization with 8051

Direct CO-PO-PSO attainment

Course Outcome Mapping to Program Outcome & Program Specific Outcome															
CO	PO 1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO1 2	PSO1	PSO2	PSO3
EC493.1	2	1											3	2	1
EC493.2			1	2									3	2	1
EC493.3		3		2									3	1	1
EC493.4	1												3	1	1
Attainment	0.75	1	0.25	1									3	1.5	1

1: Slight (Low)

2: Moderate (Medium)

3: Substantial (High)

Regent Education and Research Foundation Group of Institutions

AY – 2022-23

Year / Semester	4thsem
Name of Faculty	Mr. Chiranjit Roy
Subject Name	Biology for Engineers
Subject Code	ESCS401
Target Marks (%)	50%
No. Of students achieved target marks	47
Total no. Of students attempted	57
Percentage of students above target marks	82%
Attainment Level (Theory)	Percentage
Level 1	
Level 2	18%
Level 3	82%
Attainment of CO	
BS-B401.1	2
BS-B401.2	3
BS-B401.3	2
BS-B401.4	3
BS-B401.5	3

Course name	CO	Description
ESB401	BS-B401.1	For a given algorithms analyze worst-case running times of algorithms based on asymptotic analysis and justify the correctness of algorithms.

BS-B401.2	Describe the greedy paradigm and explain when an algorithmic design situation calls for it. For a given problem develop the greedy algorithms.
BS-B401.3	Describe the divide-and-conquer paradigm and explain when an algorithmic design situation calls for it. Synthesize divide-and-conquer algorithms. Derive and solve recurrence relation.
BS-B401.4	Describe the dynamic-programming paradigm and explain when an algorithmic design situation calls for it. For a given problems of dynamic-programming and approximation.
BS-B401.5	Develop the dynamic programming algorithms, and analyze it to determine its computational complexity.

Direct CO-PO-PSO attainment

Course Outcome Mapping to Program Outcome & Program Specific Outcome															
CO	PO 1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
BS-B401.1	2	2	2	1									3	2	1
BS-B401.2	1	2	2										3	2	1
BS-B401.3	2	2	2	1									3	1	
BS-B401.4	1	1											3	2	1
BS-B401.5	2	2	1	2									3	1	
Attainment	1.6	1.8	1.4	0.8									3	1.6	0.6

1: Slight (Low)

2: Moderate (Medium)

3: Substantial (High)

Regent Education and Research Foundation Group of Institutions

AY – 2022-23

Year / Semester	4thsem
Name of Faculty	Miss Pragati Ghosh
Subject Name	Design & Analysis of Algorithm (ES)
Subject Code	ESCS401
Target Marks (%)	50%
No. Of students achieved target marks	50
Total no. Of students attempted	57
Percentage of students above target marks	87%
Attainment Level (Theory)	Percentage
Level 1	
Level 2	13%
Level 3	87%
Attainment of CO	
ESCS401.1	2

ESCS401.2	3
ESCS401.3	2
ESCS401.4	2
ESCS401.5	2
ESCS401.6	3
ESCS401.7	3

Course name	CO	Description
ESCS401	ESCS401.1	For a given algorithms analyze worst-case running times of algorithms based on asymptotic analysis and justify the correctness of algorithms.
	ESCS401.2	Describe the greedy paradigm and explain when an algorithmic design situation calls for it. For a given problem develop the greedy algorithms.
	ESCS401.3	Describe the divide-and-conquer paradigm and explain when an algorithmic design situation calls for it. Synthesize divide-and-conquer algorithms. Derive and solve recurrence relation.
	ESCS401.4	Describe the dynamic-programming paradigm and explain when an algorithmic design situation calls for it. For a given problems of dynamic-programming and approximation.
	ESCS401.5	Develop the dynamic programming algorithms, and analyze it to determine its computational complexity.
	ESCS401.6	For a given model engineering problem model it using graph and write the corresponding algorithm to solve the problems.
	ESCS401.7	Explain the ways to analyze randomized algorithms (expected running time, probability of error).

Direct CO-PO-PSO attainment

Course Outcome Mapping to Program Outcome & Program Specific Outcome															
CO	PO 1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
ESCS401.1	1	2	2	1									3	2	1
ESCS401.2	1	2	2	2									3	1	1
ESCS401.3	1	2	2	1									3	2	1
ESCS401.4	1	2		2									3	2	1
ESCS401.5	2	3	3	2									3	1	1
ESCS401.6	1	1	1	1									3	1	1
ESCS401.7	2		1	1									3	1	1

1: Slight (Low)

2: Moderate (Medium)

3: Substantial (High)

Regent Education and Research Foundation Group of Institutions

AY – 2022-23

Year / Semester	3rd Year/6th Semester
Name of Faculty	Dr.HimeliChakrabarti
Subject Name	Control System and Instrumentation
Subject Code	EC601
Target Marks (%)	50%
No. of students achieved target marks	53
Total no. of students attempted	63
Percentage of students above target marks	82%
Attainment Level (Theory Sessional)	Percentage
Level 1	
Level 2	18%
Level 3	82%
Attainment of CO	
CO1	3

CO2	3
CO3	3
CO4	3
CO5	2

Course name	CO	Description
Control System & Instrumentation	EC 601.1	Characterize a system and find its steady state behavior.
	EC 601.2	Investigate stability of a system using different tests.
	EC 601.3	Design various controllers.
	EC 601.4	Solve linear, nonlinear and optimal control problems.
	EC 601.5	Study with CRO, Wave analyzer, Spectrum analyzer knowing their functional details.

Direct CO-PO-PSO attainment

Course Outcome Mapping to Program Outcome & Program Specific Outcome															
CO	PO 1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
EC 601.1	3	3	2	3									3	2	1
EC 601.2	3	2	2										3	2	1
EC 601.3	3	2	1	2	3								3	2	1
EC 601.4	3			2									3	1	1
EC 601.5	3	1			2								3	2	1
Attainment	3	1.6	1	1.4	1								3	1.8	1

1: Slight (Low)

2: Moderate (Medium)

3: Substantial (High)

Year / Semester	2022 – 23 (EVEN)
Name of Faculty	Dr. HimeliChakrabarti

Subject Name	Control and Instrumentation Laboratory
Subject Code	EC-691
Target Marks (%)	50%
No. of students achieved target marks	63
Total no. of students attempted	63
Percentage of students above target marks	100%
Attainment Level (Practical)	Percentage
Level 1	
Level 2	
Level 3	100%
Attainment of CO	
CO1	3
CO2	3
CO3	3
CO4	3
CO5	2
CO6	2

Course name	CO	Description
Control and Instrumentation Laboratory	EC691.1	Discuss the need of software tools (MATLAB, PSPICE) to illustrate modeling and simulation of any system.. Classify and evaluate the performance parameters of a system and then with simulation prepare an advance tool to modify the values of the parameter of the system in order to meet the desired need
	EC691.2	Prepare professionals in laboratory to perform characteristics of a system by experimental data and its graphical representation.
	EC691.3	.Evaluate and determine nyquist , root locas and bode plot and also check different parameter
	EC691.4	Prepare Hardware laboratory to analysis the performance of the system.

	EC691.5	. Evaluate possible causes of discrepancy in practical experimental observations in comparison to theory by introducing the concepts of different stability theorems
	EC691.6	Prepare Hardware laboratory to analysis the performance of the system and also check the theoretical and practical observation and compare the value and also detect the percentage of the error.

Direct CO-PO-PSO attainment

Course Outcome Mapping to Program Outcome & Program Specific Outcome															
CO	PO 1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
EC691.1	2	2		1	1								3	2	1
EC691.2	2	2	2	1	1								3	1	1
EC691.3	2	2		1	1								3	1	
EC691.4	2	2	2	1	1								3	1	1
EC691.5	2	2	2	1	2								3	2	
EC691.6	2	2	2	1	1								3	2	1
Attainment	2	2	1.2	1	1.1								3	1.5	0.66

Regent Education and Research Foundation Group of Institutions

AY – 2022-23

Academic Year	2022 – 23 (ODD)
Department	ECE
Year / Semester	2023/6th
Name of Faculty	PulakMazumder
Subject Name	Computer Network
Subject Code	EC602
Target Marks (%)	50%
No. of students achieved target marks	61

Total no. of students attempted	63
Percentage of students above target marks	100%

Attainment Level (Theory)	Percentage
Level 1	3%
Level 2	
Level 3	97%
Attainment of CO	
CO1	3
CO2	3
CO3	3
CO4	3
CO5	3

Cours e name	CO	Description
Comp uter Netw ork	EC602.1	Understand the computer communication process.
	EC602.2	Analyze research related information
	EC602.3	Understand that today's world is controlled by Computer, Information Technology, but tomorrow world will be ruled by ideas, concept, and creativity.
	EC602.4	Understanding that when IPR would take such important place in growth of individuals & nation, it is needless to emphasis the need of information about Intellectual Property Right to be promoted among students in general & engineering in particular.
	EC602.5	Understand that IPR protection provides an incentive to inventors for further research work and investment in R & D, which leads to creation of new and better products, and in turn brings about, economic growth and social benefits.

Direct CO-PO-PSO attainment

Course Outcome Mapping to Program Outcome & Program Specific Outcome															
CO	PO 1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
1	2	1	1										3	2	1
2	1	2		2									2	2	1
3	3	2	1	2									3	1	1
4	3	2	2	1	1								3	2	1
5	2	2	1	1	1								2	2	1
Attainment	2.2	1.8	1	1.2	0.4								2.6	1.8	1

Year / Semester	2022 – 23 (ODD)
Name of Faculty	PulakMazumder
Subject Name	Computer Network Lab
Subject Code	EC602
Target Marks (%)	50%
No. of students achieved target marks	63
Total no. of students attempted	63
Percentage of students above target marks	100%
Attainment Level (Practical)	Percentage
Level 1	
Level 2	
Level 3	100%
Attainment of CO	
CO1	3
CO2	3
CO3	3
CO4	3
CO5	3
CO6	3

Course name	CO	Description
Computer Network	EC692.1	IPC (Message queue)
	EC692.2	NIC Installation & Configuration (Windows/Linux)
	EC692.3	Familiarization with o Networking cables (CAT5, UTP) o Connectors (RJ45, T-conector) o Hubs, Switches
	EC692.4	TCP/UDP Socket Programming
	EC692.5	Multicast & Broadcast Sockets
	EC692.6	Implementation of a Prototype Multithreaded Server

Direct CO-PO-PSO attainment

Course Outcome Mapping to Program Outcome & Program Specific Outcome															
CO	PO 1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
1	2	1	2	2	1								3	2	1
2	2	1	1	1	2								3	2	1
3	1	2	2	2	1								3	1	1
4	3	2	1	2	2								3	2	1
5	3	2	2	1	1								3	1	1
6	2	2	1	1	1								3	2	1
Attainment	2.2	1.6	1.5	1.2	1.3								3	1.66	1

Regent Education and Research Foundation Group of Institutions

AY – 2022-23

Academic Year	2022 – 23 (EVEN)
Department	ECE
Year / Semester	3rd Year/ 6th Semester
Name of Faculty	Dr. HimeliChakrabarti
Subject Name	CMOS VLSI Design
Subject Code	PE-EC603C
Target Marks (%)	50%
No. of students achieved target marks	49
Total no. of students attempted	63
Percentage of students above target marks	80 %

Attainment Level (Theory)	Percentage
Level 1	
Level 2	20%
Level 3	80 %
Attainment of CO	
CO1	3
CO2	3
CO3	3

CO4	2
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Course name	CO	Description
CMOS VLSI Design	PE-EC603C.1	Identify the various IC fabrication methods.
	PE-EC603C.2	Express the Layout of simple MOS circuit.
	PE-EC603C.3	Differentiate various FPGA architectures.
	PE-EC603C.4	To learn basic CMOS Circuits

Direct CO-PO-PSO attainment

Course Outcome Mapping to Program Outcome & Program Specific Outcome															
CO	PO 1	PO2	PO 3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
PE-EC603C.1	1		1										3	2	1
PE-EC603C.2	1	1	1										3	2	1
PE-EC603C.3	1	2	1										3	2	1
PE-EC603C.4	1	2	1					1					3	1	1
Attainment	1	1.2	1					0.25					3	1.75	1

Regent Education and Research Foundation Group of Institutions

AY – 2022-23

Academic Year	2022 – 23 (EVEN)
Department	Electronics and Communication Engineering
Year / Semester	3rd year/6th Semester
Name of Faculty	Mr. Sukdeb Saha
Subject Name	Electronic Measurements and Measuring Instruments
Subject Code	EC 604A
Target Marks (%)	50%
No. of students achieved target marks	54
Total no. of students attempted	63
Percentage of students above target marks	85%

Attainment Level (Theory)	Percentage
Level 1	
Level 2	15%
Level 3	85%
Attainment of CO	
CO1	3
CO2	3
CO3	2
CO4	2

CO5	3
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Course name	CO	Description
Electronic Measurements and Measuring Instruments	OE-EC604A.1	Describe the fundamental concepts and principles of instrumentation
	OE-EC604A.2	Explain the operation of various instruments required in measurements
	OE-EC604A.3	Apply the measurement techniques for different types of tests
	OE-EC604A.4	To select specific instruments for specific measurement function.
	OE-EC604A.5	Understand principle of operation and working of different electronic instruments Students will understand functioning, specification and application of signal analyzing instruments.

Direct CO-PO-PSO attainment

Course Outcome Mapping to Program Outcome & Program Specific Outcome															
CO	PO 1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
OE-EC604A.1	3	2	1	1	1								3	2	1
OE-EC604A.2	3	3	2	1	1								3	1	1
OE-EC604A.3	3	3	3	2	1								3	2	1
OE-EC604A.4	2	3	2	2	1								2	2	
OE-EC604A.5	2	2	1	1	1								3	2	1
Attainment	2.6	2.6	1.8	1.4	1								2.8	1.8	1

1: Slight (Low)

2: Moderate (Medium)

3: Substantial (High)

Regent Education and Research Foundation Group of Institutions

AY – 2022-23

Academic Year	2022 – 23 (EVEN)
Department	ECE
Year / Semester	4th Year,8th Sem
Name of Faculty	Amit Ghosh
Subject Name	Fiber Optic Communications
Subject Code	EC-PE-EC801B
Target Marks (%)	50%
No. of students achieved target marks	41
Total no. of students attempted	41
Percentage of students above target marks	100%

Attainment Level (Theory)	Percentage
Level 1	
Level 2	
Level 3	100%
Attainment of CO	
CO1	3
CO2	3
CO3	3
CO4	3

CO5	3
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Course name	CO	Description
Fiber Optic Communications	1	Understand the principles fiber-optic communication, the components and the bandwidth advantages.
	2	Understand the properties of the optical fibers and optical components
	3	Understand operation of lasers, LEDs, and detectors
	4	Analyze system performance of optical communication systems
	5	Design optical networks and understand non-linear effects in optical fibers

Direct CO-PO-PSO attainment

Course Outcome Mapping to Program Outcome & Program Specific Outcome															
CO	PO 1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO1 0	PO1 1	PO1 2	PSO 1	PSO 2	PSO 3
1	3	2	3	1	-	1	2	-	-	2	2	3	3	2	1
2	3	2	2	-	-	1	2	-	-	2	2	3	3	2	1
3	3	2	3	-	-	3	2	-	-	2	2	3	3	1	1
4	3	3	3	-	-	2	2	2	2	2	2	3	3	2	1
5	2	3	3	-	-	2	2	1	2	2	3	3	3	2	1
Attainment	2.8	2.4	2.8	1.0	-	1.8	2.0	1.5	2.0	2.0	2.2	3.0	3	1.8	1

1: Slight (Low)

2: Moderate (Medium)

3: Substantial (High)

Regent Education and Research Foundation Group of Institutions

AY – 2022-23

Year / Semester	8thsem
Name of Faculty	Dr. Suparna Panchanan
Subject Name	VLSI Design Automation
Subject Code	PE-EC802C

Target Marks (%)	50%
No. of students achieved target marks	34
Total no. of students attempted	41
Percentage of students above target marks	82
Attainment Level (Theory)	Percentage
Level 1	2
Level 2	16
Level 3	82
Attainment of CO	
PE-EC 802C .1	2
PE-EC 802C .2	3
PE-EC 802C .3	2
PE-EC 802C .4	3
PE-EC 802C .5	2

Course name	CO	Description
PE-EC 802C	PE-EC 802C.1	Understand the need for VLSI physical design Automation.
	PE-EC 802C.2	Analyze VLSI automation algorithms for partitioning
	PE-EC 802C.3	Formulate placement, floor planning and pin assignment problems and simulate
	PE-EC 802C.4	Simulation
	PE-EC 802C.5	Synthesis

Direct CO-PO-PSO attainment

Course Outcome Mapping to Program Outcome & Program Specific Outcome															
C O	PO1	PO2	PO 3	PO 4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
PE-EC 802C.1	1	2											3	2	1
PE-EC 802C.2	1	2		1									3	2	1
PE-EC 802C.3		3	2	1									3	1	1
PE-EC 802C.4	1	2		1									3	2	1
PE-EC 802C.5	1	2											3	2	
Attainment	0.8	2.2	0.4	0.6									3	1.8	0.8

1: Slight (Low)

2: Moderate (Medium)

3: Substantial (High)

Regent Education and Research Foundation Group of Institutions

AY – 2022-23

Academic Year	2022 – 23 (EVEN)
Department	ECE
Year / Semester	4th/8th
Name of Faculty	Miss Poulmi Banerjee
Subject Name	Internet of Things
Subject Code	OE-EC803A
Target Marks (%)	50%
No. of students achieved target marks	33
Total no. of students attempted	41
Percentage of students above target marks	80 %

Attainment Level (Theory)	Percentage
Level 1	
Level 2	20 %
Level 3	80 %
Attainment of CO	
CO1	3
CO2	3
CO3	3

CO4	2
.....	

Course name	CO	Description
Internet of Things	EC803A.1	Able to understand the basic Application, Technology, Development History, Advantages of IOT.
	EC803A.2	Understand the technology revolution and the Principals of different Technology, Security of technology and Control devices and Operation, Revolution of internet , Prototyping principals , Cloud and Sensor network
	EC803A.3	Understand the technology revolution and the Principals of different Technology, Security of technology and Control devices and Operation, Revolution of internet , Prototyping principals , Cloud and Sensor network
	EC803A.4	Reality about prototyping for preparing business model and ethical characteristics and scaling up softwares, Design different IOT system

Direct CO-PO-PSO attainment

Course Outcome Mapping to Program Outcome & Program Specific Outcome															
CO	PO 1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
EC803A.1	1		1										3	2	1
EC803A.2	1	1	1										3	2	1
EC803A.3	1	2	1										3	1	1
EC803A.4	1	2	1					1					3	2	1
Attainment	1	1.2	1					0.25					3	1.75	1

Regent Education and Research Foundation Group of Institutions

AY – 2022-23

Academic Year	2022 – 23 (EVEN)
Department	ECE
Year / Semester	4th/8th
Name of Faculty	MR. Chintan Roy
Subject Name	Artificial Intelligence
Subject Code	OE-EC804A
Target Marks (%)	50%
No. of students achieved target marks	33
Total no. of students attempted	41
Percentage of students above target marks	80 %

Attainment Level (Theory)	Percentage
Level 1	
Level 2	20 %
Level 3	80 %
Attainment of CO	
CO1	3
CO2	3
CO3	3
CO4	2

Course name	CO	Description
Artificial Intelligence	EC804A.1	Understand the modern view of AI as the study of agents that receive percepts from the environment and perform actions.
	EC804A.2	Exhibit strong familiarity with a number of important AI techniques, including in particular search.
	EC804A.3	knowledge representation, planning and constraint management. Demonstrate awareness of the major challenges facing AI and the complex of typical problems within the field with search
	EC804A.4	Asses critically the techniques presented and to apply them to real world problems.

Direct CO-PO-PSO attainment

Course Outcome Mapping to Program Outcome & Program Specific Outcome															
CO	PO 1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	POS3
EC804A.1	1				1								3	2	1
EC804A.2	1	2	1	2	1								3	2	1
EC804A.3	1	2	1	1	1								3	1	1
EC804A.4	1	1	1	1	1								3	2	
Attainment	1	1.1	0.75	1	1								3	1.75	0.75

1: Slight (Low)

2: Moderate (Medium)

3: Substantial (High)

Academic Year	2022 – 23 (ODD)
Department	Mechanical Engineering
Year / Semester	2 nd /3 rd
Name of Faculty	Paramita Dutta
Subject Name	Mathematics III
Subject Code	BS-M301
Target Marks (%)	50%
No. of students achieved target marks	54
Total no. of students attempted	66
Percentage of students above target marks	81.82

Attainment Level (Theory)	Percentage
Level 1	6.06
Level 2	12.12
Level 3	81.82
Attainment of CO	
CO1	3
CO2	3
CO3	3
CO4	3

Course name	CO	Description
BS-M301	CO1	Know the methodologies to solve partial differential equations.
	CO2	Solve field problems in engineering involving partial differential equations.
	CO3	Formulate and solve problems involving random variables.
	CO4	Apply statistical methods for analyzing experimental data.

