DEPARTMENT OF HARBOUR AND OCEAN ENGINEERING

B.E HARBOUR AND OCEAN ENGINEERING

MAPPING OF CO/PO/PSO

Program Educational Objective

The program educational Objective of the Bachelor of Harbour and Ocean Engineering is to facilitate
the students to:
1. Become successful Port and Coastal Engineers who are able to be competent, innovative and productive in addressing the needs of the Port and Maritime Industry
2. Pursue higher education and research.
3. Grow professionally with their knowledge and proficient skills throughout their career.
4. Demonstrate high standard of ethical conduct, positive attitude and societal responsibilities.

PROGRAMME OUTCOMES:

PO1	Apply the knowledge of mathematics, science, engineering fundamentals and an engineering specialization to the solution of complex engineering problems
PO2	Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusion using first principles of mathematics, natural science and engineering science
PO3	Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for public health and safety, and the cultural, societal and environmental considerations
PO4	Use research –based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusion
PO5	Create, select, and apply appropriate techniques, resources and modern engineering and IT tools including prediction and modeling to complex engineering activities
PO6	Apply reasoning informed by the contextual knowledge to asses societal and environmental contexts, and demonstrate the knowledge of and need for sustainable development
PO7	Understand the impact of the professional ethics and responsibilities and norms of the engineering practice.
PO8	Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practices
PO9	Function effectively as an individual, and a a member or leader in diverse teams, and in multidisciplinary setting
PO10	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.
PO11	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.
PO12	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.

PROGRAMME SPECIFIC OBJECTIVES:

PSO1	To analyses, plan, design, operate, maintenance of various structural components of port and maritime structures using state-of-art technology
PSO2	Effectively practice as professional port and coastal engineers, coastal modelers, maritime design engineers managers, and leaders in the maritime, industries and/or a wide variety of other fields as engineers.
PSO3	To perform an efficient and productive port engineer, in solving site specific coastal engineering problems and arriving timely decisions in a cost effective way

MAPPING OF CO/PO/PSO

SEMESTER-I

UCLEC01- Technical English-I

Course Outcomes:

After the successful completion of the course, the students will be able to:

UCLEC01.1	Outline the importance of communication skill
UCLEC01.2	Illustrate technical and general vocabulary
UCLEC01.3	Distinguish different tenses and identification of common errors
UCLEC01.4	Infer the skill for writing formal and informal letters
UCLEC01.5	Develop good listening and speaking skills
UCLEC01.6	Apply the skills to speak and write English grammatically

Mapping of CO/PO/PSO:

PPOs / COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	-	-	-	-	-	3	2	-	3	3	-	3	-	-	-
CO2	-	-	-	-	-	3	2	-	2	2	-	3	-	-	-
CO3	-	-	-	-	3	3	2	-	3	3	-	2	-	-	-
CO4	-	-	-	-	2	2	3	-	3	3	-	3	-	-	-
CO5	-	-	-	-	2	2	2	-	3	3	-	3	-	-	-
CO6	-	-	-	-	2	3	3	-	3	3	-	3	-	-	-
AVERAGE	-	-	-	-	2.3	2.7	2.3	-	2.8	2.8	-	2.8	-	-	-

CORRELATION LEVELS	1. SLIGHT (LOW)	2. MODERATE (MEDIUM)	3. SUBSTANTIAL (HIGH)

UCPHC01- ENGINEERING PHYSICS- I

Course Outcome:

After the successful completion of the course, the students will be able to:

UCPHC01.1	Summarize the laws and principles of basic mechanics
UCPHC01.2	Explain the concepts of hydrostatics and hydrodynamics
UCPHC01.3	Illustrate the properties of matter
UCPHC01.4	Demonstrate the basic principles of heat and light
UCPHC01.5	Outline the basic principles of electricity and electrical machines
UCPHC01.6	Apply the fundamentals of electromagnetic induction for engineering applications

Mapping of CO/PO/PSO:

PPOs / COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	2	2	-	-	2	-	-	-	-	-	-	2	2	2	3
CO2	2	-	2	2	2	-	-	-	-	-	-	2	2	2	2
CO3	2	2	-	3	2	-	-	-	-	-	-	-	-	-	-
CO4	2	2	2	-	3	-	-	-	-	-	-	3	-	2	-
CO5	3	2	2	2	3	-	-	-	-	-	-	2	2	2	2
CO6	3	3	3	2	3	-	-	-	-	-	-	3	2	3	2
AVERAGE	2.3	2.2	2.3	2.3	2.5	-	-	-	-	-	-	2.4	2	2.2	2.3
CORRELATION LEVELS				1. SLIGHT (LOW)			2. MODERATE (MEDIUM)				3. SUBSTANTIAL (HIGH)				

UBCHC01- Engineering Chemistry

Course Outcomes:

After the successful completion of the course, the students will be able to

UBCHC01.1	Illustrate the fundamentals of phase rule and reduced phase rule
UBCHC01.2	Outline the concepts of water treatment techniques
UBCHC01.3	Identify the types of fuels and characterization of various constituents
UBCHC01.4	Illustrate the basic principles of electrochemical reactions and redox reactions
UBCHC01.5	Distinguish the production technologies of metallic and non-metallic
UBCHC01.6	Apply corrosion Control techniques in on- board ships

MAPPING OF CO/PO/PSO:

POs / COs	PO1	PO2	PO3	PO4	PO5	PO6			PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO
CO1	2	-	-	-	-	-			2	-	-	-	-	2	2	2	2
CO2	2	2	-	-	-	-			3	-	-	-	-	-	-	-	-
CO3	2	2	-	-	-	-			3	-	-	-	-	-	-	-	-
CO4	2	2	-	-	-	-			3	-	-	-	-	-	-	-	-
CO5	3	2	-	-	2	-			-	-	-	-	-	-	2	2	2
CO6	3	2	3	-	2	-			3	-	-	-	-	-	2	2	3
AVERAGE	2.3	2	3	-	2	-			2.8	-	-	-	-	2	2	2	2.3

CORRELATION LEVELS		1.	2.	3. SLIGHT (LOW)	4. MODERATE (MEDIUM)	5. SUBSTANTIAL (HIGH)

UBMTC01- Engineering Mathematics-I

COURSE

After the successful completion of the course, the students will be able to:

UBMTC01	Solve the problems using three-dimensional analytical geometry .
UBMTC01	Apply the theorems and formulae for solving problems in differential calculus
UBMTC01	Classify the functions of several variables
UBMTC01	Apply integral calculus on engineering problems
UBMTC01	solve problems Using multiple integrals
UBMTC01	Apply the concepts of Calculus and analytical geometry for engineering applications

PPOs / COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	3	3	2	-	-	-	-	-	-	-	-	2	2	2
CO2	3	3	3	2	2	-	-	-	-	-	-	2	2	2	2
CO3	2	2	2	2	-	-	-	-	-	-	-	-	-	-	-
CO4	3	3	3	2	2	-	-	-	-	-	-	2	2	2	2
CO5	2	2	2	2	2	-	-	-	-	-	-	2	-	3	3
CO6	3	3	3	2	2	-	-	-	-	-	-	2	3	3	3
AVERAGE	2.7	2.7	2.7	2	2	-	-	-	-	-	-	2	2.3	2.4	2.4
CORRELATION LEVELS				1. SLIGHT (LOW)			2. MODERATE (MEDIUM)				3. SUBSTANTIAL (HIGH)				

UCITC01- Introduction to Programming in C and C++

Course Outcomes:

After the successful completion of the course, the students will be able to Formulate simple algorithms for arithmetic and logical problems

UCITC01.1	Outline the basic organization of computer and introduction to number system
UCITC01.2	Demonstrate problem-solving concepts of C language
UCITC01.3	Explain the concepts of arrays and strings
UCITC01.4	Illustrate the functions and pointers of C Language
UCITC01.5	Develop syntax for writing programs in C language
UCITC01.6	Infer the knowledge of computer and programming in C

MAPPING OF CO/PO/PSO:

PPOs / COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	2	2	2	-	2	-	-	-	-	-	-	-	-	-	-
CO2	3	3	2	2	1	-	-	-	-	-	-	-	-	-	-
CO3	3	3	3	2	2	-	-	-	-	2	-	-	-	-	-
CO4	2	2	2	-	1	-	-	-	-	2	-	-	-	-	-
CO5	2	2	2	-	3	-	-	-	-	2	-	3	-	-	-
CO6	3	3	3	2	3	-	-	-	-	2	-	2	-	-	-
AVERAGE	2.5	2.5	2.3	2	2	-	-	-	-	2	-	2.5	-	-	-

| CORRELATION LEVELS | | 1. SLIGHT (LOW) | 2. MODERATE (MEDIUM) | 3. SUBSTANTIAL (HIGH) |

UBMCCPA- Engineering Graphics

Course Outcomes:

After the successful completion of the course, the students will be able to:

UBMCCPA.1	Identify the three Dimensional objects in two-dimensional media
UBMCCPA.2	Construct the projection of points, straight lines and determination of true length and true inclination
UBMCCPA.3	Illustrate the simple solid on plain surface
UBMCCPA.4	Demonstrate the projection of solids and development of surfaces
UBMCCPA.5	Construct the isometric projection of simple solids
UBMCCPA.6	Examine the different isometric views and projections

MAPPING OF CO/PO/PSO:

PPOs / COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	2	2	2	2	2	-	-	-	-	1	-	-	-	-	-
CO2	3	3	2	3	1	-	-	-	-	2	-	-	-	2	-
CO3	2	2	3	2	2	-	-	-	-	3	-	-	-	2	-
CO4	3	3	2	2	1	-	-	-	-	1	-	-	3	-	-
CO5	3	2	2	3	3	-	-	-	-	2	-	-	2	-	2
CO6	3	3	2	2	3	-	-	-	-	3	-	2	-	-	2
AVERAGE	2.7	2.5	2.2	2.3	2	-	-	-	-	2	-	2	2.5	2	2

CORRELATION LEVELS	1. SLIGHT (LOW)	2. MODERATE (MEDIUM)	3. SUBSTANTIAL (HIGH)

UCPHCPA- Engineering Physics Laboratory

COURSE OUTCOMES:

After the successful completion of the course, the students will be able to:

UCPHCPA.1	Explain the calibration of Voltmeter and Potentiometer
UCPHCPA.2	Demonstrate the principles of light through convex lens and calculating its wavelength
UCPHCPA.3	Determine the surface tension and co-efficient of viscosity of water
UCPHCPA.4	Infer modulus of elasticity of torsion pendulum and Young's modulus of elasticity of a bar
UCPHCPA.5	Illustrate how to measure the thickness of the wire
UCPHCPA.6	Explain the concepts behind measurement of magnetic field along the axis of a coil

MAPPING OF CO/PO/PSO:

PPOs / COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	2	2	2	2	1	-	-	-	1	2	-	2	2	2	3
CO2	2	-	2	2	2	-	-	-	2	1	-	2	2	3	3
CO3	2	2	3	3	1	-	-	-	2	2	-	-	2	-	-
CO4	3	2	2	3	2	-	-	-	2	2	-	2	2	2	2
CO5	3	2	2	2	3	-	-	-	2	3	-	2	2	3	2
CO6	3	3	3	3	3	-	-	-	3	2	-	3	2	3	2
AVERAGE	2.5	2.2	2.3	2.5	2.0	-	-	-	2.0	2	-	2.2	2	2.6	2.4
CORRELATION LEVELS				1. SLIGHT (LOW)			2. MODERATE (MEDIUM)				3. SUBSTANTIAL (HIGH)				

UBCHCPA- Engineering Chemistry Laboratory

COURSE OUTCOMES:

After the successful completion of the course, the students will be able to:

UBCHCPA.1	Illustrate how to estimate Bicarbonate and Hydroxide Alkalinity
UBCHCPA.2	Explain how to calculate Total Hardness and Chloride Content of water
UBCHCPA.3	Demonstrate how to estimate Temporary and Permanent Hardness, COD, BOD, TDS and TSS of water
UBCHCPA.4	Compare the titration methods of acid, base and Ferrous ion
UBCHCPA.5	Determine Single Electrode potential of Galvanic cell and Molecular
UBCHCPA.6	Explain how to determine Proximate analysis of fuel and its Calorific value

MAPPING OF CO/PO/PSO:

