



**KASHI INSTITUTE OF TECHNOLOGY, VARANASI
DEPARTMENT OF CIVIL ENGINEERING**

By

Submitted

**REPORT OF CO - PO
ASSESSMENT AND ATTAINMENT
OF
FACULTY OF CIVIL ENGINEERING**





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The faculty is encouraged to focus on helping the students build new abilities rather than placing too much emphasis on getting everything done on the syllabus before the end of the students, rather than being repeated for the following generation of students.

progress and empowering them to master new talents that will set them apart from their peers throughout the world. The curriculum is revised as needed to meet the needs of today's tracking their students' academic

and focusing the resources available in an educational system. OBE assists universities in that they "know and are able to achieve" whatever they required outputs are by organizing Outcome (PSO). The goal of outcome-based education (OBE) is to have students demonstrate methods, attainment of Course Outcome (CO), Program Outcome (PO) & Program Specific Engineering, etc), delivery methods to attain OBE in these Programs, presents assessment Intelligence, Programming for Problem Solving, Emerging Domain in Electronics Engineering & Mechatronics, Basic Electrical Engineering, Emerging Technology, Artificial Engineering Mathematics-1, Elementary mathematics-1, Soft Skill, Fundamental of Mechanical the calculation of various courses like Engineering Physics, Engineering Chemistry, motivation, initiative, flexibility, adaptability and entrepreneurial skills. This report described organizational skills, leadership skills, self-confidence, creativity, strong work ethics, are needed in workplace, e.g. interpersonal skills, analytical skills, computer skills, Engineers, but also gives emphasis on the development of affective domain attribute which

model which not only gives much better technical knowledge to twenty first century Outcome Based Education System through National Board of Accreditation (NBA). This is a measure what the students are capable of doing. Indian education system has introduced the Education to Outcome Based Education. Outcome Based Education (OBE) system is able to and demand of twenty first century learning system is the transition from Output Based the exact text presented in the text book as answer for questions. But the real need

capability of the students. It only assesses the students learning by allowing them to reproduce from teachers to students. But the traditional system of education fails to measure the learning-practicing in which the knowledge, skills and information are transferred

According to John Dewey, an American philosopher, psychologist and educational reformer, "Education is not preparation for life, education is life itself". Education is a form of teaching-

1. INTRODUCTION:

CO-PO ASSESSMENT & ATTAINMENT

semester. Additionally, students are evaluated based on the 'Levels' that track their learning skills rather than their grade. Success for all students and staff is the Outcome Based Education (OBE) principle, as stated by ensuring that every student has the skills, abilities, and qualities required for success after leaving the educational system. Organizing institution is a way that allows for the achievement and maximization of those Outcomes for all students. Institutions adopting OBE attempt to carry changes to the educational program by progressively adapting to the requirements of the various stakeholders like Students, Parents, Industry Personnel and Recruiters.

This report described the calculation of various technical and non technical courses. Delivery methods to attain OBE in Engineering Program, presents assessment methods, attainment of course outcome (COs) and program outcome (POs).



2- Institute Vision & Mission

Vision:

To empower young generation for substantial contribution to economical, technological and social progress of the society worldwide.

Mission:

- To contribute to the development of the human resources in the form of professional leaders of global cadre.
- To develop holistic personality of the learners.
- To make this Institute as a Leading Centre of Research.



3- DEPARTMENT OF CIVIL ENGINEERING: VISION AND MISSION:

Vision:

To produce a new generation of Civil Engineers by providing state-of-the-art education in Civil Engineering recognized worldwide for excellence. This would be guided by extensive research in technology and management for industrial and social needs for sustainable development.

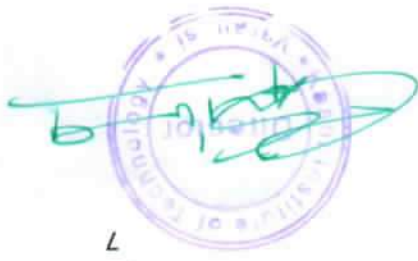
Mission:

Our endeavor is to make the department the highest seat of learning, prepare Engineers equipped with strong conceptual Foundation coupled with practical insight to meet global Business changes.

GOALS OF CIVIL ENGINEERING DEPARTMENT

1. YEAR 2017
Prepare students for nationally recognized leaders in civil engineering field.
Provide national and international level of research work for students.
Promote continuous development in quality of students.
2. Year 2018
Introduce students with latest software in civil engineering field.
Site and industrial visits for practical knowledge in various subjects.
Expand alumni and corporate relationships to increase support of civil engineering.
3. Year 2019
Revise the undergraduate syllabus to meet need of the profession.
Improve the diversity of student body and personality.
Enhance the research work of undergraduate students.
4. Year 2020
Enhance facilities for research and support of faculty members personally.
Implement new department organization to support strategic plan.
Develop high impact research work and publications.
5. Year 2021
Improve laboratory and practical work related to subjects.
Improve faculty retention efforts and inputs.
Expand alumni and corporate relationships to increase support of civil engineering.





To give fundamental knowledge of fluid, its properties and behavior under various conditions of internal and external flows. To develop understanding about hydrostatic law, principle of buoyancy and stability of a floating body and application of mass, momentum and energy equation in fluid flow.

Course Objectives:

- 1. Intended outcomes written to help guide instruction for what the students will learn in the course.
- 2. Course objectives are measurable objectives that the learner is expected to accomplish at the end of an instructional.
- 3. A statement of an action that a learner should be able to perform after successfully completing the learning material. e.g. course objectives of Fluid Mechanics.

• Program Specific Outcomes (PSOs):

Program Specific Outcomes are statements that describe what the students of a specific engineering program should be able to do.

• Program Educational Objectives (PEOs):

These are broad statements that describe the career and professional accomplishments in four to five years after graduation that the program is preparing the graduates to achieve.

• Program Outcomes (POs):

Program outcomes are statements that describe what the knowledge, skills and attitudes students should have at the time of graduation from an engineering program. That means just at the end of 4 years these represent what is the knowledge, skills and attitudes they should have.

• Course Outcomes (COs):

Course Outcomes (COs) are what the student should be able to do at the end of a course. The most important aspect of a CO is that it should be observable and measurable form of a set of individually assessable outcomes of the programme. Graduates Attributes (GAs) are the components indicative of the graduate's potential to acquire competence to practice at the appropriate level.

1-Course Outcomes (COs) 2-Program Outcomes (POs) 3-Program Educational Objectives (PEOs) 4-Program Specific Outcomes (PSOs)

OBE is all about feedback and outcomes There are four levels of Outcomes from OBE are: levels. Objectives and Outcomes. It focuses on measuring student performance i.e. outcomes at different and learning methodology in which the course delivery, assessment are planned to achieve stated

• Outcome Based Education (OBE): Outcome-Based Education (OBE) is a student-centric teaching

Terminology (Abbreviations)

4-LEVELS OF OUTCOMES:



Course Outcomes		S.No.
BL	Course 3 -KCE 303 FLUID MECHANICS	
	Course Outcome/ Unit	
	K1	Course Outcomes: At the end of this course the student will be able to: Understand the broad principles of fluid statics, kinematics and dynamics
	K1, K2	Understand definitions of the basic terms used in fluid mechanics
	K2	Understand classifications of fluid flow
K3	Apply the continuity, momentum and energy principles	4
K2	Apply dimensional analysis	5

COURSE OUTCOME STATEMENT:

Course Outcomes (COs):

CO statements indicating what a student can do after the successful completion of a course. Every course leads to some Course Outcomes. The CO statements are defined by considering the course content covered in each module of a course. For every course there may be 5 or 6 COs. The keywords used to define COs are based on Bloom's Taxonomy. A well written CO facilitates lecturers in measuring the achievement of the CO at the end of the semester. It also helps the lecturers in designing suitable delivery and assessment methods to achieve the designed CO. Graduates Attributes (GAs) are the components indicative of the graduate's potential to acquire competence to practice at the appropriate level. Gas form a set of individually assessable outcomes of the program. For e.g. a course such as Fluid Mechanics might have the following course outcomes set.



Course Outcomes (COs) of Various Courses:



DEPARTMENT OF CIVIL ENGINEERING	
COURSE OUTCOME	
ODD SEMESTER: (Third Sem.)	
Course Outcomes	
Course 1 - KCE 301 ENGINEERING MECHANICS	
S.No.	Course Outcome/ Unit
1	Use scalar and vector analytical techniques for analyzing forces in statically determinate structures
2	Apply fundamental concepts of kinematics and kinetics of particles to the analysis of simple, practical problems.
3	Apply basic knowledge of mathematics and physics to solve real-world problems.
4	Understand basic dynamics concepts – force, momentum, work and energy;
5	Understand and be able to apply Newton's laws of motion;
K1, K2	
Course Outcomes	
Course 2 -KCE 302 SURVEYING & GEOMATICS	
S.No.	Course Outcome/ Unit
1	Describe the function of surveying and work with survey instruments, take observations, and prepare plan, profile, and cross-section and perform calculations.
2	Calculate, design and layout horizontal and vertical curves.
3	Operate a total station and GPS to measure distance, angles, and to calculate differences in elevation. Reduce data for application in a geographic information system.
4	Relate and apply principles of photogrammetry for surveying.
5	Apply principles of Remote Sensing and Digital Image Processing for Civil Engineering problems
K1, K2	
K1	

Course Outcomes		Course 4 - Materials, Testing & Construction Practices	
BL		S.No.	Course Outcome/ Unit
K1	Course Outcomes: At the end of this course the student will be able to 1. Identify various building materials and to understand their basic properties.	1	
K1	Understand the use of non-conventional civil engineering materials.	2	
K2	Study suitable type of flooring and roofing in the construction process.	3	
K3	Characterize the concept of plastering, pointing and various other building services.	4	
K2	Exemplify the various fire protection, sound and thermal insulation techniques, maintenance and repair of buildings	5	

EVEN SEMESTER

Course Outcomes		Course 4 - RENEWABLE ENERGY RESOURCES (KOE074)	
BL		S.No.	Course Outcome/ Unit
K1	Identify and assess the energy conservation/saving opportunities in different electric system and understand related legislations.	1	
K1	Identify and assess the energy saving behavior of utilities through implementation of DSM and EMIS.	2	
K2	Explain energy audit & management and to prepare energy audit report for different energy conservation instances.	3	
K3	Illustrate the energy audit for Mechanical Utilities.	4	
K2	Describe cost-effective measures towards improving energy efficiency and energy conservation by implementation of energy efficient technologies.	5	

Course Outcomes		Course 3 -KCE 303 FLUID MECHANICS	
BL		S.No.	Course Outcome/ Unit
K1	Course Outcomes: At the end of this course the student will be able to 1. Understand the broad principles of fluid statics, kinematics and dynamics	1	
K1, K2	Understand definitions of the basic terms used in fluid mechanics	2	
K2	Understand classifications of fluid flow	3	
K3	Apply the continuity, momentum and energy principles	4	
K2	Apply dimensional analysis	5	





ODD SEMESTER

Course Outcomes		S.No.
Course 7-KCE 501 GEOTECHNICAL ENGINEERING		
BL	Course Outcome/ Unit	
K1	Classify the soil and determine its Index properties.	1
K1	Evaluate permeability and seepage properties of soil.	2
K1, K2	Interpret the compaction and consolidation characteristics & effective stress concept of soil.	3
K2	Determine the vertical and shear stress under different loading conditions and explain the phenomenon of soil liquefaction.	4
K2, K3	Interpret the earth pressure and related slope failures.	5

3rd Year

Course Outcomes		S.No.
Course 6 -KCE 403 HYDRAULIC ENGINEERING & MACHINES		
BL	Course Outcome/ Unit	
K1	Apply their knowledge of fluid mechanics in addressing problems in open channels.	1
K1, K2	Solve problems in uniform, gradually and rapidly varied flows in steady state conditions.	2
K2	Have knowledge in hydraulic machines like pumps and turbines	3

Course Outcomes		S.No.
Course 5 -KCE 402 INTRODUCTION TO SOLID MECHANICS		
BL	Course Outcome/ Unit	
K1	Describe the concepts and principles of stresses and strains	1
K1	Analyze solid mechanics problems using classical methods and energy methods	2
K2	Analyze structural members subjected to combined stresses	3
K3	Calculate the deflections at any point on a beam subjected to a combination of loads	4
K1	Understand the behavior of columns, springs and cylinders against loads.	5



Course Outcomes		S.No.
BL	Course 11 -KCE 052 MODERN CONSTRUCTION MATERIALS	
	Course Outcome/ Unit	
	1	Understand the use of modern construction materials.
	2	Use geosynthetics and bituminous materials in constructions.
	3	Apply knowledge of modern materials in production of variety of concrete.
K4	Apply knowledge of composites and chemicals in production of modern concrete.	4
K4	Use modern water proofing and insulating materials in constructions.	5

Course Outcomes		S.No.
BL	Course 10 -KCE 051 CONCRETE TECHNOLOGY	
	Course Outcome/ Unit	
	1	Understand the properties of constituent material of concrete.
	2	Apply admixtures to enhance the properties of concrete.
	3	Evaluate the strength and durability parameters of concrete.
K1	Design the concrete mix for various strengths using difference methods.	4
K1, K2	Use advanced concrete types in construction industry.	5

Course Outcomes		S.No.
BL	Course 9 -Computer Architecture and Organization (KCE051)KCE 503 QUANTITY ESTIMATION AND CONSTRUCTION MANAGEMENT	
	Course Outcome/ Unit	
	1	Understand the importance of units of measurement and preliminary estimate for administrative approval of projects.
	2	Understand the contracts and tender documents in construction projects.
	3	Analyze and assess the quantity of materials required for civil engineering works as per specifications.
K1	Evaluate and estimate the cost of expenditure and prepare a detailed rate analysis report.	4
K1	Analyze and choose cost effective approach for civil engineering projects.	5

Course Outcomes		S.No.
BL	Course 8 -KCE502 STRUCTURAL ANALYSIS	
	Course Outcome/ Unit	
	1	Explain type of structures and method for their analysis.
	2	Analyze different types of trusses for member forces.
	3	Compute slope and deflection in determinate structures using different methods.
K1	Apply the concept of influence lines and moving loads to compute bending moment and shear force at different sections.	4
K1	Analyze determinate arches for different loading conditions.	5



Course Outcomes		Course 16 -KCE 056 SENSOR AND INSTRUMENTATION TECHNOLOGIES FOR CIVIL ENGINEERING APPLICATIONS	
BL	S.No.	Course Outcome/ Unit	
K2	1	Analyze the errors during measurements	
K2	2	Describe the measurement of electrical variables	
K2	3	Describe the requirements during the transmission of measured signals	
K2	4	Construct Instrumentation/Computer Networks	
K3	5	Suggest proper sensor technologies for specific applications	
K3	6	Design and set up measurement systems and do the studies	

Course Outcomes		Course 14 -KCE055 ENGINEERING HYDROLOGY	
BL	S.No.	Course Outcome/ Unit	
K2	1	Understand the basic concept of hydrological cycle and its various phases.	
K2	2	Understand the concept of runoff and apply the knowledge to construct the hydrograph.	
K2	3	Apply the various methods to assess the flood.	
K2	4	Assess the quality of various forms of water and their aquifer properties.	
K2	5	Understand the well hydraulics and apply ground water modeling techniques.	

Course Outcomes		Course 13 -KCE 054 ENGINEERING GEOLOGY	
BL	S.No.	Course Outcome/ Unit	
K3	1	Understand the scope of geological studies.	
K2	2	Understand the rocks and its engineering properties.	
K2	3	Understand the minerals and constituents of rocks.	
K4	4	Understand the rock deformations, their causes effects and preventive measures.	
K4	5	Understand the ground water reserves, Geophysical exploration methods and site selection for mega projects.	

Course Outcomes		Course 12 -KCE-053 : OPEN CHANNEL FLOW	
BL	S.No.	Course Outcome/ Unit	
K1	1	Apply knowledge of fluid flow for designing of channel sections.	
K1	2	Analyze the gradually varied flow in channel section.	
K1	3	Analyze the rapidly varied flow in channel sections.	
K2	4	Apply numerical methods for profile computation in channels.	
K4	5	Design channels for sub critical and super critical flows.	