Direct CO-PO-PSO attainment

Course Outcome Mapping to Program Outcome & Program Specific Outcome															
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	-	2	2	1	-	-	-	-	-	-	1	1	1	1	-
CO2	1	3	2	2	-	-	-	-	-	-	1	1	1	1	-
CO3	-	2	2	2	-	-	-	-	-	-	2	2	1	1	-
CO4	-	3	2	3	-	-	-	-	-	-	3	2	1	1	-
Attainment	1	2.5	2	2	-	-	-	-	-	-	1.75	1.5	1	1	-

Academic Year	2022 – 23 (ODD)
Department	Mechanical Engineering
Year / Semester	2 nd /3 rd
Name of Faculty	Monalisa Sinha
Subject Name	Biology
Subject Code	BS-BIO301
Target Marks (%)	50%
No. of students achieved target marks	48
Total no. of students attempted	66
Percentage of students above target marks	72.73

Attainment Level (Theory)	Percentage
Level 1	3.03
Level 2	24.24
Level 3	72.73
Attainment of CO	
CO1	3
CO2	3
CO3	3
CO4	3

Course name	CO	Description
BS-BIO301	CO1	Describe about the biological observations of 18 th century and highlight the under lying criteria of biology, such as morphological, biochemical and ecological.
	CO2	Understand the concepts of recessiveness and dominance during the passage of genetic material from parent to offspring and identify DNA as a genetic material in the molecular basis of information transfer.
	CO3	Know about the structure and functioning of biomolecules.
	CO4	Apply thermodynamic principles to biological systems and understand microorganisms.

Direct CO-PO-PSO attainment

Course Outcome Mapping to Program Outcome & Program Specific Outcome															
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	-	-	-	-	-	3	3	3	-	-	-	1	-	2	2
CO2	-	-	-	-	-	2	3	2	-	-	-	1	-	2	2
CO3	-	-	-	-	-	3	3	2	-	-	-	1	-	2	2
CO4	1	1	-	-	-	3	3	3	-	-	-	1	-	2	2
Attainment	1	1	-	-	-	2.75	3	2.5	-	-	-	1	-	2	2

Academic Year	2022 – 23 (ODD)
Department	Mechanical Engineering
Year / Semester	2 nd /3 rd
Name of Faculty	Pulak Mazumdar
Subject Name	Basic Electronics Engineering
Subject Code	ES-ECE301
Target Marks (%)	50%
No. of students achieved target marks	37
Total no. of students attempted	66
Percentage of students above target marks	56.06

Attainment Level (Theory)	Percentage
Level 1	7.58
Level 2	36.36
Level 3	56.06
Attainment of CO	
CO1	3
CO2	3
CO3	3
CO4	3

Course name	CO	Description
ES-ECE301	CO1	Understand the principles of semiconductor devices and their applications.
	CO2	Design an application using operational amplifier.
	CO3	Understand the working of timing circuits, oscillator, logic gates, flip flop as a building block of digital systems.
	CO4	Learn the basics of Electronic communication system.

Direct CO-PO-PSO attainment

Course Outcome Mapping to Program Outcome & Program Specific Outcome															
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	2	1	1	-	1	1	-	-	-	-	1	1	-	-
CO2	3	2	2	2	-	1	1	-	-	-	-	1	1	-	-
CO3	3	2	2	2	-	1	1	-	-	-	-	2	1	-	-
CO4	3	2	2	2	-	1	1	-	-	-	-	2	1	-	-
Attainment	3	2	1.75	1.75	-	1	1	-	-	-	-	1.5	1	-	-

Academic Year	2022 – 23 (ODD)
Department	Mechanical Engineering
Year / Semester	2 nd /3 rd
Name of Faculty	Debtanu Patra
Subject Name	Engineering Mechanics
Subject Code	ES-ME301
Target Marks (%)	50%
No. of students achieved target marks	34
Total no. of students attempted	66
Percentage of students above target marks	51.52

Attainment Level (Theory)	Percentage
Level 1	21.21
Level 2	27.27
Level 3	51.52
Attainment of CO	
CO1	3
CO2	3
CO3	3
CO4	3

Course name	CO	Description
ES-ME301	CO1	Develop ability to model and analysis of mechanical engineering systems using vectoral representation of forces and moments.
	CO2	Know the basis of centroid and center of gravity.
	CO3	Understand the basic dynamics concept: force, momentum, work, power and energy.
	CO4	Demonstrate the kinetics of rigid bodies and the concept of vibration.

Direct CO-PO-PSO attainment

Course Outcome Mapping to Program Outcome & Program Specific Outcome															
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	3	3	1	-	1	-	-	-	-	-	2	3	1	1
CO2	3	3	3	1	-	1	-	-	-	-	-	2	3	1	1
CO3	3	3	3	2	-	1	-	-	-	-	-	2	3	1	1
CO4	3	3	3	2	-	1	-	-	-	-	-	2	3	1	1
Attainment	3	3	3	1.5	-	1	-	-	-	-	-	2	3	1	1

Academic Year	2022 – 23 (ODD)
Department	Mechanical Engineering
Year / Semester	2 nd /3 rd
Name of Faculty	Arpan Mandal
Subject Name	Thermodynamics
Subject Code	PC-ME301
Target Marks (%)	50%
No. of students achieved target marks	54
Total no. of students attempted	66
Percentage of students above target marks	81.82

Attainment Level (Theory)	Percentage
Level 1	4.55
Level 2	13.64
Level 3	81.82
Attainment of CO	
CO1	3
CO2	3
CO3	3
CO4	3

Course name	CO	Description
PC-ME301	CO1	Apply energy balance to systems and control volumes, in situations involving heat and work interactions.
	CO2	Evaluate changes in thermodynamic properties of substances.
	CO3	Determine the performance of energy conversion devices.
	CO4	Differentiate between high grade and low grade energies.

Direct CO-PO-PSO attainment

Course Outcome Mapping to Program Outcome & Program Specific Outcome															
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	3	3	1	-	1	1	-	-	-	-	2	3	1	1
CO2	3	3	3	1	-	1	1	-	-	-	-	2	3	1	1
CO3	3	3	3	1	-	1	1	-	-	-	-	2	3	1	1
CO4	3	3	3	1	-	1	1	-	-	-	-	2	3	1	1
Attainment	3	3	3	1	-	1	1	-	-	-	-	2	3	1	1

Academic Year	2022 – 23 (ODD)
Department	Mechanical Engineering
Year / Semester	2 nd /3 rd
Name of Faculty	Puspendu Chandra Chandra & Pabitra Maji
Subject Name	Manufacturing Processes
Subject Code	PC-ME302
Target Marks (%)	50%
No. of students achieved target marks	60
Total no. of students attempted	66
Percentage of students above target marks	90.91

Attainment Level (Theory)	Percentage
Level 1	1.52
Level 2	7.58
Level 3	90.91
Attainment of CO	
CO1	3
CO2	3
CO3	3
CO4	3

Course name	CO	Description
PC-ME302	CO1	Explain the process of making patterns, preparation of sand mould, various special casting processes and casting defects.
	CO2	Describe different metal forming techniques, their applications and difficulties.
	CO3	Understand machining operations, cutting tool geometry and basic of CNC machining.
	CO4	Know the principles of different joining processes.

Direct CO-PO-PSO attainment

Course Outcome Mapping to Program Outcome & Program Specific Outcome															
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	3	3	1	-	1	1	1	-	-	-	2	3	1	1
CO2	3	3	2	1	-	1	1	1	-	-	-	2	3	1	1
CO3	3	3	3	1	-	1	1	1	-	-	-	2	3	1	1
CO4	3	3	2	1	-	1	1	1	-	-	-	2	3	1	1
Attainment	3	3	2.5	1	-	1	1	1	-	-	-	2	3	1	1

Academic Year	2022 – 23 (ODD)
Department	Mechanical Engineering
Year / Semester	2 nd /3 rd
Name of Faculty	Pabitra Maji
Subject Name	Practice of Manufacturing Processes
Subject Code	PC-ME391
Target Marks (%)	50%
No. of students achieved target marks	66
Total no. of students attempted	66
Percentage of students above target marks	100
Attainment Level (Practical)	Percentage
Level 1	0
Level 2	0
Level 3	100
Attainment of CO	
CO1	3
CO2	3
CO3	3
CO4	3

Course name	CO	Description
PC-ME391	CO1	Perform machining operations on lathe, milling machine, shaper and drilling machine.
	CO2	Prepare pattern and mould for sand casting.
	CO3	Execute forging and sheet metal operations.
	CO4	Perform joining and fitting operations.

Direct CO-PO-PSO attainment

Course Outcome Mapping to Program Outcome & Program Specific Outcome															
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	1	2	1	-	1	1	-	3	1	1	2	3	2	1
CO2	3	1	2	1	-	1	1	-	3	1	1	2	3	2	1
CO3	3	1	2	1	-	1	1	-	3	1	1	2	3	2	1
CO4	3	1	2	1	-	1	1	-	3	1	1	2	3	2	1
Attainment	3	1	2	1	-	1	1	-	3	1	1	2	3	2	1

Academic Year	2022 – 23 (ODD)
Department	Mechanical Engineering
Year / Semester	3 rd /5th
Name of Faculty	Arpan Mandal & Debtanu Patra
Subject Name	Heat Transfer
Subject Code	PC-ME501
Target Marks (%)	50%
No. of students achieved target marks	27
Total no. of students attempted	62
Percentage of students above target marks	43.55

Attainment Level (Theory)	Percentage
Level 1	9.68
Level 2	46.77
Level 3	43.55
Attainment of CO	
CO1	2
CO2	2
CO3	2
CO4	2

Course name	CO	Description
PC-ME501	CO1	Understand the three basic modes of heat transfer namely conduction, convection and radiation and analyze problems involving any of the three modes of heat transfer.
	CO2	Analyze the temperature variation using analytical methods where possible or employ approximate methods or empirical correlations to evaluate the rate of heat transfer.
	CO3	Describe film wise & drop wise condensation, pool & flow boiling and analyze heat exchanger using LMTD and NTU approaches.
	CO4	Analyze diffusion and convective mass transfer occurring in different applications.

Direct CO-PO-PSO attainment

Course Outcome Mapping to Program Outcome & Program Specific Outcome															
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	3	3	1	-	1	3	1	-	-	-	1	3	1	1
CO2	3	3	3	2	-	1	2	1	-	-	-	2	3	1	1
CO3	3	3	3	3	-	1	2	1	-	-	-	2	3	1	1
CO4	3	3	3	3	-	1	2	1	-	-	-	2	3	1	1
Attainment	3	3	3	2.25	-	1	2.25	1	-	-	-	1.75	3	1	1

Academic Year	2022 – 23 (ODD)
Department	Mechanical Engineering
Year / Semester	3 rd /5th
Name of Faculty	Banarsi Pandey
Subject Name	Solid Mechanics
Subject Code	PC-ME502
Target Marks (%)	50%
No. of students achieved target marks	9
Total no. of students attempted	62
Percentage of students above target marks	14.52

Attainment Level (Theory)	Percentage
Level 1	33.87
Level 2	51.61
Level 3	14.52
Attainment of CO	
CO1	2
CO2	2
CO3	2
CO4	2

Course name	CO	Description
PC-ME502	CO1	Understand the concept of tensors, stress and strain in Cartesian coordinate.
	CO2	Learn different methods to formulate and solve stress-strain problems.
	CO3	Demonstrate governing equations for stress and strain in cylindrical and spherical coordinates and axisymmetric problems.
	CO4	Apply the problem solving knowledge to practical applications.

Direct CO-PO-PSO attainment

Course Outcome Mapping to Program Outcome & Program Specific Outcome															
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	3	3	1	-	1	-	-	-	-	-	1	3	1	1
CO2	3	3	3	2	-	1	-	-	-	-	-	2	3	1	1
CO3	3	3	3	3	-	1	-	-	-	-	-	2	3	1	1
CO4	3	3	3	3	-	1	-	-	-	-	-	2	3	1	1
Attainment	3	3	3	2.25	-	1	-	-	-	-	-	1.75	3	1	1

Academic Year	2022 – 23 (ODD)
Department	Mechanical Engineering
Year / Semester	3 rd /5th
Name of Faculty	Arpan Mandal
Subject Name	Kinematics and Theory of Machines
Subject Code	PC-ME503
Target Marks (%)	50%
No. of students achieved target marks	32
Total no. of students attempted	62
Percentage of students above target marks	51.61

Attainment Level (Theory)	Percentage
Level 1	12.90
Level 2	35.48
Level 3	51.61
Attainment of CO	
CO1	3
CO2	3
CO3	3
CO4	3

Course name	CO	Description
PC-ME503	CO1	Understand the kinematics and rigid- body dynamics of kinematically driven machine components.
	CO2	Understand the motion of linked mechanisms in terms of the displacement, velocity and acceleration at any point in a rigid link.
	CO3	Understand the kinematics of power transmitting devices.
	CO4	Understand the concept of vibration, effect of balancing and mechanism of stability.

Direct CO-PO-PSO attainment

Course Outcome Mapping to Program Outcome & Program Specific Outcome															
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	3	3	2	-	1	-	-	-	-	-	3	3	2	1
CO2	3	3	3	2	-	1	-	-	-	-	-	2	3	1	1
CO3	3	3	3	3	-	1	-	-	-	-	-	2	3	1	1
CO4	3	3	3	3	-	1	-	-	-	-	-	2	3	1	1
Attainment	3	3	3	2.5	-	1	-	-	-	-	-	2.25	3	1.25	1

Academic Year	2022 – 23 (ODD)
Department	Mechanical Engineering
Year / Semester	3 rd /5th
Name of Faculty	Amrita Chakraborty
Subject Name	Humanities I (Effective Technical Communication)
Subject Code	HM-HU501
Target Marks (%)	50%
No. of students achieved target marks	54
Total no. of students attempted	62
Percentage of students above target marks	87.10

Attainment Level (Theory)	Percentage
Level 1	1.61
Level 2	11.29
Level 3	87.10
Attainment of CO	
CO1	3
CO2	3
CO3	3
CO4	3

Course name	CO	Description
HM-HU501	CO1	Understand the dynamics of Verbal and Non Verbal aspects of technical communication.
	CO2	Practice multi-step writing process to plan, draft, and revise reports, correspondence, and presentations.
	CO3	Know the ethical aspects of engineering and explain social and professional etiquettes.
	CO4	Plan self-development and practice self-assessment to function on multi-disciplinary teams.

Direct CO-PO-PSO attainment

Course Outcome Mapping to Program Outcome & Program Specific Outcome															
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	-	-	-	-	-	-	-	-	3	3	-	2	-	3	1
CO2	-	-	-	-	-	-	-	-	3	2	1	2	-	3	1
CO3	-	-	-	-	-	2	2	3	2	2	1	2	-	3	2
CO4	-	-	-	-	-	-	-	-	3	3	2	2	-	3	1
Attainment	-	-	-	-	-	2	2	3	2.75	2.5	1.33	2	-	3	1.25

Academic Year	2022 – 23 (ODD)
Department	Mechanical Engineering
Year / Semester	3 rd /5th
Name of Faculty	Aninda Das
Subject Name	Mechanical Engineering Laboratory (Thermal) I
Subject Code	PC-ME591
Target Marks (%)	50%
No. of students achieved target marks	62
Total no. of students attempted	62
Percentage of students above target marks	100
Attainment Level (Practical)	Percentage
Level 1	0
Level 2	0
Level 3	100
Attainment of CO	
CO1	3
CO2	3
CO3	3
CO4	3

Course name	CO	Description
PC-ME591	CO1	Analyze fluid flow through pipe and different flow meters.
	CO2	Analyze performance characteristics of hydraulic machines.
	CO3	Analyze fuel characterizations, performance of IC engines and vapor compression system.
	CO4	Analyze thermal properties of a specimen.

Direct CO-PO-PSO attainment

Course Outcome Mapping to Program Outcome & Program Specific Outcome															
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	1	2	1	-	-	-	-	3	1	1	2	3	3	1
CO2	3	1	2	1	-	1	1	-	3	1	1	2	3	3	1
CO3	3	1	2	1	-	1	1	-	3	1	1	2	3	3	1
CO4	3	1	2	1	-	-	-	-	3	1	1	2	3	3	1
Attainment	3	1	2	1	-	1	1	-	3	1	1	2	3	3	1

Academic Year	2022 – 23 (ODD)
Department	Mechanical Engineering
Year / Semester	3 rd /5 th
Name of Faculty	Dr. Abhijit Biswas
Subject Name	Machine Drawing II
Subject Code	PC-ME592
Target Marks (%)	50%
No. of students achieved target marks	62
Total no. of students attempted	62
Percentage of students above target marks	100
Attainment Level (Practical)	Percentage
Level 1	0
Level 2	0
Level 3	100
Attainment of CO	
CO1	3
CO2	3
CO3	3
CO4	3

Course name	CO	Description
PC-ME592	CO1	Understand and apply the knowledge of machine drawing as a system of communication in which ideas are expressed clearly and all information fully conveyed.
	CO2	Understand the design a system, component or process to meet desired needs within, realistic constraints such as manufacturability, economic, environmental, safety & sustainability etc.
	CO3	Represent a part drawing and assembly drawing.
	CO4	Identify, formulates, analyzes and solve engineering problems in optimum time.

Direct CO-PO-PSO attainment

Course Outcome Mapping to Program Outcome & Program Specific Outcome															
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	1	3	1	-	-	-	-	-	2	1	2	3	2	1
CO2	3	2	1	1	1	2	2	-	-	1	2	2	3	2	1
CO3	3	2	3	3	3	-	-	-	-	1	2	2	3	2	1
CO4	3	3	3	3	3	-	-	-	-	1	2	2	3	2	2
Attainment	3	2	2.5	2	2.33	2	2	-	-	1.25	1.75	2	3	2	1.25

Academic Year	2022 – 23 (ODD)
Department	Mechanical Engineering
Year / Semester	3 rd /5th
Name of Faculty	All faculty
Subject Name	Project-I
Subject Code	PW-ME581
Target Marks (%)	50%
No. of students achieved target marks	62
Total no. of students attempted	62
Percentage of students above target marks	100
Attainment Level (Sessional)	Percentage
Level 1	0
Level 2	0
Level 3	100
Attainment of CO	
CO1	3
CO2	3
CO3	3
CO4	3

Course name	CO	Description
PW-ME581	CO1	Learn project management skills.
	CO2	Apply theoretical knowledge into practical solutions.
	CO3	Identify and resolve problems through critical thinking and decision-making capabilities.
	CO4	Learn to communicate effectively and develop teamwork approach.

Direct CO-PO-PSO attainment

Course Outcome Mapping to Program Outcome & Program Specific Outcome															
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	-	-	-	-	-	-	-	-	3	3	3	2	3	2	1
CO2	3	3	3	3	2	-	-	-	-	-	1	2	3	2	2
CO3	2	3	3	3	2	1	1	1	2	2	2	2	3	2	2
CO4	-	-	-	-	-	1	1	1	3	3	3	2	3	3	2
Attainment	2.5	3	3	3	2	1	1	1	2.67	2.67	2.25	2	3	2.25	1.75

Academic Year	2022 – 23 (ODD)
Department	Mechanical Engineering
Year / Semester	4 th /7th
Name of Faculty	Dr. Abhijit Biswas
Subject Name	Advanced Manufacturing Technology
Subject Code	PC-ME701
Target Marks (%)	50%
No. of students achieved target marks	44
Total no. of students attempted	57
Percentage of students above target marks	77.19

Attainment Level (Theory)	Percentage
Level 1	1.75
Level 2	21.05
Level 3	77.19
Attainment of CO	
CO1	3
CO2	3
CO3	3
CO4	3

Course name	CO	Description
PC-ME701	CO1	Differentiate the various non-traditional machining processes.
	CO2	Demonstrate the principle of different non-traditional machining processes.
	CO3	Understand the effect of process parameters for different non-traditional machining processes.
	CO4	Demonstrate micromachining technology.

Direct CO-PO-PSO attainment

Course Outcome Mapping to Program Outcome & Program Specific Outcome																
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	
CO1	3	1	1	-	-	-	-	-	-	-	-	1	3	1	1	
CO2	3	1	1	1	-	-	-	-	-	-	-	2	3	1	1	
CO3	3	3	3	2	-	-	-	-	-	-	-	3	3	1	1	
CO4	3	3	2	2	-	-	-	-	-	-	-	2	3	1	1	
Attainment	3	2	1.75	1.67	-	-	-	-	-	-	-	2	3	1	1	

Academic Year	2022 – 23 (ODD)
Department	Mechanical Engineering
Year / Semester	4 th /7 th
Name of Faculty	Sabyasachi Mukherjee
Subject Name	Automobile Engineering
Subject Code	PE-ME701/2A
Target Marks (%)	50%
No. of students achieved target marks	54
Total no. of students attempted	57
Percentage of students above target marks	97.74

Attainment Level (Theory)	Percentage
Level 1	0
Level 2	5.26
Level 3	94.74
Attainment of CO	
CO1	3
CO2	3
CO3	3
CO4	3

Course name	CO	Description
PE-ME701/2A	CO1	Understand the basic lay-out of an automobile.
	CO2	Explain the operation of engine cooling, lubrication, ignition, electrical and air conditioning systems.
	CO3	Illustrate the principles of transmission, suspension, steering and braking systems.
	CO4	Demonstrate automotive electronics and latest developments in automobiles.

Direct CO-PO-PSO attainment

Course Outcome Mapping to Program Outcome & Program Specific Outcome															
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	1	1	-	-	-	-	-	-	-	-	1	3	1	1
CO2	3	1	1	-	-	2	2	2	-	-	-	1	3	1	1
CO3	3	1	1	-	-	2	2	2	-	-	-	1	3	1	1
CO4	3	1	1	-	-	-	-	-	-	-	-	2	3	1	1
Attainment	3	1	1	-	-	2	2	2	-	-	-	1.25	3	1	1

Academic Year	2022 – 23 (ODD)
Department	Mechanical Engineering
Year / Semester	4 th /7 th
Name of Faculty	Puspendu Chandra Chandra
Subject Name	Advanced Welding Technology
Subject Code	PE-ME701/2H
Target Marks (%)	50%
No. of students achieved target marks	52
Total no. of students attempted	57
Percentage of students above target marks	91.23

Attainment Level (Theory)	Percentage
Level 1	1.75
Level 2	7.02
Level 3	91.23
Attainment of CO	
CO1	3
CO2	3
CO3	3
CO4	3

Course name	CO	Description
PE-ME701/2H	CO1	Understand different types of welding processes used for different materials.
	CO2	Demonstrate basic mechanism of different welding processes.
	CO3	Evaluate the influencing factors for different welding processes.
	CO4	Understand welding defects and various tests to judge soundness of the weld joint.