PPOs / COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	2	-	-	2	-	-	-	-	2	3	-	2	1	2	2
CO2	2	2	-	1	-	-	2	-	3	2	-	-	-	-	-
CO3	2	1	-	2	2	-	2	-	2	3	-	-	-	-	-
CO4	2	1	-	3	2	-	3	-	3	2	-	-	-	-	-
CO5	3	2	-	2	2	-	-	-	2	3	-	-	2	2	2
CO6	3	2	3	2	2	-	3	-	3	2	-	-	2	2	3
AVERAGE	2.3	2	3	2	2.3	-	2.5	-	2.5	2.5	-	-	2	2	2.3
CORRELATION LEVELS				1. SLIGHT (LOW)			2. MODERATE (MEDIUM)			3. SUBSTANTIAL (HIGH)					

UCITCPA- Programming in C and C++ Laboratory

COURSE OUTCOMES:

After the successful completion of the course, the students will be able to:

UCITCPA.1	Develop logics to swap two numbers, finding largest of given numbers and roots of quadratic equation
UCITCPA.2	Develop logic to print Fibonacci Series and sum of odd numbers and to find the area and Perimeter of the Circle, Triangle, and Square
UCITCPA.3	Determine maximum, minimum, Sum and average of elements of an array
UCITCPA.4	Determine the sum and multiplication of two matrices
UCITCPA.5	Determine whether a string is palindrome or not and find number of string
UCITCPA.6	Develop logic to perform the operations using function and pointer

MAPPING OF CO/PO/PSO:

PPOs / COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	2	2	2	1		-	-	-	-	2	-	1	-	-	-
CO2	3	2	3	2	-	-	-	-	-	2	-	2	-	-	-
CO3	3	2	3	2	2	-	-	-	-	1	-	2	-	-	-
CO4	2	2	2	1	2	-	-	-	-	1	-	2	-	-	-
CO5	2	2	2	2	2	-	-	-	-	2	-	2	-	-	-
CO6	2	3	3	2	3	-	-	-	-	2	-	2	-	-	-
AVERAGE	2.3	2.2	2.5	2.0	2.3	-	-	-	-	2	-	2	-	-	-
CORRELATION LEVELS				1. SLIGHT (LOW)			2. MODERATE (MEDIUM)			3. SUBSTANTIAL (HIGH)					

UCLECPB- Spoken English – I

COURSE OUTCOMES:

After the successful completion of the course, the students will be able to:

UCLECPB.1	Develop skills in informal conversation; comprehend their views without making

	grammatical errors	
UCLECPB.2	Define their perspective more operationally	
UCLECPB.3	Infer the delicacy of using the linguistics skills	
UCLECPB.4	Develop listening and speaking skills for effective presentation	
UCLECPB.5	Develop good attitude and behavior	
UCLECPB.6	Build interview skills and personality development.	

MAPPING OF CO/PO/PSO:

POs / COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	-	-	-	-	-	2	2	2	2	2	-	2	-	-	-
CO2	-	-	-	-	-	2	1	2	2	3	-	2	-	-	-
CO3	-	-	-	-	-	2	1	2	2	2	-	3	-	-	-
CO4	-	-	-	-	-	2	2	2	2	1	-	3	-	-	-
CO5	-	-	-	-	-	3	2	2	3	2	-	1	-	-	-
CO6	-	-	-	-	-	3	1	2	1	2	-	2	-	-	-
AVERAGE	-	-	-	-	-	2.3	2	2	2	2	-	2.3	-	-	-
CORRELATION LEVELS					1. SLIGHT (LOW)			2. MODERATE (MEDIUM)			3. SUBSTANTIAL (HIGH)				

SEMESTER-II

UCLEC02- Technical English-II

COURSE OUTCOMES:

After the successful completion of the course, the students will be able to:

UCLEC02.1	Identify the importance of technical English
UCLEC02.2	Apply good communication skill for enhancing vocabulary
UCLEC02.3	Develop skills in reading
UCLEC02.4	Build knowledge on writing letters and descriptive writings
UCLEC02.5	Develop speaking and listening skills
UCLEC02.6	Apply the correct pause and pronunciation

MAPPING OF CO/PO/PSO:

POs / COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	-	-	-	-	-	2	2	-	2	2	-	2	-	-	-
CO2	-	-	-	-	-	3	2	-	2	2	-	2	-	-	-
CO3	-	-	-	-	-	2	1	-	2	2	-	2	-	-	-
CO4	-	-	-	-	-	2	2	-	2	2	-	2	-	-	-
CO5	-	-	-	-	-	2	2	-	2	2	-	2	-	-	-
CO6	-	-	-	-	-	1	3	-	2	2	-	2	-	-	-
AVERAGE	-	-	-	-	-	2.2	2.2	-	2.2	2.2	-	2.2	-	-	-
CORRELATION LEVELS					1. SLIGHT (LOW)		2. MODERATE (MEDIUM)			3. SUBSTANTIAL (HIGH)					

UCPHC02- ENGINEERING PHYSICS- II

COURSE OUTCOMES:

After the successful completion of the course, the students will be able to:

UCPHC02.1	Demonstrate the applications of sound waves

UCPHC02.2	Explain the principles of laser and its applications
UCPHC02.3	Illustrate miller indices and X-Ray power diffraction method to identify crystal structure
UCPHC02.4	Compare the electrical conductivity in semiconductors
UCPHC02.5	Contrast dielectric and magnetic materials
UCPHC02.6	Infer the principles of light and sound waves in various applications

MAPPING OF CO/PO/PSO:

POs / COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	2	2	2	-	-	-	-	-	-	-	-		2	2	2
CO2	2	1	2	2	-	-	-	-	-	-	-		2	2	2
CO3	3	2	2	2	-	-	-	-	-	-	-	-	2	-	-
CO4	2	3	2	2	2	-	-	-	-	-	-		2	2	2
CO5	3	3	2	2	2	-	-	-	-	-	-	3	2	2	2
CO6	3	2	2	2	-	-	-	-	-	-	-	2	2	2	2
AVERAGE	2.5	2.2	2	2	2	-	-	-	-	-	-	2.5	2	2	2
CORRELATION LEVELS				1. SLIGHT (LOW)			2. MODERATE (MEDIUM)				3. SUBSTANTIAL (HIGH)				

UBMTC02- Engineering Mathematics-II

COURSE OUTCOMES:

After the successful completion of the course, the students will be able to:

UBMTC02.1	Infer knowledge on ordinary differential first order equations
UBMTC02.2	Illustrate the use of ordinary differential higher order equations
UBMTC02.3	Solve problems using vector calculus
UBMTC02.4	Demonstrate the properties of analytic functions

UBMTC02.5	Demonstrate Laplace transforms in engineering applications
UBMTC02.6	Apply differential equations, vector calculus and Laplace transforms in engineering applications

MAPPING OF CO/PO/PSO:

POs / COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	2	3	2		-	-	-	-	-	-	-	2	2	2
CO2	3	2	3	2		-	-	-	-	-	-	3	2	2	2
CO3	2	3	2	2	2	-	-	-	-	-	-	-	2	-	2
CO4	3	2	3	2		-	-	-	-	-	-	2	2	2	2
CO5	2	3	2	3		-	-	-	-	-	-	2	3	2	3
CO6	3	2	3	2	2	-	-	-	-	-	-	2	3	2	2
AVERAGE	2.7	2.3	2.7	2.2	2	-	-	-	-	-	-	2.3	2.3	2	2.2
CORRELATION LEVELS				1. SLIGHT (LOW)			2. MODERATE (MEDIUM)			3. SUBSTANTIAL (HIGH)					

UBEEC01- BASICS OF ELECTRICAL & ELECTRONICS ENGINEERING

COURSE OUTCOMES:

After the successful completion of the course, the students will be able to:

UBEEC01.1	Outline KCL, KVL and related methods to solve DC circuits

UBEEC01.2	Illustrate the operation of single phase AC Circuits
UBEEC01.3	Explain the principle of operation of three phase AC Circuits
UBEEC01.4	Infer the performance characteristics of Semiconductor Devices
UBEEC01.5	Demonstrate the working principle of Electrical instruments
UBEEC01.6	Apply the knowledge of electric circuits and electronic devices for engineering applications

MAPPING OF CO/PO/PSO:

POs / COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	2	3	2	-	-	-	-	-	-	-	3	3	2	3
CO2	2	3	2	2	-	-	-	-	-	-	-	2	2	2	3
CO3	2	3	3	2	-	-	-	-	-	-	-	2	2	2	3
CO4	3	3	2	2	-	-	-	-	-	-	-	3	3	3	3
CO5	3	2	2	3	-	-	-	-	-	-	-	2	2	2	3
CO6	3	3	3	2	-	-	-	-	-	-	-	3	3	2	3
AVERAGE	2.7	2.7	2.5	2.2	-	-	-	-	-	-	-	2.5	2.5	2.2	3
CORRELATION LEVELS				1. SLIGHT (LOW)			2. MODERATE (MEDIUM)				3. SUBSTANTIAL (HIGH)				

UBBTC01- Environmental Studies

COURSE OUTCOMES:

After the successful completion of the course, the students will be able to:

UBBTC01.1	Summarize Natural Resources such as Forest, water, mineral, Energy, land and Natural
UBBTC01.2	Identify the interrelationship between living organism and environment
UBBTC01.3	Illustrate the importance of environment by assessing its impact on the human world

UBBTC01.4	Demonstrate different type of pollution and its hazards
UBBTC01.5	Explain the impact of pollution explosion, family welfare program and Role of Information Technology in Environment and human health
UBBTC01.6	Classify the integrated themes such as biodiversity natural resources, pollution control and waste management

MAPPING OF CO/PO/PSO:

POs / COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	-	-	-	-	-	2	2	2	2	-	-	2	-	-	-
CO2	-	-	-	-	-	2	2	2	2	-	-	2	-	-	-
CO3	-	-	-	-	-	3	2	2	2	-	-	2	-	-	-
CO4	-	-	-	-	-	2	3	2	2	-	-	2	-	-	-
CO5	-	-	-	-	-	3	2	3	2	-	-	2	-	-	-
CO6	-	-	-	-	-	2	2	2	2	-	-	2	-	-	-
AVERAGE	-	-	-	-	-	2	2	2	2	-	-	2	-	-	-

CORRELATION LEVELS	1. SLIGHT (LOW)	2. MODERATE (MEDIUM)	3. SUBSTANTIAL (HIGH)

UBMCC03- ENGINEERING   MECHANICS

COURSE OUTCOMES:

After the successful completion of the course, the students will be able to:

UBMCC03.1	Explain the engineering principles dealing with force, displacement, velocity and acceleration
UBMCC03.2	Build the knowledge on the equilibrium of rigid bodies
UBMCC03.3	Determine Friction and its effects

UBMCC03.4	Explain the fundamental concepts of kinematics and kinetics of particles to solve engineering problems.
UBMCC03.5	Demonstrate the principles of work and energy of particles
UBMCC03.6	Apply the concept of mechanics for engineering applications

MAPPING OF CO/PO/PSO:

POs / COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	2	2	2	-	-	-	-	-	-	-	2	2	2	2
CO2	3	3	3	2	-	-	-	-	-	-	-	2	2	3	3
CO3	3	2	2	2	-	-	-	-	-	-	-	2	2	3	2
CO4	3	2	3	2	2	-	-	-	-	-	-	2	2	2	2
CO5	3	3	2	2	-	-	-	-	-	-	-	2	2	2	2
CO6	3	3	3	2	2	-	-	-	-	-	-	3	3	2	3
AVERAGE	3	2.5	2.5	2	2	-	-	-	-	-	-	2.2	2.2	2.3	2.3
CORRELATION LEVELS				1. SLIGHT (LOW)			2. MODERATE (MEDIUM)				3. SUBSTANTIAL (HIGH)				

UBMCC11- THERMODYNAMICS

COURSE OUTCOMES:

After the successful completion of the course, the students will be able to:

UBMCC11.1	Explain the engineering principles dealing with force, displacement, velocity and acceleration
UBMCC11.2	Build the knowledge on the equilibrium of rigid bodies
UBMCC11.3	Determine Friction and its effects
UBMCC11.4	Explain the fundamental concepts of kinematics and kinetics of particles to solve engineering problems
UBMCC11.5	Demonstrate the principles of work and energy of particles

UBMCC11.6	Apply the concept of mechanics for engineering applications

MAPPING OF CO/PO/PSO:

POs / COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	2	2	2	-	-	-	-	-	-	-	2	2	2	2
CO2	3	3	3	2	-	-	-	-	-	-	-	2	2	3	3
CO3	3	2	2	2	-	-	-	-	-	-	-	2	2	3	2
CO4	3	2	2	2	1	-	-	-	-	-	-	2	2	2	2
CO5	3	3	2	2	-	-	-	-	-	-	-	1	1	2	2
CO6	3	3	3	2	2	-	-	-	-	-	-	3	3	2	3
AVERAGE	3	2.5	2.3	2	1.5	-	-	-	-	-	-	2	2	2.3	2.3
CORRELATION LEVELS				1. SLIGHT (LOW)			2. MODERATE (MEDIUM)			3. SUBSTANTIAL (HIGH)					

UBEECPA- BASICS OF ELECTRICAL & ELECTRONICS LABORATORY

COURSE OUTCOMES:

After the successful completion of the course, the students will be able to:

UBEECPA.1	Demonstrate instruments such as ammeter and voltmeter for measuring resistance, power and power factor
UBEECPA.2	Compare the vector diagrams of series and parallel R,L and C circuits
UBEECPA.3	Explain how to measure power input to three phase induction motor using watt

	meters
UBEECPA.4	Illustrate the characteristics of PN diode, Zener diode and JFET
UBEECPA.5	Contrast the working principle of half wave and full wave rectifier
UBEECPA.6	Combine measuring instruments for different parameters in engineering applications

MAPPING OF CO/PO/PSO:

POs / COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	2	2	2	2	-	-	-	-	2	-	-	-	2	2	-
CO2	2	2	3	2	-	-	-	-	2	2	-	2	3	2	2
CO3	2	2	2	2	2	-	-	-	2	2	2	2	2	2	2
CO4	2	2	2	2	1	-	-	-	1	2	-	1	3	2	2
CO5	2	2	2	2	2	-	-	-	3	1	3	3	3	2	2
CO6	2	2	3	2	3	-	-	-	2	3	3	3	3	2	2
AVERAGE	2	2	2.3	2	2	-	-	-	2	2	2.7	2.2	2.7	2	2
CORRELATION LEVELS				1. SLIGHT (LOW)			2. MODERATE (MEDIUM)			3. SUBSTANTIAL (HIGH)					

UBWSCPA- ENGINEERING PRACTICES LABORATORY

COURSE OUTCOMES:

After the successful completion of the course, the students will be able to:

UBWSCPA.1	Outline the operation of lathes and drilling machines.
UBWSCPA.2	Construct the structures using welding equipments
UBWSCPA.3	Create simple components using lathe and drilling machine
UBWSCPA.4	Develop the Process of chipping, filling, hack sawing, drilling and tapping
UBWSCPA.5	Plan assembling and dismantling of components
UBWSCPA.6	Construct simple lap, butt and tee joints using arc welding equipments

MAPPING OF CO/PO/PSO:

POs / COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	2	-	2	-	2	-	-	-	2	2	-	-	-	-	-
CO2	2	-	2	-	2	-	-	-	2	2	-	-	-	-	-
CO3	2	-	2	-	2	-	-	-	2	2	-	-	-	-	-
CO4	2	-	2	-	2	-	-	-	2	2	-	-	-	-	-
CO5	2	-	2	-	2	-	-	-	2	2	-	2	-	-	-
CO6	2	-	2	-	2	-	-	-	2	2	-	2	-	-	-
AVERAGE	2	-	2	-	2	-	-	-	2	2	-	2	-	-	-

CORRELATION LEVELS	1. SLIGHT (LOW)	2. MODERATE (MEDIUM)	3. SUBSTANTIAL (HIGH)

UCLECPC- Spoken English-II

COURSE OUTCOMES:

After the successful completion of the course, the students will be able to:

UCLECPC.1	Apply Articles, Prepositions, Pronouns, Adjectives and Adverbs in their speaking and writing skills

UCLECPC.2	Infer the knowledge on public speaking and conduct of meetings
UCLECPC.3	Develop skills on interactive English
UCLECPC.4	Develop listening and speaking skills for effective presentation
UCLECPC.5	Develop good attitude , behavior and communication skills
UCLECPC.6	Build interview skills and personality development

MAPPING OF CO/PO/PSO:

PPOs / COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	-	-	-	-	-	2	2	2	2	2	-	-	-	-	-
CO2	-	-	-	-	-	3	2	2	2	3	-	-	-	-	-
CO3	-	-	-	-	-	3	1	2	2	2	-	2	-	-	-
CO4	-	-	-	-	-	2	2	3	2	3	-	2	-	-	-
CO5	-	-	-	-	-	3	2	1	3	2	-	2	-	-	-
CO6	-	-	-	-	-	2	3	2	3	3	-	2	-	-	-
AVERAGE	-	-	-	-	-	2.5	2	2	2.3	2.5	-	2	-	-	-
CORRELATION LEVELS				1. SLIGHT (LOW)			2. MODERATE (MEDIUM)			3. SUBSTANTIAL (HIGH)					

SEMESTER-III

UDMTC03- Engineering Mathematics III

COURSE OUTCOMES:

After the successful completion of the course, the students will be able to:

UDMTC03.1	Solve problems on Laplace Transform
UDMTC03.2	Demonstrate the use of Fourier Transforms in solving physical problems
UDMTC03.3	Evaluate Z-transform of physical systems

UDMTC03.4	Apply probability distributions in physical systems
UDMTC03.5	Evaluate Sampling distributions of physical systems
UDMTC03.6	Apply the knowledge of Laplace transform , Fourier transform, probability and sampling distributions in engineering applications

MAPPING OF CO/PO/PSO:

PPOs / COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	2	3	2	2	-	-	-	-	-	-	2	2	2	2
CO2	3	2	3	3	2	-	-	-	-	-	-	-	2	2	3
CO3	2	3	2	2	2	-	-	-	-	-	-	2	2	-	2
CO4	3	2	3	3	2	-	-	-	-	-	-	2	2	3	3
CO5	3	3	3	2	2	-	-	-	-	-	-	2	3	3	3
CO6	3	3	3	3	2	-	-	-	-	-	-	2	3	3	2
AVERAGE	2.83	2.50	2.83	2.50	1.67	-	-	-	-	-	-	2.00	2.33	2.40	2.17
CORRELATION LEVELS				1. SLIGHT (LOW)			2. MODERATE (MEDIUM)				3. SUBSTANTIAL (HIGH)				

UDHE301- Mechanics of Fluids

COURSE OUTCOMES:

After successful completion of the course, the students should be able to

UDHE301.1	Demonstrate various properties of fluids
UDHE301.2	Learn about fluid statics and kinematics fluid flow with measurement techniques
UDHE301.3	Know about fluid dynamics and governing equations for fluid flow
UDHE301.4	Understand the definition of boundary layer and analyze the flow through pipes
UDHE301.5	Learn about the application of dimensional analysis, similitude and model study
UDHE301.6	Analyze the practical fluid flow problems

MAPPING OF CO/PO/PSO:

PPOs / COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	1	1	1	-	-	-	-	-	-	-	1	3	-	-
CO2	3	2	2	3	1	-	-	-	-	-	-	3	2	-	-
CO3	3	2	2	2	1	-	-	-	-	-	-	3	3	-	-
CO4	3	3	3	2	-	-	-	-	-	-	-	3	2	-	-
CO5	3	2	2	3	1	-	-	-	-	-	-	3	2	-	-
CO6	3	3	3	3	2	-	-	-	-	-	-	3	3	2	2
AVERAGE	3	2.2	2.2	2.3	1.25	-	-	-	-	-	-	3	2.5	2	2
CORRELATION LEVELS				1. SLIGHT (LOW)			2. MODERATE (MEDIUM)			3. SUBSTANTIAL (HIGH)					

UDHE302- Materials for Marine Environment

COURSE OUTCOMES:

The Students will be able to

UDHE302.1	Learn the various properties of building materials used in marine environment
UDHE302.2	Demonstrate the different mortars like, lime-cement-mortar
UDHE302.3	Develop a thorough knowledge on concrete mixing methods as per IS code of practice
UDHE302.4	Know about Timber properties and its applications in marine construction
UDHE302.5	Learn various types of modern materials, line plastics, glass, ceramic, etc.,
UDHE302.6	Know the properties and uses of materials suitable for marine environment and their behavior to environmental forces

MAPPING OF CO/PO/PSO:

PPOs / COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	2	3	2	-	-	-	1	1	-	2	1	1	-	1	-
CO2	2	2	2	-	-	-	2	1	-	1	2	1	-	2	-
CO3	3	2	1	-	-	-	2	2	-	3	2	3	-	2	1
CO4	2	1	3	-	-	-	1	1	-	1	2	2	-	1	1
CO5	2	3	3	-	-	-	3	1	-	3	2	1	-	2	-
CO6	1	2	2	1	1	1	3	2	1	3	2	2	1	2	1
AVERAGE	2.0	2.2	2.2	0.5	0.5	0.5	2.0	1.33	1.0	2.17	1.83	1.67	1.0	1.7	1.0

CORRELATION LEVELS	1. SLIGHT (LOW)	2. MODERATE (MEDIUM)	3. SUBSTANTIAL (HIGH)

UDHE303- Wave Hydrodynamics

COURSE OUTCOMES:

The students will be able to

UDHE303.1	acquire the fundamentals of hydrodynamics in water waves
UDHE303.2	analyze the engineering problems related to linear water wave theory
UDHE303.3	learn about the coastal processes of wave reflection, wave breaking with structures
UDHE303.4	learn about the coastal processes of wave refraction, diffraction, shoaling
UDHE303.5	know about the concept of developing the ocean energy systems
UDHE303.6	apply and solve the various wave-structure interaction problems using linear wave theory

MAPPING OF CO/PO/PSO:

PPOs / COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	2	3	3	-	-	-	-	-	-	-	-	3	3	3
CO2	3	3	2	3	-	-	-	-	-	-	-	-	3	3	3
CO3	3	1	2	2	-	-	-	-	-	-	-	-	3	3	3
CO4	3	2	2	2	-	-	-	-	-	-	-	-	3	3	3
CO5	2	2	2	3	-	-	-	-	-	-	-	-	3	2	3
CO6	3	3	2	2	2	1	1	1	1	1	1	1	2	3	3
AVERAGE	2.83	2.17	2.17	2.5	2.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	2.83	2.83	3.0
CORRELATION LEVELS				1. SLIGHT (LOW)			2. MODERATE (MEDIUM)			3. SUBSTANTIAL (HIGH)					

UDHE304- Introduction to Coastal and Offshore Technology

COURSE OUTCOMES:

The students will be able to

UDHE304.1	demonstrate the various types of port and harbor structures
UDHE304.2	analyze the basic knowledge on the functions and utility of offshore structures
UDHE304.3	evaluate the installation methods of deepwater fixed and floating offshore structures
UDHE304.4	examine the various loads acting on offshore structures
UDHE304.5	demonstrate the basic knowledge about mooring methods for offshore structures
UDHE304.6	examine the various types of port and offshore structures, their installation methods, various loads acting on them and the associated mooring methods

MAPPING OF CO/PO/PSO:

POs / COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	3	3	-	-	2	1	2	-	1	-	-	3	2	3
CO2	2	3	2	-	-	3	3	3	-	3	-	-	3	3	3
CO3	2	2	3	-	-	3	2	3	-	3	-	-	3	3	3
CO4	2	2	2	-	-	2	2	2	-	2	-	-	3	3	3
CO5	2	3	2	-	-	3	3	3	-	3	-	-	3	3	3
CO6	2	3	3	1	1	3	3	3	1	3	2	2	3	3	3
AVERAGE	2.17	2.67	2.5	1	1	2.67	2.33	2.67	1	2.5	2.0	2.0	3.0	2.83	3.0

CORRELATION LEVELS	1. SLIGHT (LOW)	2. MODERATE (MEDIUM)	3. SUBSTANTIAL (HIGH)

UDHE305- Mechanics of Solids

COURSE OUTCOMES:

The students will be able to

UDHE305.1	Estimate stress and strain of materials with combination of different loading
UDHE305.2	Analyze the forces on truss members and thin cylinders using various methods
UDHE305.3	Evaluate bending moment and shear force under different loadings in various supports.
UDHE305.4	Demonstrate theory of simple bending for analysis of stresses
UDHE305.5	Evaluate beam deflection by double integration method, Macaulay's method, moment area method and conjugate beam method
UDHE305.6	Develop the necessary knowledge on solid mechanics needed for design of structures

MAPPING OF CO/PO/PSO:

POs / COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	2	3	2	-	-	-	-	-	-	-	-	3	-	-
CO2	3	3	3	3	-	-	-	-	-	-	-	-	3	-	-
CO3	3	2	1	1	-	1	-	-	-	-	-	-	2	-	-
CO4	3	2	3	2	-	2	-	-	-	-	-	-	3	-	-
CO5	3	1	2	1	1	2	-	-	-	-	-	-	3	2	2
CO6	3	3	3	2	1	2	1	1	-	1	1	1	3	2	2
AVERAGE	3.0	2.17	2.5	1.83	1	1.5	1	1	1	1	1	1	2.83	2.17	2.0
CORRELATION LEVELS				1. SLIGHT (LOW)			2. MODERATE (MEDIUM)			3. SUBSTANTIAL (HIGH)					

UDHEP3A- Mechanics of Fluids Laboratory

COURSE OUTCOMES:

The students will be able to

UDHEP3A.1	estimate friction factors in pipes for turbulent
UDHEP3A.2	evaluate the meta centric height of floating vessels
UDHEP3A.3	estimate contraction coefficient and properties of orifices and mouth pieces
UDHEP3A.4	estimate calibration aspects of triangular notch
UDHEP3A.5	develop characteristics curves of the Reciprocating Pump and Pelton Wheel
UDHEP3A.6	evaluate various flow properties of hydraulic structures

MAPPING OF CO/PO/PSO:

POs / COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	3	3	-	-	-	-	-	3	3	2	3	3	3	3
CO2	3	3	3	-	-	-	-	-	3	3	2	2	3	3	2

CO3	3	3	2	-	-	-	-	-	3	3	2	2	3	3	2
CO4	3	3	2	-	-	-	-	-	3	3	3	3	3	3	2
CO5	3	3	3	-	-	-	-	-	3	3	2	2	3	3	3
CO6	3	2	2	1	1	1	1	1	2	2	3	3	3	3	2
AVERAGE	3	2.83	2.5	1	1	1	1	1	2.83	2.83	2.33	2.5	3	3	2.33

CORRELATION LEVELS	1. SLIGHT (LOW)	2. MODERATE (MEDIUM)	3. SUBSTANTIAL (HIGH)

UDHEP3B- Mechanics of Solids Laboratory

COURSE OUTCOMES:

The students will be able to

UDHEP3B.1	estimate the shear strength of Al or MS rods using UTM
UDHEP3B.2	evaluate the hardness of the material through impact tests
UDHEP3B.3	demonstrate the deflection characteristics of open and closed springs
UDHEP3B.4	evaluate torsion properties of pendulum through Maxwell's theorem
UDHEP3B.5	evaluate the stress concentration of plates using photo-elasticity
UDHEP3B.6	apply the engineering techniques to test and obtain values of engineering properties

MAPPING OF CO/PO/PSO:

POs / COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	3	3	-	-	-	-	-	3	3	2	3	2	3	3
CO2	3	3	3	-	-	-	-	-	3	2	2	2	3	2	3
CO3	3	2	3	-	-	-	-	-	3	3	2	2	2	2	3
CO4	3	2	3	-	-	-	-	-	3	3	3	3	3	2	3
CO5	3	3	3	-	-	-	-	-	3	3	2	2	2	3	3
CO6	3	2	2	1	1	1	1	1	2	3	3	3	3	2	3
AVERAGE	3	2.5	2.83	1	1	1	1	2	2.83	2.83	2.33	2.5	2.5	2.83	3
CORRELATION LEVELS				1. SLIGHT (LOW)			2. MODERATE (MEDIUM)			3. SUBSTANTIAL (HIGH)					

UDLECPD- Spoken English- III

COURSE OUTCOMES:

The Students will be able to

UDLECPD.1	Participate effectively in informal conversation; comprehend their views and respond to them without making grammatical errors.
UDLECPD.2	Define their perspective more operationally.
UDLECPD.3	Acquire the delicacy of using the linguistics skills.
UDLECPD.4	Aggrandize the assertive proficiency
UDLECPD.5	Nurture the ability of self actualization which widens his vicinity
UDLECPD.6	Enhances the versatility of the students on all skills.

MAPPING OF CO/PO/PSO:

POs / COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3

CO1	2	2	2	2	3	2	1	1	1	1	2	2	2	2	2
CO2	2	3	3	3	3	2	1	1	2	2	2	3	2	3	2
CO3	3	2	3	3	2	1	2	1	2	2	3	3	2	2	2
CO4	2	3	3	3	2	1	2	1	3	3	3	3	3	2	2
CO5	3	3	3	3	2	2	3	1	3	3	2	3	3	3	3
CO6	3	3	3	3	2	2	3	1	3	3	3	2	3	3	2
AVERAGE	2.5	2.67	2.83	2.83	2.33	1.67	2.0	1.0	1.83	2.33	2.5	2.67	2.5	2.5	2.17

CORRELATION LEVELS	1. SLIGHT (LOW)	2. MODERATE (MEDIUM)	3. SUBSTANTIAL (HIGH)

SEMESTER –IV

UDHE401- Ocean Data Analysis

COURSE OUTCOMES:

The students will be able to

UDHE401.1	apply the linear wave theory to numerical problems in coastal engineering
UDHE401.2	estimate wave parameters from real time water wave records
UDHE401.3	evaluate rose by number through wind data analysis and wave spectrum studies
UDHE401.4	demonstrate wave forecasting techniques for random water waves
UDHE401.5	estimate field ocean data to arrive return wave heights and histograms
UDHE401.6	demonstrate the various ocean data analysis to arrive design parameters

MAPPING OF CO/PO/PSO:

POs / COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	1	3	2	-	-	-	1	-	1	-	-	3	3	2
CO2	2	2	2	1	-	-	-	1	-	1	-	-	3	3	2
CO3	2	1	2	2	-	-	-	1	-	1	-	-	3	2	2
CO4	2	2	3	2	-	-	2	2	-	1	-	-	3	2	1
CO5	3	2	3	2	-	-	1	1	-	1	-	-	3	3	3
CO6	3	3	3	2	1	1	1	1	1	1	1	2	3	3	3
AVERAGE	2.5	1.83	2.67	1.83	1	1	1.33	1.17	1	1	1	2.0	3	2.67	2.17

CORRELATION LEVELS		1. SLIGHT (LOW)	2. MODERATE (MEDIUM)	3. SUBSTANTIAL (HIGH)

UDHE402- Theory of Coastal Surveying –I

COURSE OUTCOMES:

The students will be able to

UDHE402.1	demonstrate chain surveying methods and apply error corrections
UDHE402.2	develop the knowledge on prismatic and surveyor's compass usage and its calculations
UDHE402.3	develop knowledge on leveling calculations using auto levels using various methods
UDHE402.4	estimate vertical heights and angles using theodolite and errors encountered
UDHE402.5	develop suitable calculations and methods horizontal and vertical curves
UDHE402.6	apply the survey techniques for the practical land and coastal survey

MAPPING OF CO/PO/PSO:

POs / COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	2	3	2	1	-	2	-	-	-	3	-	2	3	1	-
CO2	3	3	2	1	-	3	-	-	-	2	-	3	3	2	1

CO3	3	3	2	1	-	2	-	-	-	2	-	2	3	1	1
CO4	3	3	2	2	-	2	-	-	-	3	-	2	3	1	-
CO5	3	3	2	2	-	2	-	-	-	2	-	2	3	-	1
CO6	2	3	3	2	1	2	1	1	1	2	1	2	3	3	2
AVERAGE	2.5	3	2.17	1.5	1.0	2.17	1	1.0	1	2.33	1	2.17	3.0	1.6	1.25

CORRELATION LEVELS			1. SLIGHT (LOW)	2. MODERATE (MEDIUM)	3. SUBSTANTIAL (HIGH)

UDHE403- Applied Coastal Hydraulics & Hydraulic Machinery

COURSE OUTCOMES:

The students will be able to:

UDHE403.1	evaluate the different types of open channel flow through numerical problems
UDHE403.2	analyze uniform flow and to design the most economical sections in flow channels
UDHE403.3	demonstrate the principles of gradually varied flow through numerical problems
UDHE403.4	analyze the behavior of hydraulic jumps and perform associated calculations
UDHE403.5	evaluate the knowledge of turbines and its applications through numerical problems
UDHE403.6	develop the necessary knowledge on various aspects open channel hydraulics and turbines for complex engineering solutions through numerical problems

MAPPING OF CO/PO/PSO:

POs / COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	3	3	2	-	-	-	-	-	1	1	1	3	2	3
CO2	3	3	3	2	-	-	-	-	-	1	-	1	2	2	3
CO3	3	3	3	2	-	-	-	-	-	1	-	1	3	2	3
CO4	3	3	3	2	-	-	-	-	-	1	-	1	2	2	3
CO5	3	3	3	2	-	-	-	-	-	1	-	1	3	3	3
CO6	3	3	3	2	1	1	1	1	1	1	-	1	3	3	3
AVERAGE	3.0	3.0	3.0	2.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1	2.67	2.33	3.0
CORRELATION LEVELS				1. SLIGHT (LOW)			2. MODERATE (MEDIUM)			3. SUBSTANTIAL (HIGH)					

UDHE404- Oceanography

COURSE OUTCOMES:

The students will be able to

UDHE404.1	analyze the properties of rocks and minerals
UDHE404.2	develop knowledge on various aspects of oceanography and its associated phenomena
UDHE404.3	evaluate the properties of sea water and hydrodynamics of tsunami and tides
UDHE404.4	evaluate the physics of estuarine circulations and sedimentation aspects
UDHE404.5	analyze the chemical composition of seawater and its effect in ocean
UDHE404.6	apply the oceanographic principles in harbour design and construction

MAPPING OF CO/PO/PSO:

POs / COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	2	3	3	-	-	2	-	-	-	1	1	1	1	3	3

CO2	3	3	3	-	-	1	-	-	-	2	-	1	1	3	2
CO3	2	2	3	-	-	1	-	-	-	3	-	1	1	2	1
CO4	2	3	3	-	-	2	-	-	-	3	-	1	1	2	1
CO5	2	2	3	-	-	1	-	-	-	3	1	1	1	2	2
CO6	3	3	3	-	-	1	1	1	1	3	1	1	1	3	2
AVERAGE	2.33	2.67	3.0	1	1	1.33	1	1	1	2.5	3	1	1	2.5	1.83

CORRELATION LEVELS	1. SLIGHT (LOW)	2. MODERATE (MEDIUM)	3. SUBSTANTIAL (HIGH)

UDVCC04- Ethics and Values

COURSE OUTCOMES:

After the successful completion of the course, the students will be able to:

UDVCC04.1	Outline the importance of Ethics and Moral principles
UDVCC04.2	Understand the ethical problems and analyze them
UDVCC04.3	Enumerate the skills to confront moral issues and dilemmas
UDVCC04.4	Infer the major ethical theories
UDVCC04.5	Demonstrate the ethical theories for resolving moral issues
UDVCC04.6	Apply the skills to professional ethics in the field of engineering

MAPPING OF CO/PO/PSO:

POs / COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3

CO1	-	-	-	-	-	2	-	3	-	-	-	2	-	-	-
CO2	-	-	-	-	-	3	2	3	-	2	-	3	-	-	-
CO3	-	-	-	-	-	2	-	3	-	2	-	2	-	-	-
CO4	-	-	-	-	-	3	2	3	2	-	-	2	-	-	-
CO5	-	-	-	-	-	2	2	3	2	2	-	3	-	-	-
CO6	-	-	-	-	-	3	2	3	2	3	-	3	-	-	-
AVERAGE	-	-	-	-	-	2.50	2.00	3.00	2.00	2.25	-	2.50	-	-	-
CORRELATION LEVELS				1. SLIGHT (LOW)			2. MODERATE (MEDIUM)				3. SUBSTANTIAL (HIGH)				

UDHE4PA- Coastal Survey Laboratory I

COURSE OUTCOMES:

The Students will be able to

UDHE4PA.1	Demonstrate compass Survey
UDHE4PA.2	Visualize fly leveling
UDHE4PA.3	Demonstrate check leveling
UDHE4PA.4	Measure the horizontal angle and vertical angle
UDHE4PA.5	Determine R.L. of the top of the building
UDHE4PA.6	Analyze the topography and land survey field data to apply in practice.