BL	Course Outcomes	
	Course 19 -KCE 601 DESIGN OF CONCRETE STRUCTURE	
	S.No.	Course Outcome/ Unit
	1	Analyse and Design RCC beams for flexure by IS methods.
K1,	2	Analyse and Design RCC beams for shear by IS methods.
K2	3	Analyse and Design RCC slabs and staircase by IS methods.
K2	4	Design the RCC compression members by IS methods.
K2	5	Design various types of footings and cantilever retaining wall

EVEN SEMESTER

BL	Course Outcomes	
	Course 18 -KCE 058 GIS AND ADVANCE REMOTE SENSING	
	S.No.	Course Outcome/ Unit
	1	Understand the concepts of Photogrammetry and compute the heights of objects
K3	2	Understand the principles of aerial and satellite remote sensing, Able to comprehend the energy interactions with earth surface features, spectral properties of water bodies .
K3	3	Understand the basic concept of GIS and its applications, know different types of data representation in GIS
K2	4	Understand and Develop models for GIS spatial Analysis and will be able to know what the questions that GIS can answer are
K3	5	Illustrate spatial and non-spatial data features in GIS and understand the map projections and coordinates systems
K3	6	Apply knowledge of GIS and understand the integration of Remote Sensing and GIS

BL	Course Outcomes	
	Course 17 -KCE 057 AIR & NOISE POLLUTION CONTROL	
	S.No.	Course Outcome/ Unit
	1	Understand air pollutants and their impacts.
K2	2	Explain air pollution chemistry and meteorological aspects of air pollutants.
K1, K2, K3	3	Demonstrate methods for controlling particulate air pollutants.
K1	4	Demonstrate methods for controlling gaseous air pollutants.
K2	5	Understand automotive emission standards.
K3	6	Apply methods for controlling noise pollution



Course Outcomes		S.No.
BL	Course 23 -KCE062 RIVER ENGINEERING	
	Course Outcome/ Unit	
	K1 & K2	1 Explain river morphology and its classification.
	K2	2 Explain hydraulic geometry and behavior of river.
	K3	3 Explain socio-cultural influences and ethics of stream restorations.
K4	4 Analyze flow and sediment transport in rivers and channels.	
K5 & K6	5 Design guide band, embankments and flood protection systems.	

Course Outcomes		S.No.
BL	Course 22 -KCE 061 ADVANCE STRUCTURAL ANALYSIS	
	Course Outcome/ Unit	
	K1	1 Analyze indeterminate structure to calculate unknown forces, slope and deflections by different methods.
	K2	2 Apply principle of influence lines to analyze indeterminate beams and arches.
	K2	3 Analyze and design cable structure with their influence line diagram.
K1	4 Apply basics of force and stiffness methods of matrix analysis for beams, frames and trusses.	
K3	5 Apply the basic of plastic analysis to analyze the structure by using different mechanism.	

Course Outcomes		S.No.
BL	Course 21 -KCE 603 ENVIRONMENTAL ENGINEERING	
	Course Outcome/ Unit	
	K3	1 Assess water demand and optimal size of water mains.
	K3	2 Layout the distribution system & assess the capacity of reservoir.
	K3	3 Investigate physical, chemical & biological parameter of water.
K4	4 Design treatment units for water and waste water.	
K2	5 Apply emerging technologies for treatment of waste water.	

Course Outcomes		S.No.
BL	Course 20 -KCE 062 TRANSPORTATION ENGINEERING	
	Course Outcome/ Unit	
	K1	1 Understand the history of road development, their alignment & Survey.
	K1	2 Design the various geometric parameters of road.
	K1	3 Study the traffic characteristics & design of road intersections & signals.
K3	4 Examine the properties of highway materials & their implementation in design of pavements.	
K2	5 Learn methods to construct various types of roads.	



ODD SEMESTER

4th Year

Course Outcomes		S.No.
Course 1 - KCE070 Railway, Waterway and Airway Engineering		
Course Outcome/ Unit		
K2	1	Explain the importance of railway infrastructure.
K2	2	Identify the factors governing design of railway infrastructures.
K2	3	Analysys and design the railway track system.
K2	4	Understand the concepts of airport engineering and design components of airport.
K1,K2	5	Associate with the concepts of water transport system.

Course Outcomes		S.No.
Course 25 - KCE 064 FOUNDATION DESIGN		
Course Outcome/ Unit		
K1	1	Understand various methods of Soil Exploration and its importance.
K1	2	Analyze bearing capacity and settlement of soil for shallow foundation.
K2	3	Design the various types of shallow foundation and understand the basics of deep foundation.
K2	4	Understand the characteristics of well foundations and retaining wall.
K3	5	Understand the concept of soil reinforcement.

Course Outcomes		S.No.
Course 24 - KCE063 REPAIR AND REHABILITATION OF STRUCTURES		
Course Outcome/ Unit		
K2	1	Understand the fundamentals of maintenance and repair strategies.
K3	2	Identify for serviceability and durability aspects of concrete.
K2	3	Know the materials and techniques used for repair of structures.
K2	4	Decide the appropriate repair and retrofitting techniques.
K2	5	Use appropriate health monitoring technique and demolition methods



Course Outcomes		S.No.
Course 5 - KCE074 Solid Waste Management		
Course Outcome/ Unit		
1	Understand the concept of solid waste management.	K1
2	Explain handling and processing of solid waste.	K1, K2
3	Apply the concept of landfilling for disposal of solid waste.	K3
4	Design composting and other solid waste conversion units.	K2
5	Understand the various hazardous waste, risk assessment and legislation	K1, K2

Course Outcomes		S.No.
Course 4 - KCE073 Advance Concrete Design		
Course Outcome/ Unit		
1	Understand the design criteria as well as design concept of circular and rectangular tanks.	K1
2	Design the Intz tank, RC domes and beams, cylindrical and rectangular tanks.	K1
3	Understand the concept of pre tensioning and post tensioning and different systems used in pre tensioning.	K1 & K2
4	Analysis and design the simple prestressed beams.	K3
5	Design deep beams and corbel as per IS 456.	K2

Course Outcomes		S.No.
Course 3 - KCE072 Probability Methods in Civil Engineering		
Course Outcome/ Unit		
1	Apply probabilistic techniques for the analysis of complex Civil Engineering structures using advanced techniques.	K1
2	Demonstrate mathematical and statistical knowledge and skills to be applied in various civil engineering structures.	K2
3	Apply the laws of logic to mathematical statements.	K2
4	Develop mathematical thinking in the conduct of different experiments and presentation of results precisely.	K2

Course Outcomes		S.No.
Course 2 - KCE071 Sustainable Construction Methods		
Course Outcome/ Unit		
1	Classify the sustainable construction materials.	K2
2	Apply cutting-edge construction technologies.	K1
3	Evaluate different sustainable construction methods.	K2
4	Apply different rating systems of construction/buildings as a professional.	K3
5	Apply life cycle approach to optimize the performance of green construction materials	K2



Course Outcomes		S.No.
Course 9 - KCE078 Irrigation and Water Resource Engineering		
Course Outcome/ Unit		
k ₃	Describe the components of hydrological cycle, evaporation process and consumptive use.	1
k ₄	Apply the knowledge of stream flow measurement techniques and hydrograph theory for computation of run-off.	2
k ₄	Design different types of irrigation channels and water logging preventive measures.	3
k ₄	Design the regulatory and control systems of canal and irrigation outlets.	4
k ₃	Apply the knowledge of ground water hydrology and determination of discharge through wells.	5

Course Outcomes		S.No.
Course 8 - KCE077 Geo-synthetics and Reinforced Soil Structures		
Course Outcome/ Unit		
K2	Identify the type of Geosynthetic and their relevance.	1
K3	Analyze & compute different properties of Geosynthetics.	2
K2	Understand the emerging trends of Geosynthetic in geotechnical applications.	3
K1	Design the Reinforced Earth Walls using Geosynthetic material.	4
K1	Design the Reinforced Foundation using Geosynthetic materials	5

Course Outcomes		S.No.
Course 7 - KCE076 Urban Transportation Planning		
Course Outcome/ Unit		
K1	Understand the basic concepts of planning at urban and regional levels.	1
K1	Distinguish between the Conventional and current approaches for travel demand estimation.	2
K1	Implement various types of models and trip generation.	3
K1	Analyze the urban travel markets.	4
K2	Evaluate the transport planning proposals	5

Course Outcomes		S.No.
Course 6 - KCE075 Design of Steel Structures		
Course Outcome/ Unit		
K1	Understand properties of steel and types of loads acting on steel structures.	1
K1	Design welded and bolted type of connections for elementary steel structures.	2
K2	Design tension members for elementary steel structures.	3
K2	Design compression members such as simple columns, braced and latticed columns and column bases.	4
K3	Design flexural members such as beams, girders and girders	5



Course Outcomes		S.No.
Course 3 - KOE071 FILTER DESIGN		
Course Outcome/ Unit		
K2	Choose an appropriate transform for the given signal.	1
K2	Choose appropriate decimation and interpolation factors for high performance filters.	2
K1	Model and design an AR system.	3
K2	Implement filter algorithms on a given DSP processor platform.	4

Course Outcomes		S.No.
Course 2 - KHU702/KHU802 PROJECT MANAGEMENT & ENTREPRENEURSHIP		
Course Outcome/ Unit		
K1	Entrepreneurship	1
K2,K3	Entrepreneurial Idea and Innovation	2
K3	Project Management	3
K1	Project Financing	4
K2	Social Entrepreneurship	5

Course Outcomes		S.No.
Course 1 - KHU701/KHU801 RURAL DEVELOPMENT: ADMINISTRATION AND PLANNING		
Course Outcome/ Unit		
K1,K1	Students can understand the definitions, concepts and components of Rural Development	1
K2	Students will know the importance, structure, significance, resources of Indian rural economy.	2
K2	Students will have a clear idea about the area development programmes and its impact.	3
K2	Students will be able to acquire knowledge about rural entrepreneurship.	4
K2	Students will be able to understand about the using of different methods for human resource planning	5

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Course Outcomes		S.No.
Course 10 - KCE079 Disaster Preparedness and Management		
Course Outcome/ Unit		
K2	Understand the basic concepts of disasters and hazards	1
K2	Classify the natural disasters.	2
K2	Analyze the impacts of disaster on various societal components	3
K4	Understand the components of disaster management cycle and roles of various agencies its risk reduction	4
K4	Understand the process of recovery, reconstruction and development methods	5

Course Outcomes		Course 7 -KOE075 OPERATIONS RESEARCH	
S.No.	Course Outcome/ Unit		
1	Introduction:	K1,J2	
2	Transportation Problems	K1,K4	
3	Network Techniques	K3	
4	Theory of Games	K2	
5	Inventory Control	K3,K4	

Course Outcomes		Course 6 -KOE074 RENEWABLE ENERGY RESOURCES	
S.No.	Course Outcome/ Unit		
1	Introduction to conventional and non-conventional energy	K1	
2	Solar Thermal Energy: Solar radiation, flat plate collectors	K2	
3	Geothermal Energy: Resources of geothermal energy	K2	
4	Thermo-electrical and thermionic Conversions	K2	
5	Bio-mass: Availability of bio-mass and its conversion theory	K2,K3	

Course Outcomes		Course 5 -KOE073 MACHINE LEARNING	
S.No.	Course Outcome/ Unit		
1	Introduction to Well defined learning problems	K1	
2	Student get the knowledge of decision tree and artificial neural network	K3	
3	Estimating Hypotheses Accuracy, Basics of sampling Theory	K3	
4	Computational Learning Theory: Sample Complexity for Finite Hypothesis spaces	K2	
5	Genetic Algorithms: an illustrative example, Hypothesis space search, Genetic Programming	K3	

Course Outcomes		Course 4 - KOE072 BIOECONOMICS	
S.No.	Course Outcome/ Unit		
1	Students will be able to understand basic concept of Bioeconomics, challenges, opportunities & regulations	K2	
2	Students will be able to understand development and innovation in terms of bioeconomy towards sustainable development	K2	
3	Students will be able to understand Inter- and transdisciplinary in bioeconomy & research approaches	K2	
4	Students will be able to explain bio-based resources, value chain, innovative use of biomass and biological knowledge to provide food, feed, industrial products	K1	





Course Outcomes		Course 9 -KOE077 DESIGN THINKING	
BL		S.No.	Course Outcome/ Unit
K1,K1	1	1	Develop a strong understanding of the design process and apply it in a variety of business settings
K2	2	2	Analyze self, culture, teamwork to work in a multidisciplinary environment and exhibit empathetic behavior
K2	3	3	Formulate specific problem statements of real time issues and generate innovative ideas using design tools
K2	4	4	Apply critical thinking skills in order to arrive at the root cause from a set of likely causes
K2	5	5	Demonstrate an enhanced ability to apply design thinking skills for evaluation of claims and arguments.

Course Outcomes		Course 8 -KOE-076 VISION FOR HUMANE SOCIETY	
BL		S.No.	Course Outcome/ Unit
K1	1	1	The methodology of this course is exploration and thus universally adaptable. It involves a systematic and rational study of the human being vis-a-vis the rest of existence.
K3	2	2	It is free from any dogma or set of do's and don'ts related to values.
K3	3	3	It is a process of self-investigation and self-exploration, and not of giving sermons. Whatever is found as truth or reality is stated as a proposal and the students are facilitated and encouraged to verify it in their own right, based on their Natural Acceptance and subsequent Experiential Validation.
K2	4	4	This process of self-exploration takes the form of a dialogue between the teacher and the students to begin with, and then to continue within the student leading to continuous self evolution.
K3	5	5	This self-exploration also enables them to critically evaluate their pre- conditionings and present beliefs

Program Outcomes (POs):

POs are defined by Accreditation Agencies of the country (NBA in India), which are the statements about the knowledge, skills and attitudes, graduate attributes of a formal engineering program should have. Graduates Attributes (GAs) are the components indicative of the graduate's potential to acquire competence to practice at the appropriate level. GAs form a set of individually assessable outcomes of the program. The NBA laid down the graduate attributes relating to program outcomes and is to be derived by Program. These are broad and covers a wider area than of COs. 12 Program Outcomes, or Graduate Attributes for the sake of unity and quality assurance.

The Program outcomes reflect the ability of graduates to demonstrate knowledge in fundamentals of Basic Sciences, Humanities and Social Sciences, Engineering Sciences and apply these principles in understanding and practically apply the knowledge in professional core subjects, graduates must adhere to professional and ethical responsibilities in the pursuit of their careers and also for the benefit of the society. These outcomes also enable the graduate to pursue higher studies and engage in R&D for a successful professional career. The proper definition and the attainment of POs contribute to the attainment of Program Educational Objectives which will help the graduate to perform his/ her duties, professional responsibilities, design, development, production and testing of novel products, ability to deal with finances and project management during his/her early professional career of 3 to 4 years.

PROGRAM OUTCOMES (PO's)

PO1: Engineering Knowledge

Apply the knowledge of mathematics, Science, Engineering fundamentals and an Engineering specialization to the solution of complex engineering problems.

PO2: Problems Analysis

Identify, formulates, review research literature and analyze Complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural Sciences and Engineering Sciences.

PO3: Design/Development of Solutions

Design solution for Complex engineering problems and design system components are processes that meet the specified needs with appropriate consideration for the public health and safety and the cultural societal and environmental considerations.

PO4: Conduct investigations of Complex Problem

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.