Direct CO-PO-PSO attainment

Course Outcome Mapping to Program Outcome & Program Specific Outcome															
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	1	-	-	-	-	-	-	-	-	-	1	3	1	1
CO2	3	1	1	-	-	2	1	-	-	-	-	1	3	1	1
CO3	3	3	2	2	-	2	1	-	-	-	-	1	3	1	1
CO4	3	3	3	3	-	2	1	-	-	-	-	2	3	2	2
Attainment	3	2	2	2.5	-	2	1	-	-	-	-	1.25	3	1.25	1.25

Academic Year	2022 – 23 (ODD)
Department	Mechanical Engineering
Year / Semester	4 th /7 th
Name of Faculty	Aninda Das
Subject Name	Non-Conventional Energy Resources
Subject Code	OE-ME701D
Target Marks (%)	50%
No. of students achieved target marks	55
Total no. of students attempted	57
Percentage of students above target marks	96.49

Attainment Level (Theory)	Percentage
Level 1	0
Level 2	3.51
Level 3	96.49
Attainment of CO	
CO1	3
CO2	3
CO3	3
CO4	3

Course name	CO	Description
OE-ME701D	CO1	Know about the energy scenario at present and the need of using renewable energy for sustainability.
	CO2	Demonstrate different sources of non-conventional energy.
	CO3	Understand the generation and storage of energy from non-conventional sources.
	CO4	Illustrate the applications and limitations of different non-conventional energy resources.

Direct CO-PO-PSO attainment

Course Outcome Mapping to Program Outcome & Program Specific Outcome															
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	1	2	-	-	-	3	3	1	-	-	-	2	1	2	2
CO2	2	-	2	-	-	3	3	2	-	-	-	2	1	2	2
CO3	3	-	2	-	-	3	3	2	-	-	-	2	1	2	2
CO4	2	-	2	-	-	3	3	2	-	-	-	1	1	2	2
Attainment	2	2	2	-	-	3	3	1.75	-	-	-	1.75	1	2	2

Academic Year	2022 – 23 (ODD)
Department	Mechanical Engineering
Year / Semester	4 th /7 th
Name of Faculty	Rahul Kanti Nath
Subject Name	Economics for Engineers
Subject Code	HM-HU701
Target Marks (%)	50%
No. of students achieved target marks	32
Total no. of students attempted	57
Percentage of students above target marks	56.14
Attainment Level (Theory)	Percentage
Level 1	8.77
Level 2	35.09
Level 3	56.14
Attainment of CO	
CO1	3
CO2	3
CO3	3
CO4	3

Course name	CO	Description
HM-HU701	CO1	Understand economic decisions making criteria.
	CO2	Know basic principles of engineering costs and estimation.
	CO3	Illustrate the concept of depreciation and inflation.
	CO4	Understand basic accounting principles.

Direct CO-PO-PSO attainment

Course Outcome Mapping to Program Outcome & Program Specific Outcome																
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	
CO1	-	2	-	-	-	-	2	3	-	-	2	1	3	1	1	
CO2	-	2	-	-	-	-	2	3	-	-	3	1	3	1	1	
CO3	-	1	-	1	-	-	2	3	-	-	2	1	3	1	1	
CO4	-	-	-	-	-	-	3	3	-	-	2	1	3	1	1	
Attainment	-	1.67	-	1	-	-	2.25	3	-	-	2.25	1	3	1	1	

Academic Year	2022 – 23 (ODD)
Department	Mechanical Engineering
Year / Semester	4 th /7 th
Name of Faculty	Sabyasachi Mukherjee
Subject Name	Mechanical Engineering Laboratory III (Manufacturing)
Subject Code	PC-ME791
Target Marks (%)	50%
No. of students achieved target marks	57
Total no. of students attempted	57
Percentage of students above target marks	100
Attainment Level (Practical)	Percentage
Level 1	0
Level 2	0
Level 3	100
Attainment of CO	
CO1	3
CO2	3
CO3	3
CO4	3

Course name	CO	Description
PC-ME791	CO1	Perform quantitative and qualitative analysis of conventional manufacturing processes.
	CO2	Understand the working of a robot and its programming.
	CO3	Perform programming on CNC machine.
	CO4	Perform non-conventional machining and additive manufacturing.

Direct CO-PO-PSO attainment

Course Outcome Mapping to Program Outcome & Program Specific Outcome															
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	3	3	3	2	-	1	-	2	-	3	2	3	2	1
CO2	3	2	3	2	3	-	-	-	2	-	3	2	3	2	1
CO3	3	3	3	2	3	-	-	-	2	-	3	2	3	2	1
CO4	3	2	3	2	3	-	-	-	2	-	3	2	3	2	1
Attainment	3	2.5	3	2.25	2.75	-	1	-	2	-	3	2	3	2	1

Academic Year	2022 – 23 (ODD)
Department	Mechanical Engineering
Year / Semester	4 th /7 th
Name of Faculty	All faculty
Subject Name	Project-III
Subject Code	PW-ME781
Target Marks (%)	50%
No. of students achieved target marks	57
Total no. of students attempted	57
Percentage of students above target marks	100
Attainment Level (Sessional)	Percentage
Level 1	0
Level 2	0
Level 3	100
Attainment of CO	
CO1	3
CO2	3
CO3	3
CO4	3

Course name	CO	Description
PW-ME781	CO1	Learn project management skills.
	CO2	Apply theoretical knowledge into practical solutions.
	CO3	Identify and resolve problems through critical thinking and decision-making capabilities.
	CO4	Learn to communicate effectively and develop teamwork approach.

Direct CO-PO-PSO attainment

Course Outcome Mapping to Program Outcome & Program Specific Outcome															
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	-	-	-	-	-	-	-	-	3	3	3	2	3	2	1
CO2	3	3	3	3	2	-	-	-	-	-	1	2	3	2	2
CO3	2	3	3	3	2	1	1	1	2	2	2	2	3	2	2
CO4	-	-	-	-	-	1	1	1	3	3	3	2	3	3	2
Attainment	2.5	3	3	3	2	1	1	1	2.67	2.67	2.25	2	3	2.25	1.75

Academic Year	2022 – 23 (EVEN)
Department	Mechanical Engineering
Year / Semester	2 nd /4 th
Name of Faculty	Dr. Rahul Kanti Nath
Subject Name	Materials Engineering
Subject Code	ES-ME401
Target Marks (%)	50%
No. of students achieved target marks	27
Total no. of students attempted	62
Percentage of students above target marks	43.55
Attainment Level (Theory)	Percentage
Level 1	20.97
Level 2	35.48
Level 3	43.55
Attainment of CO	
CO1	3
CO2	3
CO3	3
CO4	3

Course name	CO	Description
ES-ME401	CO1	Identify crystal structures for various materials and understand the defects in such structures.
	CO2	Quantify mechanical properties and demonstrate failure in materials.
	CO3	Evaluate the state of the phases present in a material and its effect.
	CO4	Understand the methods to tailor material properties of ferrous and non-ferrous materials.

Direct CO-PO-PSO attainment

Course Outcome Mapping to Program Outcome & Program Specific Outcome															
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	3	3	2	-	-	-	-	-	-	-	2	3	1	1
CO2	3	3	3	3	-	-	-	-	-	-	-	2	3	1	1
CO3	3	3	1	1	-	-	-	-	-	-	-	2	3	1	1
CO4	3	3	3	3	-	-	-	-	-	-	-	2	3	1	1
Attainment	3	3	2.5	2.25	-	-	-	-	-	-	-	2	3	1	1

Academic Year	2022 – 23 (EVEN)
Department	Mechanical Engineering
Year / Semester	2 nd /4 th
Name of Faculty	Arpan Mandal
Subject Name	Applied Thermodynamics
Subject Code	PC-ME401
Target Marks (%)	50%
No. of students achieved target marks	23
Total no. of students attempted	62
Percentage of students above target marks	37.10
Attainment Level (Theory)	Percentage
Level 1	25.81
Level 2	37.10
Level 3	37.10
Attainment of CO	
CO1	3
CO2	3
CO3	3
CO4	3

Course name	CO	Description
PC-ME401	CO1	Understand the operation of various practical power cycles.
	CO2	Analyze various heat cycles and psychrometry.
	CO3	Evaluate energy conversion in various thermal devices such as combustors, air coolers, nozzles, diffusers, steam turbines and reciprocating compressors.
	CO4	Demonstrate the phenomenon occurring in high speed compressible flow.

Direct CO-PO-PSO attainment

Course Outcome Mapping to Program Outcome & Program Specific Outcome															
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	2	3	2	-	1	1	-	-	-	-	2	3	1	1
CO2	3	3	3	3	-	1	1	-	-	-	-	2	3	1	1
CO3	3	3	1	1	-	1	1	-	-	-	-	2	3	1	1
CO4	3	3	3	3	-	1	1	-	-	-	-	2	3	1	1
Attainment	3	2.75	2.5	2.25	-	1	1	-	-	-	-	2	3	1	1

Academic Year	2022 – 23 (EVEN)
Department	Mechanical Engineering
Year / Semester	2 nd /4 th
Name of Faculty	Dr. Pabitra Maji
Subject Name	Fluid Mechanics & Fluid Machines
Subject Code	PC-ME402
Target Marks (%)	50%
No. of students achieved target marks	45
Total no. of students attempted	62
Percentage of students above target marks	72.58
Attainment Level (Theory)	Percentage
Level 1	8.06
Level 2	19.35
Level 3	72.58
Attainment of CO	
CO1	3
CO2	3
CO3	3
CO4	3

Course name	CO	Description
PC-ME402	CO1	Understand the mass and moment conservation laws for fluid flows and their applications.
	CO2	Study the velocity and pressure variations in various types of simple flows.
	CO3	Analyze mathematically various simple flow situations.
	CO4	Evaluate the performance of pumps and turbines.

Direct CO-PO-PSO attainment

Course Outcome Mapping to Program Outcome & Program Specific Outcome															
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	3	3	3	-	1	1	-	-	-	-	2	3	1	1
CO2	3	3	3	3	-	1	1	-	-	-	-	2	3	1	1
CO3	3	3	3	3	-	1	1	-	-	-	-	2	3	1	1
CO4	3	3	3	3	-	1	1	-	-	-	-	2	3	1	2
Attainment	3	3	3	3	-	1	1	-	-	-	-	2	3	1	1.25

Academic Year	2022 – 23 (EVEN)
Department	Mechanical Engineering
Year / Semester	2 nd /4 th
Name of Faculty	Banarsi Pandey
Subject Name	Strength of Materials
Subject Code	PC-ME403
Target Marks (%)	50%
No. of students achieved target marks	14
Total no. of students attempted	62
Percentage of students above target marks	22.58
Attainment Level (Theory)	Percentage
Level 1	45.16
Level 2	31.26
Level 3	22.58
Attainment of CO	
CO1	1
CO2	1
CO3	1
CO4	1

Course name	CO	Description
PC-ME403	CO1	Understand the nature of stresses developed in simple geometries such as bars, cantilevers, beams, shafts, cylinders and spheres for various types of simple loads.
	CO2	Analyze the elastic deformation occurring in various simple geometries for different types of loading.
	CO3	Understand the development of internal forces and resistance mechanism for one dimensional and two-dimensional structural elements.
	CO4	Understand the behavior of torsion, stresses and deformation in shafts and helical springs.

Direct CO-PO-PSO attainment

Course Outcome Mapping to Program Outcome & Program Specific Outcome															
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	3	3	3	-	1	1	-	-	-	-	2	3	1	1
CO2	3	3	3	3	-	1	1	-	-	-	-	2	3	1	1
CO3	3	3	3	3	-	1	1	-	-	-	-	2	3	1	1
CO4	3	3	3	3	-	1	1	-	-	-	-	2	3	1	1
Attainment	3	3	3	3	-	1	1	-	-	-	-	2	3	1	1

Academic Year	2022 – 23 (EVEN)
Department	Mechanical Engineering
Year / Semester	2 nd /4 th
Name of Faculty	Debtanu Patra
Subject Name	Metrology & Instrumentation
Subject Code	PC-ME404
Target Marks (%)	50%
No. of students achieved target marks	30
Total no. of students attempted	62
Percentage of students above target marks	48.39
Attainment Level (Theory)	Percentage
Level 1	12.90
Level 2	38.71
Level 3	48.39
Attainment of CO	
CO1	3
CO2	3
CO3	3
CO4	3

Course name	CO	Description
PC-ME404	CO1	Understand the working of linear, angular measuring and working of optical measuring instruments and fundamentals of limits and limit gauges.
	CO2	Understand the basic idea of various methods for measurement of screw thread and surface finish parameters, advanced measuring devices and machine tool metrology.
	CO3	Overview of mechanical measurement systems and principle of instruments for motion and dimension measurement.
	CO4	Understand the working principle and applications of devices for measurement of force and torque; strain and stress and temperature.

Direct CO-PO-PSO attainment

Course Outcome Mapping to Program Outcome & Program Specific Outcome															
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	2	2	-	-	1	-	-	-	-	-	2	3	1	1
CO2	3	2	2	-	-	1	-	-	-	-	-	2	3	1	1
CO3	3	2	2	-	-	1	-	-	-	-	-	2	3	1	1
CO4	3	2	2	-	-	1	-	-	-	-	-	2	3	1	1
Attainment	3	2	2	-	-	1	-	-	-	-	-	2	3	1	1

Academic Year	2022 – 23 (EVEN)
Department	Mechanical Engineering
Year / Semester	2 nd /4 th
Name of Faculty	Debtanu Patra
Subject Name	Practice of manufacturing Processes and Systems Laboratory
Subject Code	PC-ME491
Target Marks (%)	50%
No. of students achieved target marks	62
Total no. of students attempted	62
Percentage of students above target marks	100
Attainment Level (Practical)	Percentage
Level 1	0
Level 2	0
Level 3	100
Attainment of CO	
CO1	3
CO2	3
CO3	3
CO4	3

Course name	CO	Description
PC-ME491	CO1	Perform experiments on hydraulics/pneumatics and electronics systems.
	CO2	Take measurement using standard gauges.
	CO3	Select and use different measuring instruments and accessories as per requirement.
	CO4	Understand the scope for errors and remedies during taking measurement of specimens.

Direct CO-PO-PSO attainment

Course Outcome Mapping to Program Outcome & Program Specific Outcome															
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	2	2	-	-	-	-	-	1	-	1	2	3	3	1
CO2	3	2	2	-	-	-	-	-	1	-	1	2	3	3	1
CO3	3	2	2	-	-	-	-	-	1	-	1	2	3	3	1
CO4	3	3	2	-	-	-	-	-	1	-	1	2	3	3	1
Attainment	3	2.25	2	-	-	-	-	-	1	-	1	2	3	3	1

Academic Year	2022 – 23 (EVEN)
Department	Mechanical Engineering
Year / Semester	2 nd /4 th
Name of Faculty	Banarsi Pandey
Subject Name	Machine Drawing I
Subject Code	PC-ME492
Target Marks (%)	50%
No. of students achieved target marks	62
Total no. of students attempted	62
Percentage of students above target marks	100
Attainment Level (Practical)	Percentage
Level 1	0
Level 2	0
Level 3	100
Attainment of CO	
CO1	3
CO2	3
CO3	3
CO4	3

Course name	CO	Description
PC-ME492	CO1	Draw and recognize standard engineering symbols.
	CO2	Draw and analyze orthographic projection.
	CO3	Draw and analyze isometric projection.
	CO4	Draw and analyze assembly design.

Direct CO-PO-PSO attainment

Course Outcome Mapping to Program Outcome & Program Specific Outcome															
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	3	2	-	-	-	-	-	-	-	2	2	3	2	1
CO2	3	3	2	-	-	-	-	-	-	-	2	2	3	1	1
CO3	3	3	2	-	-	-	-	-	-	-	2	2	3	1	1
CO4	3	3	2	-	-	-	-	-	-	-	2	2	3	1	1
Attainment	3	3	2	-	-	-	-	-	-	-	2	2	3	1.25	1

Academic Year	2022 – 23 (EVEN)
Department	Mechanical Engineering
Year / Semester	3 rd /6 th
Name of Faculty	Dr. Pabitra Maji
Subject Name	Manufacturing Technology
Subject Code	PC-ME601
Target Marks (%)	50%
No. of students achieved target marks	26
Total no. of students attempted	59
Percentage of students above target marks	44.07
Attainment Level (Theory)	Percentage
Level 1	25.42
Level 2	30.51
Level 3	44.07
Attainment of CO	
CO1	3
CO2	3
CO3	3
CO4	3

Course name	CO	Description
PC-ME601	CO1	Describe machines and related tools for manufacturing various components.
	CO2	Understand the relationship between process and system in manufacturing domain.
	CO3	Perform experiment on CNC machine.
	CO4	Demonstrate rapid prototyping methods.

Direct CO-PO-PSO attainment

Course Outcome Mapping to Program Outcome & Program Specific Outcome															
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	2	2	1	-	-	-	-	-	-	-	2	3	1	1
CO2	3	2	2	1	-	-	-	-	-	-	-	2	3	1	1
CO3	3	3	3	2	-	-	-	-	-	-	-	2	3	2	1
CO4	3	3	2	1	-	-	-	-	-	-	-	2	3	2	1
Attainment	3	2.5	2.25	1.25	-	-	-	-	-	-	-	2	3	1.5	1

Academic Year	2022 – 23 (EVEN)
Department	Mechanical Engineering
Year / Semester	3 rd /6th
Name of Faculty	Banarsi Pandey
Subject Name	Design of Machine Elements
Subject Code	PC-ME602
Target Marks (%)	50%
No. of students achieved target marks	15
Total no. of students attempted	59
Percentage of students above target marks	25.42
Attainment Level (Theory)	Percentage
Level 1	37.29
Level 2	37.29
Level 3	25.42
Attainment of CO	
CO1	2
CO2	2
CO3	2
CO4	2

Course name	CO	Description
PC-ME602	CO1	Remember different codes and standards for design with different materials.
	CO2	Analyze failure in engineering products.
	CO3	Demonstrate and analyze design criteria for different joints.
	CO4	Evaluate design aspects of power transmission apparatus.

Direct CO-PO-PSO attainment

Course Outcome Mapping to Program Outcome & Program Specific Outcome															
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	2	1	-	-	-	-	-	-	-	-	2	3	2	2
CO2	3	3	3	3	-	-	-	-	-	-	-	2	3	2	1
CO3	3	3	3	3	-	-	-	-	-	-	-	2	3	2	1
CO4	3	3	3	3	-	-	-	-	-	-	-	2	3	2	1
Attainment	3	2.75	2.5	3	-	-	-	-	-	-	-	2	3	2	1.25

Academic Year	2022 – 23 (EVEN)
Department	Mechanical Engineering
Year / Semester	3 rd /6 th
Name of Faculty	Dr. Abhijit Biswas
Subject Name	Internal Combustion Engines and Gas Turbines
Subject Code	PE-ME601A
Target Marks (%)	50%
No. of students achieved target marks	23
Total no. of students attempted	59
Percentage of students above target marks	38.98
Attainment Level (Theory)	Percentage
Level 1	20.34
Level 2	40.68
Level 3	38.98
Attainment of CO	
CO1	2
CO2	2
CO3	2
CO4	2

Course name	CO	Description
PE-ME601A	CO1	Describe the fundamental concepts, working principle and combustion phenomena of IC engine.
	CO2	Explain the characteristics of different fuels and their combustion cycles.
	CO3	Evaluate the performance of IC engines.
	CO4	Illustrate the working principle of gas turbine, Jet propulsive engines and Rockets.

Direct CO-PO-PSO attainment

Course Outcome Mapping to Program Outcome & Program Specific Outcome															
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	2	1	-	-	1	1	-	-	-	-	2	3	2	2
CO2	3	3	3	3	-	1	1	-	-	-	-	2	3	2	2
CO3	3	3	3	3	-	1	1	-	-	-	-	2	3	1	1
CO4	3	3	2	2	-	1	1	-	-	-	-	2	3	2	2
Attainment	3	2.75	2.25	2.67	-	1	1	-	-	-	-	2	3	1.75	1.75

Academic Year	2022 – 23 (EVEN)
Department	Mechanical Engineering
Year / Semester	3 rd /6th
Name of Faculty	Puspendu Chandra Chandra
Subject Name	Material Handling
Subject Code	PE-ME602I
Target Marks (%)	50%
No. of students achieved target marks	33
Total no. of students attempted	59
Percentage of students above target marks	55.94
Attainment Level (Theory)	Percentage
Level 1	18.64
Level 2	25.42
Level 3	55.94
Attainment of CO	
CO1	3
CO2	3
CO3	3
CO4	3

Course name	CO	Description
PE-ME602I	CO1	Demonstrate unit load calculation and selecting specification of some material handling system.
	CO2	Illustrate constructional features of different material handling systems.
	CO3	Describe the working principles and safety of various material handling systems.
	CO4	Select a specific material handling system as per the required application.