MAPPING OF CO/PO/PSO:

POs / COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	3	3	-	-	-	-	-	3	3	2	3	2	3	3
CO2	3	3	3	-	-	-	-	-	3	2	2	2	3	2	3
CO3	3	2	3	-	-	-	-	-	3	3	2	2	2	2	3

CO4	3	2	3	-	-	-	-	-	3	3	3	3	3	2	3
CO5	3	3	3	-	-	-	-	-	3	3	2	2	2	3	3
CO6	3	2	2	1	1	1	1	1	2	3	3	3	3	2	3
AVERAGE	3	2.5	2.83	1	1	1	1	2	2.83	2.83	2.33	2.5	2.5	2.83	3
CORRELATION LEVELS				1. SLIGHT (LOW)			2. MODERATE (MEDIUM)				3. SUBSTANTIAL (HIGH)			

UDHE4PB- Coastal Modeling Laboratory I

COURSE OUTCOMES:

The students will be able to

UDHE4PB.1	Generate regular and random waves
UDHE4PB.2	Analyze the ocean wave data and to prepare the wave histogram
UDHE4PB.3	Plot the different wave spectrum
UDHE4PB.4	Convert the Geographical coordinates into UTM coordinates
UDHE4PB.5	Analysis the wave using Scilab and Matlab
UDHE4PB.6	Analyze the ocean wave data for field application using MS-Excel, Scilab and Matlab

MAPPING OF CO/PO/PSO:

POs / COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3

CO1	3	3	3	-	-	-	-	-	3	3	2	3	2	3	3
CO2	3	3	3	-	-	-	-	-	3	2	2	2	3	2	3
CO3	3	2	3	-	-	-	-	-	3	3	2	2	2	2	3
CO4	3	2	3	-	-	-	-	-	3	3	3	3	3	2	3
CO5	3	3	3	-	-	-	-	-	3	3	2	2	2	3	3
CO6	3	2	2	1	1	1	1	1	2	3	3	3	3	2	3
AVERAGE	3	2.5	2.83	1	1	1	1	2	2.83	2.83	2.33	2.5	2.5	2.83	3
CORRELATION LEVELS				1. SLIGHT (LOW)			2. MODERATE (MEDIUM)				3. SUBSTANTIAL (HIGH)				

UDHE4PC- Harbour - Computer Aided Design

COURSE OUTCOMES:

The Students will be able to

UDHE4PC.1	Use different Drawing tools
UDHE4PC.2	Know about Modifying tools
UDHE4PC.3	Understand the Line type managers
UDHE4PC.4	Use text tools
UDHE4PC.5	Know different dimensioning and layers
UDHE4PC.6	Plot and Prepare engineering drawings.

MAPPING OF CO/PO/PSO:

POs / COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	3	3	-	-	-	-	-	3	3	2	3	2	3	3
CO2	3	3	3	-	-	-	-	-	3	2	2	2	3	2	3

CO3	3	2	3	-	-	-	-	-	3	3	2	2	2	2	3
CO4	3	2	3	-	-	-	-	-	3	3	3	3	3	2	3
CO5	3	3	3	-	-	-	-	-	3	3	2	2	2	3	3
CO6	3	2	2	1	1	1	1	1	2	3	3	3	3	2	3
AVERAGE	**3**	**2.5**	**2.83**	**1**	**1**	**1**	**1**	**2**	**2.83**	**2.83**	**2.33**	**2.5**	**2.5**	**2.83**	**3**
CORRELATION LEVELS				1. SLIGHT (LOW)			2. MODERATE (MEDIUM)			3. SUBSTANTIAL (HIGH)					

UDLECPD- English Laboratory –IV

COURSE OUTCOMES:

After completion of this course, the student will be able to

UDLECPD.1	Connect and work with others to achieve a set task
UDLECPD.2	Handle emotions including tolerance and behavioral responses, building positive friendships and bonding with peers and classmates
UDLECPD.3	Demonstrate respect for the opinions, personal space and beliefs of others
UDLECPD.4	Address the interview in a confident manner
UDLECPD.5	Apply and formulating various forms of written communications that are learnt
UDLECPD.6	Participate actively in the class and understand concepts. Will be ready to handle large groups without any fear

MAPPING OF CO/PO/PSO:

POs / COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	-	-	-	-	-	2	2	2	2	2	-	-	-	-	-
CO2	-	-	-	-	-	2	1	2	2	3	-	-	-	-	-
CO3	-	-	-	-	-	2	1	2	1	2	-	2	-	-	-
CO4	-	-	-	-	-	2	2	3	2	3	-	2	-	-	-
CO5	-	-	-	-	-	3	2	1	3	2	-	2	-	-	-
CO6	-	-	-	-	-	2	1	2	3	3	-	2	-	-	-
AVERAGE	-	-	-	-	-	2.2	1.5	2	2.2	2.5	-	2	-	-	-

CORRELATION LEVELS	1. SLIGHT (LOW)	2. MODERATE (MEDIUM)	3. SUBSTANTIAL (HIGH)

UDBTCO2- Biology for Engineers

COURSE OUTCOMES:

The Students will be able to

UDBTCO2.1	Graduates within the first five years will be able to grasp and apply biological engineering principles, procedures needed to solve real-world problems.
UDBTCO2.2	To understand the fundamentals of living things, their classification, cell structure and biochemical constituents
UDBTCO2.3	To apply the concept of plant, animal and microbial systems and growth in real life situations
UDBTCO2.4	To comprehend genetics and the immune system
UDBTCO2.5	To demonstrate the cause, symptoms, diagnosis and treatment of common diseases
UDBTCO2.6	To apply the biological systems in relevant industries

MAPPING OF CO/PO/PSO:

POs / COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	-	-	-	-	-	3	3	2	2	-	-	2	-	-	-

CO2	-	-	-	-	-	2	3	3	1	-	-	2	-	-	-
CO3	-	-	-	-	-	2	3	3	1	-	-	2	-	-	-
CO4	-	-	-	-	-	3	3	2	2	-	-	3	-	-	-
CO5	-	-	-	-	-	3	3	3	2	-	-	3	-	-	-
CO6	-	-	-	-	-	2	3	2	2	-	-	3	-	-	-
AVERAGE	-	-	-	-	-	2.50	3.00	2.50	1.67	-	-	2.50	-	-	-
CORRELATION LEVELS					1. SLIGHT (LOW)			2. MODERATE (MEDIUM)			3. SUBSTANTIAL (HIGH)			

SEMESTER –V

UDHE501- Design of Coastal Structures

COURSE OUTCOMES:

The students will be able to

UDHE501.1	estimate the basic parameters of linear water waves through numerical problems
UDHE501.2	evaluate the wave forces on offshore circular piles
UDHE501.3	analyze the wave forces on rubble mound breakwaters
UDHE501.4	estimate wave forces and moments on sea walls and caisson breakwaters
UDHE501.5	evaluate wave induced forces on groin structures
UDHE501.6	analyze wave forces and pressures on various types of near shore structures for design

MAPPING OF CO/PO/PSO:

POs / COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	1	3	2	-	-	-	1	-	1	-	-	3	3	2
CO2	2	2	2	1	-	-	1	2	-	1	-	-	3	3	2
CO3	2	1	2	2	-	-	1	1	-	1	-	-	3	2	2
CO4	2	2	3	2	-	-	-	1	-	1	-	-	3	2	1
CO5	3	2	3	2	-	-	-	1	-	1	-	2	3	3	3

CO6	3	3	3	2	1	1	1	1	1	1	1	2	3	3	3
AVERAGE	2.5	1.83	2.67	1.83	1	1	1.0	1.17	1	1	1	2.0	3	2.67	2.17

CORRELATION LEVELS		1. SLIGHT (LOW)	2. MODERATE (MEDIUM)	3. SUBSTANTIAL (HIGH)

UDHE502- Marine Geotechnical Engineering

COURSE OUTCOMES:

The students will be able to

UDHE502.1	Demonstrate Sieve And Sedimentation Analysis And To Calculate Atterberg Limits
UDHE502.2	Evaluate Total, Neutral And Effective Stresses In Soil, For Applying To Simple Problems
UDHE502.3	Estimate Stress Distribution Using Boussinesque Formula And Terzaghi's Consolidation Test
UDHE502.4	Analyze Shear Strength Of Soil By Mohr-Coulomb Theory, Direct Shear And Triaxle Test
UDHE502.5	Demonstrate Slope Stability And Failure Mechanisms For Both Infinite And Finite Slopes
UDHE502.6	Apply The Geotechnical Principles In Real Time Problem

MAPPING OF CO/PO/PSO:

POs / COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	1	3	2	-	-	-	1	-	1	-	-	3	3	2
CO2	2	2	2	1	-	-	-	1	-	1	-	-	3	3	2
CO3	2	2	2	2	-	-	-	1	-	1	-	-	3	2	2
CO4	2	2	3	2	-	-	2	2	-	1	-	-	3	2	2
CO5	2	3	3	2	-	-	1	1	-	1	-	-	3	3	3

CO6	3	3	3	2	1	1	1	1	1	1	1	2	3	3	3
AVERAGE	**2.33**	**2.17**	**2.67**	**1.83**	**1**	**1**	**1.33**	**1.17**	**1**	**1**	**1**	**2.0**	**3**	**2.67**	**2.33**
CORRELATION LEVELS				1. **SLIGHT (LOW)**			2. **MODERATE (MEDIUM)**			3. **SUBSTANTIAL (HIGH)**					

UDHE506- Engineering Geology

COURSE OUTCOMES:

The students will be able to

UDHE506.1	Develop The Knowledge On Various Aspects Of Physical Geology.
UDHE506.2	Demonstrate The Physical Properties Of Minerals
UDHE506.3	Develop Knowledge On Rock Types, Its Engineering Properties And Uses.
UDHE506.4	Analyze Geological Maps, Folds, Faults And Joints.
UDHE506.5	Develop Knowledge On Geological Investigation In Projects Such As Harbors, Dams, Etc.,
UDHE506.6	Evaluate And Obtain Solutions On Soil Problems Related To Engineering Geology.

MAPPING OF CO/PO/PSO:

POs / COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	2	3	3	-	-	2	-	-	-	1	1	1	1	3	3
CO2	3	3	3	-	-	1	-	-	-	2	-	1	1	3	2
CO3	2	2	3	-	-	1	-	-	-	3	-	1	1	2	1
CO4	2	3	3	-	-	2	-	-	-	3	-	1	1	2	1

CO5	2	2	3	-	-	1	-	-	-	3	1	1	1	2	2
CO6	3	3	3	-	-	1	1	1	1	3	1	1	1	3	2
AVERAGE	2.33	2.67	3.0	1	1	1.33	1	1	1	2.5	3	1	1	2.5	1.83

CORRELATION LEVELS		1. SLIGHT (LOW)	2. MODERATE (MEDIUM)	3. SUBSTANTIAL (HIGH)

UDHEP05- Theory of Structures

COURSE OUTCOMES:

The student will be able to:

UDHEP05.1	evaluate the deflection of determinate structures(pin-jointed and rigid plane frames)
UDHEP05.2	analyze fixed beams, arches(Eddy's theorem) through numerical problems
UDHEP05.3	analyze continuous beams using Clapeyron's theorem and carry over of moments
UDHEP05.4	demonstrate Euler's column theory for various end conditions to achieve equivalent length and slenderness ratio
UDHEP05.5	analyze plastic theory to find plastic moment, load factor for indeterminate beams
UDHEP05.6	analyze statically determinate beams, frames and perform plastic analysis of structures

MAPPING OF CO/PO/PSO:

POs / COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	1	3	2	-	-	-	1	-	1	-	-	3	3	2
CO2	2	2	2	1	-	-	-	1	-	1	-	-	3	3	2
CO3	2	1	2	2	-	-	1	1	-	1	-	-	2	3	2
CO4	2	2	3	2	-	-	1	2	-	1	-	-	2	3	1
CO5	3	2	3	2	1	-	1	1	-	1	-	-	3	3	3
CO6	3	3	3	2	1	1	1	1	1	1	1	2	3	3	3
AVERAGE	2.5	1.83	2.67	1.83	1	1	1.0	1.17	1	1	1	2.0	2.67	3	2.17

UDVCC07- Indian Constitution

COURSE OUTCOMES:

After the successful completion of the course, the students will be able to:

UDVCC07.1	Outline the importance of constitution
UDVCC07.2	Understand the fundamental rights and duties
UDVCC07.3	Demonstrate the powers of unions and states
UDVCC07.4	Infer the judicial system in India
UDVCC07.5	Demonstrate the Federalism in India
UDVCC07.6	Apply the skills to the field of engineering

MAPPING OF CO/PO/PSO:

POs / COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	-	-	-	-	-	2	-	3	-	-	-	2	-	-	-
CO2	-	-	-	-	-	3	2	3	-	2	-	3	-	-	-
CO3	-	-	-	-	-	2	-	3	-	2	-	2	-	-	-
CO4	-	-	-	-	-	3	2	3	2	-	-	2	-	-	-

CO5	-	-	-	-	-	2	2	3	2	2	-	3	-	-	-
CO6	-	-	-	-	-	3	2	3	2	3	-	3	-	-	-
AVERAGE	-	-	-	-	-	2.50	2.00	3.00	2.00	2.25	-	2.50	-	-	-
CORRELATION LEVELS				1. SLIGHT (LOW)			2. MODERATE (MEDIUM)			3. SUBSTANTIAL (HIGH)				

UDHE5PA- Marine Hydrodynamics Laboratory

COURSE OUTCOMES:

The students will be able to

UDHE5PA.1	Develop Wind Rose Diagram Using Wave Height And Wave Period
UDHE5PA.2	Develop Tidal Plot And Current Plot
UDHE5PA.3	Evaluate Beach Profile (Cross Shore Profile)
UDHE5PA.4	Demonstrate Mike 21-Study Experiment -UTM Conversation
UDHE5PA.5	Demonstrate Image Rectification And Bathymetry Map Digitization
UDHE5PA.6	Analyze The Wave And Current Data For Development Of Images, Diagrams And Maps.