PO11: Project Management and Finance

documentation make effective presentation and give and receive clear instructions. 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

PO10: Communication

multidisciplinary settings. Function, effectively as an individual and as a member or leader in diverse teams in

PO9: Individual and Team Work

engineering practices. Apply ethical principles and commit to professional ethics and responsibilities and norms of the

PO8: Ethics

contexts and demonstrate the knowledge need for sustainable development Understand the impact of the professional Engineering solutions in social and environmental

PO7: Environment and Sustainability

cultural issues and the consequent responsibilities relevant to the professional engineering practice. Apply reasoning informed by the contextual knowledge to access societal, health, safety, legal and

PO6: The Engineer and Society

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

PO5: Modern Tool Usage

in the case of designing an antenna or a DSP filter. ● This frequently necessitates the employment of cutting-edge computational ideas and methods, as mathematical framework.

requirement, durability, product life, etc., which must be defined (modeled) within a suitable ● That necessitates taking into account suitable restrictions or requirements, such as cost, power

ways, leading to a variety of potential solutions

● That may not have a special answer. A design problem, for instance, can be solved in a variety of applicable to the engineering discipline.

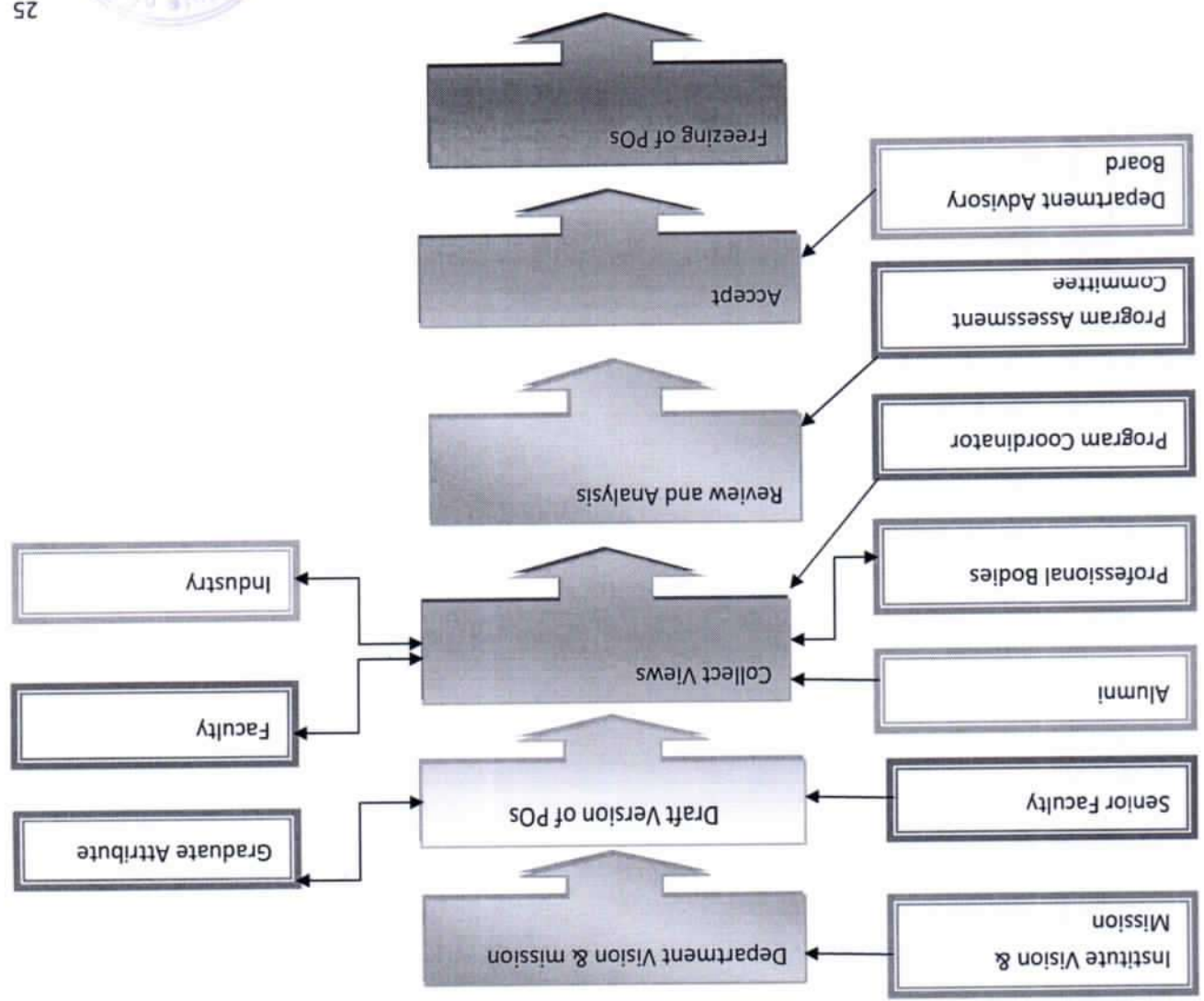
cannot be solved by the straightforward application of knowledge, theories, and techniques ● Those problems, as opposed to those presented at the end of chapters in a typical text book,

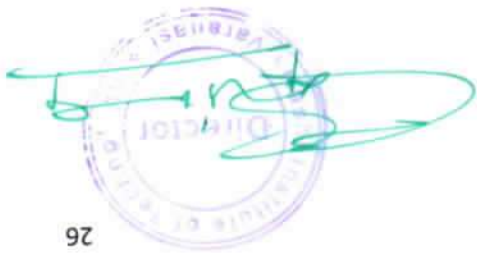
Demonstrate knowledge and understanding of Engineering and Management principles and apply these to one's own work, as a member and leader in a team to manage projects and in multidisciplinary environments.

PO12: 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 changes.

Process to define Program Outcomes (POs) of the department :

Fig. 1



**PROGRAM EDUCATIONAL OBJECTIVES (PEOs):**

Program Educational Objectives (PEO) are statements that describe the career and professional accomplishments that the program is preparing the graduates to achieve. PEO's are measured 4-5 years after graduation. They are set in order to measure the effectiveness of the program, and to check whether it has prepared the students to deal with the real world, where they could apply and use the skills and knowledge they've learned to good use.

PEO1 - PROFICIENT DEVELOPMENT

To develop in the students the capacity to obtain knowledge on Mathematics, Science and Engineering and apply it expertly inside sensible requirements, for example, financial, natural, social, political, moral, wellbeing and security, manufacturability and manageability with due moral obligation.

PEO2-CORE PROFICIENCY

To provide ability to recognize, plan, appreciate formulate, comprehend, analyze, design and solve engineering problems with hands on experience in different advancement involving modern tools necessary for engineering practice to fulfill the necessities of society and the business.

PEO3 - SPECIALISED ACHIEVEMENT

To furnished the students with the capacity to explore, reenact, design, simulate, experiment, analyze, optimize and interpret in their core applications through multi disciplinary ideas and contemporary figuring out how to incorporate them into industry prepared graduates.

PEO4 - PROFESSIONALISM

To provide training, exposure and awareness on importance of soft skills for better career and holistic personality development as well as professional attitude towards ethical issues, team work, responsibility, accountability, multidisciplinary approach and capability to relate engineering issues to broader social context.

PEO5 - LEARNING ENVIRONMENT

To furnish students with an academic environment and make them mindful of greatness, foster the desire of revelation, imagination, creativity, authority, composed moral codes and rules and the long lasting figuring out how to turn into an effective expert in Civil Engineering.

The Process for Establishing the PEO's

The PEOs are established through the following process steps:

- STEP 1: Vision and Mission of the Institute & Department are taken into consideration to interact with various stake holders, and establish the PEO's
- STEP 2: The Head of the Department, Program Coordinator and other Senior Faculty prepares the draft version of PEOs and POs.
- STEP 3: The draft rendition is examined with partners and their perspectives are gathered by the Program co-ordinator
- STEP 4: The Program Assessment Committee surveys and dissects the PEOs and POs and presents its recommendations to the Departmental advisory Board.
- STEP 5: The Departmental advisory Board deliberates on the recommendations and freezes the PEOs and POs and submits them to the BOG for final approval. The Program curriculum is planned by integrating inputs from members of Board of Studies and Academic council who are drawn from various academic institutions, R&D associations and industry.

PROGRAM SPECIFIC OUTCOMES (PSOs):

The graduates of the department will attain:

PSO1: Problem tackling ability

Graduates will actually want to apply the capacity to break down, plan and carry out application explicit electronic framework for complex designing issues for simple, advanced area, correspondences and sign handling applications by applying the information on essential sciences, designing arithmetic and designing basics.

PSO2: Professional Skill

Graduates will actually want to foster quick changes in apparatuses and innovation with a comprehension of cultural and biological issues pertinent to proficient designing practice through long lasting learning.

PSO3: Successful Career Graduates will actually want to have great versatility to work in multi-disciplinary workplace, great relational abilities as a forerunner in a group in enthusiasm for proficient morals and cultural obligations.

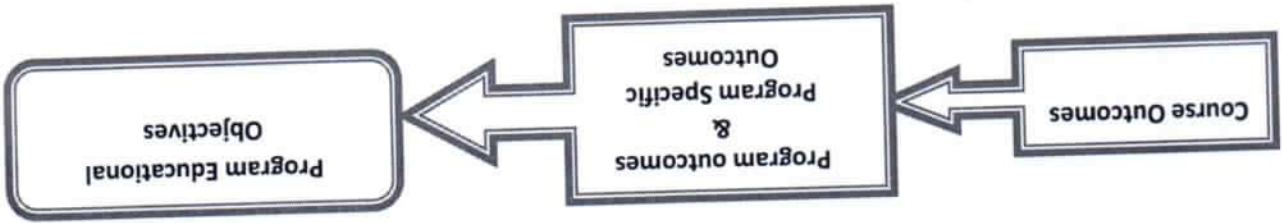


Fig. Relating Outcomes (CO-PO & PSO-PEO)

This figure shows the building block of CO-PO & PSO-PEO Relationship. After CO statements Develop by course in-charge, CO will map with any possible POs based on the relationship exist between them. But all POs are not necessary mapped with one CO and it may be left blank. Anyhow, it is mandatory that all POs should be mapped with any one of PSO and PEO which are specified in the program.

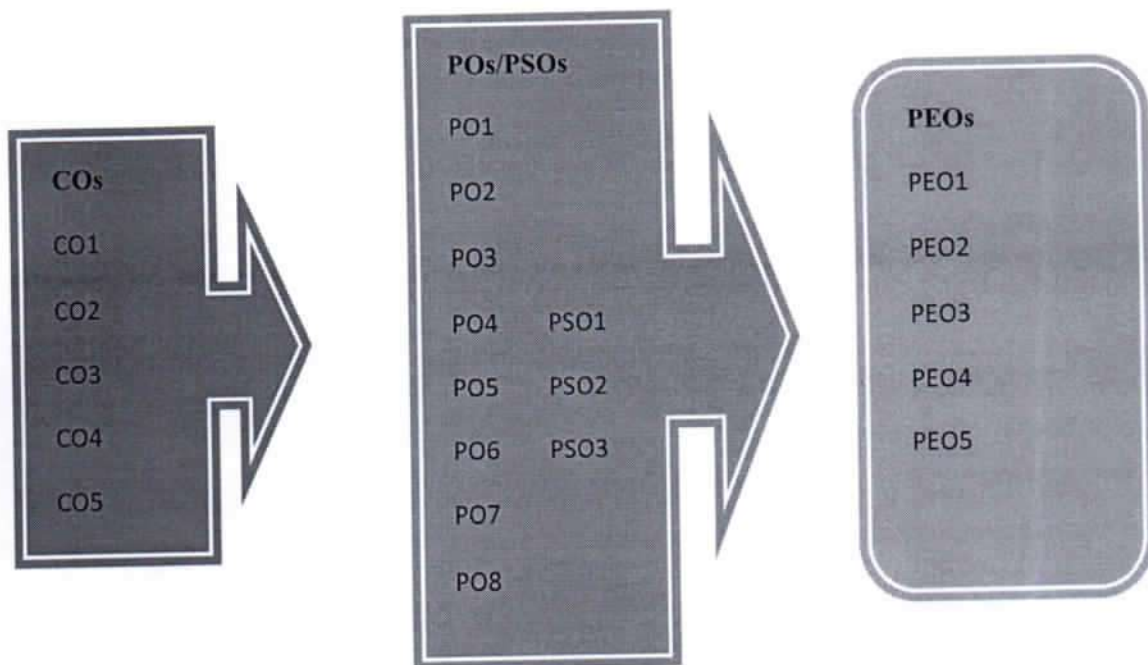


Fig. Relationship between CO, PO, PSO & PEO

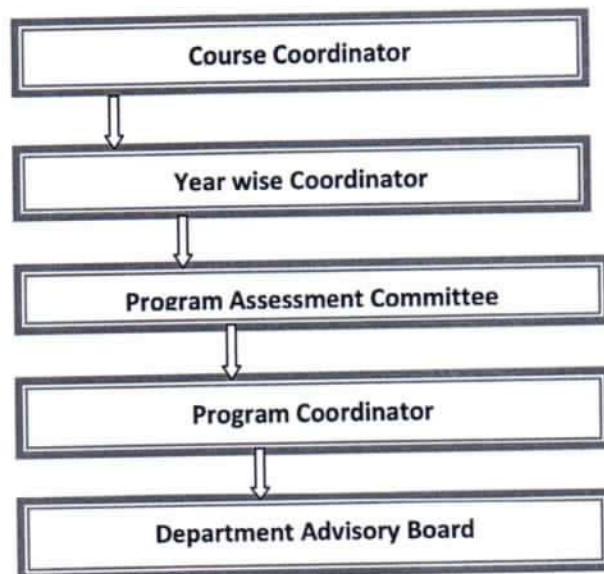


Fig. Hierarchy of Faculty Involvement



- **Course Coordinator:** write appropriate COs and finalize the CO-PO mapping.
- **Year wise Coordinator:** Consolidate the CO attainment of the respective year.
- **Program Assessment Committee:** Consolidate the CO attainment and PO attainment of the respective program.
- **Program Coordinator:** Monitor and Guide the Program Assessment Committee.
- **Department Advisory Board:** All these works mention above have to be done under the supervision of Department Advisory Board.



Vision, Mission & PEO are published & disseminated at following places:

Vision , Mission & PEOs			
Sr. No.	Place of Dissemination	Item	Dissemination Detail
1	College Website	Vision ,Mission, PEO	Permanent
2	Depart Area	Vision ,Mission, PEO	Permanent
3	Laboratory Area	Vision ,Mission, PEO	Permanent
4	Notice Board	Vision, Mission,	Permanent
5	Employer Survey Form	Vision ,Mission, PEO	When Required
6	Bulk SMS	Vision ,Mission,	At New Admission
7	Email	Vision ,Mission,	Footer in Every Mail
8	Home Page of ERP	Vision ,Mission,	Permanent
9	Laboratory Manuals	Vision ,Mission,	Permanent
10	Faculty Meetings	Vision ,Mission, PEO	At regular interval
11	In Alumni Interactions	Vision, Mission, PEO	Alumni Meet
12	Back Grounds of all Computers in the Department	Vision, Mission	Permanent

The Process for Updating Vision and Mission of Department:

The following steps are followed to establish Vision and Mission of Department.

Step 1: The Institute's Vision & Mission serve as the starting point in Step 1.

Step 2: The Department holds faculty discussions about the skill sets required by regional and global employers, industry technological breakthroughs, and R & D. A draft of the Department's vision and mission statements is also created in accordance with suggestions made by the Departmental Planning Committee.

Step 3: The draft version is changed in light of feedback from the Departmental Planning Committee, parents, professional organizations, and industry representatives.