Direct CO-PO-PSO attainment

Course Outcome Mapping to Program Outcome & Program Specific Outcome															
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	2	1	-	-	2	2	-	-	-	-	2	3	1	1
CO2	3	2	1	-	-	2	2	-	-	-	-	2	3	1	1
CO3	3	2	2	-	-	2	2	-	-	-	-	2	3	1	1
CO4	3	2	2	-	-	2	2	-	-	-	-	2	3	1	1
Attainment	3	2	2.5	-	-	2	2	-	-	-	-	2	3	1	1

Academic Year	2022 – 23 (EVEN)
Department	Mechanical Engineering
Year / Semester	3 rd /6 th
Name of Faculty	Aninda Das
Subject Name	Humanities II (OperationsResearch)
Subject Code	HM-HU601
Target Marks (%)	50%
No. of students achieved target marks	20
Total no. of students attempted	59
Percentage of students above target marks	33.90
Attainment Level (Theory)	Percentage
Level 1	28.81
Level 2	37.29
Level 3	33.90
Attainment of CO	
CO1	2
CO2	2
CO3	2
CO4	2

Course name	CO	Description
HM-HU601	CO1	Apply linear programming tools for optimal utilization of resources in various types of industries.
	CO2	Solve project management problems for optimizing cost and time.
	CO3	Understand sequencing, inventory management and the concept of replacement.
	CO4	Make decision in different situations and forecast demands.

Direct CO-PO-PSO attainment

Course Outcome Mapping to Program Outcome & Program Specific Outcome															
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	1	3	3	2	-	-	-	-	-	-	1	2	3	1	1
CO2	1	3	3	2	-	-	-	-	-	-	3	2	3	2	1
CO3	1	3	2	-	-	-	-	-	-	-	1	2	3	2	1
CO4	1	3	3	2	-	-	-	-	-	-	3	2	3	2	1
Attainment	1	3	2.75	2	-	-	-	-	-	-	2	2	3	1.75	1

Academic Year	2022 – 23 (EVEN)
Department	Mechanical Engineering
Year / Semester	3 rd /6th
Name of Faculty	Puspendu Chandra Chandra
Subject Name	Mechanical Engineering Laboratory(Design) II
Subject Code	PC-ME691
Target Marks (%)	50%
No. of students achieved target marks	59
Total no. of students attempted	59
Percentage of students above target marks	100
Attainment Level (Practical)	Percentage
Level 1	0
Level 2	0
Level 3	100
Attainment of CO	
CO1	3
CO2	3
CO3	3
CO4	3

Course name	CO	Description
PC-ME691	CO1	Measure mechanical properties of materials.
	CO2	Compare mechanical properties with logical explanation.
	CO3	Illustrate motions of different kinematic pairs.
	CO4	Characterize the dynamic behavior of mechanical system.

Direct CO-PO-PSO attainment

Course Outcome Mapping to Program Outcome & Program Specific Outcome															
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	2	2	-	-	-	-	-	1	-	1	2	3	2	1
CO2	3	3	3	1	-	-	-	-	1	-	1	2	3	2	1
CO3	3	2	2	-	-	-	-	-	1	-	1	2	3	2	1
CO4	3	3	2	-	-	-	-	-	1	-	1	2	3	2	1
Attainment	3	2.5	2.25	1	-	-	-	-	1	-	1	2	3	2	1

Academic Year	2022 – 23 (EVEN)
Department	Mechanical Engineering
Year / Semester	3 rd /6th
Name of Faculty	All faculty
Subject Name	Project II
Subject Code	PW-ME681
Target Marks (%)	50%
No. of students achieved target marks	57
Total no. of students attempted	59
Percentage of students above target marks	100
Attainment Level (Sessional)	Percentage
Level 1	0
Level 2	3.39
Level 3	96.61
Attainment of CO	
CO1	3
CO2	3
CO3	3
CO4	3

Course name	CO	Description
PW-ME681	CO1	Learn project management skills.
	CO2	Apply theoretical knowledge to make innovative machine or product.
	CO3	Identify and resolve problems through critical thinking and decision-making capabilities.
	CO4	Learn to communicate effectively and develop teamwork approach.

Direct CO-PO-PSO attainment

Course Outcome Mapping to Program Outcome & Program Specific Outcome															
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	-	-	-	-	-	-	-	-	3	3	3	2	3	2	1
CO2	3	3	3	3	2	-	-	-	-	-	1	2	3	2	2
CO3	2	3	3	3	2	1	1	1	2	2	2	2	3	2	2
CO4	-	-	-	-	-	1	1	1	3	3	3	2	3	3	2
Attainment	2.5	3	3	3	2	1	1	1	2.67	2.67	2.25	2	3	2.25	1.75

Academic Year	2022 – 23 (EVEN)
Department	Mechanical Engineering
Year / Semester	4 th /8th
Name of Faculty	Sabyasachi Mukherjee
Subject Name	Power Plant Engineering
Subject Code	PE-ME801B
Target Marks (%)	50%
No. of students achieved target marks	32
Total no. of students attempted	57
Percentage of students above target marks	56.14
Attainment Level (Theory)	Percentage
Level 1	15.79
Level 2	28.07
Level 3	56.14
Attainment of CO	
CO1	3
CO2	3
CO3	3
CO4	3

Course name	CO	Description
PE-ME801B	CO1	Understand functions of the various components of power plant.
	CO2	Illustrate the working of nuclear, thermal and gas based power plants.
	CO3	Evaluate the design layout and working of hydroelectric power plants.
	CO4	Estimate the feasibility and its implications on power generating units.

Direct CO-PO-PSO attainment

Course Outcome Mapping to Program Outcome & Program Specific Outcome															
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	2	2	1	-	-	-	-	-	-	-	2	3	1	1
CO2	3	3	3	3	-	2	2	2	-	-	-	2	3	1	1
CO3	3	3	3	3	-	2	2	2	-	-	-	2	3	1	1
CO4	3	3	3	3	-	2	2	2	-	-	-	2	3	1	1
Attainment	3	2.75	2.75	2.5	-	2	2	2	-	-	-	2	3	1	1

Academic Year	2022 – 23 (EVEN)
Department	Mechanical Engineering
Year / Semester	4 th /8th
Name of Faculty	Dr. Abhijit Biswas
Subject Name	Tribology
Subject Code	PE-ME802E
Target Marks (%)	50%
No. of students achieved target marks	18
Total no. of students attempted	57
Percentage of students above target marks	31.58
Attainment Level (Theory)	Percentage
Level 1	21.05
Level 2	47.37
Level 3	31.58
Attainment of CO	
CO1	2
CO2	2
CO3	2
CO4	2

Course name	CO	Description
PE-ME802E	CO1	Acquire the fundamental knowledge in the field of Industrial tribology.
	CO2	Demonstrate friction and wear mechanism in engineering components.
	CO3	Describe different types of lubrication and their applications.
	CO4	Understand basic concept of surface engineering.

Direct CO-PO-PSO attainment

Course Outcome Mapping to Program Outcome & Program Specific Outcome															
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	2	1	-	-	-	-	-	-	-	-	2	3	1	1
CO2	3	3	3	3	-	-	-	-	-	-	-	2	3	1	1
CO3	3	3	3	2	-	-	-	-	-	-	-	2	3	1	1
CO4	3	2	2	1	-	-	-	-	-	-	-	2	3	1	1
Attainment	3	2.5	2.25	2	-	-	-	-	-	-	-	2	3	1	1

Academic Year	2022 – 23 (EVEN)
Department	Mechanical Engineering
Year / Semester	4 th /8th
Name of Faculty	Dr. Rahul Kanti Nath
Subject Name	Total Quality Management
Subject Code	OE-ME801A
Target Marks (%)	50%
No. of students achieved target marks	41
Total no. of students attempted	57
Percentage of students above target marks	71.93
Attainment Level (Theory)	Percentage
Level 1	8.77
Level 2	19.30
Level 3	71.93
Attainment of CO	
CO1	3
CO2	3
CO3	3
CO4	3

Course name	CO	Description
OE-ME801A	CO1	Understand quality management philosophies, techniques, and frameworks.
	CO2	Know various TQM Principles.
	CO3	Apply tools and techniques of TQM in manufacturing and service sectors.
	CO4	Understand the implications of quality management standards and systems.

Direct CO-PO-PSO attainment

Course Outcome Mapping to Program Outcome & Program Specific Outcome															
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	2	3	3	1	-	-	-	-	-	-	1	2	1	2	2
CO2	2	3	3	1	-	-	-	-	-	-	1	2	1	2	2
CO3	2	3	3	3	-	-	-	-	-	-	1	2	1	2	2
CO4	2	3	3	3	-	-	-	-	-	-	1	2	1	2	2
Attainment	2	3	3	2	-	-	-	-	-	-	1	2	1	2	2

Academic Year	2022 – 23 (EVEN)
Department	Mechanical Engineering
Year / Semester	4 th /8 th
Name of Faculty	Debtanu Patra
Subject Name	Industrial Pollution and Control
Subject Code	OE-ME802D
Target Marks (%)	50%
No. of students achieved target marks	38
Total no. of students attempted	57
Percentage of students above target marks	66.67
Attainment Level (Theory)	Percentage
Level 1	12.28
Level 2	21.05
Level 3	66.67
Attainment of CO	
CO1	3
CO2	3
CO3	3
CO4	3

Course name	CO	Description
OE-ME802D	CO1	Know about the various types of pollution caused by the industries and their effects on the environment.
	CO2	Know specifically about the causes, processes and control techniques of air pollution.
	CO3	Know specifically about the causes, processes and control techniques of water pollution.
	CO4	Know specifically about the causes, processes and control techniques of noise pollution.

Direct CO-PO-PSO attainment

Course Outcome Mapping to Program Outcome & Program Specific Outcome															
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	1	3	2	-	-	3	3	3	-	-	-	2	1	3	3
CO2	1	2	1	-	-	3	3	3	-	-	-	2	1	3	3
CO3	1	2	1	-	-	3	3	3	-	-	-	2	1	3	3
CO4	1	2	1	-	-	3	3	3	-	-	-	2	1	3	3
Attainment	1	2.25	1.25	-	-	3	3	3	-	-	-	2	1	3	3

Academic Year	2022 – 23 (EVEN)
Department	Mechanical Engineering
Year / Semester	4 th /8th
Name of Faculty	All faculty
Subject Name	Project IV
Subject Code	PW-ME881
Target Marks (%)	50%
No. of students achieved target marks	57
Total no. of students attempted	57
Percentage of students above target marks	100
Attainment Level (Sessional)	Percentage
Level 1	0
Level 2	0
Level 3	100
Attainment of CO	
CO1	3
CO2	3
CO3	3
CO4	3

Course name	CO	Description
PW-ME881	CO1	Learn project management skills.
	CO2	Apply theoretical knowledge to make innovative machine or product.
	CO3	Identify and resolve problems through critical thinking and decision-making capabilities.
	CO4	Learn to communicate effectively and develop teamwork approach.

Direct CO-PO-PSO attainment

Course Outcome Mapping to Program Outcome & Program Specific Outcome															
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	-	-	-	-	-	-	-	-	3	3	3	2	3	2	1
CO2	3	3	3	3	2	-	-	-	-	-	1	2	3	2	2
CO3	2	3	3	3	2	1	1	1	2	2	2	2	3	2	2
CO4	-	-	-	-	-	1	1	1	3	3	3	2	3	3	2
Attainment	2.5	3	3	3	2	1	1	1	2.67	2.67	2.25	2	3	2.25	1.75

Academic Year	2022 – 23 (EVEN)
Department	Mechanical Engineering
Year / Semester	4 th /8th
Name of Faculty	All faculty
Subject Name	Comprehensive Viva-Voce
Subject Code	PW-ME882
Target Marks (%)	50%
No. of students achieved target marks	57
Total no. of students attempted	57
Percentage of students above target marks	100
Attainment Level (Sessional)	Percentage
Level 1	0
Level 2	0
Level 3	100
Attainment of CO	
CO1	3
CO2	3
CO3	3
CO4	3

Course name	CO	Description
PW-ME882	CO1	Understand area of strength and weakens in the mechanical engineering domain.
	CO2	Enhance interview skills.
	CO3	Recognize area of interest.
	CO4	Prepare themselves for competitive exams.

Direct CO-PO-PSO attainment

Course Outcome Mapping to Program Outcome & Program Specific Outcome															
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	1	1	1	-	-	-	-	-	-	-	-	2	1	-	-
CO2	-	-	-	-	-	-	-	-	-	3	-	2	-	2	-
CO3	1	1	-	-	-	-	-	-	-	-	-	2	-	2	-
CO4	1	-	-	-	-	-	-	-	-	3	-	2	-	1	1
Attainment	1	1	1	-	-	-	-	-	-	3	-	2	1	1.67	1

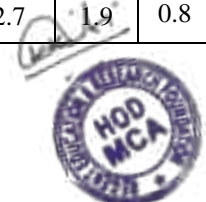
Academic Year	2022 – 23 (ODD)
Department	Master of Computer Application
Year / Semester	1st Year/1st Semester
Name of Faculty	Mr. Krishna Kanta Maiti
Subject Name	Programming Concept with Python
Subject Code	MCAN-101
Target Marks (%)	50%
No. of students achieved target marks	36
Total no. of students attempted	40
Percentage of students above target marks	90 %

Attainment Level (Theory)	Percentage
Level 1	2 %
Level 2	5 %
Level 3	93 %
Attainment of CO	
CO1	3
CO2	3
CO3	3
CO4	3
CO5	3
CO6	3
CO7	3

Course name	CO	Description
Programming Concept with Python	1	Learn, understand and comprehend the concept of programming.
	2	Design algorithm to solve simple programming problem.
	3	Understand and remember syntax and semantics of Python.
	4	Create application using secondary storage.
	5	Understand and apply library for data analysis.
	6	Apply Python to implement different solutions for the same problem and analyse why one solution is better than the other.
	7	To write program for real life problem.

Direct CO-PO-PSO attainment

Course Outcome Mapping to Program Outcome & Program Specific Outcome															
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
1	1	-	2	-	3	3	2	-	-	-	2	2	3	-	-
2	-	-	2	3	-	3	-	-	2	2	3	3	3	-	-
3	2	3	3	2	-	-	3	-	3	3	3	3	-	3	-
4	-	1	2	2	3	-	-	-	1	2	-	2	3	-	-
5	2	-	1	3	2	2	3	2	-	-	2	3	-	3	-
6	-	3	-	-	-	2	-	-	2	-	3	3	2	-	3
7	2	1	-	1	-	-	2	2	-	-	-	3	2	-	2
Attainment	1	1.14	1.4	1.6	1.14	1.4	1.4	0.6	1.14	1	1.9	2.7	1.9	0.8	0.71



Academic Year	2022 – 23 (ODD)
Department	Master of Computer Application
Year / Semester	1st Year/1st Semester
Name of Faculty	Ms. Koushik Paul
Subject Name	Relational Database Management System
Subject Code	MCAN-102
Target Marks (%)	50%
No. of students achieved target marks	37
Total no. of students attempted	40
Percentage of students above target marks	92.5 %

Attainment Level (Theory)	Percentage
Level 1	2.5 %
Level 2	4.5 %
Level 3	93 %
Attainment of CO	
CO1	3
CO2	3
CO3	3
CO4	3
CO5	3
CO6	3

Course name	CO	Description
Relational Database Management System	1	Identify the need for a database over the file system.
	2	Understand and implement the process of data insertion, retrieval, and manipulation.
	3	Understand and analyse the functional dependencies among attributes of the entity set and normalization between the relations.
	4	Implement SQL concept for a database transaction.
	5	Understand and Implement the Transaction control and concurrency control management.
	6	Evaluate the relational tables, PL/SQL programs, triggers, database files, indexing of RDBMS

Direct CO-PO-PSO attainment

Course Outcome Mapping to Program Outcome & Program Specific Outcome															
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
1	2	-	2	1	3	3	2	-	1	-	2	3	3	-	-
2	-	-	2	3	-	3	1	-	3	2	3	3	3	-	-
3	2	3	3	2	1	-	1	-	3	3	3	3	3	-	-
4	2	1	2	3	3	-	1	-	1	2	2	3	2	3	-
5	2	-	1	3	2	2	3	1	-	1	2	3	2	2	-
6	-	3	2	-	-	2	-	-	2	-	3	3	2	3	1
Attainment	1.3	1.2	2	2	1.5	1.6	1.3	0.17	1.6	1.3	2.5	3	2.5	1.33	0.17



Academic Year	2022 – 23 (ODD)
Department	Master of Computer Application
Year / Semester	1st Year/1st Semester
Name of Faculty	Mr. Amit Kumar Bag
Subject Name	Computer Organization and Architecture
Subject Code	MCAN-103
Target Marks (%)	50%
No. of students achieved target marks	32
Total no. of students attempted	40
Percentage of students above target marks	80 %

Attainment Level (Theory)	Percentage
Level 1	2.5%
Level 2	6 %
Level 3	91.5 %
Attainment of CO	
CO1	3
CO2	3
CO3	3
CO4	3
CO5	3

Course name	CO	Description
Computer Organization and Architecture	1	Describe the merits and pitfalls in computer performance measurements and analyse the impact of instruction set architecture on cost-performance of computer design
	2	Explain Digital Logic Circuits, Data Representation, Register and Processor level Design and Instruction Set architecture
	3	Solve problems related to computer arithmetic and Determine which hardware blocks and control lines are used for specific instructions
	4	Design a pipeline for consistent execution of instructions with minimum hazards
	5	Explain memory organization, I/O organization and its impact on computer cost/performance.

Direct PO attainment

Course Outcome Mapping to Program Outcome & Program Specific Outcome															
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
1	1	-	2	-	3	3	2	-	-	-	2	2		3	
2	-	1	2	3	-	3	-	-	2	2	3	3		3	
3	1	3	3	2	2	2	3	-	1	1	1	3		3	
4	-	1	2	3	3	1	-	-	1	2	2	3	3	2	
5	2	-	1	3	2	2	3	1	-	1	2	3	3	2	1
Attainment	0.8	1	2	2.2	2	2.2	1.6	0.2	0.8	1.2	2	2.8	1.2	2.6	0.5



Academic Year	2022 – 23 (EVEN)
Department	Master of Computer Application
Year / Semester	1st Year/2nd Semester
Name of Faculty	Mr. Krishna Kanta Maiti
Subject Name	Data Structure with Python
Subject Code	MCAN-201
Target Marks (%)	50 %
No. of students achieved target marks	36
Total no. of students attempted	40
Percentage of students above target marks	90 %

Attainment Level (Theory)	Percentage
Level 1	2 %
Level 2	5 %
Level 3	93 %
Attainment of CO	
CO1	3
CO2	3
CO3	3
CO4	3
CO5	3

Course name	CO	Description
Data Structure with Python	1	Understand the concept of abstract data type such as stack, queue, linked list, and trees
	2	Chose appropriate data structure to design algorithm to solve the problem.
	3	Analyze the algorithms in the context of efficiency.
	4	Apply the knowledge of stack and queue to design algorithm
	5	Design application using sorting, searching and the concept of tree.

Direct CO-PO-PSO attainment

Course Outcome Mapping to Program Outcome & Program Specific Outcome															
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
1	1	-	2	-	3	3	2	-	-	-	2	2	3	-	-
2	-	-	2	3	-	3	-	-	2	2	3	3	3	2	-
3	2	3	3	2	-	-	3	-	3	3	3	3	2	3	-
4	-	1	2	2	3	-	-	-	1	2	-	2	2	2	-
5	2	-	1	3	2	2	3	2	-	-	2	3	2	3	-
Attainment	1	0.8	2	2	1.6	1.6	1.6	0.4	1.2	1.4	2	2.6	2.4	2	0

Academic Year	2022 – 23 (EVEN)
Department	Master of Computer Application
Year / Semester	1st Year/2nd Semester
Name of Faculty	Mr. Arup Mallick
Subject Name	Operating System
Subject Code	MCAN-202
Target Marks (%)	50 %
No. of students achieved target marks	38
Total no. of students attempted	40
Percentage of students above target marks	95 %

Attainment Level (Theory)	Percentage
Level 1	2.5 %
Level 2	4.5 %
Level 3	93 %
Attainment of CO	
CO1	3
CO2	3
CO3	3
CO4	3
CO5	3

Course name	CO	Description
Operating System	1	Describe the main components of OS and their working.
	2	Explain the concepts of process and thread and their scheduling policies.
	3	Explain the various memory management techniques.
	4	Compare the different techniques for managing memory, I/O, disk and files.
	5	Explains the security and protection features of an Operating System.

Direct CO-PO-PSO attainment

Course Outcome Mapping to Program Outcome & Program Specific Outcome															
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
1	2	-	2	2	3	3	2	-	1	-	2	3	3	-	-
2	-	-	2	3	-	3	1	-	3	2	3	3	3	2	-
3	2	3	3	2	1	-	1	2	3	3	3	3	2	3	-
4	2	1	2	3	3	-	2	-	1	2	2	3	2	2	-
5	2	-	1	3	2	2	3	1	-	1	2	3	2	-	3
Attainment	1.6	0.8	2	2.6	1.8	1.6	1.8	0.5	1.6	1.6	2.4	3	2.4	1.4	0.6

Academic Year	2022 – 23 (EVEN)
Department	Master of Computer Application
Year / Semester	1 st Year/2 nd Semester
Name of Faculty	Mr. Shirsendu Dutta
Subject Name	Object Oriented Programming with JAVA
Subject Code	MCAN-203
Target Marks (%)	50%
No. of students achieved target marks	33
Total no. of students attempted	40
Percentage of students above target marks	82.5 %

Attainment Level (Theory)	Percentage
Level 1	2.5%
Level 2	6.5 %
Level 3	91 %
Attainment of CO	
CO1	3
CO2	3
CO3	3
CO4	3

Course name	CO	Description
Object Oriented Programming with JAVA	1	Use the characteristics of Java language in a program. Use variables and data types in program development.
	2	Identify and implement arrays, String and Selection Statements.
	3	Write Java programs using object-oriented programming techniques including classes, objects, methods, instance variables, and interface.
	4	Design and implementation programs of Exception handling, Packages, Multithreading Programming, and Window based programs.