MAPPING OF CO/PO/PSO:

POs / COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	3	2	-	-	-	-	-	3	3	2	3	2	3	3
CO2	3	2	3	-	-	-	-	-	3	2	2	2	3	2	2
CO3	3	2	2	-	-	-	-	-	3	3	2	2	2	2	2
CO4	3	2	3	-	-	-	-	-	3	3	3	2	3	2	2
CO5	3	3	2	-	-	-	-	-	3	3	2	3	2	3	3
CO6	3	2	3	1	1	1	1	1	2	3	3	2	3	2	2
AVERAGE	**3**	**2.83**	**2.5**	**1**	**1**	**1**	**1**	**1**	**2.83**	**2.83**	**2.33**	**2.83**	**2.5**	**2.83**	**2.83**

CORRELATION LEVELS	1. SLIGHT (LOW)	2. MODERATE (MEDIUM)	3. SUBSTANTIAL (HIGH)

UDHE5PB- Concrete Technology Laboratory

COURSE OUTCOMES:

Student will be able to

UDHE5PB.1	demonstrate Blaine Air Permeability method for finesse test
UDHE5PB.2	demonstrate consistency test of Standard Cement Paste
UDHE5PB.3	demonstrate initial and final setting time test
UDHE5PB.4	demonstrate compressive strength test and soundness test
UDHE5PB.5	demonstrate sieve analysis, impact value test and crushing value test
UDHE5PB.6	estimate all the parameters of concrete mixture

MAPPING OF CO/PO/PSO:

POs / COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	3	3	-	-	-	-	-	3	3	2	3	3	3	3
CO2	3	3	3	-	-	-	-	-	3	2	2	2	3	3	3
CO3	2	3	3	-	-	-	-	-	3	3	2	2	3	3	3
CO4	2	3	3	-	-	-	-	-	3	3	3	3	3	3	3
CO5	3	3	3	-	-	-	-	-	3	3	2	2	3	3	3
CO6	2	3	3	1	1	1	1	1	3	3	3	3	3	3	3

AVERAGE	2.5	3	3	1	1	1	1	1	2.83	2.83	2.33	2.5	3	2.83	3

CORRELATION LEVELS		1. SLIGHT (LOW)	2. MODERATE (MEDIUM)	3. SUBSTANTIAL (HIGH)

UDHE5PC- Internship- 1

COURSE OUTCOMES:

After the successful completion of the course, the students will be able to:

UDHE5PC.1	Identify social economic and safety issues in an engineering problem
UDHE5PC.2	Influence critical thinking among students
UDHE5PC.3	Combine best practices opted by different industries for similar work in technical issues
UDHE5PC.4	Apply new concepts to the solution of engineering problems
UDHE5PC.5	Build technical competency and Interpersonal skills for working in multidisciplinary environment
UDHE5PC.6	Identify relevant organizations for their major project works

MAPPING OF CO/PO/PSO:

POs / COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	-	-	-	-	-	-	2	-	3	2	-	-	3	-	-
CO2	-	-	-	-	-	-	3	-	3	3	-	-	2	-	-
CO3	-	-	-	-	-	3	2	-	3	3	3	3	3	2	2
CO4	-	-	-	-	-	3	3	-	3	3	3	3	3	3	3
CO5	-	-	-	-	-	3	3	-	3	3	3	3	3	3	3
CO6	-	-	-	-	-	3	3	-	3	3	3	3	3	-	-

AVERAGE	-	-	-	-	-	3.00	2.67	-	3.00	2.83	3.00	3.00	2.83	2.67	2.67
CORRELATION LEVELS				1. SLIGHT (LOW)				2. MODERATE (MEDIUM)				3. SUBSTANTIAL (HIGH)			

SEMESTER-VI

UDHE601- Foundation Engineering

COURSE OUTCOMES:

The students will be able to

UDHE601.1	Analyze the geotechnical properties of soil and subsoil deposits for shallow foundations
UDHE601.2	Evaluate ultimate bearing capacity of shallow foundations and to estimate settlement values
UDHE601.3	Estimate lateral earth pressures for mat foundations and retaining walls
UDHE601.4	Analyze sheet pile walls, braced cuts and pile foundations
UDHE601.5	Analyze difficult Soils for soil improvement and ground modification
UDHE601.6	Demonstrate, design and implement ocean structures by studying structure-soil interaction

MAPPING OF CO/PO/PSO:

POs / COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	1	1	3	-	-	-	1	-	1	-	-	2	3	3
CO2	2	2	2	2	-	-	-	1	-	1	-	-	2	3	3
CO3	2	1	1	2	-	-	-	1	-	1	-	-	2	2	3

CO4	2	2	2	3	-	2	-	2	-	1	-	-	1	2	3
CO5	3	2	2	3	-	1	-	1	-	1	-	-	3	3	3
CO6	3	3	3	3	1	1	1	1	1	1	1	2	3	3	3
AVERAGE	2.5	1.83	1.83	2.67	1	1.33	1	1.17	1	1	1	2.0	2.17	2.67	3

CORRELATION LEVELS	1. SLIGHT (LOW)	2. MODERATE (MEDIUM)	3. SUBSTANTIAL (HIGH)

UDHE602- Design of RC Structures

COURSE OUTCOMES:

The students will be able to

UDHE602.1	Analyze elastic method, ultimate load and limit state method of design of concrete structures
UDHE602.2	Analyze and design, singly, doubly reinforced rectangular and flanged beams
UDHE602.3	Analyze and design, one way and two way slabs for uniformly distributed load
UDHE602.4	Evaluate limit state design for axial, uniaxial and biaxial bending of columns and footings
UDHE602.5	Demonstrate the fundamentals of pre stressed concrete technology
UDHE602.6	Evaluate the loads and design the concrete structures for various design methods

MAPPING OF CO/PO/PSO:

POs / COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	1	3	3	-	-	-	1	-	1	-	-	3	3	3
CO2	2	2	2	2	-	-	-	1	-	1	-	-	3	3	3
CO3	2	1	2	2	-	-	-	1	-	1	-	-	3	3	3
CO4	2	2	3	3	-	-	2	1	-	1	-	-	3	3	3
CO5	3	2	3	3	-	-	1	1	-	1	-	-	3	3	3
CO6	3	3	3	3	1	1	1	1	1	1	1	1	3	3	3
AVERAGE	2.5	1.83	2.67	2.67	1	1	1.33	1.0	1	1	1	10	3	3	3

CORRELATION LEVELS		1. SLIGHT (LOW)	2. MODERATE (MEDIUM)	3. SUBSTANTIAL (HIGH)

UDHEP06- Quantity Surveying

COURSE OUTCOMES:

The students will be able to

UDHEP06.1	Demonstrate estimates and method of estimates
UDHEP06.2	Demonstrate estimate of port and harbor buildings
UDHEP06.3	Evaluate the quantities for port structures
UDHEP06.4	Estimate, schedule of rates, analysis of rates, tenders and arbitration documents
UDHEP06.5	Demonstrate the basics of value engineering and its associated concepts
UDHEP06.6	Evaluate the various aspects of quantity surveying principles

MAPPING OF CO/PO/PSO:

POs / COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	1	3	3	-	-	-	1	-	1	-	-	3	3	3
CO2	2	2	2	2	-	-	-	1	-	1	-	-	3	3	3
CO3	2	1	2	2	-	-	-	1	-	1	-	-	3	2	2
CO4	2	2	3	3	-	2	-	2	-	1	-	-	3	2	2

CO5	3	2	3	3	-	1	1	1	-	1	-	-	3	3	3
CO6	3	3	3	3	1	1	1	1	1	1	1	2	3	3	3
AVERAGE	2.5	1.83	2.67	2.67	1	1.33	1	1.17	1	1	1	2.0	3	2.67	2.67

CORRELATION LEVELS		1. SLIGHT (LOW)	2. MODERATE (MEDIUM)	3. SUBSTANTIAL (HIGH)

UDHEP11- Sediment Transport

COURSE OUTCOMES:

The students will be able to

UDHEP11.1	Demonstrate the physics of near shore dynamics and behavior of coastal morphology
UDHEP11.2	Analyze the particle dynamics and sediment transport and modes of sediment transport
UDHEP11.3	Estimate the median particle size, rate of bed load, suspended, total load transport
UDHEP11.4	Estimate the long shore sediment transport using empirical methods
UDHEP11.5	Analyze the shoreline behavior with structures and modeling of shoreline changes
UDHEP11.6	Analyze the physics of sediment transport in near shore region for appropriate design of coastal structures to solve coastal erosion problems

MAPPING OF CO/PO/PSO:

POs / COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	1	3	3	-	-	-	1	-	1	-	-	2	3	3
CO2	2	2	2	2	-	-	-	1	-	1	-	-	2	3	3
CO3	2	1	2	2	-	-	-	1	-	1	-	-	2	2	3
CO4	2	2	3	3	-	-	2	2	-	1	-	-	1	2	3

CO5	3	2	3	3	-	-	1	1	-	1	-	-	3	3	3
CO6	3	3	3	3	1	1	1	1	1	1	1	2	3	3	3
AVERAGE	2.5	1.83	2.67	2.67	1	1	1.33	1.17	1	1	1	2.0	2.17	2.67	3

CORRELATION LEVELS	1. SLIGHT (LOW)	2. MODERATE (MEDIUM)	3. SUBSTANTIAL (HIGH)

UDVCC10- Essence of Indian Traditional Knowledge

COURSE OUTCOMES:

After the successful completion of the course, the students will be able to:

UDVCC10.1	Know about the basic principles of thought process, reasoning and inferencing.
UDVCC10.2	Understand the sustainability is at the core of Indian Traditional Knowledge Systems connecting society and nature.
UDVCC10.3	Demonstrate the Holistic life style of Yogic-science
UDVCC10.4	Understand the Indian perspective of modern scientific world-view
UDVCC10.5	Apply the basic principles of Yoga and holistic health care system
UDVCC10.6	connect up and explain basics of Indian Traditional knowledge modern scientific perspective.