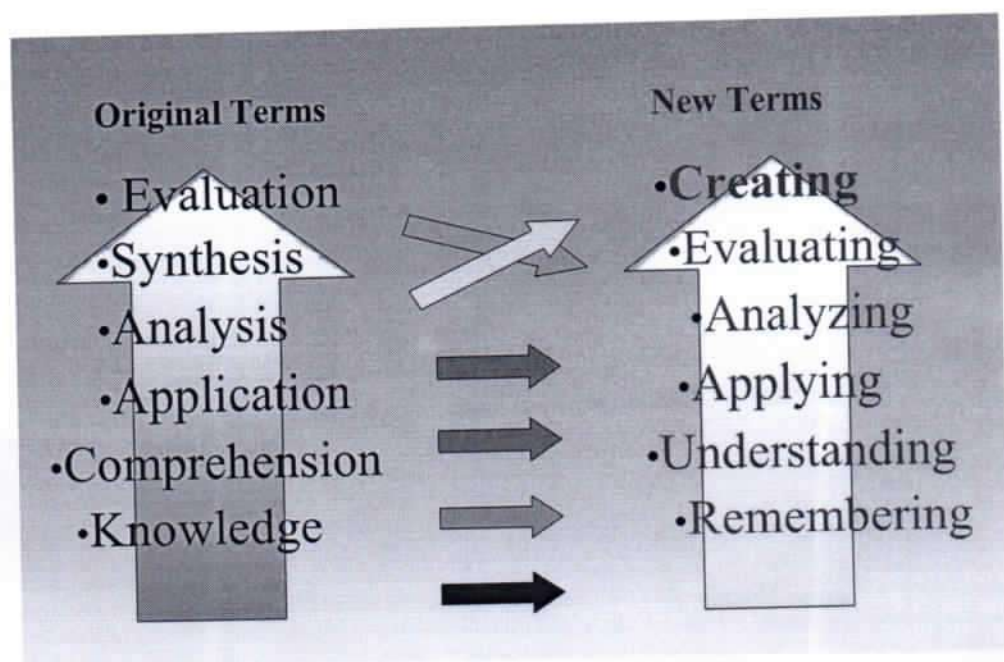
Step 4: To ascertain whether the accepted points of view are congruent with the institute's vision and goal. Should the Central Advisory Committee deem the Vision and Mission to be unsatisfactory move on to step 5.

Step 5: The Central Advisory Committee will again request changes from the Departmental Planning Committee if it is not happy with the Vision and Mission.

Step 6: The Vision and Mission are approved and made public among the stakeholders if they meet the requirements of the Central Advisory Committee.

5- Revised Bloom's Taxonomy

Bloom's Taxonomy was created in 1956 under the leadership of educational psychologist Dr Benjamin Bloom in order to promote higher forms of thinking in education, such as analyzing and evaluating concepts, processes, procedures, and principles, rather than just remembering facts. It is most often used when designing educational, training and learning processes.



Critical thinking is a skill that you are expected to develop as you progress through University. Critical thinking will become part of your research, your reading, your planning and reflection and of your academic writing. It involves a set of skills and an attitude of mind that you will need to cultivate and practice - it won't necessarily come easily or naturally! If you can develop critical thinking skills in relation to your subject, they will be valuable to you in many other aspects of life (including employment).

Bloom's taxonomy of thinking and learning illustrates forms of thinking, in ascending order of complexity, from lower-order thinking skills (LOTS) to higher-order thinking skills (HOTS). It begins with **remembering** and ends with **creating**. This is used by lecturers to set learning outcomes and assessment criteria for a course or module, you will often find these verbs in your module handbooks. The knowledge about a subject alone, like having access to a range of information, or 'facts', is at the simplest or lowest level. So using only, or mostly, descriptive language in your writing, to communicate what you know about a topic is not likely to generate many marks. Higher and more complex levels include the ability to analyze, synthesize and evaluate information by comparing and contrasting different points of view, sets of information or experiences. This might involve recognizing patterns of behavior, for example, and using them to make predictions.

BLOOM'S REVISED TAXONOMY OF THINKING SKILLS Fig.1

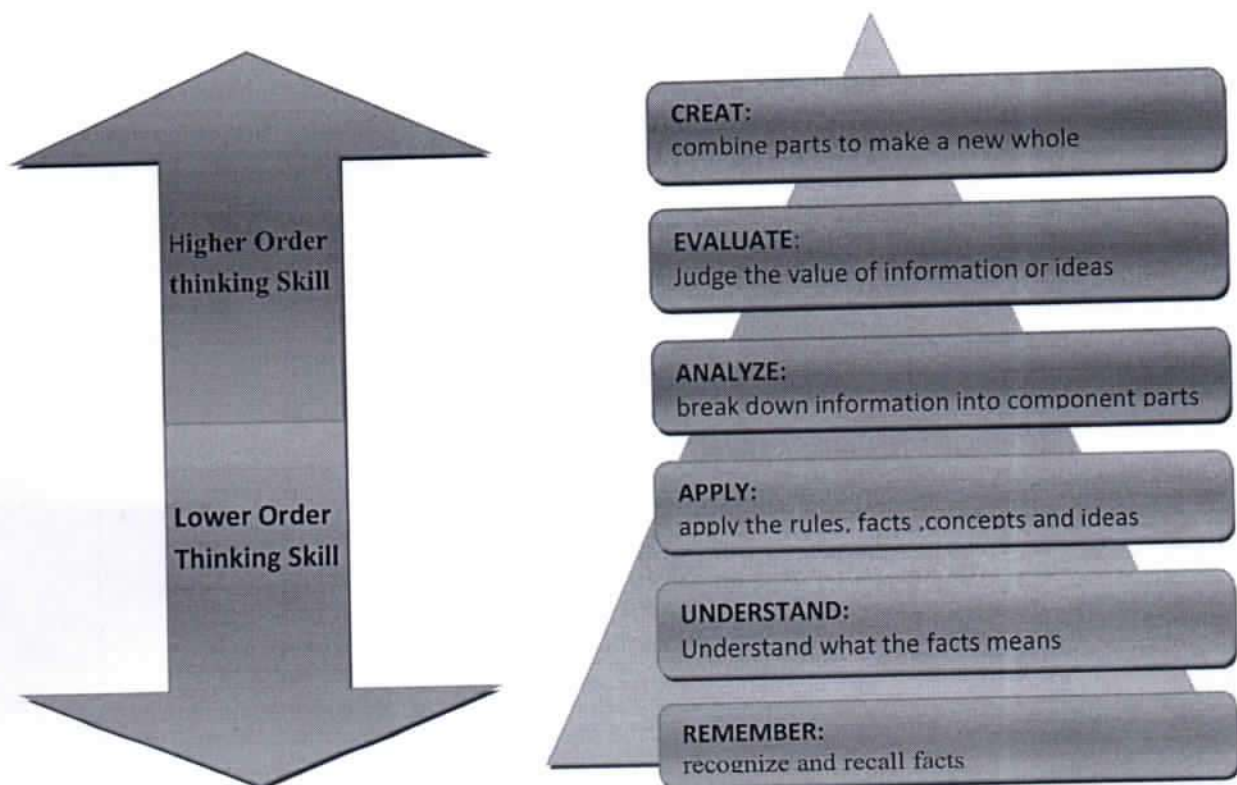
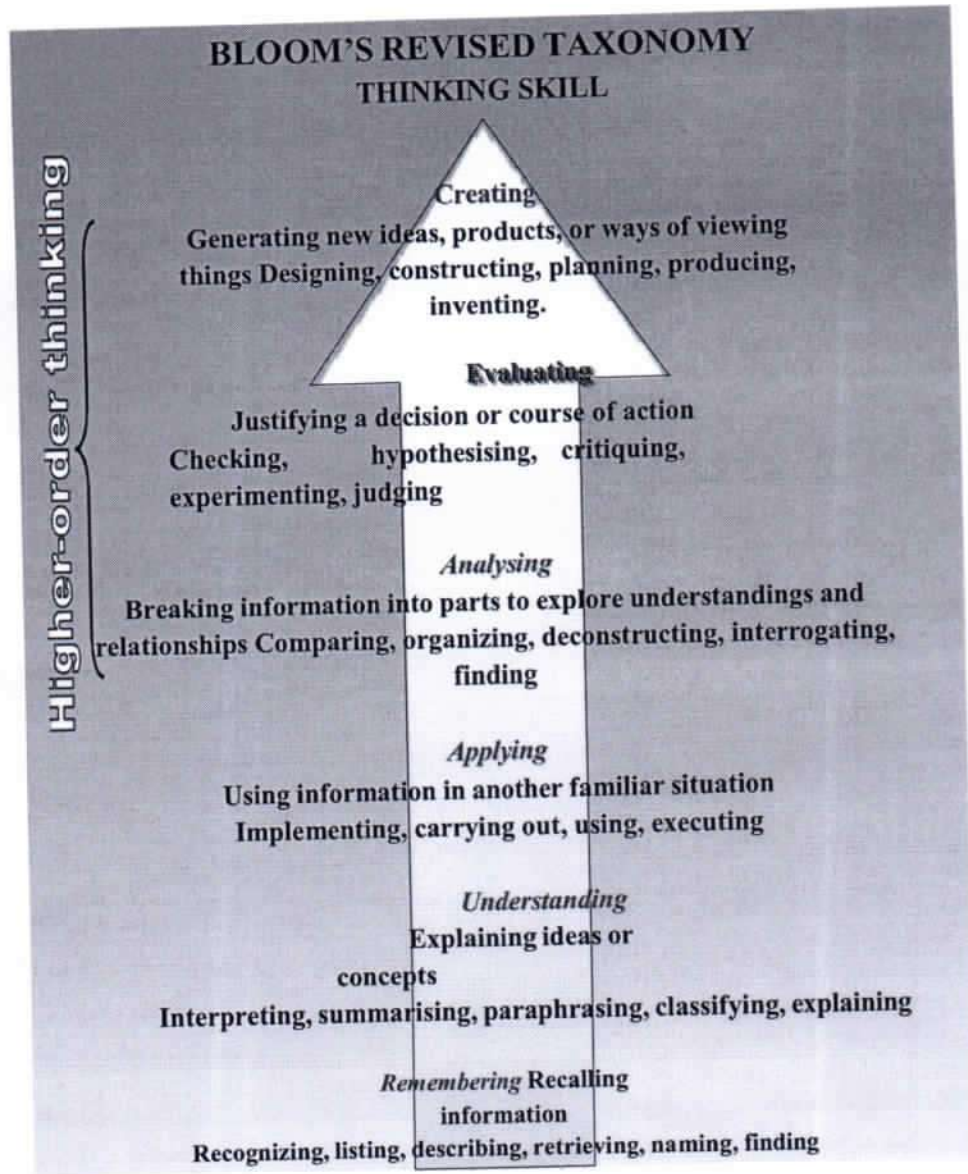


Fig.2



Cognitive processes: Level 1- C1

Categories & Cognitive Processes	Alternative Names	Definition
Remember		Retrieve knowledge from long- term memory
Recognizing	Identifying	Locating knowledge in long-term memory that is consistent with presented material
Recalling	Retrieving	Retrieving relevant knowledge from long-term memory

Categories & Cognitive Processes	Alternative Names	Definition
Understand		Construct meaning from instructional messages, including oral, written, and graphic communication
Interpreting	Clarifying Paraphrasing Representing Translating	Changing from one form of representation to another
Exemplifying	Illustrating Instantiating	Finding a specific example or illustration of a concept or principle
Classifying	Categorizing Subsuming	Determining that something belongs to a category
Summarizing	Abstracting Generalizing	Abstracting a general theme or major point(s)
Inferring	Concluding Extrapolating Interpolating Predicting	Drawing a logical conclusion from presented information
Comparing	Contrasting Mapping Matching	Detecting correspondences between two ideas, objects, and the like
Explaining	Constructing models	Constructing a cause and effect model of a system

Level 2 – C2

Categories & Cognitive Processes	Alternative Names	Definition
Apply		Applying a procedure to a familiar task
Executing	Carrying out	Applying a procedure to a familiar task
Implementing	Using	Applying a procedure to an unfamiliar task

Level- 3 C3



Analyze		Break material into its constituent parts and determine how the parts relate to one another and to an overall structure or purpose
Differentiating	Discriminating Distinguishing Focusing Selecting	Distinguishing relevant from irrelevant parts or important from unimportant parts of presented material
Organizing	Finding coherence Integrating Outlining Parsing Structuring	Determining how elements fit or function within a structure
Attributing	Deconstructing	Determine a point of view, bias, values, or intent underlying presented material

LEVEL-4 C4

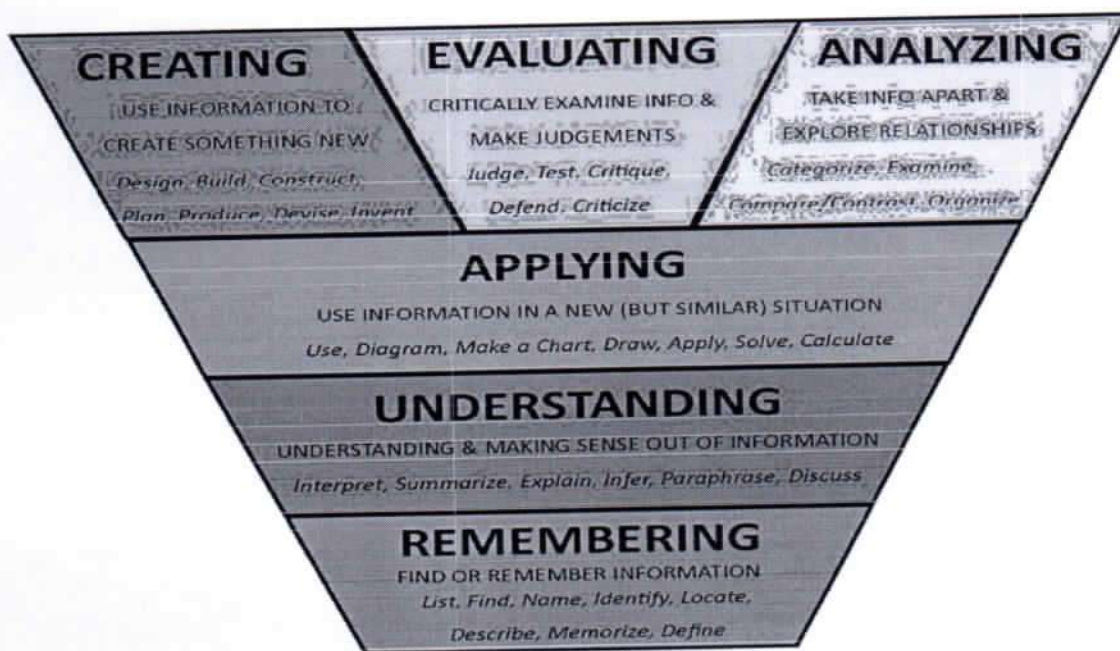
Evaluate		Make judgments based on criteria and standards
Checking	Coordinating Detecting Monitoring Testing	Detecting inconsistencies or fallacies within a process or product; determining whether a process or product has internal consistency; detecting the effectiveness of a procedure as it is being implemented
Critiquing	Judging	Detecting inconsistencies between a product and external criteria; determining whether a product has external consistency; detecting the appropriateness of a procedure for a given problem

Level 5 – C5

Categories & Cognitive Processes	Alternative Names	Definition
Create		Put elements together to form a coherent or functional whole; reorganize elements into a new pattern or structure
Generating	Hypothesizing	Coming up with alternative hypotheses based on criteria
Planning	Designing	Devising a procedure for accomplishing some task
Producing	Constructing	Inventing a product

Level-6 C6





Pictorial representation of Blooms Taxonomy

The Knowledge Dimension

Dimension	Definition
Factual Knowledge	The basic elements students must know to be acquainted with a discipline or solve problems in it
Conceptual Knowledge	The interrelationships among the basic elements within a larger structure that enable them to function together
Procedural Knowledge	How to do something, methods of inquiry, and criteria for using skills, algorithms, techniques, and methods
Met cognitive Knowledge	Knowledge of cognition in general as well as awareness and knowledge of one's own cognition

Cognitive Process 1: To Remember

Remembering consists of recognizing and recalling relevant information from long-term memory.

Verbs associated with this level:

Choose, define, describe, find, identify, label, list, locate, match, name, recall, recite, recognize, record, relate, retrieve, say, select, show, sort and tell

Cognitive Process 2: To understand

Understanding is the ability to make your own meaning from educational material such as reading and teacher explanations. The sub-skills for this process include interpreting, exemplifying, classifying, summarizing, inferring, comparing, and explaining.

Verbs associated with this level:

Categorize, clarify, classify, compare, conclude, construct, contrast, demonstrate, distinguish, explain, illustrate, interpret, match, paraphrase, predict, represent, reorganize, summarize, translate and understand

Cognitive Process 3: To apply

Applying refers to using a learned procedure either in a familiar or new situation.