Direct CO-PO-PSO attainment

Course Outcome Mapping to Program Outcome & Program Specific Outcome															
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
1	1	-	2	-	3	3	2	-	1	-	2	2	3	2	-
2	-	1	2	3	-	3	-	2	2	2	3	3	3	2	-
3	1	3	3	2	2	2	3	2	1	1	1	3	2	3	-
4	-	1	2	3	3	1	2	2	1	2	2	3	2	3	1
Attainment	0.8	1	2	2.2	2	2.2	1.6	1.4	1	1.2	2	2.8	2.5	2.5	.25



Academic Year	2022 – 23 (EVEN)
Department	Master of Computer Application
Year / Semester	1st Year/2nd Semester
Name of Faculty	Ms. Antara Ghosh
Subject Name	Networking
Subject Code	MCAN-204
Target Marks (%)	50%
No. of students achieved target marks	36
Total no. of students attempted	40
Percentage of students above target marks	90 %

Attainment Level (Theory)	Percentage
Level 1	2 %
Level 2	6.5 %
Level 3	91.5 %
Attainment of CO	
CO1	3
CO2	3
CO3	3
CO4	3
CO5	3
CO6	3

Course name	CO	Description
Networking	1	Understand the purpose of network layered models, network communication using the layered concept and able to compare and contrast OSI and TCP/IP model.
	2	Differentiate among and discuss the four level of address (physical, logical, port and url) used by the internet TCP/IP protocols.
	3	Understand the routing principals and algorithm such as distance vector routing and link state.
	4	Judge the efficiency of the connection oriented and connectionless protocol.
	5	Familiar with the routing techniques, protocols and quality of service.
	6	Explain the concept of network security and cryptography.

Direct CO-PO-PSO attainment

Course Outcome Mapping to Program Outcome & Program Specific Outcome															
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
1	1	-	2	-	3	3	2	1	-	-	2	2	3	2	-
2	-	-	2	3	-	3	-	-	2	2	3	3	3	2	-
3	2	3	3	2	2	-	3	2	3	3	3	3	2	3	-
4	-	1	2	3	3	-	-	-	1	2	-	3	2	3	-
5	2	-	1	3	2	2	3	1	-	-	2	3	2	2	-
6	1	3	-	-	-	2	-	-	2	-	3	3	2	-	3
Attainment	1	1.1	1.6	1.8	1.6	1.6	1.3	0.66	1.3	1.16	2.2	2.8	2.33	2	0.5

Academic Year	2022 – 23 (EVEN)
Department	Master of Computer Application
Year / Semester	1st Year/2nd Semester
Name of Faculty	Mr. Shirsendu Dutta
Subject Name	Automata Theory & Computational Complexity
Subject Code	MCAN-E205F
Target Marks (%)	50 %
No. of students achieved target marks	37
Total no. of students attempted	40
Percentage of students above target marks	92.5 %

Attainment Level (Theory)	Percentage
Level 1	1.5 %
Level 2	6.5 %
Level 3	92 %
Attainment of CO	
CO1	3
CO2	3
CO3	3
CO4	3

Course name	CO	Description
Automata Theory & Computational Complexity	1	Understand the formal notation for strings, languages and machines.
	2	Design and Implement Finite automata to accept a string of a language.
	3	For a given language determine whether the given language is regular or not.
	4	Design context free grammars to generate strings of context free language.
	5	Determine equivalence of languages accepted by Push Down Automata and languages generated by context free grammars.
	6	Understand and analyse the hierarchy of formal languages, grammars and machines.
	7	Distinguish between computability and non-computability and Decidability and un-decidability.

Direct CO-PO-PSO attainment

Course Outcome Mapping to Program Outcome & Program Specific Outcome															
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
1	1	-	-	-	-	3	2	2	2	3	-	2	3	2	-
2	-	-	-	3	-	3	-	2	2	3	-	3	3	3	-
3	2	3	-	2	-	-	3	2	3	3	-	3	2	3	-
4	-	1	-	3	-	-	-	2	3	2	-	3	2	2	-
5	-	2	1	2	1	2	2	2	1	2	3	3	2	3	-
6	1	1	-	-	-	-	-	2	-	1	-	2	2	3	-
7	1	-	1	3	3	-	1	2	-	1	-	2	2	-	3
Attainment	0.71	1	0.28	1.85	0.51	1.14	1.14	2	1.57	2.14	0.42	2.57	2.28	2.28	0.42

Academic Year	2022 – 23 (ODD)
Department	Master of Computer Application
Year / Semester	2nd year/ 3rd Semester
Name of Faculty	Mr. Arup Mallick
Subject Name	Machine Learning
Subject Code	MCAN-305G
Target Marks (%)	50%
No. of students achieved target marks	37
Total no. of students attempted	40
Percentage of students above target marks	92.5%

Attainment Level (Theory)	Percentage
Level 1	1.5%
Level 2	6%
Level 3	92.5%
Attainment of CO	
CO1	3
CO2	3
CO3	3
CO4	3
CO5	3

Course name	CO	Description
Machine Learning	1	Understand the concept of machine learning.
	2	Identify the regression and classification problem.
	3	Relate the supervised, unsupervised learning in the real life problem
	4	Evaluate the machine learning models with respect to the performance parameters.
	5	Design and implement various machine learning algorithms in the range of real world problems.

Direct CO-PO-PSO attainment

Course Outcome Mapping to Program Outcome & Program Specific Outcome															
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
1	2	-	-	1	1	2	3	-	-	-	-	3	3	2	-
2	1	1	-	2	-	-	3	-	-	-	-	2	3	3	-
3	-	2	2	3	1	-	-	-	-	1	-	3	3	3	-
4	1	2	3	3	3	2	-	-	-	-	-	2	3	2	-
5	1	2	3	3	3	1	-	-	-	-	2	3	3	2	-
Attainment	1	1.4	1.6	2.4	1.6	1	1.2	-	-	0.2	0.4	2.6	3	2.4	-



Academic Year	2022 – 23 (ODD)
Department	Master of Computer Application
Year / Semester	2nd year/ 3rd Semester
Name of Faculty	MR. Somnath Mukherjee
Subject Name	Artificial Intelligence
Subject Code	MCAN-302
Target Marks (%)	50%
No. of students achieved target marks	33
Total no. of students attempted	40
Percentage of students above target marks	82.5%

Attainment Level (Theory)	Percentage
Level 1	5.5%
Level 2	12%
Level 3	82.5%
Attainment of CO	
CO1	2
CO2	3
CO3	3
CO4	3
CO5	3

Course name	CO	Description
Artificial Intelligence	1	After successful completion of this course, students will be able to understand the underlying assumption of philosophy of the logical sequences of real life problem by applying State Space Search behind the limitation of non-solving method of conventional computational approach.
	2	Incorporating heuristic search technique on Game Playing.
	3	Various strategies of representing knowledge with decision making algorithms. Creation of substantial domain knowledge base with meta data. Application of knowledge representation issues using Prolog/LISP.
	4	To recognize the adoption of new system through learning by an Intelligent System and processing of Natural Language.
	5	Ability to apply machine learning techniques to solve real world problems and how Expert Systems can be carried out by the help of learning, analysing by applying various search techniques and resolute to provide solutions.

Direct CO-PO-PSO attainment

Course Outcome Mapping to Program Outcome & Program Specific Outcome

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO1 0	PO1 1	PO1 2	PSO 1	PSO 2	PSO 3
1	2	2	2	1	1	2	3	-	-	-	-	3	3	2	
2	1	-	2	2	-	-	3	-	-	-	-	2	3	2	
3	-	2	2	3	1	-	-	-	-	1	1	3	3	3	
4	2	2	2	2	2	-	-	-	1	-	-	3	2	2	
5	2	2	3	3	3	2	2	-	-	-	1	3	2	3	1
Attainment	1.4	1.6	2.2	2.2	1.4	0.8	1.6	-	0.2	0.2	0.4	2.8	2.6	2.4	0.5

Academic Year	2022 – 23 (ODD)
Department	Master of Computer Application
Year / Semester	2 nd year/ 3 rd Semester
Name of Faculty	Ms. Antara Ghosh
Subject Name	Software Engineering using UML
Subject Code	MCAN-301
Target Marks (%)	50%
No. of students achieved target marks	38
Total no. of students attempted	40
Percentage of students above target marks	95%

Attainment Level (Theory)	Percentage
Level 1	0%
Level 2	5%
Level 3	95%
Attainment of CO	
CO1	3
CO2	3
CO3	3
CO4	3
CO5	3

Course name	CO	Description
Software Engineering using UML	1	Analyse the problem scenario and identify classes/ objects and their properties, relationship in class model.
	2	Demonstrate the conceptual modelling techniques of UML for solving Real-World problem.
	3	To learn software development life cycle for Object-Oriented solutions for Real-World Problems.
	4	Ability to apply the concepts of object oriented methodologies to analyse requirements and design to the point where it is ready for implementation.
	5	Demonstrate the concept of Testing to measure quality of software.

Direct CO-PO-PSO attainment

Course Outcome Mapping to Program Outcome & Program Specific Outcome																
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	
1	2	2	2	1	1	2	3	-	-	-	-	3	3	-	-	
2	1	-	2	2	-	-	3	-	-	-	-	2	2	3	-	
3	-	2	2	3	1	-	-	-	-	1	1	3	3	-	-	
4	2	2	2	2	2	-	-	-	1	-	-	3	2	3	-	
5	2	2	3	3	3	2	2	-	-	-	1	3	3	-	-	
Attainment	1.4	1.6	2.2	2.2	1.4	0.8	1.6	-	0.2	0.2	0.4	2.8	2.6	1.2	0	





Regent Education and Research Foundation Group of Institutions

AY – 2022-23

Mapping of Course Outcomes with Program Specific Outcomes

Program Specific Outcomes for master of business administration (MBA)

PSO 1: Developing skills among graduates through hands-on learning methods essential to successfully manage and lead businesses across the globe.

PSO 2: Providing opportunities to students for competing in corporate world characterized by diversity, rapid technological development, and a fiercely competitive marketplace.

PSO 3: To be known for their team player qualities to handle diversity and the leadership skills to make sound decisions while working with peers in an inter-disciplinary environment with people of cross-cultural attributes

PSO 4: To be adaptable to new technology, innovations and changes in world economy through lifelong learning and a flexible mindset



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Academic Year	2022 – 23 (ODD)
Department	MBA
Year / Semester	FIRST/FIRST
Name of Faculty	SUSOVAN SAMANTA
Subject Name	MANAGERIAL ECONOMICS(MICRO)
Subject Code	MB 101
Target Marks (%)	50%
No. of students achieved target marks	51
Total no. of students attempted	51
Percentage of students above target marks	100%

Attainment Level (Theory)	Percentage
Level 1	
Level 2	
Level 3	100%
Attainment of CO	
CO-1	3
CO-2	3
CO-3	3

Course name	CO	Description
MANAGERIAL ECONOMICS (MICRO)	MB 101.1	Develop an understanding of the applications of managerial economics.
	MB 101.2	Interpret regression analysis and discuss why it's employed in decision-making.
	MB 101.3	Analyze perfectly competitive markets including substitution.
	MB 101.4	Explain uniform pricing and how it relates to price discrimination and total revenue.
	MB 101.5	Discuss optimization and utility including consumer behavior.
	MB 101.6	Analyze a chosen company to include the above, but to further make recommendations for the company based upon the weekly topics.

Course Outcome (CO) Mapping to Program Specific Outcome (PSO)				
CO	PSO1	PSO2	PSO3	PSO4
1	2	2		2
2	1	2		2
3	2	2	3	
4	2	2	1	3
5	1	2	2	3
6	2		2	2
Attainment	1.66	1.66	1.33	2

1: Slight (Low) 2: Moderate (Medium) 3: Substantial (High)

Academic Year	2022 – 23 (ODD)
Department	MBA
Year / Semester	FIRST/FIRST
Name of Faculty	SURYA MUKHERJEE
Subject Name	ORGANIZATIONAL BEHAVIOUR
Subject Code	MB 102
Target Marks (%)	50%
No. of students achieved target marks	51
Total no. of students attempted	51
Percentage of students above target marks	100%

Attainment Level (Theory)	Percentage
Level 1	
Level 2	
Level 3	100%
Attainment of CO	
CO-1	3
CO-2	3
CO-3	3

Course name	CO	Description
ORGANISATIONAL BEHAVIOUR	MB 102.1	Discuss the development of the field of organizational behaviour and explain the micro and macro approaches
	MB 102.2	Identify the processes used in developing communication and resolving conflicts
	MB 102.3	Identify the various leadership styles and the role of leaders in a decision making process.
	MB 102.4	Discuss the implementation of organizational change.
	MB 102.5	Explain organizational culture and describe its dimensions and to examine various organizational designs
	MB 102.6	explain group dynamics and demonstrate skills required for working in groups (team building)

Course Outcome (CO) Mapping to Program Specific Outcome (PSO)				
CO	PSO1	PSO2	PSO3	PSO4
1	2	2		2
2		2		2
3	2	1	3	
4	2	1	1	3
5	1	2	2	3
6	2		2	2
Attainment	1.5	1.33	1.33	2

1: Slight (Low) 2: Moderate (Medium) 3: Substantial (High)

Regent Education and Research Foundation Group of Institutions

Academic Year	2022 – 23 (ODD)
Department	MBA
Year / Semester	FIRST/FIRST
Name of Faculty	ANAMIKA BASU
Subject Name	BUSINESS COMMUNICATION
Subject Code	MB 103
Target Marks (%)	50%
No. of students achieved target marks	51
Total no. of students attempted	51
Percentage of students above target marks	100%

Attainment Level (Theory)	Percentage
Level 1	
Level 2	
Level 3	100%
Attainment of CO	
CO-1	3
CO-2	3
CO-3	3

Course name	CO	Description
BUSINESS COMMUNICATION	MB 103.1	Provide an overview of Prerequisites to Business Communication
	MB 103.2	Put in use the basic mechanics of Grammar
	MB 103.3	Provide an outline to effective Organizational Communication
	MB 103.4	Understand the nuances of Business communication.
	MB 103.5	Impart the correct practices of the strategies of Effective Business writing.
	MB 103.6	Identify ways to collaborate in business

Course Outcome (CO) Mapping to Program Specific Outcome (PSO)				
CO	PSO1	PSO2	PSO3	PSO4
1	2	2	1	2
2	2	2	2	2
3	1	2	1	2
4	2		2	2
5	2	3		2
6	1		2	
Attainment	1.67	1.5	1.33	1.67

1: Slight (Low)

2: Moderate (Medium)

3: Substantial (High)

Regent Education and Research Foundation Group of Institutions

Academic Year	2022 – 23 (ODD)
Department	MBA
Year / Semester	FIRST/FIRST
Name of Faculty	SUSOVAN SAMANTA
Subject Name	LEGAL AND BUSINESS ENVIRONMENT (MICRO AND MACRO)
Subject Code	MB 104
Target Marks (%)	50%
No. of students achieved target marks	51
Total no. of students attempted	51
Percentage of students above target marks	100%

Attainment Level (Theory)	Percentage
Level 1	
Level 2	
Level 3	100%
Attainment of CO	
CO-1	3
CO-2	3
CO-3	3

Course name	CO	Description
LEGAL AND BUSINESS ENVIRONMENT (MICRO & MACRO)	MB 104.1	Provide knowledge of the environment in which businesses operate, the economic operational and financial framework
	MB 104.2	Give students an understanding of the various constituents of the local and global business environments.
	MB 104.3	Have a critical study of liberalization, privatization and globalization.
	MB 104.4	Study the procedural aspects of various forms of Business Organizations in India. study the procedural aspects of various forms of Business Organizations in India
	MB 104.5	Identify and evaluate the complexities of business environment and their impact on the business.
	MB 104.6	Gain knowledge about the operation of different institutions in international business environment.

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Course Outcome (CO) Mapping to Program Specific Outcome (PSO)				
CO	PSO1	PSO2	PSO3	PSO4
1	2	3	2	1
2	2	1	2	
3	2	2		
4	2	2		2
5	2		3	2
6			2	1
Attainment	1.66	1.33	1.5	1

1: Slight (Low)

2: Moderate (Medium)

3: Substantial (High)



Regent Education and Research Foundation Group of Institutions

Academic Year	2022 – 23 (ODD)
Department	MBA
Year / Semester	FIRST/FIRST
Name of Faculty	ANAMIKA BASU
Subject Name	INDIAN ETHOS AND BUSINESS ETHICS
Subject Code	MB 105
Target Marks (%)	50%
No. of students achieved target marks	51
Total no. of students attempted	51
Percentage of students above target marks	100%

Attainment Level (Theory)	Percentage
Level 1	
Level 2	
Level 3	100%
Attainment of CO	
CO-1	3
CO-2	3
CO-3	3

Course name	CO	Description
INDIAN ETHOS AND BUSINESS ETHICS	MB 105.1	Summarize the need for business ethics to ensure sustained business stability.
	MB 105.2	Discuss spiritual value management that increases honesty, trust, respect and compassion in the organization.
	MB 105.3	Have a critical study of liberalization, privatization and globalization.
	MB 105.4	Study the procedural aspects of various forms of Business Organizations in India To study the procedural aspects of various forms of Business Organizations in India
	MB 105.6	Gain knowledge about the operation of different institutions in international business environment.
	MB 105.5	Identify and evaluate the complexities of business environment and their impact on the business.

Regent Education and Research Foundation Group of Institutions

Course Outcome Mapping to Program Specific Outcome				
CO	PSO 1	PSO 2	PSO 3	PSO4
1	2	2		2
2	1	2	3	2
3	2	2	3	
4	2	2	2	3
5	2	1	2	3
6			2	
Attainment	1.5	1.5	2	1.33

1: Slight (Low)

2: Moderate (Medium)

3: Substantial (High)



Regent Education and Research Foundation Group of Institutions

Academic Year	2022 – 23 (ODD)
Department	MBA
Year / Semester	FIRST/FIRST
Name of Faculty	SOMA BARMAN
Subject Name	QUANTITATIVE TECHNIQUES
Subject Code	MB 106
Target Marks (%)	50%
No. of students achieved target marks	51
Total no. of students attempted	51
Percentage of students above target marks	100%

Attainment Level (Theory)	Percentage
Level 1	
Level 2	
Level 3	100%
Attainment of CO	
CO-1	3
CO-2	3
CO-3	3

Course name	CO	Description
QUANTITATIVE TECHNIQUES	MB 106.1	Identify, formulate and solve Linear Programming Problems graphically, mathematically and by using excel solver
	MB 106.2	Develop critical thinking and use PERT and CPM techniques to improve decision making.
	MB 106.3	Solve optimization problems like transportation and assignment problem mathematically and by using excel solver
	MB 106.4	Enable better reporting for decision making.
	MB 106.5	Highlight the benefits as well as the limits of quantitative analysis in a real-world context.
	MB 106.6	Develop ideas of the basic characteristics of Linear Programming

Course Outcome Mapping to Program Specific Outcome				
CO	PSO1	PSO2	PSO3	PSO4
1	2	2		2
2	1	2		2
3	2	2	3	
4	2	2	2	3
5	1	1	2	3
6			2	
Attainment	1.33	1.5	1.5	1.33

1: Slight (Low)

2: Moderate (Medium)

3: Substantial (High)

Regent Education and Research Foundation Group of Institutions

Academic Year	2022 – 23 (EVEN)
Department	MBA
Year / Semester	FIRST/SECOND
Name of Faculty	DISHANI GHOSH
Subject Name	INDIAN ECONOMY AND POLICY
Subject Code	MB 201
Target Marks (%)	50%
No. of students achieved target marks	51
Total no. of students attempted	51
Percentage of students above target marks	100%

Attainment Level (Theory)	Percentage
Level 1	
Level 2	
Level 3	100%
Attainment of CO	
CO-1	3
CO-2	3
CO-3	3

Course name	CO	Description
Indian Economy and Policy	MB 201.1	Develop ideas of the basic characteristics of Indian economy
	MB 201.2	Understand govt Policies and programs
	MB 201.3	Understand how planning and infrastructure support can develop an economy.
	MB 201.4	Understand the nature of financial instruments and their usage
	MB 201.5	Understanding the efficiency and implications of Market interference, including government Policy
	MB 201.6	Comprehensive understanding of Indian Economy

Course Outcome Mapping to Program Specific Outcome				
CO	PSO1	PSO2	PSO3	PSO4
1	1		2	2
2	1	2	1	2
3			2	2
4	1	2	2	2
5	1		2	2
6	2	2		
Attainment	1	1	1.5	1.66

1: Slight (Low)

2: Moderate (Medium)

3: Substantial (High)

Regent Education and Research Foundation Group of Institutions

Academic Year	2022–23(EVEN)
Department	MASTER OF BUSINESS ADMINISTRATION
Year/Semester	FIRST YEAR/ SECOND SEMESTER
Name of Faculty	ANTARA BOSE
Subject Name	Financial Reporting Statements and Analysis
Subject Code	MB - 202
Target Marks(%)	50%
No. of students achieved target marks	51
Total no. of students attempted	51
Percentage of students above target marks	100%

Attainment Level(Theory)	Percentage
Level 1	-
Level 2	-
Level 3	100%
Attainment of CO	
CO1	3
CO2	3
CO3	3
CO4	3
CO5	3
CO6	3
CO7	3

Course name	CO	Description
FINANCIAL REPORTING, STATEMENT AND ANALYSIS (MB- 202)	MB 202.1	Explain the basic concepts of accounting and financial management. Definition and classification of accounting, concepts and conventions of accounting.
	MB 202.2	Understanding events and transactions, accounting equation, golden rules and debit credit concepts. Explain different terms and concepts before making income statement of business.
	MB 202.3	Understand methods of preparing journal, ledger, income statements and balance sheet.
	MB 202.4	Understand the use and method of preparing cost sheet to know the cost components in a product.
	MB 202.5	Understand use and preparation of the cash flow and fund flow statement to know the inflow and outflow of cash, liquidity of the business.
	MB 202.6	Understanding the relation between income statement and balance sheet and cost sheet.