MAPPING OF CO/PO/PSO:

POs / COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	-	-	-	-	-	2	-	3	-	-	-	2	-	-	-
CO2	-	-	-	-	-	3	2	3	-	2	-	3	-	-	-

CO3	-	-	-	-	-	2	-	3	-	2	-	2	-	-	-
CO4	-	-	-	-	-	3	2	3	2	-	-	2	-	-	-
CO5	-	-	-	-	-	2	2	3	2	2	-	3	-	-	-
CO6	-	-	-	-	-	3	2	3	2	3	-	3	-	-	-
AVERAGE	-	-	-	-	-	2.50	2.00	3.00	2.00	2.25	-	2.50	-	-	-
CORRELATION LEVELS				1. SLIGHT (LOW)			2. MODERATE (MEDIUM)			3. SUBSTANTIAL (HIGH)				

UDHE6PA- Coastal Survey Laboratory II

COURSE OUTCOMES:

The students will be able to

UDHE6PA.1	Estimate the height and width of a building using theodolite
UDHE6PA.2	Evaluate the height and width of a building using electronic theodolite
UDHE6PA.3	Analyze and use survey equipment
UDHE6PA.4	Demonstrate the height and width of a building using Total station
UDHE6PA.5	Demonstrate shoreline survey using total station and GPS
UDHE6PA.6	Demonstrate various survey equipments for coastal surveying using theodolite, electronic theodolite, total station & GPS

MAPPING OF CO/PO/PSO:

POs / COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	3	3	-	-	-	-	-	3	2	2	3	2	3	3
CO2	3	3	3	-	-	-	-	-	3	3	2	2	3	2	3
CO3	2	3	3	-	-	-	-	-	3	2	2	3	2	2	3
CO4	2	3	3	-	-	-	-	-	3	3	3	3	3	2	3
CO5	3	3	3	-	-	-	-	-	3	2	2	3	2	3	3
CO6	2	3	2	1	1	1	1	1	2	3	3	3	3	2	3

AVERAGE	2.5	3	2.83	1	1	1	1	2	2.83	2.5	2.33	2.83	2.5	2.83	3
CORRELATION LEVELS				1. SLIGHT (LOW)			2. MODERATE (MEDIUM)			3. SUBSTANTIAL (HIGH)					

UDHE6PB- Marine Geotechnical Engineering Laboratory

COURSE OUTCOMES:

The students will be able to

UDHE6PB	Evaluate the marine content % and specific gravity of solids and soils.
UDHE6PB	Evaluate liquid limit, plastic limit, shrinkage limit and shrinkage ratio
UDHE6PB	Demonstrate core cutter, sieve analysis, Cu & Cc and comparison of Cu & Cc.
UDHE6PB	Analyze shear strength by liquid limit method.
UDHE6PB	Demonstrate sand pouring cylinder and Proctor's test for permeability variable head
UDHE6PB	Apply marine geotechnical engineering principal in real time field problem

MAPPING OF CO/PO/PSO:

POs / COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	3	3	-	-	-	-	-	3	3	2	3	2	3	
CO2	3	3	3	-	-	-	-	-	3	2	2	2	3	2	
CO3	3	2	3	-	-	-	-	-	3	3	2	2	2	2	
CO4	3	2	3	-	-	-	-	-	3	3	3	3	3	2	
CO5	3	3	3	-	-	-	-	-	3	3	2	2	2	3	

CO6	3	2	2	1	1	1	1	1	2	3	3	3	3	2	
AVERAGE	3	2.5	2.83	1	1	1	1	2	2.83	2.83	2.33	2.5	2.5	2.83	
CORRELATION LEVELS				1. SLIGHT (LOW)			2. MODERATE (MEDIUM)			3. SUBSTANTIAL (HIGH)				

UDHE6PC- Mini Project

COURSE OUTCOMES:

The students will be able to

UDHE6PC.1	Solve coastal engineering problem
UDHE6PC.2	Analyze and prepare reports of detailed design for the defined problems
UDHE6PC.3	Demonstrate the skill developed during the programme
UDHE6PC.4	analyze the complex coastal environmental problems using numerical software's like MIKE21, STAAD PRO and PLAXIS
UDHE6PC.5	Prepare a design project report and present a project report
UDHE6PC.6	Analyze the complex coastal environmental problems and report the problems

MAPPING OF CO/PO/PSO:

POs / COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	3	3	-	-	-	-	-	3	3	2	2	3	3	3
CO2	3	3	3	-	-	-	-	-	3	2	3	2	3	2	3
CO3	3	2	3	-	-	-	-	-	3	3	2	2	3	2	3
CO4	3	2	3	-	2	-	-	-	3	3	3	3	3	2	3
CO5	3	3	3	-	1	-	-	-	3	3	2	2	3	3	3

CO6	3	2	2	1	1	1	1	1	2	3	3	3	3	2	3
AVERAGE	3	2.5	2.83	1	1.33	1	1	1	2.83	2.83	2.5	2.33	3	2.83	3
CORRELATION LEVELS					**1. SLIGHT (LOW)**			**2. MODERATE (MEDIUM)**			**3. SUBSTANTIAL (HIGH)**				

SEMESTER VII

UDHE701- Port Planning

COURSE OUTCOMES:

The students will be able to

UDHE701.1	Adopt port planning principles
UDHE701.2	Estimate the various parameters of traffic forecasting
UDHE701.3	Evaluate the essentials of master planning and port zoning
UDHE701.4	Evaluate the nautical aspects of port planning and ship maneuverability
UDHE701.5	Demonstrate the environmental and safety aspects in port planning
UDHE701.6	Evaluate the knowledge of the port planning principles for the port design and operations

MAPPING OF CO/PO/PSO:

POs / COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	1	3	2	-	-	-		1	1	-	-	3	2	2
CO2	2	2	2	1	-	-	-		1	1	-	-	3	2	1
CO3	2	1	2	2	-	-	-		1	1	-	-	2	2	2

CO4	2	2	3	2	2	1	2		2	1	-	-	2	1	2
CO5	3	2	3	2	1	1	1	1	1	1	-	-	3	3	2
CO6	3	3	3	2	1	1	1	1	1	1	1	2	3	3	2
AVERAGE	2.5	1.83	2.67	1.83	1.33	1	1.33	1	1.17	1	1	2.0	2.67	2.17	1.83
CORRELATION LEVELS				1. SLIGHT (LOW)			2. MODERATE (MEDIUM)			3. SUBSTANTIAL (HIGH)					

UDHE702- Offshore Structural Analysis

COURSE OUTCOMES:

The students will be able to

UDHE702.1	Estimate wave load, wind load, hydrodynamic coefficient and seismic loads on structure
UDHE702.2	Evaluate tubular joints using allowable loads; using stress concentration factors
UDHE702.3	Analyze the structures for high temperature; blast mitigation for accidental loads
UDHE702.4	Analyze matrix methods using finite element method for stability and dynamics
UDHE702.5	Demonstrate Stadd Pro software for simple calculations and design Problems
UDHE702.6	Demonstrate various analytic methods for loads and design of offshore structures

MAPPING OF CO/PO/PSO:

POs / COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	3	3	2	-	-	-	1	-	1	1	-	3	3	2
CO2	2	3	2	1	-	-	-	1	-	1	1	-	3	3	2
CO3	2	3	2	2	-	-	-	1	-	1	1	-	3	2	2
CO4	2	3	3	2	2	-	2	2	-	1	1	-	3	2	1
CO5	3	3	3	2	1	-	1	1	-	1	1	-	3	3	3
CO6	3	3	3	2	1	1	1	1	1	1	1	2	3	3	3
AVERAGE	2.5	3	2.67	1.83	1.33	1	1.33	1.17	1	1	1	2.0	3	2.67	2.17
CORRELATION LEVELS				1. SLIGHT (LOW)			2. MODERATE (MEDIUM)			3. SUBSTANTIAL (HIGH)					

UDHEP25- Geotechnical behavior of Expansible & Collapsible Soils

COURSE OUTCOMES:

The students will be able to

UDHEP25.1	analyze geotechnical problems on moisture equilibrium
UDHEP25.2	demonstrate clay mineralogy, swell potential and laboratory tests
UDHEP25.3	evaluate the methods of prediction of heave and adopt double odometer tests
UDHEP25.4	analyze and design of footings, stiffened mats and under reamed piles
UDHEP25.5	evaluate stabilization methods for soils of varying composition
UDHEP25.6	evaluate advanced soil problems related to expansive and collapsible soils to achieve optimum design levels in foundation related soil problems

MAPPING OF CO/PO/PSO:

POs / COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	1	3	3	-	-	-	1	-	1	2	-	3	3	2
CO2	2	2	2	2	-	-	-	1	-	1	2	-	3	3	2
CO3	2	1	2	2	-	-	-	1	-	1	2	-	3	2	2
CO4	2	2	3	3	2	-	2	2	-	1	1	2	3	2	1
CO5	3	2	3	3	1	-	1	1	-	1	3	1	3	3	3

CO6	3	3	3	3	1	1	1	1	1	1	3	2	3	3	3
AVERAGE	2.5	1.83	2.67	2.67	1.33	1	1.33	1.17	1	1	2.17	1.67	3	2.67	2.17

CORRELATION LEVELS		1. SLIGHT (LOW)	2. MODERATE (MEDIUM)	3. SUBSTANTIAL (HIGH)

UDHEP26- Coastal Disasters & its Mitigation Measures

COURSE OUTCOMES:

The students will be able to

UDHEP26.1	Demonstrate various types of coastal disasters and the terminologies
UDHEP26.2	Demonstrate tsunami generation and mitigation of their effects
UDHEP26.3	Analyze the process storm surges, tidal bores and their effects
UDHEP26.4	Analyze the process of oil slicks and its effect on flora and fauna
UDHEP26.5	Demonstrate perspectives of marine pollution events through case studies.
UDHEP26.6	Evaluate the process and effects of various types of coastal disasters and its effects on marine environment.

MAPPING OF CO/PO/PSO:

POs / COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	1	3	3	-	-	-	1	-	-	2	1	3	3	3
CO2	2	2	2	2	-	-	-	1	-	-	2	1	2	3	2
CO3	2	1	2	2	-	-	-	1	-	-	2	1	2	3	2
CO4	2	2	3	3	-	-	2	2	2	2	1	1	3	3	3
CO5	3	2	3	3	-	-	1	1	1	1	3	1	3	3	3
CO6	3	3	3	3	1	1	1	1	1	2	3	1	3	3	3
AVERAGE	2.5	1.83	2.67	2.67	1.0	1	1.33	1.17	1.33	1.67	2.17	1	2.67	3	2.67

CORRELATION LEVELS	1. SLIGHT (LOW)	2. MODERATE (MEDIUM)	3. SUBSTANTIAL (HIGH)

UDHE703- Design of Steel Structures

COURSE OUTCOMES:

The students will be able to

UDHE703.1	Demonstrate design of bolted, riveted and welded joints of steel sections
UDHE703.2	Demonstrate the design of tension members of T and angle sections
UDHE703.3	Analyze and design compression members for lacing and battening columns
UDHE703.4	Evaluate and design supported, unsupported beams and built up beams
UDHE703.5	Analyze and design roof trusses, purlins and bearing.
UDHE703.6	Analyze and design structural steel sections used for industrial applications as per IS 800 - 2007 codal provisions

MAPPING OF CO/PO/PO:

POs / COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	1	3	2	-	-	-	1	-	1	-	-	3	3	3
CO2	2	2	2	2	-	-	-	1	-	1	-	-	3	3	2
CO3	2	1	2	3	-	-	-	1	-	1	-	-	3	2	2
CO4	2	2	3	3	-	-	2	2	-	1	-	-	3	2	2

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO5	3	2	3	3	-	-	1	1	-	1	-	-	3	3	3
CO6	3	3	3	2	1	1	1	1	1	1	1	1	3	3	3
AVERAGE	2.5	1.83	2.67	2.5	1	1	1.33	1.17	1	1	1	2.0	3	2.67	2.5
CORRELATION LEVELS				1. **SLIGHT (LOW)**			2. **MODERATE (MEDIUM)**			3. **SUBSTANTIAL (HIGH)**					

UDHE704- Advanced Design of Coastal Structures

COURSE OUTCOMES:

The students will be able to

UDHE704.1	Demonstrate the basics of water wave mechanics
UDHE704.2	Analyze and design rubble mound breakwaters for the given wave data.
UDHE704.3	Estimate wave forces on caisson breakwaters and analyze its stability
UDHE704.4	Evaluate wave forces, moments on offshore piles-Morison's formula
UDHE704.5	Evaluate coastal protection works by various methods
UDHE704.6	Evaluate wave-structure interaction problems to design breakwaters and offshore piles for a given ocean data.