Verbs associated with this level:

Apply, carry out, construct, develop, display, execute, illustrate, implement, model, solve and use

Cognitive process 4: To Analyze

To analyze is to break material into its constituent parts and determine how the parts relate to one another and to an overall structure or purpose. Students analyze by differentiating, organizing, and attributing.

Verbs associated with this level:

Analyze, ascertain, attribute, connect, deconstruct, determine, differentiate, discriminate, dissect, distinguish, divide, examine, experiment, focus, infer, inspect, integrate, investigate, organize, outline, reduce, solve (a problem) and test fo

Cognitive Process 5: To evaluate

To evaluate is to make judgments based on criteria and standards.

Verbs associated with this level:

Appraise, assess, award, check, conclude, convince, coordinate, criticize, critique, defend, detect, discriminate, evaluate, judge, justify, monitor, prioritize, rank, recommend, support, test, value

Cognitive Process 6: To Create

To create is to put elements together to form a coherent or functional whole; reorganize elements into a new pattern or structure; inventing a product. This skill involves putting things together to make something new. To accomplish creating tasks, learners generate, plan, and produce.

Verbs associated with this level:

Adapt, build, compose, construct, create, design, develop, elaborate, extend, formulate, generate, hypothesize, invent, make, modify, plan, produce, originate, refine, transform.



CO – PO AND CO – PSO MAPPING OF COURSES: SAMPLE

Mapping Factor (Correlation Level)

The role of CO-PO mapping will be assigned to the faculty as per hierarchy. The course in-charge is responsible for writing the necessary COs for their corresponding course after receiving the department's course (subject) allocation.. COs will be created utilizing the action verbs of the various learning levels., CO statements that are relevant to the skills, knowledge, and behavior that students will learn during the end of each course should be more specific and quantifiable.

After writing the CO statements, CO will be mapped with PO of the department. If the department is having more than one section in a year or the same course is available for more than one program of the same institute in a semester, the subject expert will be nominated as course coordinator of the corresponding course. The role of the course coordinator is to review the CO statements and the CO-PO mapping which has been done by course in-charge. The year wise coordinator has to consolidate the CO's of the respective year and maintain the documentation of the CO attainment level of the respective year courses as well as documentation of the individual students' extra-curricular and co-curricular activities. These details will hand over to the program coordinator in order to evaluate PO attainment of the individual student as well as individual course at the end of the 8th semester. The Program coordinator has to evaluate the PO attainment of individual student through direct and indirect method after the student completing their program. All these works have to be done under the guidance of Department Advisory Committee (DAC)

CO – PO mapping indicates to what extent a certain component (either assessment method to CO or CO to PO or PO to PEO & PSO are correlated to each other. Course correlation matrix shows the **Learning Relationship** (level of learning achieved) between COs and POs of a course. This matrix also strongly indicates whether the students are able to achieve the course outcomes/objectives. All the courses together must cover all the POs and PSOs. For a course we map the COs to POs through the CO-PO matrix and to PSOs through the CO-PSO matrix. The matrix can be used for any course and it is good method to evaluate a course syllabus. The various correlation levels are:

- * **3- indicates Substantial (high)** mapping (high contribution towards attainment)
- * **2- indicates Moderate** (medium) mapping (medium contribution towards attainment)
- * **1- indicates Slight (low)** mapping (some contribution towards attainment)
- * **“-” indicates there is no correlation.**

Procedure followed while assigning the values by Mapping COs to POs:

Judging the importance of the particular COs in relation to the POs.

- If the CO matches strongly with a particular PO criterion then Assign **3**.
- If it matches moderately then Assign **2**.
- If the match is low then Assign **1**.



- If there is no correlation between any CO with PO else mark with ‘-’ Symbol
- If an action verb used in a CO is repeated at multiple Blooms levels, then we need to judge which Blooms level is the best fit for that action verb the first five POs are purely of **technical** in nature, while the other POs are **non-technical**.
- Writing the COs, we need to restrict our self between Blooms Level 1 to Level 4. Again, if it is a programming course, restrict between Blooms Level 1 to Level 3 but for the other courses, we can go up to Blooms Level 4.
- For the laboratory courses, while composing COs, we need to restrict our self between Blooms Level 1 to Level 5.
- Only for Mini-project and Main project, you may extend up to Blooms Level 6 while composing COs.

Note: * The table given below gives information about the action verbs used in the POs and the nature of POs, stating whether the POs are technical or non-technical. we need to understand the intention of each POs and the Bloom’s level to which each of **POs** and the Blooms level to which each of these action verbs in the POs correlates to. Once you have understood the **POs** then you can write the COs for a course and see to what extent each of those COs correlate with the POs.



Table: Process for mapping the values for CO-PO Matrix

Type	POs	Action Verb(s) in POs	Bloom's Level(s) for POs	Blooms Level(s) for COs	Type	Thumb Rule		
Technical	PO1	Apply	L3	Blooms L1 to L4 for Theory Courses	Non Technical	PO7 If Blooms L1 Action Verbs of a CO -> Correlates any of PO7 to PO12 -> then Assign 1		
	PO2	Identify	L2					
		Formulate	L6					
		Review	L2					
	PO3	Design	L3,L6	Blooms L1 to L5 for Laboratory Courses		PO8	If Blooms L2 to L3 Action Verbs of a CO -> Correlates any of PO7 to PO12 -> then Assign 2	
		Develop	L3,L6			PO9		
	PO4	Analyze	L4			PO10	PO11	If Blooms L4 to L6 Action Verbs of a CO -> Correlates any of PO7 to PO12 -> then Assign 3
		Interpret	L2 , L3					
		Design	L6					
	PO5	Create	L6	Blooms L1 to L6 for Mini Project and Major Project		PO12		
		Select	L1 , L2 L6					
		Apply	L3					
	PO6	Apply	L3			Assess		
			L5					



CO-PO & PSO Mapping FOR CO-PO MATRIX

DEPARTMENT OF CIVIL ENGINEERING															
Course 6 Railway, Waterway and Airway Engineering (KCE 070)															
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO1-	PO11	PO12	PSO1	PSO2	PSO3
CO1	2	1	2	2	-	-	-	-	-	-	-	-	2	1	-
CO2	2	1	3	1	1	1	1	1	1	1	1	1	2	1	1
CO3	3	2	2	-	-	-	-	-	-	-	-	-	1	-	2
CO4	2	2	1	-	-	-	-	-	-	-	-	-	2	1	1
CO5	2	1	1	-	-	-	-	-	-	-	-	-	1	1	1

DEPARTMENT OF CIVIL ENGINEERING															
Course 1 Design of Steel Structures (KCE -075)															
CO-PO & PSO MAPPING															
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO1-	PO11	PO12	PSO1	PSO2	PSO3
CO1	2	2	2	2	-	-	-	-	-	-	-	-	2	2	-
CO2	3	3	2	1	-	-	-	1	2	2	1	2	3	-	1
CO3	2	1	2	1	-	-	-	-	-	-	-	-	3	-	1
CO4	3	2	1	1	-	-	-	-	-	1	-	-	-	-	1
CO5	2	3	2	-	-	1	-	-	-	-	-	-	-	1	-

DEPARTMENT OF CIVIL ENGINEERING															
Course Name- Renewable Energy Resources (KOE 074)															
CO-PO & PSO MAPPING															
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO1-	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	2	2	2	1	-	-	-	-	1	-	1	3	1	-
CO2	2	2	3	1	1	-	-	-	-	1	1	1	3	1	1
CO3	2	1	2	-	-	1	-	-	-	-	-	-	1	-	-
CO4	3	2	1	-	-	-	-	-	-	-	-	-	-	1	-
CO5	3	1	1	1	-	-	-	-	-	-	-	-	-	1	-

DEPARTMENT OF CIVIL ENGINEERING															
Course Name- Project Management and Enterpreneurship (KHU-802)															
CO-PO & PSO MAPPING															
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO1-	PO11	PO12	PSO1	PSO2	PSO3
CO1	1	1	1	1	-	-	1	1	-	2	-	-	1	1	-
CO2	1	1	1	1	-	-	1	-	-	1	1	-	1	-	-
CO3	1	1	1	-	-	-	-	-	-	1	1	-	-	-	-
CO4	1	1	-	-	-	-	1	1	-	1	-	-	-	1	-
CO5	1	1	-	-	-	-	-	-	-	1	-	-	-	-	-



DEPARTMENT OF CIVIL ENGINEERING															
Course Name - Engineering Mechanics (KCE-301)															
CO-PO & PSO MAPPING															
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	2	2	2	-	-	-	-	-	1	-	-	3	-	-
CO2	2	1	3	1	1	1	-	-	-	1	-	-	2	-	1
CO3	3	2	2	-	-	-	-	-	-	1	-	-	1	-	-
CO4	3	2	1	-	2	2	-	-	-	1	1	2	-	2	-
CO5	3	1	1	-	3	-	-	-	-	1	2	1	-	2	-

DEPARTMENT OF CIVIL ENGINEERING															
Course Name - Surveying and Geomatics (KCE-302)															
CO-PO & PSO MAPPING															
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	2	2	2	-	-	-	-	-	1	-	-	3	-	-
CO2	2	1	3	1	1	1	-	-	-	1	-	-	2	-	1
CO3	3	2	2	-	-	-	-	-	-	1	-	-	1	-	-
CO4	3	2	1	-	2	2	-	-	-	1	1	2	-	2	-
CO5	3	1	1	-	3	-	-	-	-	1	2	1	-	2	-

DEPARTMENT OF CIVIL ENGINEERING															
Course 2 Fluid Mechanics (KCE 303)															
CO-PO & PSO MAPPING															
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	2	1	2	2	-	-	-	-	-	-	-	-	2	1	-
CO2	2	3	3	1	1	1	1	1	1	1	1	1	2	1	1
CO3	3	1	2	-	-	-	-	-	-	-	-	-	1	-	-
CO4	2	3	2	-	-	-	-	-	-	-	-	-	-	1	2
CO5	1	1	1	-	-	-	-	-	-	-	-	-	2	1	2



DEPARTMENT OF CIVIL ENGINEERING															
Course 1 Energy Science (KOE043)															
CO-PO & PSO MAPPING															
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	2	3	2	2	-	-	-	-	-	-	-	-	2	1	2
CO2	2	1	2	1	-	-	-	-	-	-	-	-	2	1	1
CO3	3	3	2	-	1	1	1	1	1	1	1	1	1	-	-
CO4	2	1	1	1	-	-	-	-	-	-	-	-	-	1	2
CO5	3	2	2	1	-	-	-	-	-	-	-	-	2	1	-

DEPARTMENT OF CIVIL ENGINEERING															
Course Materials, Testing & Construction Practices (KCE 401)															
CO-PO & PSO MAPPING															
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	2	2	2	-	-	-	-	-	1	-	-	3	-	-
CO2	2	1	3	1	1	1	-	-	-	1	-	-	2	-	1
CO3	3	2	2	-	-	-	-	-	-	1	-	-	1	-	-
CO4	3	2	1	-	2	2	-	-	-	1	1	2	-	2	-
CO5	3	1	1	-	3	-	-	-	-	1	2	1	-	2	-

DEPARTMENT OF CIVIL ENGINEERING															
Course 3 Hydraulic Engineering & Machine (KCE 403)															
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	2	2	2	2	-	-	-	-	-	-	-	-	2	1	2
CO2	2	1	3	1	1	1	1	1	1	1	1	1	2	1	1
CO3	3	2	2	-	-	-	-	-	-	-	-	-	1	1	-
CO4	2	1	1	-	-	-	-	-	-	-	-	-	-	1	2
CO5	3	2	1	-	-	-	-	-	-	-	-	-	2	1	-

DEPARTMENT OF CIVIL ENGINEERING															
Course 4 Geotechnical Engineering (KCE 501)															
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	2	2	2	2	-	-	-	-	-	-	-	-	2	1	-
CO2	2	2	1	1	1	1	1	1	1	1	1	1	2	1	1
CO3	3	1	2	-	-	-	-	-	-	-	-	-	1	2	-
CO4	2	1	1	-	-	-	-	-	-	-	-	-	-	1	2
CO5	2	2	1	-	-	-	-	-	-	-	-	-	2	1	-



DEPARTMENT OF CIVIL ENGINEERING															
Course 3 Structure Analysis (KCE 502)															
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	2	1	2	-	-	-	-	-	-	-	-	2	2	-
CO2	3	2	1	2	-	-	-	1	1	1	1	1	3	1	1
CO3	3	1	2	-	-	-	-	-	-	-	-	-	3	1	-
CO4	3	2	1	-	-	-	-	-	-	1	-	-	-	1	-
CO5	3	2	2	-	-	1	-	-	-	-	-	-	-	1	-

DEPARTMENT OF CIVIL ENGINEERING															
Course 3 QUANTITY ESTIMATION AND CONSTRUCTION MANAGEMENT (KCE 503)															
CO-PO & PSO MAPPING															
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	2	2	3	-	-	1	-	-	-	-	1	3	1	-
CO2	2	2	3	2	1	-	-	-	1	-	-	1	3	1	1
CO3	3	1	1	1	-	-	-	-	-	-	-	-	1	-	-
CO4	3	3	3	-	1	1	-	1	-	-	-	-	-	1	-
CO5	3	2	1	-	-	-	-	-	-	-	-	-	-	1	-

DEPARTMENT OF CIVIL ENGINEERING															
Course 2 Concrete Technology (KCE 051)															
CO-PO & PSO MAPPING															
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	2	1	2	-	-	-	-	-	-	-	-	2	2	-
CO2	3	2	1	2	-	-	-	1	1	1	1	1	3	1	1
CO3	3	1	2	-	-	-	-	-	-	-	-	-	3	1	-
CO4	3	2	1	-	-	-	-	-	-	1	-	-	-	1	-
CO5	3	2	2	-	-	1	-	-	-	-	-	-	-	1	-

DEPARTMENT OF CIVIL ENGINEERING															
Course Name- Engineering Hydrology (KCE 055)															
CO-PO & PSO MAPPING															
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	2	2	3	-	-	1	-	-	-	-	1	3	1	-
CO2	2	2	3	2	1	-	-	-	1	-	-	1	3	1	1
CO3	3	1	1	1	-	-	-	-	-	-	-	-	1	-	-
CO4	3	3	3	-	1	1	-	1	-	-	-	-	-	1	-
CO5	3	2	1	-	-	-	-	-	-	-	-	-	-	1	-

DEPARTMENT OF CIVIL ENGINEERING															
Course 4 Design of Concrete Structures (KCE 601)															
CO-PO & PSO MAPPING															
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	2	2	2	-	-	-	-	-	-	-	1	2	2	-
CO2	3	2	1	2	-	-	-	1	1	2	1	1	3	1	1
CO3	3	1	2	-	-	-	-	-	-	-	-	-	3	1	-
CO4	3	2	2	-	-	-	-	-	-	1	-	-	-	1	-
CO5	3	3	2	-	-	1	-	-	-	-	-	-	-	1	-

DEPARTMENT OF CIVIL ENGINEERING															
Course 4 TRANSPORTATION ENGINEERING (KCE 602)															
CO-PO & PSO MAPPING															
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	3	3	2	1	1	2	-	-	1	-	1	3	1	1
CO2	2	2	2	1	-	1	1	-	-	1	1	1	2	1	-
CO3	2	1	2	-	-	-	1	-	-	1	-	-	1	-	-
CO4	3	2	1	2	1	1	1	1	-	1	1	-	1	-	-
CO5	2	1	1	-	-	-	1	-	-	1	-	-	1	-	-

DEPARTMENT OF CIVIL ENGINEERING															
Course Name- Environmental Engineering (KCE-603)															
CO-PO & PSO MAPPING															
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO1-	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	3	3	2	1	1	2	-	-	1	-	1	3	1	1
CO2	2	2	2	1	-	1	1	-	-	1	1	1	2	1	-
CO3	2	1	2	-	-	-	1	-	-	1	-	-	1	-	-
CO4	3	2	1	2	1	1	1	1	-	1	1	-	1	-	-
CO5	2	1	1	-	-	-	1	-	-	1	-	-	1	-	-

DEPARTMENT OF CIVIL ENGINEERING															
Course 5 Foundation Design (KCE 064)															
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO1-	PO11	PO12	PSO1	PSO2	PSO3
CO1	2	1	2	2	-	-	-	-	-	-	-	-	2	1	-
CO2	3	2	2	1	1	1	1	1	1	1	1	1	2	1	1
CO3	2	1	2	-	-	-	-	-	-	-	-	-	1	2	-
CO4	3	2	1	-	-	-	-	-	-	-	-	-	2	1	2
CO5	2	2	1	-	-	-	-	-	-	-	-	-	1	1	2

DEPARTMENT OF CIVIL ENGINEERING															
Course Name- GIS and Remote Sensing (KOE-066)															
CO-PO & PSO MAPPING															
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO1-	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	2	2	2	-	1	1	-	-	1	-	-	1	1	-
CO2	3	1	3	1	-	1	1	-	1	1	-	-	1	1	1
CO3	2	2	2	-	2	1	1	-	-	1	-	-	1	-	-
CO4	3	2	1	2	2	2	1	-	1	1	1	1	2	3	-
CO5	3	1	2	-	2	2	1	-	1	1	-	2	-	2	-



Attainment of Course Outcomes

In the Outcome Based Education (OBE), assessment is done through one or more than one processes, carried out by the department, that identify, collect, and prepare data to evaluate the achievement of course outcomes (CO's).