Regent Education and Research Foundation Group of Institutions

Financial Accounting Course Outcome mapping to Program Specific Outcome				
CO	PSO1	PSO2	PSO3	PSO4
MB 202.1	2	2	2	2
MB 202.2	1	2	1	2
MB 202.3	2	2	3	
MB 202.4	2	2	1	3
MB 202.5	1	2	2	3
MB 202.6		2		
Attainment	1.33	2	1.5	1.67

1: Slight (Low)

2: Moderate (Medium)

3: Substantial (High)



Regent Education and Research Foundation Group of Institutions

Academic Year	2022 – 23 (Even)
Department	MBA
Year / Semester	FIRST/SECOND
Name of Faculty	SUPROVAT BASU
Subject Name	MARKETING MANAGEMENT
Subject Code	MB 203
Target Marks (%)	50%
No. of students achieved target marks	51
Total no. of students attempted	51
Percentage of students above target marks	100%

Attainment Level (Theory)	Percentage
Level 1	
Level 2	
Level 3	100%
Attainment of CO	
CO-1	3
CO-2	3
CO-3	3

Course name	CO	Description
MARKETING MANAGEMENT	MB 203.1	Outline key marketing concepts and its application to different markets
	MB 203.2	Outline key marketing concepts and its application to different markets
	MB 203.3	Analyze and examine the implementation of marketing concepts and strategy to firms
	MB 203.4	Understand the tools used by marketing managers in decision situations
	MB 203.5	Understand the marketing environment
	MM 203.6	Describe and formulate strategies to effectively manage company's sales operations

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Course Outcome Mapping to Program Specific Outcome				
CO	PSO1	PSO2	PSO3	PSO4
1	1	2		2
2	2	2		2
3	2	2	3	1
4	2	1	1	3
5	1		2	3
6		1	2	
Attainment	1.33	1.33	1.33	1.83

1: Slight (Low)

2: Moderate (Medium)

3: Substantial (High)



Regent Education and Research Foundation Group of Institutions

Academic Year	2022 – 23 (EVEN)
Department	MBA
Year / Semester	FIRST/SECOND
Name of Faculty	ANTARA BOSE
Subject Name	OPERATIONS MANAGEMENT
Subject Code	MB 204
Target Marks (%)	50%
No. of students achieved target marks	51
Total no. of students attempted	51
Percentage of students above target marks	100%

Attainment Level (Theory)	Percentage
Level 1	
Level 2	
Level 3	100%
Attainment of CO	
CO-1	3
CO-2	3
CO-3	3

Course name	CO	Description
OPERATIONS MANAGEMENT	MB 204.1	Plan production schedules and plan resources (material and machine) required for production
	MB 204.2	Measure performance related to productivity
	MB 204.3	Able to conduct basic industrial engineering study on men and machines.
	MB 204.4	Students can design maintenance schedules in manufacturing units
	MB 204.5	Implement production and service-related decisions.
	MB 204.6	Use risk analysis tools to assess credit risk.

Course Outcome Mapping to Program Specific Outcome				
CO	PSO1	PSO2	PSO3	PSO4
1	1	2		2
2	1	2	2	2
3	2	2	3	
4	2	2	1	3
5	1		2	3
6	1	2	1	
Attainment	1.33	1.67	1.5	1.33

1: Slight (Low)

2: Moderate (Medium)

3: Substantial (High)

Regent Education and Research Foundation Group of Institutions

Academic Year	2022 – 23 (EVEN)
Department	MBA
Year / Semester	1 st year/2 nd semester
Name of Faculty	Barnita Das
Subject Name	Management Information system
Subject Code	MB-205
Target Marks (%)	50%
No. of students achieved target marks	51
Total no. of students attempted	51
Percentage of students above target marks	100%

Attainment Level (Theory)	Percentage
Level 1	
Level 2	
Level 3	100%
Attainment of CO	
CO1	3
CO2	3
CO3	3
CO4	3
CO5	3
CO6	3

Course name	CO	Description
Management Information System	MB205.1	Able to understand the basic concepts of Information Systems and applying the same to solve the business problems.
	MB205.2	Able to develop the knowledge of Management Information system and how it differs from other Information systems.
	MB205.3	Able to define Control and Planning process in an Organization with the characteristics and nature of control process.
	MB205.4	Able to use various technologies like Internet, Intranet, Extranet and E-Commerce in business operations and for Managerial decision support, and gather knowledge about threats and security measures.
	MB205.5	Acquainted with the facing challenges in management and using various advance systems such as ERP, SCM, CRM etc.
	MB205.6	Able to understand the basic conceptions of DBMS and gather knowledge about the SQL query languages.

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Course Outcome Mapping to Program Specific Outcome				
CO	PSO1	PSO2	PSO3	PSO4
MB205.1	3	2	1	1
MB205.2	3	1	2	2
MB205.3	2	2	1	1
MB205.4		1	2	2
MB205.5	1	2	2	1
MB205.6	2	3		1
Attainment	1.833	1.833	1.33	1.33

1: Slight (Low)

2: Moderate (Medium)

3: Substantial (High)



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Regent Education and Research Foundation Group of Institutions

Academic Year	2022 – 23 (EVEN)
Department	MBA
Year / Semester	FIRST/SECOND
Name of Faculty	SURYA MUKHERJEE
Subject Name	HUMAN RESOURCE MANAGEMENT
Subject Code	MB 206
Target Marks (%)	50%
No. of students achieved target marks	51
Total no. of students attempted	51
Percentage of students above target marks	100%

Attainment Level (Theory)	Percentage
Level 1	
Level 2	
Level 3	100%
Attainment of CO	
CO-1	3
CO-2	3
CO-3	3

Course name	CO	Description
HUMAN RESOURCE MANAGEMENT	MB 206.1	Identify and apply new ideas, methods and ways of thinking
	MB 206.2	Evaluate HRM related to social, cultural, ethical and environmental aspects, responsibilities and issues in a global context
	MB 206.3	Examine current issues, trends, practices, and processes in HRM
	MB 206.4	Contribute to employee performance management and organizational effectiveness
	MB 206.5	Develop, implement, and evaluate employee orientation, training, and development programs.
	MB 206.6	Facilitate and communicate the human resources components of the organization's business plan.

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Course Outcome Mapping to Program Specific Outcome				
CO	PSO1	PSO2	PSO3	PSO4
1	3	2		2
2	1	2	2	2
3	3	2	3	
4	2	2	1	3
5	1		2	3
6	1		1	
Attainment	1.83	1.33	1.5	1.33

1: Slight (Low)

2: Moderate (Medium)

3: Substantial (High)



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Regent Education and Research Foundation Group of Institutions

Academic Year	2022 – 23 (ODD)
Department	MBA
Year / Semester	SECOND YEAR/THIRD SEM
Name of Faculty	SUPROVAT BASU
Subject Name	ENTERPRENEURSHIP & PROJECT MANAGEMENT
Subject Code	MB 301
Target Marks (%)	50%
No. of students achieved target marks	52
Total no. of students attempted	52
Percentage of students above target marks	100%

Attainment Level (Theory)	Percentage
Level 1	
Level 2	
Level 3	100%
Attainment of CO	
CO-1	3
CO-2	3
CO-3	3

Course name	CO	Description
ENTERPREN EURSHIP & PROJECT MANAGEMENT	MB 301.1	Promote recognition of the growing importance of project management and its multiple dimensions and knowledge;
	MB 301.2	Students can adjust with Corporate Change
	MB 301.3	Dominant coalition & behavioral view on corporate strategy
	MB301.4	Understand Corporate change and Transformation
	MB 301.5	Risk Management and Corporate value creation
	MB 301.6	Learn the basic difference between Manager and Leader.

Course Outcome Mapping to Program Specific Outcome				
CO	PSO1	PSO2	PSO3	PSO4
1	2	2		2
2	1	2	2	2
3	3	2		
4	2	2	1	3
5	1	2	2	3
6	1		3	
Attainment	1.67	1.67	1.5	1.33

1: Slight (Low)

2: Moderate (Medium)

3. Substantial (High)

Regent Education and Research Foundation Group of Institutions

Academic Year	2022 – 23 (ODD)
Department	MBA
Year / Semester	SECOND YEAR/THIRD SEM
Name of Faculty	SUSOVAN SAMANTA
Subject Name	CORPSORATE STRATEGY
Subject Code	MB 302
Target Marks (%)	50%
No. of students achieved target marks	52
Total no. of students attempted	52
Percentage of students above target marks	100%

Attainment Level (Theory)	Percentage
Level 1	
Level 2	
Level 3	100%
Attainment of CO	
CO-1	3
CO-2	3
CO-3	3

Course name	CO	Description
CORPSORTE STRATEGY	MB 302.1	Create value through Corporate Governance
	MB 302.2	Students can adjust with Corporate Change
	MB 302.3	Dominant coalition & behavioral view on corporate strategy
	MB302.4	Understand Corporate change and Transformation
	MB 301.5	Risk Management and Corporate value creation
	MB 302.6	Student is able to determine the challenges and future potential for his internship organization in particular and the sector in general.

Course Outcome Mapping to Program Specific Outcome				
CO	PSO1	PSO2	PSO3	PSO4
1		2		2
2	5	2	1	2
3	3	2	1	2
4	2	2	1	3
5	1		2	3
6	1		1	
Attainment	1.5	1.33	1	2

1: Slight (Low)

2: Moderate (Medium)

3: Substantial (High)

Regent Education and Research Foundation Group of Institutions

Academic Year	2022–23(ODD)
Department	MASTER OF BUSINESS ADMINISTRATION
Year/Semester	SECOND YEAR/ THIRD SEMESTER
Name of Faculty	SUPROVAT BASU
Subject Name	INTERNSHIP PROJECT AND VIVA VOCE
Subject Code	MB - 303
Target Marks (%)	50%
No .of students achieved target marks	52
Total no .of students attempted	52
Percentage of students above target marks	100%

Attainment Level(Theory)	Percentage
Level 1	-
Level 2	-
Level 3	100%
Attainment of CO	
CO1	3
CO2	3
CO3	3
CO4	3
CO5	3
CO6	3

Course name	CO	Description
INTERNSHIP PROJECT AND VIVA VOCE	MB303.1	Student is able to test the theoretical knowledge in practical situations by accomplishing the tasks assigned during the internship period.
	MB303.2	Student is able to analyze the functioning of internship organization and recommend changes for improvement in processes.
	MB303.3	Student is able to determine the challenges and future potential for his / her internship organization in particular and the sector in general.
	MB303.4	For his / her organization of internship, the student is able to assess its Strengths, Weaknesses, Opportunities and Threats (SWOT).
	MB303.5	Internship helps to boost the confidence and communication skill of the intern.
	MB303.6	Internship gives students industry exposure and overall maturity for the future.

Regent Education and Research Foundation Group of Institutions

The Course Outcome mapping to Program Specific Outcome				
CO	PSO1	PSO2	PSO3	PSO4
MB303.1	2	2		2
MB303.2	1	1	2	2
MB303.3	3	2	3	
MB303.4	3	2	3	3
MB303.5	3	2	3	
MB303.6				
Attainment	2	1.5	1.83	1.67

1: Slight (Low)

2: Moderate (Medium)

3: Substantial (High)



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Regent Education and Research Foundation Group of Institutions

Academic Year	2022 – 23 (ODD)
Department	MBA
Year / Semester	SECOND/THIRD
Name of Faculty	INDRAJIT DAWN
Subject Name	DATA MINING FOR BUSINESS DECISION
Subject Code	MIS 301
Target Marks (%)	50%
No. of students achieved target marks	7
Total no. of students attempted	7
Percentage of students above target marks	100%

Attainment Level (Theory)	Percentage
Level 1	
Level 2	
Level 3	100%
Attainment of CO	
CO-1	3
CO-2	3
CO-3	3

Course name	CO	Description
DATA MINING FOR BUSINESS DECISION	MIS 301.1	Gain an understanding of what data mining is all about
	MIS 301.2	Be able to perform the data preparation tasks and understand the implications.
	MIS 301.3	Demonstrate an understanding of the alternative knowledge representations such as rules, decision trees, decision tables, and Bayesian networks
	MIS 301.4	Demonstrate an understanding of the basic machine learning algorithmic methods that support knowledge discovery
	MIS 301.5	Be able to evaluate what has been learned through the application of the appropriate statistics.
	MIS 301.6	Be able to discuss alternative data mining implementations and what might be most appropriate for a given data mining task.

Course Outcome Mapping to Program Specific Outcome				
CO	PSO1	PSO2	PSO3	PSO4
1	1	2	1	2
2	3	2	2	2
3	2	2	1	2
4	2		1	3
5	1		2	3
6	1		2	
Attainment	1.67	1	1.5	2

1: Slight (Low)

2: Moderate (Medium)

3: Substantial (High)

Regent Education and Research Foundation Group of Institutions

Academic Year	2022 – 23 (ODD)
Department	MBA
Year / Semester	SECOND/THIRD
Name of Faculty	INDRAJIT DAWN
Subject Name	E-COMMERCE AND DIGITAL MARKET
Subject Code	MIS 302
Target Marks (%)	50%
No. of students achieved target marks	7
Total no. of students attempted	7
Percentage of students above target marks	100%

Attainment Level (Theory)	Percentage
Level 1	
Level 2	
Level 3	100%
Attainment of CO	
CO-1	3
CO-2	3
CO-3	3

Course name	CO	Description
E-COMMERCE AND DIGITAL MARKET	MIS 302.1	Understand the basic concepts and technologies used in the field of management information systems
	MIS 302.2	Have the knowledge of the different types of management information systems
	MIS 302.3	Understand the processes of developing and implementing information systems
	MIS 302.4	Understand the processes of developing and implementing information systems
	MIS 302.5	Describe Internet trading relationships including Business to Consumer, Business-to-Business, Intra organizational
	MIS 302.6	Be able to perform the data preparation tasks and understand the implications.

Course Outcome Mapping to Program Specific Outcome				
CO	PSO1	PSO2	PSO3	PSO4
1		2		2
2	2	2		2
3	3	2	2	2
4	2		1	3
5	1		2	3
6	1		1	
Attainment	1.5	1	1	2

1: Slight (Low)

2: Moderate (Medium)

3: Substantial (High)

Regent Education and Research Foundation Group of Institutions

Academic Year	2022–23(ODD)
Department	MASTER OF BUSINESS ADMINISTRATION
Year/Semester	SECOND YEAR/ THIRD SEMESTER
Name of Faculty	ANTARA BOSE
Subject Name	TAXATION
Subject Code	FM - 301
Target Marks (%)	50%
No .of students achieved target marks	7
Total no .of students attempted	7
Percentage of students above target marks	100%

Attainment Level (Theory)	Percentage
Level 1	-
Level 2	-
Level 3	100%
Attainment of CO	
CO1	3
CO2	3
CO3	3
CO4	3
CO5	3
CO6	3

Course name	CO	Description
TAXATION (FM 301)	FM 301.1	Enable the students to identify the basic concepts, definitions and terms related to Indian Tax System.
	FM 301.2	Enable the students to identify the basic concepts, definitions and terms related to Income Tax.
	FM 301.3	Understand Computation of Tax for individual.
	FM 301.4	Understand Computation of Tax for H.U.F, Firm and Corporate.
	FM 301.5	Students would analyze whether a person is required to obtain registration under GST law or not.
	FM 301.6	Students would explain the various terms related to Goods and Service tax (GST).

Regent Education and Research Foundation Group of Institutions

Direct PSO Attainment

Taxation Course Outcome mapping to Program Specific Outcome				
CO	PSO1	PSO2	PSO3	PSO4
FM 301.1	2	2		2
FM 301.2	1	1		2
FM 301.3	2	2	3	
FM 301.4	3	2	1	3
FM 301.5	1	2	1	3
FM 301.6			1	
Attainment	1.5	1.5	1	1.67

1: Slight (Low)

2: Moderate (Medium)

3: Substantial (High)



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Regent Education and Research Foundation Group of Institutions

Academic Year	2022–23(ODD)
Department	MASTER OF BUSINESS ADMINISTRATION
Year/Semester	SECOND YEAR/ THIRD SEMESTER
Name of Faculty	ANTARA BOSE
Subject Name	CORPORATE FINANCE
Subject Code	FM - 304
Target Marks (%)	50%
No. of students achieved target marks	7
Total no. of students attempted	7
Percentage of students above target marks	100%

Attainment Level(Theory)	Percentage
Level 1	-
Level 2	-
Level 3	100%
Attainment of CO	
CO1	3
CO2	3
CO3	3
CO4	3
CO5	3
CO6	3

Course name	CO	Description
CORPORATE FINANCE (FM – 304)	FM 304.1	Introducing financial management scope, objective and identify and explain corporate agency conflicts and resolutions
	FM 304.2	Assess corporate capital structure choice, costs and its implications on value and performance
	FM 304.3	Evaluate strategic alternatives available to multinational corporations to manage foreign exchange exposures
	FM 304.4	Assess transactions in the market for corporate control using valuation technique
	FM 304.5	Understanding on working capital management, dividend policy and other financial decisions.
	FM 304.6	Appraise the risk profile of firms; specifically, be able to estimate the costs of capital, including debt and equity capital using financial data

Regent Education and Research Foundation Group of Institutions

Direct PSO Attainment

Corporate Finance Course Outcome mapping to Program Specific Outcome				
CO	PSO1	PSO2	PSO3	PSO4
FM 304.1		2		2
FM 304.2	1	1	1	2
FM 304.3	2	2	3	1
FM 304.4	2	2	1	1
FM 304.5	1	2	1	3
FM 304.6				
Attainment	1	1.5	1	1.5

1: Slight (Low)

2: Moderate (Medium)

3: Substantial (High)



Regent Education and Research Foundation Group of Institutions

Academic Year	2022 – 23 (ODD)
Department	MBA
Year / Semester	SECOND/THIRD
Name of Faculty	SURYA MUKHERJEE
Subject Name	TEAM DYNAMICS AT WORK
Subject Code	HR 301
Target Marks (%)	50%
No. of students achieved target marks	25
Total no. of students attempted	25
Percentage of students above target marks	100%

Attainment Level (Theory)	Percentage
Level 1	
Level 2	
Level 3	100%
Attainment of CO	
CO-1	3
CO-2	3
CO-3	3

Course name	CO	Description
TEAM DYNAMICS AT WORK	HR 301.1	Learn to maximize team's potential
	HR 301.2	Apply proven tools in communication, decision- making, and learning to strengthen your team's motivation, alignment, and collaboration.
	HR 301.3	Leverage team members' roles for high team performance and understand how to match the right people to the right tasks.
	HR 301.4	Learn the concept of Sociogram and Sociometry.
	HR 301.5	Learn the concept of Delphi Technique.
	HR 301.6	Discuss different issues of managing a Team.

Course Outcome Mapping to Program Specific Outcome				
CO	PSO1	PSO2	PSO3	PSO4
1		2		2
2	1	2		2
3	3	2	2	2
4	2	2	1	3
5	3	2	2	3
6	3	2	1	
Attainment	2	2	1	2

Regent Education and Research Foundation Group of Institutions

Academic Year	2022 – 23 (ODD)
Department	MBA
Year / Semester	SECOND/THIRD
Name of Faculty	SURYA MUKHERJEE
Subject Name	ORGANIZATIONAL DESIGN
Subject Code	HR 304
Target Marks (%)	50%
No. of students achieved target marks	25
Total no. of students attempted	25
Percentage of students above target marks	100%

Attainment Level (Theory)	Percentage
Level 1	
Level 2	
Level 3	100%
Attainment of CO	
CO-1	3
CO-2	3
CO-3	3

Course name	CO	Description
ORGANIZATIONAL DESIGN	HR 304.1	Nature, functioning and design of organization as social collectives
	HR 304.2	Understand and practical insights on organizational theoretical structure
	HR 304.3	Leverage team members' roles for high team performance understand how to match the right people to the right tasks.
	HR 304.4	Learn the concept of Sociogram and Sociometry.
	HR 304.5	Learn the concept of Delphi Technique.
	HR 304.6	Problem solving capabilities for effectively managing the organizational processes

Course Outcome Mapping to Program Specific Outcome				
CO	PSO1	PSO2	PSO3	PSO4
1		2		2
2	2	2		2
3	3	2	2	3
4	2	2	1	3
5	1	1	2	3
6	1		1	
Attainment	1.5	1.5	1	1.33

1: Slight (Low)

2: Moderate (Medium)

3: Substantial (High)

Regent Education and Research Foundation Group of Institutions

Academic Year	2022 – 23 (ODD)
Department	MBA
Year / Semester	SECOND/THIRD
Name of Faculty	ANTARA BOSE
Subject Name	SUPPLY CHAIN AND LOGISTIC MANAGEMENT
Subject Code	OM 301
Target Marks (%)	50%
No. of students achieved target marks	7
Total no. of students attempted	7
Percentage of students above target marks	100%

Attainment Level (Theory)	Percentage
Level 1	
Level 2	
Level 3	100%
Attainment of CO	
CO-1	3
CO-2	3
CO-3	3

Course name	CO	Description
SUPPLY CHAIN AND LOGISTIC MANAGEMENT	OM 301.1	Develop an understanding of basic concepts and role of Logistics and supply chain management in business.
	OM 301.2	Understand how supply chain drivers play an important role in redefining value chain excellence of Firms.
	OM 301.3	Develop analytical and critical understanding & skills for planning, designing and operations of supply chain.
	OM 301.4	Understand the fundamentals of elements and functions of supply chain, role of drivers and demand forecasting.
	OM 301.5	Apply various techniques of inventory management and their practical situations.
	OM 301.6	Analyze how supply chain decisions related to facility location can be applied to various industries and designing the supply chain.