MAPPING OF CO/PO/PSO:

POs / COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	2	3	3	-	-	-	1	2	1	2	-	3	3	2
CO2	2	2	3	2	-	-	-	1	2	1	2	-	3	3	2
CO3	2	2	3	2	-	-	-	1	2	1	2	-	3	2	2
CO4	2	1	3	3	2	-	2	2	1	1	1	2	3	2	1
CO5	3	3	3	3	1	-	1	1	3	1	3	1	3	3	3

CO6	3	3	3	3	1	1	1	1	3	1	3	2	3	3	3
AVERAGE	2.5	2.17	3	2.67	1.33	1	1.33	1.17	2.17	1	2.17	1.67	3	2.67	2.17
CORRELATION LEVELS				1. SLIGHT (LOW)			2. MODERATE (MEDIUM)			3. SUBSTANTIAL (HIGH)				

UDVCC14- Finishing School Training-II

COURSE OUTCOMES:

After completion of this course, the student will be able to

UDVCC14.1	Connect and work with others to achieve a set task
UDVCC14.2	Handle emotions including tolerance and behavioral responses, building positive friendships and bonding with peers and classmates
UDVCC14.3	Demonstrate respect for the opinions, personal space and beliefs of others
UDVCC14.4	Address the interview in a confident manner
UDVCC14.5	Apply and formulating various forms of written communications that are learnt
UDVCC14.6	Participate actively in the class and understand concepts. Will be ready to handle large groups without any fear

MAPPING OF CO/PO/PSO:

POs / COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	-	-	-	-	-	2	2	2	2	2	-	-	-	-	-
CO2	-	-	-	-	-	2	1	2	2	3	-	-	-	-	-
CO3	-	-	-	-	-	2	1	2	1	2	-	2	-	-	-
CO4	-	-	-	-	-	2	2	3	2	3	-	2	-	-	-

CO5	-	-	-	-	-	3	2	1	3	2	-	2	-	-	-
CO6	-	-	-	-	-	2	1	2	3	3	-	2	-	-	-
AVERAGE	-	-	-	-	-	2.2	1.5	2	2.2	2.5	-	2	-	-	-

CORRELATION LEVELS	1. SLIGHT (LOW)	2. MODERATE (MEDIUM)	3. SUBSTANTIAL (HIGH)

UDHE7PA- Coastal Modeling Laboratory II

COURSE OUTCOMES:

The students will be able to

UDHE7PA.1	Demonstrate image rectification and map digitization for bathymetry
UDHE7PA.2	Analyze numerical models and simulations for pollutant mixing problems
UDHE7PA.3	Estimate the sediment transport capacity
UDHE7PA.4	Evaluate structural behavior under different load conditions using STAAD PRO
UDHE7PA.5	Estimate the deformation of foundations and breakwater bases using PLAXIS
UDHE7PA.6	Analyze the complex coastal environmental problems using numerical software's like MIKE21, STAAD PRO and PLAXIS

MAPPING OF CO/PO/PSO:

POs / COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	3	3	-	-	-	-	-	3	3	2	2	3	3	3
CO2	3	3	3	-	-	-	-	-	3	2	3	2	3	2	3
CO3	3	2	3	-	-	-	-	-	3	3	2	2	3	2	3
CO4	3	2	3	-	2	-	-	-	3	3	3	3	3	2	3
CO5	3	3	3	-	1	-	-	-	3	3	2	2	3	3	3
CO6	3	2	2	1	1	1	1	1	2	3	3	3	3	2	3
AVERAGE	3	2.5	2.83	1	1.33	1	1	1	2.83	2.83	2.5	2.33	3	2.83	3

CORRELATION LEVELS	1. SLIGHT (LOW)	2. MODERATE (MEDIUM)	3. SUBSTANTIAL (HIGH)

UDHE7PB- Project Work Phase – I

COURSE OUTCOMES:

The students will be able to

UDHE7PB.1	Solve coastal engineering problem
UDHE7PB.2	Analyze and prepare reports of detailed design for the defined problems
UDHE7PB.3	Demonstrate the skill developed during the programme
UDHE7PB.4	analyze the complex coastal environmental problems using numerical software's likeMIKE21, STAAD PRO and PLAXIS
UDHE7PB.5	Prepare a design project report and present a project report
UDHE7PB.6	Analyze the complex coastal environmental problems and report the problems

MAPPING OF CO/PO/PSO:

POs / COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	3	3	-	-	-	-	-	3	3	2	2	3	3	3
CO2	3	3	3	-	-	-	-	-	3	2	3	2	3	2	3
CO3	3	2	3	-	-	-	-	-	3	3	2	2	3	2	3
CO4	3	2	3	-	2	-	-	-	3	3	3	3	3	2	3
CO5	3	3	3	-	1	-	-	-	3	3	2	2	3	3	3
CO6	3	2	2	1	1	1	1	1	2	3	3	3	3	2	3
AVERAGE	3	2.5	2.83	1	1.33	1	1	1	2.83	2.83	2.5	2.33	3	2.83	3
CORRELATION LEVELS				1. SLIGHT (LOW)			2. MODERATE (MEDIUM)			3. SUBSTANTIAL (HIGH)					

UDHE57C- Internship – 2

COURSE OUTCOMES:

After the successful completion of the course, the students will be able to:

UDHE57C.1	Identify social economic and safety issues in an engineering problem
UDHE57C.2	Influence critical thinking among students
UDHE57C.3	combine best practices opted by different industries for similar work in technical issues
UDHE57C.4	Apply new concepts to the solution of engineering problems
UDHE57C.5	Build technical competency and Interpersonal skills for working in multidisciplinary environment
UDHE57C.6	Identify relevant organizations for their major project works

MAPPING OF CO/PO/PSO:

POs / COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	-	-	-	-	-	-	2	-	3	2	-	-	3	-	-
CO2	-	-	-	-	-	-	3	-	3	3	-	-	2	-	-
CO3	-	-	-	-	-	3	2	-	3	3	3	3	3	2	2
CO4	-	-	-	-	-	3	3	-	3	3	3	3	3	3	3
CO5	-	-	-	-	-	3	3	-	3	3	3	3	3	3	3
CO6	-	-	-	-	-	3	3	-	3	3	3	3	3	-	-
AVERAGE	-	-	-	-	-	3.00	2.67	-	3.00	2.83	3.00	3.00	2.83	2.67	2.67
CORRELATION LEVELS					1. SLIGHT (LOW)			2. MODERATE (MEDIUM)				3. SUBSTANTIAL (HIGH)			

SEMESTER-VIII

UDHE801- Design of Offshore Pipelines

COURSE OUTCOMES:

The students will be able to

UDHE801.1	Analyze wave interaction with pipelines for wave force value
UDHE801.2	Estimate drag -lift force- for design of submerged pipelines
UDHE801.3	Evaluate subsea pipeline system- ABS classification-corrosion control
UDHE801.4	Establish design load conditions for stability analysis and free span analysis
UDHE801.5	Demonstrate pipeline rectification for upheaval and lateral buckling
UDHE801.6	Analyze pipeline design conditions for various environmental loads and perform rectification process.

MAPPING OF CO/PO/PSO:

POs / COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	1	3	1	-	-	-	1	-	1	2	-	3	3	2
CO2	2	2	2	2	-	-	-	1	-	1	2	-	3	3	2
CO3	2	1	2	1	-	-	-	1	-	1	2	-	3	2	2
CO4	2	2	3	2	2	-	2	2	2	1	1	2	3	2	1
CO5	3	2	3	2	1	-	1	1	1	1	3	1	3	3	3
CO6	3	3	3	3	1	1	1	1	2	1	3	2	3	3	3
AVERAGE	2.5	1.83	2.67	1.83	1.33	1	1.33	1.17	1.67	1	2.17	1.67	3	2.67	2.17
CORRELATION LEVELS				1. SLIGHT (LOW)			2. MODERATE (MEDIUM)			3. SUBSTANTIAL (HIGH)					

UDHEP802- Advanced Dredging Technology

COURSE OUTCOMES:

The students will be able to

UDHEP802.1	Evaluate dredging project and analyze the situations to solve field problems
UDHEP802.2	Evaluate dredging and reclamation in coastal areas
UDHEP802.3	Analyze pump characteristics, submerged dredged pump and boosters
UDHEP802.4	Adopt cutter suction dredgers through cutter device, anchoring system and spuds
UDHEP802.5	Analyze and select the dredgers and perform the project works
UDHEP802.6	Demonstrate the various aspects of any dredging project

MAPPING OF CO/PO/PSO:

POs / COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	1	2	2	-	-	-	1	-	1	-	-	3	3	2
CO2	2	2	2	1	-	-	-	1	-	1	-	-	3	3	2
CO3	2	1	2	2	-	-	-	1	-	1	-	-	3	2	2
CO4	2	2	1	2	-	-	2	2	-	1	-	-	3	2	1
CO5	3	2	3	2	-	-	1	1	-	1	-	-	3	3	3
CO6	3	3	3	2	1	1	1	1	1	1	1	1	3	3	3
AVERAGE	2.5	1.83	2.17	1.83	1	1	1.33	1.17	1	1	1	1.0	3	2.67	2.17
CORRELATION LEVELS				1. SLIGHT (LOW)			2. MODERATE (MEDIUM)				3. SUBSTANTIAL (HIGH)				

UDHEP27- Integrated Coastal Zone Management

COURSE OUTCOMES:

The students will be able to

UDHEP27.1	Evaluate the basics of Integrated Coastal Zone Management and terminologies
UDHEP27.2	Analyze the ICM Processes, stakeholder analysis and EI assessments
UDHEP27.3	Demonstrate practice oriented training; case studies including filed visits
UDHEP27.4	Evaluate social science and natural science insights
UDHEP27.5	Demonstrate regional and global coastal law and policies
UDHEP27.6	Evaluate the various aspects of Integrated Coastal Zone Management for solving real time coastal engineering problems.

MAPPING OF CO/PO/PSO:

POs / COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	1	3	1	-	1	-	1	1	-	2	-	3	3	2
CO2	2	2	2	2	-	1	-	1	1	-	2	-	3	3	2
CO3	2	1	2	1	-	1	-	1	1	-	2	-	3	2	2
CO4	2	2	3	2	2	2	2	2	1	1	1	2	3	2	1
CO5	3	2	3	2	1	1	1	1	1	1	3	1	3	3	3
CO6	3	3	3	3	1	1	1	1	1	1	3	2	3	3	3
AVERAGE	2.5	1.83	2.67	1.83	1.33	1.17	1.33	1.17	1	1.33	2.17	1.67	3	2.67	2.17

CORRELATION LEVELS		1. SLIGHT (LOW)	2. MODERATE (MEDIUM)	3. SUBSTANTIAL (HIGH)

UDHE803- Engineering Economics and cost Analysis

COURSE OUTCOMES:

The students will be able to

UDHE803.1	Evaluate the fundamentals of economics
UDHE803.2	Analyze the various aspects of value engineering through example problems.
UDHE803.3	Evaluate cash flow analysis and rate of return method through examples.
UDHE803.4	Demonstrate the replacement and maintenance analysis of an asset with a new asset values
UDHE803.5	Analyze the depreciation aspects through examples
UDHE803.6	Evaluate cost analysis of port projects through numerical examples

MAPPING OF CO/PO/PSO:

POs / COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	1	3	3	-	-	-	1	-	1	-	-	3	3	2
CO2	2	2	2	2	-	-	-	1	-	1	-	-	3	3	2
CO3	2	1	2	2	-	-	-	1	-	1	-	-	3	2	2
CO4	2	2	3	3	-	-	2	2	-	1	-	-	3	2	1
CO5	3	2	3	3	-	-	1	1	-	1	-	-	3	3	3
CO6	3	3	3	3	1	1	1	1	1	1	1	2	3	3	3
AVERAGE	2.5	1.83	2.67	2.67	1	1	1.33	1.17	1	1	1	1.0	3	2.67	2.17

CORRELATION LEVELS		1. SLIGHT (LOW)	2. MODERATE (MEDIUM)	3. SUBSTANTIAL (HIGH)

UDHE8PA- Project Work Phase – II

COURSE OUTCOMES:

The students will be able to

UDHE8PA.1	Solve coastal engineering problem
UDHE8PA.2	Analyze and prepare reports of detailed design for the defined problems
UDHE8PA.3	Demonstrate the skill developed during the programme
UDHE8PA.4	analyze the complex coastal environmental problems using numerical software's likeMIKE21, STAAD PRO and PLAXIS
UDHE8PA.5	Prepare a design project report and present a project report
UDHE8PA.6	Analyze the complex coastal environmental problems and report the problems

MAPPING OF CO/PO/PSO:

POs / COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	3	3	-	-	-	-	-	3	3	2	2	3	3	3
CO2	3	3	3	-	-	-	-	-	3	2	3	2	3	2	3
CO3	3	2	3	-	-	-	-	-	3	3	2	2	3	2	3
CO4	3	2	3	-	2	-	-	-	3	3	3	3	3	2	3
CO5	3	3	3	-	1	-	-	-	3	3	2	2	3	3	3
CO6	3	2	2	1	1	1	1	1	2	3	3	3	3	2	3
AVERAGE	3	2.5	2.83	1	1.33	1	1	1	2.83	2.83	2.5	2.33	3	2.83	3
CORRELATION LEVELS				1. SLIGHT (LOW)			2. MODERATE (MEDIUM)			3. SUBSTANTIAL (HIGH)					