The process for finding the attainment of Course outcomes uses various tools/methods. These methods are classified into two types:

Assessment Methodology (Direct and Indirect)

Direct methods:

Direct methods display the student's knowledge and skills from their performance in the class assignment test (It is a metric used to continuously assess the student's understanding capabilities) , internal assessment tests [the Internal Assessment marks in a theory paper shall be based on two tests, sessional test(mid-1) & pre university test (PUT) mid-2], End semester examinations (theory or practical), seminars, laboratory assignments/experiments (it is a qualitative performance assessment tool designed to assess student's practical knowledge and problem solving skills), mini/major projects, add on courses, certification, presentations (as per the requirement) etc. These methods provide a sampling of what students know and/or can do and provide strong evidence of student learning. Various methods used in assessment process that periodically documents and demonstrates the degree to which the Course Outcomes are attained.

Indirect methods:

Indirect methods such as course exit survey/assignments of course outcomes by feedback, assignments of mini/major project by external experts, faculty feedback, examiner feedback & others survey to reflect on student's learning. They are used to assess opinions or thoughts about the graduate's knowledge or skills.

Collect variety of information about course outcomes from the students after learning entire course.

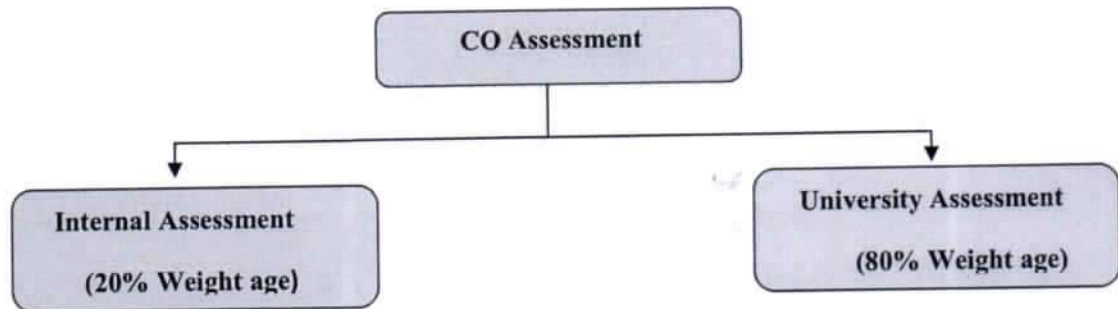
Rubrics are used for both formative and summative assessment of students. Same rubric is used for assessing an outcome so that the faculty is able to assess student progress and maintain the record of the same for each student.

ASSESSMENT PROCESS

Assessment Process for CO Attainment:

For the evaluation and assessment of CO's and PO's, rubrics are used. The rubrics considered here are given below:

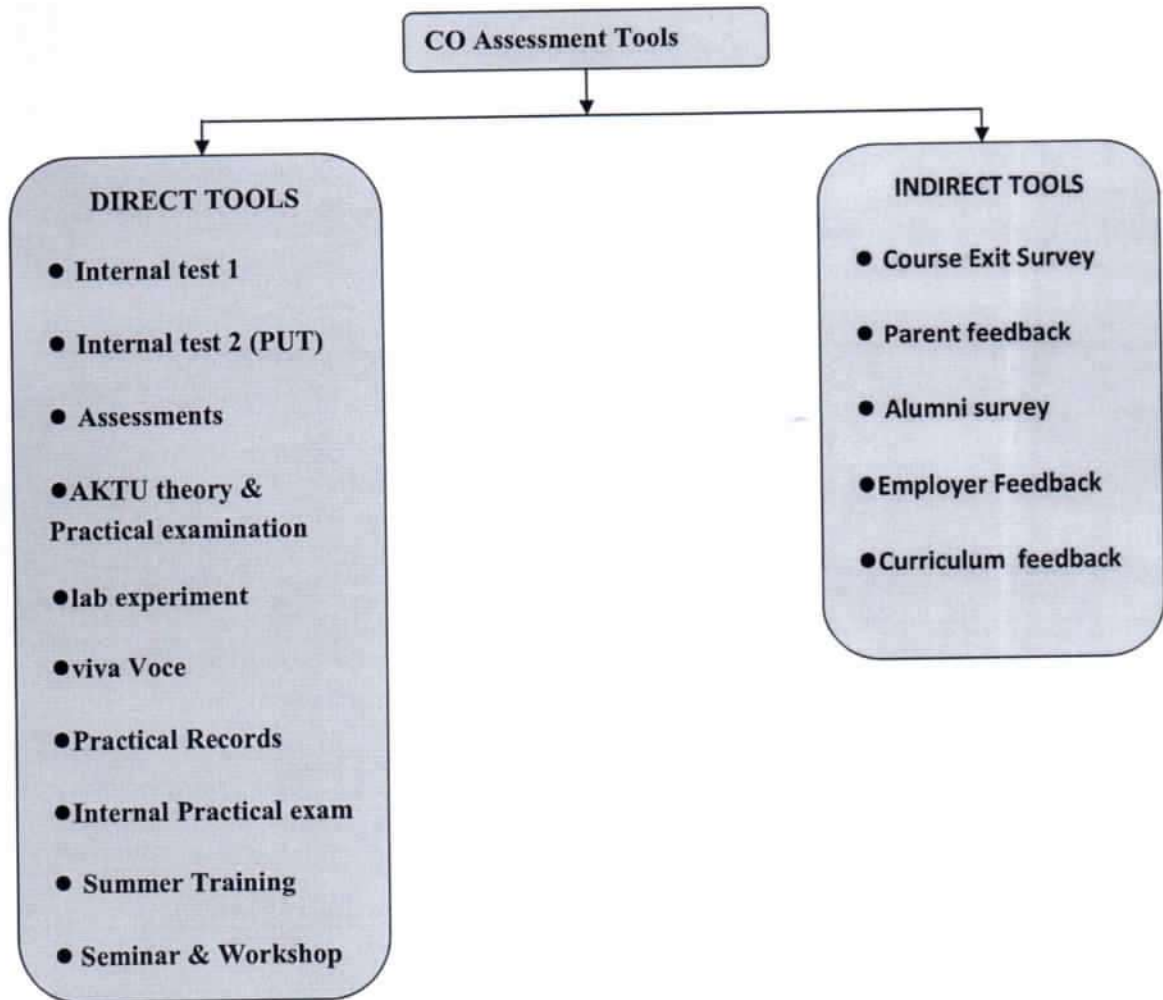
CO Assessment Rubrics:



Course Outcome is evaluated based on the performance of students in internal assessments and in university examination of a course. Internal assessment contributes 20% and university assessment contributes 80% to the total attainment of a CO.

CO Assessment Tools

The description of Assessment tools used for the evaluation of program outcomes is given in Table below. The various assessment tools used to evaluate COs and the frequency with which the assessment processes are carried out are listed in this table. In each course, the level of attainment of each CO is compared with the predefined targets, if it is not, the course coordinator takes necessary steps for the improvement to reach the target. With the help of CO against PO/PSO mapping, the PO/PSO attainment is calculated by program coordinator. Assessment Tools are of two types' direct tools and indirect tools. Which are described below?



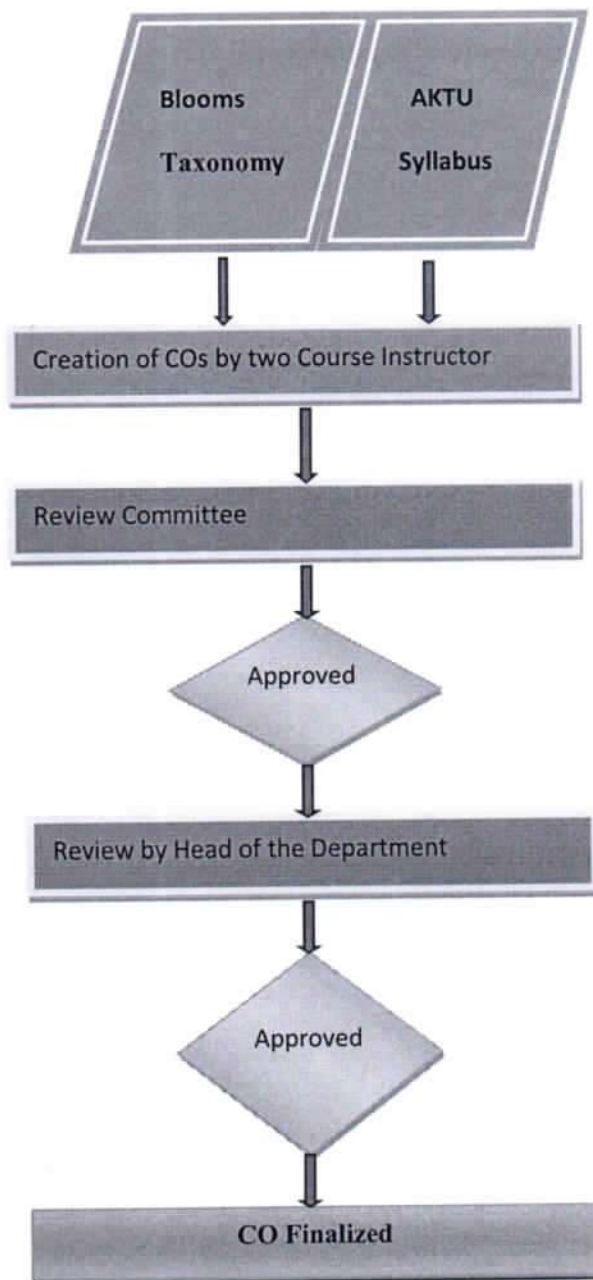
Assessment process for calculating the attainment of POs and PSOs:

Assessment Type	Assessment method	weight age	Assessment Period	Assessment and Reviewed By
Direct	Assessment tool based on Subject nature	80% (80% of AKTU Examination + 20% of the Assessment tools)	Once per Semester	Department Advisory committee
	AKTU Examination		Once per Semester	
Indirect	Current Passing out Students Survey	20%	8 th semester	Department Advisory committee
	Recruiters Survey		Every Placement activity	
	Alumni Survey		Once per Year	

Assessment Process for Evaluation of Course Outcomes:

Assessment tools and its frequency, the responsible authority to collect the data and its relevant COs, are tabulated as follows:

Fig.



Assessment Method & Attainment Level :

Step 1: Obtain Course Outcome.

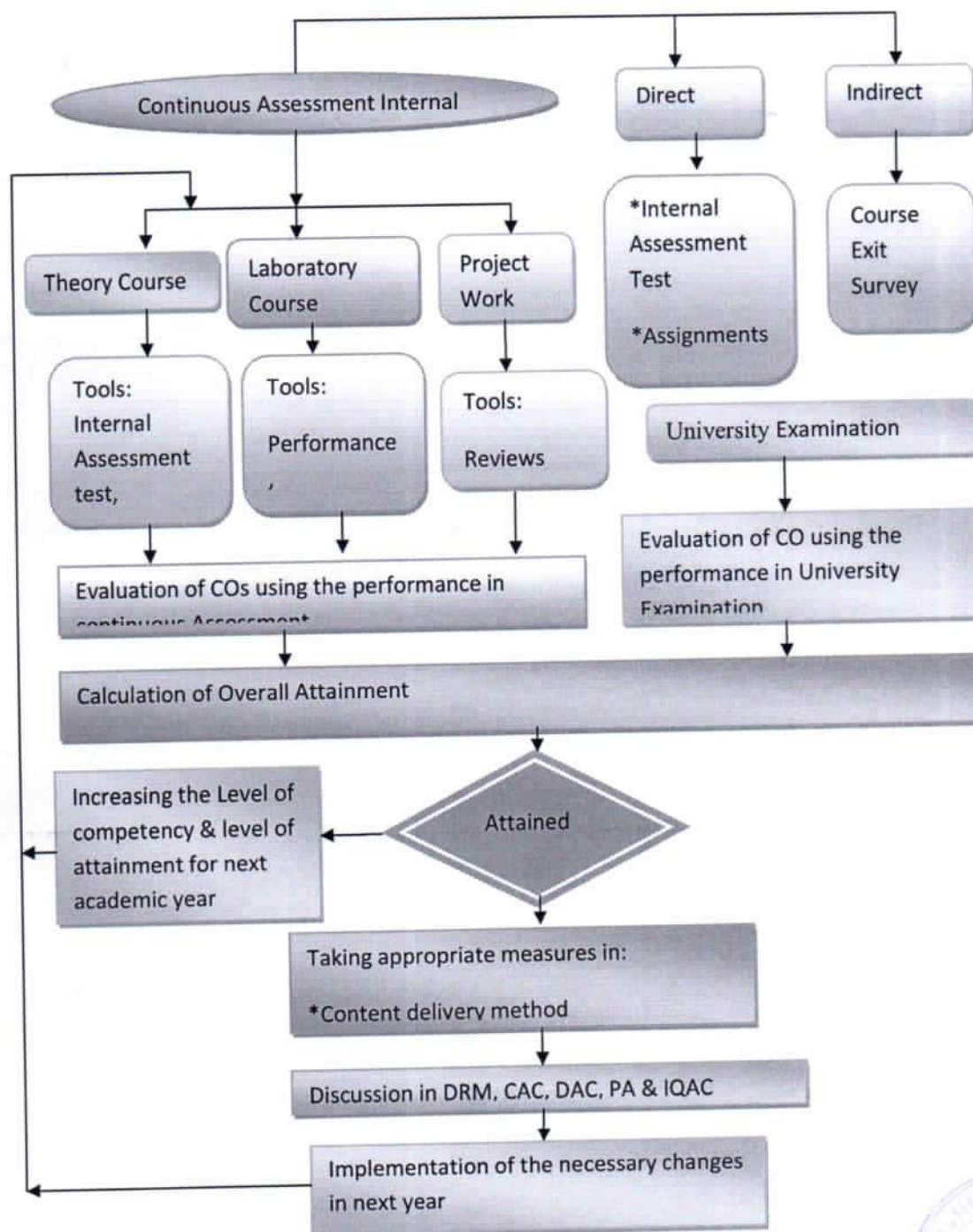
Step 2: Mapping of CO with PO.

Step 3: Setting weight- age for CO assessment.

Step 4: COs measurement through assessment.

Step 5: Obtain PO attainment table through direct and indirect method.