Course Outcome Mapping to Program Specific Outcome				
CO	PSO1	PSO2	PSO3	PSO4
1		2	3	2
2	2	2	2	2
3	3	2	2	
4	2	2	1	3
5	1	1	2	3
6	1		2	
Attainment	1.5	1.5	2	1.33

Regent Education and Research Foundation Group of Institutions

Academic Year	2022 – 23 (ODD)
Department	MBA
Year / Semester	SECOND/THIRD
Name of Faculty	ANTARA BOSE
Subject Name	OPERATIONS STRATEGY
Subject Code	OM 302
Target Marks (%)	50%
No. of students achieved target marks	7
Total no. of students attempted	7
Percentage of students above target marks	100%

Attainment Level (Theory)	Percentage
Level 1	
Level 2	
Level 3	100%
Attainment of CO	
CO-1	3
CO-2	3
CO-3	3

Course name	CO	Description
OPERATIONS STRATEGY	OM 302.1	Describe and discuss the key operations strategy concepts covered
	OM 302.2	Discuss critically the practical use of the techniques covered, taking into account organizational context
	OM 302.3	Develop analytical and critical understanding & skills for planning, designing and operations of supply chain.
	OM 302.4	Understand the fundamentals of elements and functions of supply chain, role of drivers and demand forecasting.
	OM 302.5	Apply various techniques of inventory management and their practical situations.
	OM 302.6	Analyze how supply chain decisions related to facility location can be applied to various industries and designing the supply chain.

Course Outcome Mapping to Program Specific Outcome				
CO	PSO1	PSO2	PSO3	PSO4
1		2		1
2		2		2
3	3	2	2	3
4	2	2	1	3
5	1		2	3
6	1		1	
Attainment	1.16	1.33	1	2

1: Slight (Low)

2: Moderate (Medium)

3: Substantial (High)

Regent Education and Research Foundation Group of Institutions

Academic Year	2022–23(ODD)
Department	MASTER OF BUSINESS ADMINISTRATION
Year/Semester	SECOND YEAR/ THIRD SEMESTER
Name of Faculty	SUPROVAT BASU
Subject Name	DIGITAL AND SOCIAL MEDIA MARKETING
Subject Code	MM -302
Target Marks (%)	50%
No. of students achieved target marks	35
Total no. of students attempted	35
Percentage of students above target marks	100%

Attainment Level (Theory)	Percentage
Level 1	-
Level 2	-
Level 3	100%
Attainment of CO	
CO1	3
CO2	3
CO3	3
CO4	3
CO5	3
CO6	3

Course name	CO	Description
DIGITAL AND SOCIAL MEDIA MARKETING (MM -302)	MM 302.1	Understanding the fundamentals of digital marketing and its types and
	MM 302.2	Student is able to analyze the functioning of internship organization and recommend changes for improvement in processes.
	MM 302.3	Students are able to develop and execute a Marketing Plan.
	MM 302.4	Understand the concept of Social Media Marketing and Viral Marketing.
	MM 302.5	Understand the concept and benefits of Business using LinkedIn and other job sites.
	MM 302.6	Understand digital marketing with help of the Facebook, Google and Twitter Marketing with help of various case studies and real world examples.

Regent Education and Research Foundation Group of Institutions

Direct PSO Attainment

The Course Outcome mapping to Program Specific Outcome				
CO	PSO1	PSO2	PSO3	PSO4
MM 302.1	2	2		2
MM 302.2	1	1	1	2
MM 302.3	2	2	3	2
MM 302.4			1	3
MM 302.5	1	2	1	3
MM 302.6				
Attainment	1	1.17	1	2

1: Slight (Low)

2: Moderate (Medium)

3: Substantial (High)



A handwritten signature in blue ink, written over a horizontal line. The signature is stylized and appears to be the name of an official.

Regent Education and Research Foundation Group of Institutions

Academic Year	2022–23(ODD)
Department	MASTER OF BUSINESS ADMINISTRATION
Year/Semester	SECOND YEAR/ THIRD SEMESTER
Name of Faculty	SUPROVAT BASU
Subject Name	IMC/ PROMOTION STRATEGY
Subject Code	MM -303
Target Marks (%)	50%
No. of students achieved target marks	35
Total no .of students attempted	35
Percentage of students above target marks	100%

Attainment Level (Theory)	Percentage
Level 1	-
Level 2	-
Level 3	100%
Attainment of CO	
CO1	3
CO2	3
CO3	3
CO4	3
CO5	3
CO6	3

Course name	CO	Description
IMC/ PROMOTION STRATEGY (MM 303)	MM 303.1	Apply the key terms, definitions, and concepts used in integrated marketing communications.
	MM 303.2	Examine how integrated marketing communications help to build brand identity and brand relationship and create brand equity through brand synergy.
	MM 303.3	Choose a marketing communication mix to achieve the communications and behavioral objectives of the IMC campaign plan.
	MM 303.4	Measure and critically evaluate the communications effects and results of an IMC campaign to determine its success.
	MM 303.5	Develop an integrated cross-media strategy and creative message and concept to reach the target audience and deliver the brand promise through an IMC campaign.
	MM 303.6	Demonstrate a comprehensive understanding of Marketing Communications theories and concepts

Regent Education and Research Foundation Group of Institutions

Direct PSO Attainment

The Course Outcome mapping to Program Specific Outcome				
CO	PSO1	PSO2	PSO3	PSO4
MM 303.1	2	2		2
MM 303.2	1	1		2
MM 303.3	2	2	3	2
MM 303.4	3		1	3
MM 303.5	1	2	2	3
MM 303.6				
Attainment	1.5	1.17	1	2



Regent Education and Research Foundation Group of Institutions

Academic Year	2022–23(EVEN)
Department	MASTER OF BUSINESS ADMINISTRATION
Year/Semester	SECOND YEAR/ FOURTH SEMESTER
Name of Faculty	ANTARA BOSE
Subject Name	INVESTMENT ANALYSIS AND PSORTFOLIO MANAGEMENT
Subject Code	FM - 401
Target Marks (%)	50%
No. of students achieved target marks	7
Total no. of students attempted	7
Percentage of students above target marks	100%

Attainment Level (Theory)	Percentage
Level 1	-
Level 2	-
Level 3	100%
Attainment of CO	
CO1	3
CO2	3
CO3	3
CO4	3
CO5	3
CO6	3

Course name	CO	Description
INVESTMENT ANALYSIS AND PORTFOLIO MANAGEMET (FM – 401)	FM 401.1	Demonstrate a basic understanding of investments and the nuances of investing
	FM 401.2	Exhibit the acquaintance of the securities market and its constituents
	FM 401.3	Apply knowledge gained to perform analysis of various securities and risk v and return analysis.
	FM 401.4	Analyze and apply models to securities performance and forecasting
	FM 401.5	Construct optimal portfolios and evaluate those using different models like, CAPM.
	FM 401.6	Diversify and manage investment portfolios in accordance with a person's risk Preferences

Regent Education and Research Foundation Group of Institutions

Direct CO-PO-PSO Attainment

The Course Outcome mapping to Program Outcome to Program Specific Outcome																
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4
FM 401.1	2	2	1	2	1		1				2					
FM 401.2				2	1			2					2		2	3
FM 401.3	2	2	3		2			1	2			2		3	2	3
FM 401.4			1	3		2		1					2	3	2	3
FM 401.5		2	1	3				1			3		2		2	
FM 401.6					2		1						2		1	
Attainment	0.66	1	1	1.67	1	0.33	0.33	0.83	0.33	0	0.83	0.33	1.67	1	1.5	1.5

1. Light (Low)

2: Moderate (Medium)

3: Substantial (High)



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Regent Education and Research Foundation Group of Institutions

Academic Year	2022–23(EVEN)
Department	MASTER OF BUSINESS ADMINISTRATION
Year/Semester	SECOND YEAR/ FOURTH SEMESTER
Name of Faculty	ANTARA BOSE
Subject Name	MANAGING BANKS & FINANCIAL INSTITUTIONS
Subject Code	FM – 402
Target Marks (%)	50%
No. of students achieved target marks	5
Total no. of students attempted	5
Percentage of students above target marks	100%

Attainment Level(Theory)	Percentage
Level 1	-
Level 2	-
Level 3	100%
Attainment of CO	
CO1	3
CO2	3
CO3	3
CO4	3
CO5	3
CO6	3

Course name	CO	Description
MANAGING BANKS & FINANCIAL INSTITUTIONS (FM – 402)	FM 402.1	Identify role of banks in the economic development of country and competition in the banking industry
	FM 402.2	Assess the role of RBI and the impact of monetary PSOlolicy and its instruments on banking sector
	FM 402.3	Analyze the health and risk of bank balance sheet and will also be able to appraise credit management parameters of a bank. Understanding the importance of Basel norms.
	FM 402.4	Identify the NPAs and will also be able to appraise the process of securitization.
	FM 402.5	Credit rating and risk management.
	FM 402.6	Distinguish the utility of various non-banking institutions like insurance, housing finance and credit rating. Explain the roles financial intermediaries perform in society and the major risks they face

Regent Education and Research Foundation Group of Institutions

Direct CO-PO-PSO Attainment

The Course Outcome mapping to Program Outcome to Program Specific Outcome																
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4
FM 402.1	2	2	1		1		1				2					
FM 402.2		2	2	2	1			2					3	1	1	
FM 402.3	2	2	3		2				2			2	3	3	2	3
FM 402.4				3									3	3	3	2
FM 402.5				3							3			3	3	1
FM 402.6					2		1							2		3
Attainment	0.66	1	1	1.33	1	0	0.33	0.33	0.33	0	0.83	0.33	1.5	2	1.5	1.5

1: Slight (Low)

2: Moderate (Medium)

3: Substantial (High)



Regent Education and Research Foundation Group of Institutions

Academic Year	2022–23(EVEN)
Department	MASTER OF BUSINESS ADMINISTRATION
Year/Semester	SECOND YEAR/ FOURTH SEMESTER
Name of Faculty	ANTARA BOSE
Subject Name	FINANCIAL DERIVATIVES
Subject Code	FM - 404
Target Marks (%)	50%
No. of students achieved target marks	5
Total no .of students attempted	5
Percentage of students above target marks	100%

Attainment Level(Theory)	Percentage
Level 1	-
Level 2	-
Level 3	100%
Attainment of CO	
CO1	3
CO2	3
CO3	3
CO4	3
CO5	3
CO6	3

Course name	CO	Description
FINANCIAL DERIVATIVES (FM 404)	FM 404.1	Introduction of forward and future contract and derivative market.
	FM 404.2	Understand the basics of the various instruments operating in the stock market along with their trading mechanism and regulations.
	FM 404.3	Acquire ability to selection of various options and then can apply them to specific markets
	FM 404.4	Able to analyze the risks in different financial markets.
	FM 404.5	Strategically manage the financial derivatives. Predict the price movement in the stock market and to provide commitments to prices for future dates to give protection against adverse movements in future prices.
	FM 404.6	Develop various pricing models of stock prices, trading, hedging of options and management of derivative exPSOsure.

Regent Education and Research Foundation Group of Institutions

Direct CO-PO-PSO Attainment

The Course Outcome mapping to Program Outcome to Program Specific Outcome																
CO	PO 1	PO 2	PO3	PO 4	PO5	PO6	PO 7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO 3	PSO 4
FM 404.1	2	2	1	2	1		1							3		
FM 404.2		3	2	2	1			2					3	3		2
FM 404.3	2	2	3		2			1				2	3	3	3	2
FM 404.4				3		2								2	3	3
FM 404.5				3							3		3	1	3	
FM 404.6					2		1									2
Attainm ent	0.6 6	1.6 7	1	1.6 7	1	0.33	0.3 3	0.5	0	0	0.5	0.33	1.5	2	1.5	1.5

1: Slight (Low)

2: Moderate (Medium)

3: Substantial (High)



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Regent Education and Research Foundation Group of Institutions

Academic Year	2022–23(EVEN)
Department	MASTER OF BUSINESS ADMINISTRATION
Year/Semester	SECOND YEAR/ FOURTH SEMESTER
Name of Faculty	ANTARA BOSE
Subject Name	FINANCIAL MARKETS AND SERVICES
Subject Code	FM - 406
Target Marks (%)	50%
No .of students achieved target marks	7
Total no. of students attempted	7
Percentage of students above target marks	100%

Attainment Level(Theory)	Percentage
Level 1	-
Level 2	-
Level 3	100%
Attainment of CO	
CO1	3
CO2	3
CO3	3
CO4	3
CO5	3
CO6	3

Course name	CO	Description
FINANCIAL MARKETS AND SERVICES (FM - 406)	FM 406.1	Understand the role and function of the financial system in reference to the macro economy
	FM 406.2	Detail understanding on Indian financial markets and its types.
	FM 406.3	Evaluate and create strategies to promote financial products and services
	FM 406.4	Understand the role and importance of the Indian financial market
	FM 406.5	Learn the functions of BSE AND NSE. Understand functions of SEBI.
	FM 406.6	Demonstrate an awareness of the current structure and regulation of the Indian financial services sector. Understanding the about lease and hire purchase.

Regent Education and Research Foundation Group of Institutions

Direct CO-PO-PSO Attainment

The Course Outcome mapping to Program Outcome to Program Specific Outcome																
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4
FM 406.1		2	3	2	1		1							3	1	
FM 406.2				2	1			2					1		1	
FM 406.3	2	2	3		2			2	2			2	1	1	1	3
FM 406.4	2			3		2		1					1	2	1	3
FM 406.5		2		3									3	3	1	3
FM 406.6					2		1								1	
Attainment	0.66	1	1	1.67	1	0.33	0.33	0.83	0.33	0	0	0.33	1	1.5	1	1.5

1: Slight (Low)

2: Moderate (Medium)

3: Substantial (High)



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Regent Education and Research Foundation Group of Institutions

Academic Year	2022 – 23 (ODD)
Department	MBA
Year / Semester	SECOND/4TH
Name of Faculty	ANTARA BOSE
Subject Name	SALES AND OPERATION PLANNING
Subject Code	OM 401
Target Marks (%)	50%
No. of students achieved target marks	7
Total no. of students attempted	7
Percentage of students above target marks	100%

Attainment Level (Theory)	Percentage
Level 1	
Level 2	
Level 3	100%
Attainment of CO	
CO-1	3
CO-2	3
CO-3	3

Course name	CO	Description
SALES AND OPERATION PLANNING	OM 401.1	Understand the process and information required for preparing the Sales and Operations Planning
	OM 401.2	Understand the insights on demand forecasting methods
	OM 401.3	Enhance the Capacity Planning and MRP
	OM 401.4	Understand the Master Production Scheduling and Service Operations
	OM 401.5	Learn the link between HCM and Business Strategy.
	OM 401.6	Enhanced competence in decision-making, group.

Regent Education and Research Foundation Group of Institutions

Direct CO-PO-PSO Attainment

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO 12	PSO 1	PSO2	PSO3	PSO 4
CO																
1		2		2	1			2	2	3	2	1	1	2		
2	1	2		2			2	1	2	1	2		1	2		1
3	2	2	3		1			2	2	2			1	2	2	2
4	2		1	3				2	2	2	3		1		1	2
5	1		2	3				2	2		3		1		1	1
6			2			2	2				2	0	1		2	3
Attainment	1	1	1.33	1.33	0.33	1	0.66	1.5	1.66	1.33	2	0.16	1	1	1	1.5

1: Slight (Low)

2: Moderate (Medium)

3: Substantial (High)

Regent Education and Research Foundation Group of Institutions

Academic Year	2022 – 23 (ODD)
Department	MBA
Year / Semester	SECOND/4TH
Name of Faculty	SUPRAVAT BASU
Subject Name	BEHAVIORAL OPERATION MANAGEMENT
Subject Code	OM 402
Target Marks (%)	50%
No. of students achieved target marks	7
Total no. of students attempted	7
Percentage of students above target marks	100%

Attainment Level (Theory)	Percentage
Level 1	
Level 2	
Level 3	100%
Attainment of CO	
CO-1	3
CO-2	3
CO-3	3

Course name	CO	Description
BEHAVIORAL OPERATION MANAGEMENT	OM 402.1	Learn the detailed concept of Risk
	OM 402.2	Learn different Negotiation Strategies.
	OM 402.3	Expose the participants to the recent developments in theories, principles, and practices in the field of supply chain analytics
	OM 402.4	Learn how to develop Reward policies.
	OM 402.5	Analyze how supply chain decisions related to facility location can be applied to various industries.
	OM 402.6	Learn the detailed concept of Risk

Regent Education and Research Foundation Group of Institutions

Direct CO-PO-PSO Attainment

Course Outcome Mapping to Program Outcome to Program Specific Outcome																
CO	PO 1	PO2	PO3	PO 4	PO 5	PO6	PO 7	PO8	PO9	PO 10	PO 11	PO 12	PSO 1	PSO2	PSO 3	PSO4
1		2		2	1			2	2	3	2	1				
2	1	2		2			2	1	2	1	2			3	3	
3	2	2	3		1			2	2	2			2	3		2
4	2		1	1				2	2	2	3		2	2	2	2
5	1		2					2	2		3		2	1	1	2
6	1		2			2	2				2	0				
Attainment	1.16	1	1.33	0.83	0.33	1	0.66	1.5	1.66	1.32	0.16	1	1.5	1	1	

1: Slight (Low)

2: Moderate (Medium)

3: Substantial (High)



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Regent Education and Research Foundation Group of Institutions

Academic Year	2022 – 23 (ODD)
Department	MBA
Year / Semester	SECOND/4TH
Name of Faculty	ANTARA BOSE
Subject Name	OPERATION RESEARCH APPLICATION
Subject Code	OM 403
Target Marks (%)	50%
No. of students achieved target marks	1
Total no. of students attempted	1
Percentage of students above target marks	100%

Attainment Level (Theory)	Percentage
Level 1	
Level 2	
Level 3	100%
Attainment of CO	
CO-1	3
CO-2	3
CO-3	3

Course name	CO	Description
OPERATION RESEARCH APPLICATION	OM 403.1	Understand the process and information required for preparing the Sales and Operations Planning
	OM 403.2	Understand the insights on demand forecasting methods
	OM 403.3	Enhance the Capacity Planning and MRP
	OM 403.4	Understand the Master Production Scheduling and Service Operations
	OM 403.5	Learn the link between HCM and Business Strategy.
	OM 403.6	enhanced competence in decision-making, group .

Regent Education and Research Foundation Group of Institutions

Course Outcome Mapping to Program Outcome to Program Specific Outcome																
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3	PSO 4
1		2		2	1			2	2	3	2	1		1		1
2	1	2		2			2	1	2	1	2		2	3	3	3
3	2	2	3		1			2	2	2			1	3	3	3
4	2		1	3				2	2	2	3		3	2		2
5	1		2	3				2	2		3		3	1		
6			2			2	2				2	0		2	3	
Attainment	1	1	1.33	1.33	0.33	1	0.66	1.5	1.66	1.33	2	0.16	1.5	2	1.5	1.5

1: Slight (Low)

2: Moderate (Medium)

3: Substantial (High)

Regent Education and Research Foundation Group of Institutions

Academic Year	2022 – 23 (ODD)
Department	MBA
Year / Semester	SECOND/4TH
Name of Faculty	ANTARA BOSE
Subject Name	SUPPLY CHAIN ANALYTICS
Subject Code	OM 404
Target Marks (%)	50%
No. of students achieved target marks	1
Total no. of students attempted	1
Percentage of students above target marks	100%

Attainment Level (Theory)	Percentage
Level 1	
Level 2	
Level 3	100%
Attainment of CO	
CO-1	3
CO-2	3
CO-3	3

Course name	CO	Description
SUPPLY CHAIN ANALYTICS	OM 404.1	Introduce the participants to the key issues of supply chain management and supply chain analytics
	OM 404.2	Understand the insights on demand forecasting methods
	OM 404.3	Expose the participants to the recent developments in theories, principles, and practices in the field of supply chain analytics.
	OM 404.4	Understand the Master Production Scheduling and Service Operations
	OM 404.5	Analyze how supply chain decisions related to facility location can be applied to various industries.
	OM 404.6	Learn the detailed concept of Risk

Regent Education and Research Foundation Group of Institutions

Course Outcome Mapping to Program Outcome to Program Specific Outcome																
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4
1		2		2	1			2	2	3	2	1		2		
2	1	2		2		2	2	1	2	1	2		2	2	1	1
3	2	2	3		1			2	2	2			2	2	1	2
4	2		1	3		2		2	2	2	3		2	2	1	3
5	1		2	3				2	2		3				2	
6			2			2	2				2	0			1	
Attainment	1	1	1.33	1.33	0.33	1	0.66	1.5	1.66	1.33	2	0.16	1	1.5	1	1

1: Slight (Low)

2: Moderate (Medium)

3: Substantial (High)



[Handwritten Signature]

Regent Education and Research Foundation Group of Institutions

Academic Year	2022 – 23 (Even)
Department	MBA
Year / Semester	SECOND/4TH
Name of Faculty	SUPROVAT BASU
Subject Name	CONSUMER BEHAVIOUR
Subject Code	MM 401
Target Marks (%)	50%
No. of students achieved target marks	25
Total no. of students attempted	25
Percentage of students above target marks	100%

Attainment Level (Theory)	Percentage
Level 1	
Level 2	
Level 3	100%
Attainment of CO	
CO-1	3
CO-2	3
CO-3	3

Course name	CO	Description
CONSUMER BEHAVIOUR		
	MM 401.1	Understand consumer behavior in an informed and Systematic way.
	MM 401.2	Analyse personal, socio-cultural, and environmental dimensions that influence consumer decisions making.
	MM 401.3	Enable students in designing and evaluating the marketing strategies based on fundamentals of consumer buying behaviour
	MM 401.4	Give the students a perspective to understand the application of market research in framing effective marketing strategies.
	MM 401.5	Distinguish between different consumer behaviour influences and their relationships
MM 401.6	Establish the relevance of consumer behaviour theories and concepts to marketing decisions.	

Course Outcome Mapping to Program Specific Outcome

Regent Education and Research Foundation Group of Institutions

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4
1		2		2	1			2	2	3	2	1		2		
2	1	2		2			2	1	2	1	2			2	3	1
3	2	2	3		1			2	2	2			2	2	3	3
4	2		1	3				2	2	2	3		2	2	3	3
5	1		2	3				2	2		3		2	2		2
6			2			2	2				2	0		2		2
Attainment	1	1	1.33	1.33	0.33	1	0.66	1.5	1.66	1.33	2	0.16	1	2	1.5	2

1: Slight (Low)

2: Moderate (Medium)

3: Substantial (High)

Regent Education and Research Foundation Group of Institutions

Academic Year	2022 – 23 (Even)
Department	MBA
Year / Semester	SECOND/4TH
Name of Faculty	SUPROVAT BASU
Subject Name	SALES AND DISTRIBUTION MANAGEMENT
Subject Code	MM 403
Target Marks (%)	50%
No. of students achieved target marks	40
Total no. of students attempted	40
Percentage of students above target marks	100%

Attainment Level (Theory)	Percentage
Level 1	
Level 2	
Level 3	100%
Attainment of CO	
CO-1	3
CO-2	3
CO-3	3

Course name	CO	Description
SALES AND DISTRIBUTION MANAGEMENT	MM 403.1	Recognize and demonstrate the significant responsibilities of sales person as key individual
	MM 403.2	Understand the basic concepts and techniques of selling and their applications to managerial decision makings in the field
	MM 403.3	Describe and formulate strategies to effectively manage company's sales operations
	MM 403.4	Evaluate the role of Sales manager and his/ her responsibilities in recruiting, motivating, managing and leading sales team
	MM 403.5	Sales Planning and Budgeting and characteristics of distribution channels
	MM 403.6	Visualise future changes in the Services Industry.

Regent Education and Research Foundation Group of Institutions

Course Outcome Mapping to Program Outcome to Program Specific Outcome																
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4
1		2		2	1			2	2	3	2	1	2	2	3	
2		2		2			2	1	2	1	2		2		3	3
3	2	2	3		1			2	2	2			2	2	3	3
4	2	1	1	3				2	2	2	3			2	2	2
5	1		2	3				2	2		3				1	1
6			2			2	2				2	0				
Attainment	0.83	1.16	1.33	1.33	0.33	1	0.66	1.5	1.66	1.33	2	0.16	1	1	2	1.5

1: Slight (Low)

2: Moderate (Medium)

3: Substantial (High)

Regent Education and Research Foundation Group of Institutions

Regent Education and Research Foundation Group of Institutions

Academic Year	2022 – 23 (Even)
Department	MBA
Year / Semester	SECOND/4TH
Name of Faculty	SUPROVAT BASU
Subject Name	SERVICE MARKETING
Subject Code	MM 404
Target Marks (%)	50%
No. of students achieved target marks	40
Total no. of students attempted	40
Percentage of students above target marks	100%

Attainment Level (Theory)	Percentage
Level 1	
Level 2	
Level 3	100%
Attainment of CO	
CO-1	3
CO-2	3
CO-3	3

Course name	CO	Description
SERVICE MARKETING	MM 404.1	Understand the Concept of Services and intangible products
	MM 404.2	Discuss the relevance of the services Industry to Industry
	MM 404.3	Examine the characteristics of the services industry and the modus operandi
	MM 404.4	Analyse the role and relevance of Quality in Services
	MM 404.5	Visualise future changes in the Services Industry
	MM 404.6	Provide an in depth appreciation and understanding of the unique challenges inherent in managing and delivering quality services

Regent Education and Research Foundation Group of Institutions

Course Outcome Mapping to Program Outcome to Program Specific Outcome																
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO 1	PSO 2	PSO 3	PSO4
1		2		2	1			2	2	3	2	1	2		2	
2		2		2			2	1	2	1	2		2		2	
3	2	2	3		1			2	2	2				2	2	3
4	2	1	1	3				2	2	2	3			1		3
5	1		2	3				2	2		3				1	3
6			2			2	2				2	0	2	3		3
Attainment	0.83	1.16	1.33	1.33	0.33	1	0.66	1.5	1.66	1.33	2	0.16	1	1	1.16	2

1: Slight (Low)

2: Moderate (Medium)

3. Substantial (High)



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Regent Education and Research Foundation Group of Institutions

Academic Year	2022 – 23 (Even)
Department	MBA
Year / Semester	SECOND/4TH
Name of Faculty	SUPROVAT BASU
Subject Name	PRODUCT & BRAND MANAGEMENT
Subject Code	MM 405
Target Marks (%)	50%
No. of students achieved target marks	25
Total no. of students attempted	25
Percentage of students above target marks	100%

Attainment Level (Theory)	Percentage
Level 1	
Level 2	
Level 3	100%
Attainment of CO	
CO-1	3
CO-2	3
CO-3	3

Course name	CO	Description
PRODUCT & BRAND MANAGEMENT	MM 405.1	Apply the fundamental concepts of product and brand development and management.
	MM 405.2	Use the brand positioning framework to develop a brand, keep it relevant, expand a brand internationally, and reposition a brand.
	MM 405.3	Use tools and metrics to analyze competitors and develop positioning strategies.
	MM 405.4	Recognize the importance of using teams and organization to coordinate multiple interdisciplinary tasks in order to create and manage products within an organization.
	MM 405.5	Use portfolio analysis and the product life cycle to understand how a firm manages its product mix.
	MM 405.6	Apply an understanding of the product manager's role in product pricing, sales, and promotion.

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Course Outcome Mapping to Program Outcome to Program Specific Outcome																
CO	PO 1	PO 2	PO3	PO 4	PO 5	PO6	PO7	PO8	PO9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3	PSO 4
1		2		2	1			2	2	3	2	1		1	2	
2		2		2			2	1	2	1	2		2	1		
3	2	2	3		1			2	2	2			3	1		3
4	2	1	1	3				2	2	2	3		1	1		3
5	1		2	3				2	2		3			2	2	3
6			2			2	2				2	0			2	
Attainment	0.83	1.16	1.33	1.33	0.33	1	0.66	1.5	1.66	1.33	2	0.161	1	1	1	1.5

1: Slight (Low)

2: Moderate (Medium)

3: Substantial (High)



Regent Education and Research Foundation Group of Institutions

Academic Year	2022 – 23 (ODD)
Department	MBA
Year / Semester	SECOND/FOURTH
Name of Faculty	SURYA MUKHERJEE
Subject Name	MANPOWER PLANNING, RECRUITMENT AND SELECTION
Subject Code	HR 401
Target Marks (%)	50%
No. of students achieved target marks	25
Total no. of students attempted	25
Percentage of students above target marks	100%

Attainment Level (Theory)	Percentage
Level 1	
Level 2	
Level 3	100%
Attainment of CO	
CO-1	3
CO-2	3
CO-3	3

Course name	CO	Description
MANPOWER PLANNING, RECRUITMENT AND SELECTION	HR 401.1	Students should be able to explain the factors affecting HRP and HRP process of an organisation.
	HR 401.2	Students should be able to determine the process of demand and supply forecasting while doing human resource planning.
	HR 401.3	Students should be able to devise the manpower plan for an organisation.
	HR 401.4	Students should be able to formulate Recruitment and Selection process on the basis of HRP
	HR 401.5	Students should be able to outline the Recent Trends in Manpower Development and Planning
	HR 401.6	Understand the concept of On the Job and Off the Job Training.

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Course Outcome Mapping to Program Outcome to Program Specific Outcome																
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4
1	2	2		2	1			2	2	3	2	1	2	2		2
2	1	2		2			2	1	2	1	2		1	2		1
3	2	2	3		1			2	2	2			2	2	3	2
4	2	2	1	3				2	2	2	3		2	2	1	2
5	1		2	3				2	2		3		1		2	2
6			2			2	2				2	0			2	
Attainment	1.33	1.33	1.33	1.33	0.33	1	0.66	1.5	1.66	1.33	2	0.16	1.33	1.33	1.33	1.5

1: Slight (Low)

2: Moderate (Medium)

3: Substantial (High)



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Regent Education and Research Foundation Group of Institutions

Academic Year	2022 – 23 (ODD)
Department	MBA
Year / Semester	SECOND/FOURTH
Name of Faculty	SURYA MUKHERJEE
Subject Name	EMPLOYEE RELATION AND LABOUR LAWS
Subject Code	HR 402
Target Marks (%)	50%
No. of students achieved target marks	37
Total no. of students attempted	37
Percentage of students above target marks	100%

Attainment Level (Theory)	Percentage
Level 1	
Level 2	
Level 3	100%
Attainment of CO	
CO-1	3
CO-2	3
CO-3	3

Course name	CO	Description
EMPLOYEE RELATION AND LABOUR LAWS	HR 402.1	Students should able to elaborate the concept of Industrial Relations.
	HR 402.2	The students should able to illustrate the role of trade union in the industrial setup
	HR 402.3	Students should able to outline the important causes & impact of industrial disputes
	HR 402.4	Students should able to elaborate Industrial Dispute settlement procedures.
	HR 402.5	Student should be able to summarize the important provisions of Wage Legislations, in reference to Payment of Wages Act 1936, Minimum Wages Act 1948 & Payment of Bonus Act 1965
	HR 402.6	Student should able to summarize the important provisions of Social Security Legislations, in reference to Employees State Insurance Act 1948, Employees Provident Fund Act 1952, Payment of Gratuity Act 1972

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Course Outcome Mapping to Program Outcome to Program Specific Outcome																
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4
1	2	2		2	1			2	2	3	2	1	2	2		2
2	1	2		2			2	1	2	1	2		1	2		2
3	2	2	3		1			2	2	2			2	2	3	
4	2	2	1	3				2	2	2	3	3	2	2	1	3
5	1		2	3				2	2		3	2	1		2	3
6			2			2	2				2				2	2
Attainment	1.33	1.33	1.33	1.33	0.33	1	0.67	1.5	1.66	1.33	2	1	1.3	1.3	1.3	2

1: Slight (Low)

2: Moderate (Medium)

3: Substantial (High)

Regent Education and Research Foundation Group of Institutions

Academic Year	2022 – 23 (EVEN)
Department	MBA
Year / Semester	SECOND/FOURTH
Name of Faculty	SURYA MUKHERJEE
Subject Name	COMPENSATION AND BENEFITS MANAGEMENT
Subject Code	HR 403
Target Marks (%)	50%
No. of students achieved target marks	20
Total no. of students attempted	20
Percentage of students above target marks	100%

Attainment Level (Theory)	Percentage
Level 1	
Level 2	
Level 3	100%
Attainment of CO	
CO-1	3
CO-2	3
CO-3	3

Course name	CO	Description
COMPENSATION AND BENEFITS MANAGEMENT	HR 403.1	Students should be able to explain the factors affecting HRP and HRP process of an organisation.
	HR 403.2	Students should be able to determine the process of demand and supply forecasting while doing human resource planning.
	HR 403.3	Students should be able to devise the manpower plan for an organisation.
	HR 403.4	Students should be able to formulate Recruitment and Selection process on the basis of HRP
	HR 403.5	Students should be able to outline the Recent Trends in Manpower Development and Planning

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HR 403.6	Students should be able to outline the Recent Trends of SHRM
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Course Outcome Mapping to Program Outcome to Program Specific Outcome																
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4
1	2	2		2	1			2	2	3	2	1	2		2	
2	1	2		2			2	1	2	1	2		2		2	3
3	2	2	3		1			2	2	2			2	3		3
4	2	2	1	3				2	2	2	3			1	3	3
5	1		2	3				2	2		3			2	3	
6			2			2	2				2	0		2		
Attainment	1.33	1.33	1.33	1.33	0.33	1	0.66	1.5	1.66	1.33	2	0.16	1	1.33	1.33	1.5

1: Slight (Low)

2: Moderate (Medium)

3: Substantial (High)



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Academic Year	2022 – 23 (ODD)
Department	MBA
Year / Semester	SECOND/4TH
Name of Faculty	TRINA BHATTACHARYA
Subject Name	STRATEGIC HRM
Subject Code	HR 405
Target Marks (%)	50%
No. of students achieved target marks	20
Total no. of students attempted	20
Percentage of students above target marks	100%

Attainment Level (Theory)	Percentage
Level 1	
Level 2	
Level 3	100%
Attainment of CO	
CO-1	3
CO-2	3
CO-3	3

Course name	CO	Description
STRATEGIC HRM	HR 405.1	;
	HR 405.2	Identify the key HRM functions and operations; Define, explain, illustrate and reason with the key human resource management concepts
	HR 405.3	Identify the linkages between HRM functions and operations and organisational strategies, structures and culture
	HR 405.4	Reflect and comment in a way that demonstrates awareness of the different contexts that impact on the operation of HRM
	HR 405.5	Learn the link between HCM and Business Strategy.

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	HR 405.6	Exhibit behaviour and performance that demonstrates enhanced competence in decision-making, group leadership, oral and written communication, critical thinking, problem-solving, planning and team work
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Course Outcome Mapping to Program Outcome to Program Specific Outcome																
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4
1	2	2		2	1			2	2	3	2	1	2	2		
2	1	2		2			2	1	2	1	2		1	2	3	3
3	2	2	3		1			2	2	2			2	2	3	
4	2	2	1	3				2	2	2	3		2	2	3	
5	1		2	3				2	2		3		2	2		2
6			2			2	2				2	0				1
Attainment	1.33	1.33	1.33	1.33	0.33	1	0.66	1.5	1.66	1.33	2	0.16	1.5	1.66	1.5	1

1: Slight (Low)

2: Moderate (Medium)

3: Substantial (High)

Regent Education and Research Foundation Group of Institutions

Academic Year	2022 – 23 (ODD)
Department	MBA
Year / Semester	SECOND/4TH
Name of Faculty	ANTARA BOSE
Subject Name	SALES AND OPERATION PLANNING
Subject Code	OM 401
Target Marks (%)	50%
No. of students achieved target marks	7
Total no. of students attempted	7
Percentage of students above target marks	100%

Attainment Level (Theory)	Percentage
Level 1	
Level 2	
Level 3	100%
Attainment of CO	
CO-1	3
CO-2	3
CO-3	3

Course name	CO	Description
SALES AND OPERATION PLANNING	OM 401.1	Understand the process and information required for preparing the Sales and Operations Planning
	OM 401.2	Understand the insights on demand forecasting methods
	OM 401.3	Enhance the Capacity Planning and MRP
	OM 401.4	Understand the Master Production Scheduling and Service Operations
	OM 401.5	Learn the link between HCM and Business Strategy.

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OM 401.6	enhanced competence in decision-making, group .
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Course Outcome Mapping to Program Outcome to Program Specific Outcome																
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4
1		2		2	1			2	2	3	2	1		3	2	2
2	1	2		2			2	1	2	1	2			3	1	2
3	2	2	3		1			2	2	2			3	3	2	2
4	2		1	3				2	2	2	3		3		2	2
5	1		2	3				2	2		3			3	2	2
6			2			2	2				2	0				
Attainment	1	1	1.33	1.33	0.33	1	0.66	1.5	1.66	1.33	2	0.16	1	2	1.5	1.66

1: Slight (Low)

2: Moderate (Medium)

3: Substantial (High)



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Regent Education and Research Foundation Group of Institutions

Academic Year	2022 – 23 (ODD)
Department	MBA
Year / Semester	SECOND/4TH
Name of Faculty	SUPRAVAT BASU
Subject Name	BEHAVIORAL OPERATION MANAGEMENT
Subject Code	OM 402
Target Marks (%)	50%
No. of students achieved target marks	7
Total no. of students attempted	7
Percentage of students above target marks	100%

Attainment Level (Theory)	Percentage
Level 1	
Level 2	
Level 3	100%
Attainment of CO	
CO-1	3
CO-2	3
CO-3	3

Course name	CO	Description
BEHAVIORAL OPERATION MANAGEMENT	OM 402.1	Learn the detailed concept of Risk
	OM 402.2	Learn different Negotiation Strategies.
	OM 402.3	Expose the participants to the recent developments in theories, principles, and practices in the field of supply chain analytics.
	OM 402.4	Learn how to develop Reward Policies.
	OM 402.5	Analyze how supply chain decisions related to facility location can be applied to various industries.

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OM 402.6	Learn the detailed concept of Risk
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Course Outcome Mapping to Program Outcome to Program Specific Outcome																
CO	PO 1	PO2	PO 3	PO 4	PO 5	PO6	PO 7	PO8	PO9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3	PSO 4
1		2		2	1			2	2	3	2	1	2	2		
2	1	2		2			2	1	2	1	2		1	2		3
3	2	2	3		1			2	2	2			2	2	3	3
4	2		1	1				2	2	2	3		2		1	3
5	1		2					2	2		3		2		2	3
6	1		2			2	2				2	0			2	3
Attainment	1.16	1	1.33	0.83	0.33	1	0.66	1.5	1.66	1.33	2	0.16	1.5	1	1.33	2.5

1: Slight (Low) 2: Moderate (Medium) 3. Substantial (High)

Regent Education and Research Foundation Group of Institutions

Academic Year	2022 – 23 (ODD)
Department	MBA
Year / Semester	SECOND/4TH
Name of Faculty	ANTARA BOSE
Subject Name	OPERATION RESEARCH APPLICATION
Subject Code	OM 403
Target Marks (%)	50%
No. of students achieved target marks	1
Total no. of students attempted	1
Percentage of students above target marks	100%

Attainment Level (Theory)	Percentage
Level 1	
Level 2	
Level 3	100%
Attainment of CO	
CO-1	3
CO-2	3
CO-3	3

Course name	CO	Description
OPERATION RESEARCH APPLICATION	OM 403.1	Understand the process and information required for preparing the Sales and Operations Planning
	OM 403.2	Understand the insights on demand forecasting methods
	OM 403.3	Enhance the Capacity Planning and MRP
	OM 403.4	Understand the Master Production Scheduling and Service Operations
	OM 403.5	Learn the link between HCM and Business Strategy.

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OM 403.6

enhanced competence in decision-making, group .

Course Outcome Mapping to Program Outcome to Program Specific Outcome

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4
1		2		2	1			2	2	3	2	1	2		2	2
2	1	2		2			2	1	2	1	2		2	1	2	1
3	2	2	3		1			2	2	2				2	2	2
4	2		1	3				2	2	2	3		3	2		2
5	1		2	3				2	2		3		3	1		2
6			2			2	2				2	0	2			
Attainment	1	1	1.33	1.33	0.33	1	0.66	1.5	1.66	1.33	2	0.16	2	1	1	1.5

1: Slight (Low)

2: Moderate (Medium)

3: Substantial (High)



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Regent Education and Research Foundation Group of Institutions

Academic Year	2022 – 23 (ODD)
Department	MBA
Year / Semester	SECOND/4TH
Name of Faculty	ANTARA BOSE
Subject Name	SUPPLY CHAIN ANALYTICS
Subject Code	OM 404
Target Marks (%)	50%
No. of students achieved target marks	1
Total no. of students attempted	1
Percentage of students above target marks	100%
Attainment Level (Theory)	Percentage
Level 1	
Level 2	
Level 3	100%
Attainment of CO	
CO-1	3
CO-2	3
CO-3	3

Course name	CO	Description
SUPPLY CHAIN ANALYTICS	OM 404.1	Introduce the participants to the key issues of supply chain management and supply chain analytics
	OM 404.2	Understand the insights on demand forecasting methods
	OM 404.3	Expose the participants to the recent developments in theories, principles, and practices in the field of supply chain analytics.
	OM 404.4	Understand the Master Production Scheduling and Service Operations
	OM 404.5	Analyze how supply chain decisions related to facility location can be applied to various industries.
	OM 404.6	Learn the detailed concept of Risk

Regent Education and Research Foundation Group of Institutions

Course Outcome Mapping to Program Outcome to Program Specific Outcome																
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4
1		2		2	1			2	2	3	2	1			2	2
2	1	2		2			2	1	2	1	2		3	3	1	2
3	2	2	3		1			2	2	2				3	2	2
4	2		1	3				2	2	2	3		3		2	2
5	1		2	3				2	2		3		3		2	2
6			2			2	2				2	0				
Attainment	1	1	1.33	1.33	0.33	1	0.66	1.5	1.66	1.33	2	0.16	1.5	1	1.5	1.66

1: Slight (Low)

2: Moderate (Medium)

3: Substantial (High)



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