Process for CO Attainment: Fig. 1



Methodology for Evaluating Course Outcomes (COs) Internal

Concurrent Evaluation Criteria				
Pattern	Nature of Course Full / Half Credit	Concurrent Evaluation	Nature of Exam/Assignments/Others	Converted Marks
1. B. Tech Odd/Even (2021- 22)	1- Generic Core Courses (Full credit)	Internal Test 1 (sessional)	Test 1 Marks- 40 (CO1 & CO2- 20 Mark each) Test 2 (PUT) Marks - 60 (CO ₃ , CO4 & CO5 - 20 Marks each)	Test 1: CO1 & CO2 (Objective) = 20 (10 marks each)
		&		Test 2 : CO3,CO4 & CO5 (Descriptive) = 30 (10 marks each)
2. MBA- Odd/Even (2021- 22)	2- Generic Elective courses (Half Credit)	Internal Test 2 (PUT)		
		Assignments (Unit wise)	Unit-1 Unit-2 Unit-3 Unit-4 Unit-5	25 (5 Marks Each)
		*Others	Seminar/Presentation/Project (Mini/Major)/Viva/Quiz/Work shop etc.	25 (5 Marks Each)
			Total Marks (Each COs)-	100

Fig .

* Presentation / Case Study / Role Play/ Industrial Visit/Field Visit/ Seminar/Guest Lecture /MCQs/Research paper writing/ Viva etc.

Methodology for Evaluating Course Outcomes (COs) External

COMPUTATION OF SGPA, YGPA & CGPA

The Dr. A.P.J. Abdul Kalam Technical University (APJAKTU), Lucknow adopts absolute grading system wherein the marks are converted to grades and every semester results will be declared with semester grade point average (SGPA). Yearly Grade Point Average (YGPA) shall be calculated at each year by calculating from the formula given in section 14.4 (b) of an academic year. The Cumulative Grade Point Average (CGPA) shall be calculated at the end of last semester of the program. The grading system is with the following letter grades and grade points scale as given below:

Score (Marks) Range	(AKTU Guidelines) Letter Grade	Level	Grade Points
≥ 90	A ⁺	Outstanding	10
<90	A	Excellent	9
<80, ≥ 70	B ⁺	Very Good	8
<70, ≥ 60	B	Good	7
<60, ≥ 50	C	Above Average	6
<50, ≥ 45	D	Average	5
<45, ≥ 40	E	Poor	4
<40	F	Fail	00



CO Attainment for End Semester Examination (AKTU 80%)

Course : B.Tech
Course Code : KCE 303
Name of the Faculty : Abhishek Pandey

Semester: 3rd

Academic Year: 2021-2022
Course Name : Fluid Mechanics
Section : A

S.N.	University Roll No.	NAME OF STUDENT	Internal Marks (50) Marks obtained	External Marks Marks obtained	Total Marks 150	Percent age	Grade Point Obtained	Rationale :																																				
								1- Since question wise students marks are not provided by affiliating university these marks are kept separate. If results are available with question wise marks COs wise analysis might have been done . 2- As we expect that each student must at least get 40% marks and he/she may secure with pass percentage.																																				
1	1842800024	SATISH CHANDRA	40	33	40	40	D	<table border="1"> <thead> <tr> <th>% of Marks Secured in a Subject / Course</th> <th>Letter Grade (AKTU Guidelines)</th> <th>LEVEL</th> <th>Grade Points</th> </tr> </thead> <tbody> <tr> <td>≥ 90</td> <td>A+</td> <td>(Outstanding)</td> <td>10</td> </tr> <tr> <td>< 90</td> <td>A</td> <td>(Excellent)</td> <td>9</td> </tr> <tr> <td>< 80, ≥ 70</td> <td>B+</td> <td>(Very Good)</td> <td>8</td> </tr> <tr> <td>< 70, ≥ 60</td> <td>B</td> <td>(Good)</td> <td>7</td> </tr> <tr> <td>< 60, ≥ 50</td> <td>C</td> <td>(Above Average)</td> <td>6</td> </tr> <tr> <td>< 50, ≥ 45</td> <td>D</td> <td>(Average)</td> <td>5</td> </tr> <tr> <td>< 45, ≥ 40</td> <td>E</td> <td>(Poor)</td> <td>4</td> </tr> <tr> <td>< 40</td> <td>F</td> <td>(Fail)</td> <td>0</td> </tr> </tbody> </table>	% of Marks Secured in a Subject / Course	Letter Grade (AKTU Guidelines)	LEVEL	Grade Points	≥ 90	A+	(Outstanding)	10	< 90	A	(Excellent)	9	< 80, ≥ 70	B+	(Very Good)	8	< 70, ≥ 60	B	(Good)	7	< 60, ≥ 50	C	(Above Average)	6	< 50, ≥ 45	D	(Average)	5	< 45, ≥ 40	E	(Poor)	4	< 40	F	(Fail)	0
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< 50, ≥ 45	D	(Average)	5																																									
< 45, ≥ 40	E	(Poor)	4																																									
< 40	F	(Fail)	0																																									
2	200428000001	JAAD SINGH	45	31	56	56	C																																					
3	200428000002	JANIPMA YADAV	46	31	61	61	C																																					
4	200428000003	HARISH CHANDRA HARISH CHANDRA	45	28	61	61	D																																					
5	200428000005	PRASHANT TRIPATHI	40	48	69	69	C																																					
6	200428000006	SACHIN KUMAR GAUTAM	41	30	71	71	D																																					
7	200428000007	SURABH PATEL	41	31	71	71	D																																					
8	200428000008	SHIVAM	41	32	73	73	F																																					
9	200428000009	SHUBHAM KUMAR SINGH	42	30	72	72	D																																					
10	200428000010	SINGH BHAVESH KUMAR KALUSHAL	42	30	67	67	B																																					
11	2104280009001	AKASH CHAUHAN	44	33	71	71	F																																					
12	2104280009002	DURGESH KUMAR MALURIYA	43	33	68	68	D																																					
13	2104280009004	PANKAJ KUMAR	40	33	71	71	F																																					
14	2104280009005	SANDEEP CHAUHAN	40	30	70	70	D																																					
15	2104280009006	SANDEEP KUMAR	41	1	41	41	F																																					
Total Number Of Student						15																																						
Number of Students Secure More Than 50 % Marks						14																																						
Achieved class overall performance %						93.33333333																																						
Attainment Level						3																																						
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Faculty Sign.

Head of Department Civil Engineering



Direct Assessment of COs, POs & PSOs:

(Quality / Relevance of Assessment Process)

Assessment Process for Evaluation of Theory Courses

Assessment Tools and its frequency, the responsible authority to collect the data and its relevant COs, are tabulated in tables.

Assessment Tools	Assessment Period	Assessed By	Reviewed By	Mapping with COs
Class Test -1 Class Test -2 (Pre University Test) (PUT)	Once Per Semester	Course Instructor	Department Advisory committee (DAC)	Relevant CO
Assignments-1	Once Per Semester	Course Instructor	Department Advisory committee (DAC)	CO1
Assignments-2				CO2
Assignments-3				CO3
Assignments-4				CO4
Assignments-5				CO5
Quizzes	Once Per Semester	Course Instructor	Department Advisory committee (DAC)	All COs
University Semester Exam	Once Per Semester	Course Instructor	Department Advisory committee (DAC)	All COs

Assessment Tools	Assessment Period	Assessed By	Reviewed By	Mapping with COs
Lab Experiment	Throughout Semester	Course Instructor	Department Advisory committee (DAC)	All COs
Viva Voce	Throughout Semester	Course Instructor		All COs
Practical Record	Throughout Semester	Course Instructor		All COs
Internal Practical Exam	Once Per Semester	Internal Examiners		All COs
University Semester Exam	Once Per Semester	Internal Examiners appointed by the department & External Examiners Appointed by AKTU		All COs

Assessment Process for Evaluation of Laboratory Courses

Assessment Tools		Assessed Period	Assessed By	Reviewed By	Mapping with COs
Topic Approval		7 th Sem		Department Advisory committee (DAC)	All COs
Progress Presentation 1	Presentation Skill	7 th Sem	Project Review committee		All COs
	Viva Voce				
	Implementation report				
	Faculty Interaction				
Progress Presentation 2	Presentation Skill	7 th Sem			All COs
	Viva Voce				
	Implementation report				
	Faculty Interaction				
Internal Final Presentation	Presentation Skill	8 th Sem			All COs
	Viva Voce				
	Implementation report				
	Faculty Interaction				
External Presentation	Presentation Skill	8 th Sem	Internal Examiners appointed by the department & External Examiners Appointed by AKTU		All COs
	Viva Voce				
	Implementation report				
	Faculty Interaction				

Assessment Process for Evaluation of Project Courses



Assessment Process for Evaluation of Seminar Courses & Industrial Training Courses

Assessment Tools		Assessed Period	Assessed By	Reviewed By	Mapping with COs
External Presentation	Presentation Skill	Once Per Semester	Seminar Review committee	Department Advisory committee (DAC)	All COs
	Viva Voce				
	Implementation report				
	Faculty Interaction				

Assessment Process for General Proficiency Course

Assessment Tools	Assessed Period	Assessed By	Reviewed By	Mapping with COs
Sports Event	Throughout the program	Sports Committee	Department Advisory Committee (DAC)	CO1
Cultural Events		Cultural Committee		CO2
Technical Events		Technical Committee		CO3
Societal & Environmental Events		Societal & Environmental Committee		CO4
Discipline		Proctorial Board		CO5



CO Attainment Target Level Methods:

There can be several methods. e.g.

- Same target is identified for all the COs of the course i.e. target can be class average marks $\geq 60\%$ marks.
- Target are same for all COs and are set in terms of performance level of different groups of students. While this method classifies students in to different categories, it does not provide any specific clues to plans for improvements of quality of learning. e.g.

Target			
(% of students getting < 50)	(% of students getting >50 and < 65)	(% of students getting >65 and < 80)	(% of students getting ≥ 80)
10	40	40	10

- Targets are set for each CO of a course separately. It does not directly indicate the distribution of performance among the students. However, it has the advantage of finding out the difficulty of specific COs. Fig.

COs	Target (Class Average)
CO1	70%
CO2	80%
CO3	75%
CO4	65%
CO5	80%

Target Level :

- Targets are quantized in to certain level, 3 being the most common number of levels.
- Level 3: If 70% students scoring $\geq 60\%$ of Marks allocated to CO
- Level 2: If 60% student scoring $\geq 60\%$ of Marks in CO
- Level 1: If 50% student scoring $\geq 60\%$ of Marks in CO
- Level 0: If < 50% student scoring $\geq 60\%$ of Marks in CO

Aim is to attain Level 3

CO Attainment Calculation:

The course outcomes for all the courses are calculated in terms of percentage using the formula.

$$\text{COx in \%} = \frac{\text{Marks obtained by the students in COx}}{\text{Maximum marks allotted in COx}} \times 100$$

Where $x = [1 \text{ to } N]$, $N = \text{Number of COs}$

Each course outcome is calculated for all the students based on marks obtained by the students.

$$\text{COx Attainment in \%} = \left[\frac{\text{No. of Students scored } \geq 70 \text{ of Marks in COx}}{\text{Total No. of students}} \times 100 \right]$$

Where $x = [1 \text{ to } N]$, $N = \text{Number of COs}$

CO Attainment Level is defined based on the following criteria:

Fig.

Assessment Method	COs Attainment Level	
Internal Assessment	Level 3	If 70% students scoring $\geq 70\%$ of Marks in COs
	Level 2	If 60% student scoring $\geq 70\%$ of Marks in COs
	Level 1	If 50% student scoring $\geq 70\%$ of Marks in COs

After calculating the attainment level of each COs from the performance of Internal Assessment Test 1 & 2, the attainment level of Internal Assessment Test is calculated with ratio of sum of all the COs attained by total number of COs as shown below:

$$\text{IAT Attainment Level} = \frac{\text{Sum of all COs attained by students}}{\text{Total Number of COs}}$$

Where IAT = Internal Assessment Test

IAT is calculated as follows:

$$\text{E.g. Internal Assessment Test} = \frac{\text{CO1} + \text{CO2} + \text{CO3} + \text{CO4}}{5}$$

Based on university grade, the attainment level of COs is calculated. The attainment level is decided on the following criteria.

Assessment Method	Cox Attainment Level	
University (External) Assessment	Level 3	If 60% student scoring \geq 50% of Marks in University Exam
	Level 2	If 50% student scoring \geq 50% of Marks in University Exam
	Level 1	If 40% student scoring \geq 50% of Marks in University Exam

The university attainment level is calculated as follows

$$\text{Over all CO Attainment } \mathbf{Direct} = \left(\frac{\sum_{i=1}^n \text{COI}}{n} \times 0.2 \right) + (\text{UA} \times 0.8)$$

(Where n = Number of course outcome)

$$\mathbf{Over\ all\ Attainment} = \frac{(\text{DTA} + \text{UA}) + \text{IDA}}{2}$$

(Where UA = University Attainment level)

(DTA= Direct Attainment level, IDA = Indirect attainment Level)

CO ATTAINMENT: SAMPLE(FLUID MECHANICS)

KASHI INSTITUTE OF TECHNOLOGY														
DEPARTMENT OF CIVIL ENGINEERING														
COURSE OUTCOMES ATTAINMENTS BASED ON DIRECT ASSESSMENT TOOLS (INTERNAL 20%)														
INTERNAL TEST (IT), ASSIGNMENTS (A) & OTHER (O) (QUIZ / SEMINAR / PROJECT / LAB EXP./WORKSHOP) MARKS														
Course : B.Tech					Semester: 3rd					Academic Year: 2021-2022				
Course Code : KCE 303										Course Name : Fluid Mechanics				
Name of the Faculty : Abhinav Pandey														

S. No.	Roll No.	TEST-1 (OBJECTIVE)						TEST-2 (DESCRIPTIVE)												TOTAL CO1 %	TOTAL CO2 %	% CO1	TOTAL CO3 %	% CO2	TOTAL CO4 %	% CO3	TOTAL CO5 %	% CO4		
		CO1			CO2			CO3			CO4			CO5																
		IT	A	O	IT	A	O	Original Marks	PUT	A	O	Original Marks	PUT	A	O	Original Marks	PUT	A	O											
1	184280024	6	3	4	7	5	2	16	7	3	2	15	7	3	3	18	7	3	2	13	65	15	75	12	60	13	65	11	60	
2	20042800001	6	4	4	5	4	18	9	4	4	19	8	3	3	18	8	4	4	16	80	17	85	17	85	14	70	18	80		
3	20042800002	6	4	5	10	5	19	9	5	5	15	8	5	5	18	9	3	5	17	85	18	90	19	95	16	80	17	85		
4	20042800003	6	5	2	6	2	18	7	4	3	17	8	3	3	16	9	4	2	15	75	11	55	14	70	15	75	15	75		
5	20042800005	6	5	3	6	2	15	7	4	3	15	7	4	2	16	8	2	3	16	80	15	65	14	70	15	65	13	60		
6	20042800006	6	4	3	6	4	16	8	4	4	16	8	3	3	17	6	3	2	15	75	15	75	16	80	14	70	11	55		
7	20042800007	6	4	3	6	4	16	7	3	4	16	8.5	3	3	15	6	3	4	15	75	16	80	14	70	14.5	72.5	13	65		
8	20042800008	6	3	5	6	2	19	8	3	4	16	8	3	3	16	9	4	4	16	80	15	75	13	75	16	80	17	85		
9	20042800009	6	3	5	10	5	17	8	2	2	17	6	3	5	17	9	4	4	16	80	20	100	12	60	14	70	17	85		
10	20042800010	10	5	3	4	3	17	7	4	5	18	6	3	3	18	6	3	5	16	80	18	90	14	70	12	60	14	70		
11	21042800001	6	3	4	4	3	16	7	5	3	15	8	4	2	19	7	3	3	15	75	13	65	13	75	14	70	13	65		
12	21042800002	6	4	3	6	3	16	6	2	3	16	7	4	4	18	7	4	4	15	75	16	80	11	55	15	75	15	75		
13	21042800004	6	4	5	6	4	18	6	3	3	11	9	3	4	17	8	3	4	17	85	13	65	12	60	16	80	15	75		
14	21042800003	6	4	3	6	4	18	7	2	4	12	7	5	5	17	7	3	4	15	75	16	80	13	65	17	85	14	70		
15	21042800006	6	4	5	10	5	18	8	2	5	18	8	4	4	16	7	4	3	15	75	20	100	13	75	14	70	14	70		
		Total number of Students																				15		15		15		15		15
		Number of Student Secured >= 70% Marks																				14		10		12		10		
		% of Students Attained Attainment Level																				93		67		80		67		

17 70% Students Scoring >= 70% Marks
 ATTAINMENT LEVEL 3
 17 60% Students Scoring >= 70% Marks
 ATTAINMENT LEVEL 2
 17 50% Students Scoring >= 70% Marks
 ATTAINMENT LEVEL 1

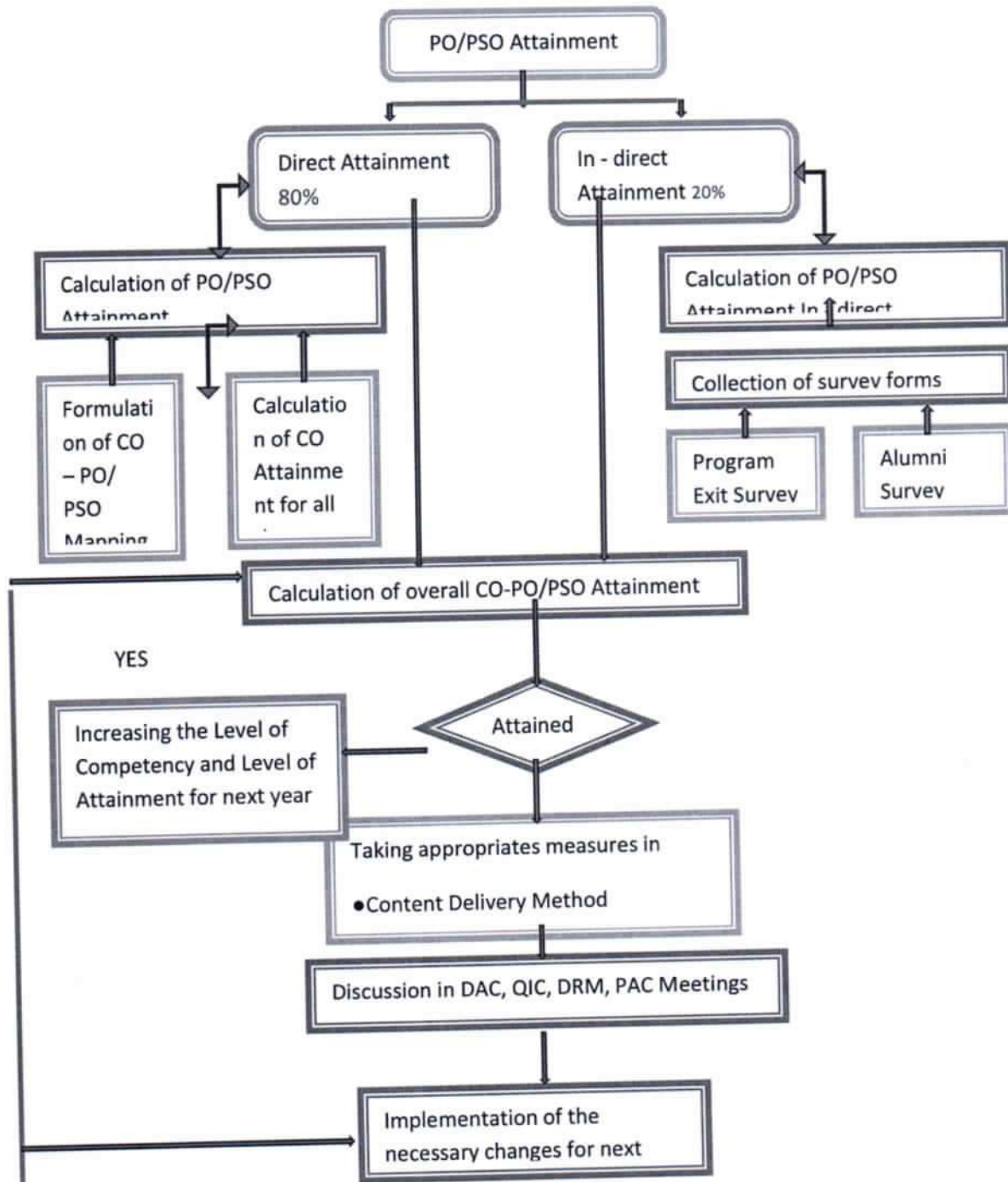
CO Attainment			
S.R.	CO NO.	ATM Level	CO Attainment %
1	CO1	3	73.33
2	CO2	3	66.67
3	CO3	3	66.67
4	CO4	3	66.67
5	CO5	3	66.67
AVG		2.40	74.67

Signature of faculty

Head of the Department
Applied Science and Humanities



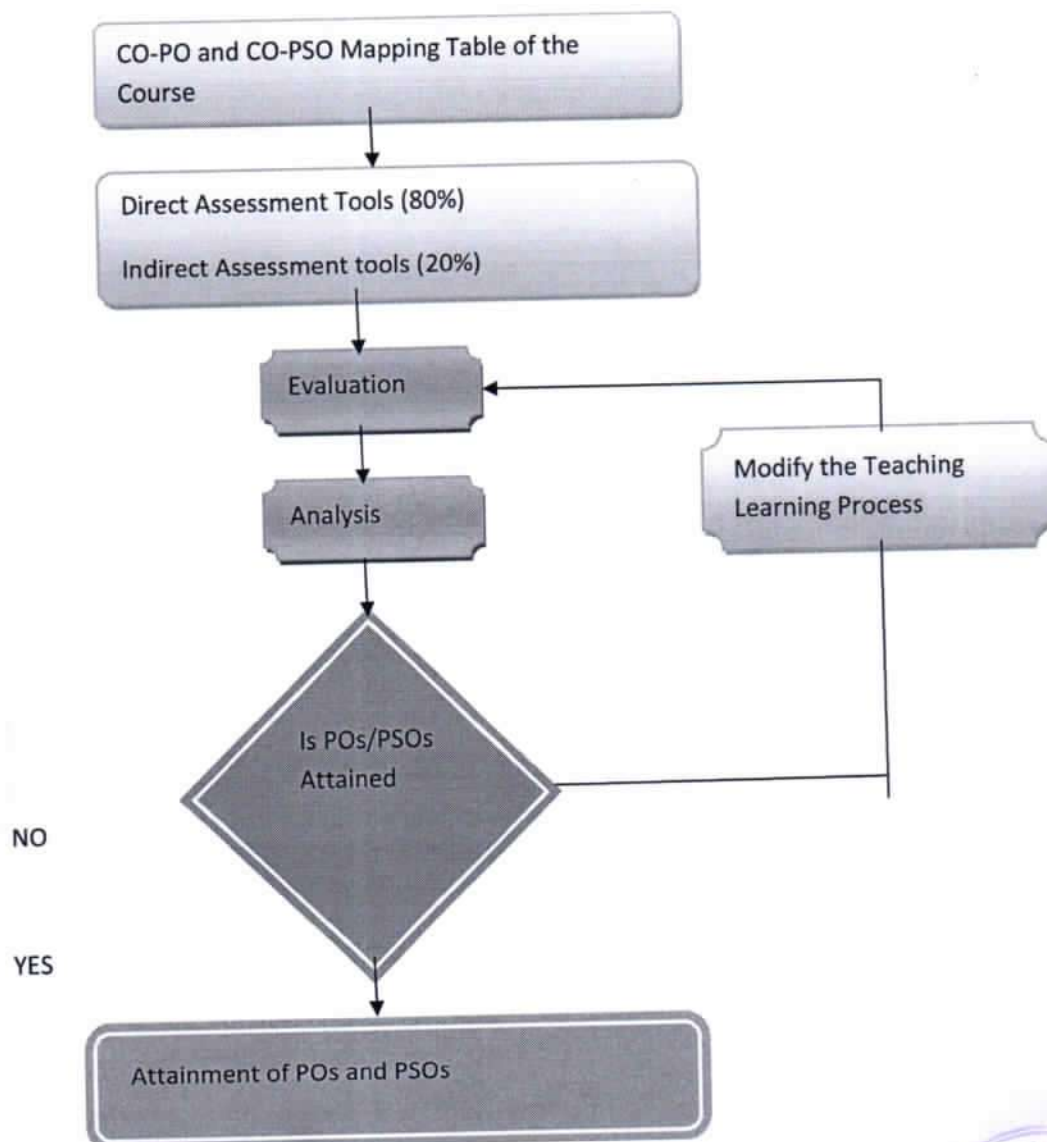
Process for PO/PSO Attainment:



Assessment tools and processes used for measuring the Attainment of each of the Program Outcomes (POs) and Program Specific Outcomes (PSOs):

Evaluation of attainment of POs and PSOs is based on direct and indirect assessment tools. Direct assessment of POs and PSOs is based on student's performance in continuous assessment and university examination. Indirect assessment is based on Program Exit Survey (Theory & Practical). The various direct and indirect tools and its frequency, the responsible authority to collect data for assessing the attainment of each POs and PSOs are given below table.

Fig.



Course level PO & PSO Attainment Calculation:

The PO & PSO attainment for the course is calculated using following formula

PO Attainment of Course (X)

$$= \text{CO Attainment \% of Course } (X) \times \text{PO}_y \text{ mapping value of course}(x)/100$$

PO Attainment Level of Course (X)

$$= (\text{weighted Average Value of PO} \times \text{CO Attainment Average}) / 3$$

PSO Attainment of Course (X)

$$= \text{CO Attainment \% of Course } (X) \times \text{PSO}_y \text{ mapping value of course}(x)/100$$

(Where, $y = [1 \text{ to } N]$, $N = \text{Number of Program Outcomes}$)

PSO Attainment Level of Course (X)

$$= (\text{weighted Average Value of PSO} \times \text{CO Attainment Average}) / 3$$

(Where, $y = [1 \text{ to } N]$, $N = \text{Number of Program Specific Outcomes}$)



PO & PSO ATTAINMENT:



KASHI INSTITUTE OF TECHNOLOGY																																			
DEPARTMENT OF CIVIL ENGINEERING																																			
CO-PO ATTAINMENT																																			
Course : B.Tech			Semester : IV			Academic Year: 2021-2022																													
Course Code : KA3401			Course Name : TECHNICAL																																
COMMUNICATION																																			
CO-PO & PSO MAPPING																																			
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3																				
CO1	-	-	-	-	1	1	1	2	2	2	2	2	2	1	-																				
CO2	-	-	-	-	-	-	-	1	1	3	3	2	1	2	-																				
CO3	-	-	-	-	-	-	-	1	2	3	2	2	1	1	-																				
CO4	-	-	-	-	-	2	1	-	1	3	2	3	2	2	-																				
CO5	-	-	-	-	-	-	-	2	3	1	1	1	1	1	-																				
CO- PO & PSO COMPUTATION																																			
COs	CO Attainment %	PO1		PO2		PO3		PO4		PO5		PO6		PO7		PO8		PO9		PO10		PO11		PO12		PSO1		PSO2		PSO3					
		P	A	P	A	P	A	P	A	P	A	P	A	P	A	P	A	P	A	P	A	P	A	P	A	P	A	P	A	P	A				
CO1	73.33	-	-	-	-	-	-	-	-	-	-	-	1	0.73	1	0.73	2	1.47	2	1.5	2	1.47	2	1.47	2	1.47	2	1.47	1	0.73	-	-	-	-	
CO2	93.33	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	0.93	1	0.93	3	2.8	3	2.8	2	1.87	1	0.93	2	1.87	1	0.93	2	1.87	-	-
CO3	93.33	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	0.93	2	1.87	3	2.8	2	1.87	2	1.87	1	0.93	1	0.93	1	0.93	1	0.93	-	-
CO4	86.67	-	-	-	-	-	-	-	-	-	-	-	2	1.73	1	0.87	-	-	1	0.87	3	2.6	2	1.73	3	2.6	2	1.73	2	1.73	2	1.73	-	-	
CO5	73.33	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	1.47	3	2.2	1	0.73	1	0.73	1	0.73	1	0.73	1	0.73	-	-		
TOTAL		-	-	-	-	-	-	-	-	-	-	-	3	2.47	2	1.6	3	2.6	8	6.6	14	12	10	8.6	10	8.53	7	5.8	7	5.8	7	5.8	-	-	
Attainment %		-	-	-	-	-	-	-	-	-	-	-	-	-	-	82.2	80	86.7	82.5	85	86	85.3	82.9	85.7	85.7	85.7	85.7	85.7	85.7	85.7	85.7	85.7	-	-	
Attained Level		-	-	-	-	-	-	-	-	-	-	-	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	-	-
WEIGHTED AVERAGE VALUE OF POs/PSOs		-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.23	0.80	0.87	1.32	2.37	1.72	1.71	1.16	1.20	-	-	-	-	-	-	-	-	-	-	
P = PLANNED		A = ATTAINED																																	

CO Attainments			
S.N.	COs NO.	CO Percentage	CO ATM Level
1	CO1	73.33	3
2	CO2	93.33	3
3	CO3	93.33	3
4	CO4	86.67	3
5	CO5	73.33	3

Action Taken Report	
COs	Action Taken
CO1	Attained
CO2	Attained
CO3	Attained
CO4	Attained
CO5	Attained

Head of the Department
Applied Science and Humanities

KASHI INSTITUTE OF TECHNOLOGY																																		
DEPARTMENT OF CIVIL ENGINEERING																																		
CO-PO ATTAINMENT																																		
Course : B.Tech			Semester : 3			Academic																												
Year : 2021-2022			Course																															
Course Code : KCE 303			Name : Fluid Mechanics																															
CO-PO & PSO MAPPING																																		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3																			
CO1	2	1	2	2	-	-	-	-	-	-	-	-	2	1	-																			
CO2	2	3	3	1	1	1	1	1	1	1	1	1	1	2	1	1																		
CO3	3	1	2	-	-	-	-	-	-	-	-	-	-	1	-																			
CO4	2	3	2	-	-	-	-	-	-	-	-	-	-	1	2																			
CO5	1	1	1	-	-	-	-	-	-	-	-	-	2	1	2																			
CO- PO & PSO COMPUTATION																																		
COs	CO Attainment %	PO1		PO2		PO3		PO4		PO5		PO6		PO7		PO8		PO9		PO10		PO11		PO12		PSO1		PSO2		PSO3				
		P	A	P	A	P	A	P	A	P	A	P	A	P	A	P	A	P	A	P	A	P	A	P	A	P	A	P	A	P	A			
CO1	93.33	2	1.9	1	0.93	2	1.9	2	1.87	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	1.87	1	0.93	-	-			
CO2	66.67	2	1.3	3	2	3	2	1	0.67	1	0.67	1	0.67	1	0.67	1	0.67	1	0.67	1	0.7	1	0.67	1	0.67	2	1.33	1	0.67	1	0.7			
CO3	66.67	3	2	1	0.67	2	1.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	0.8	2	1.6				
CO4	80.00	2	1.6	3	2.4	2	1.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	1.33	1	0.67	2	1.3				
CO5	66.67	1	0.7	1	0.67	1	0.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	1.33	1	0.67	2	1.3				
TOTAL		10	7.5	9	6.67	10	7.5	3	2.53	1	0.67	1	0.67	1	0.67	1	0.67	1	0.67	1	0.7	1	0.67	1	0.67	7	5.2	4	3.07	5	3.6			
Attainment %		75		74.1		75		84.4		66.7		66.7		66.7		66.7		66.7		67		66.7		66.7		74.3		76.7		72				
Attained Level		3		3		3		3		2		2		2		2		2		2		2		2		3		3		3				
WEIGHTED AVERAGE VALUE OF POs/PSOs		1.49		1.33		1.49		1.27		0.67		0.67		0.67		0.67		0.67		0.67		0.67		0.67		1.30		0.77		###				
P = PLANNED		A = ATTAINED																																

CO Attainments			
S.N.	COs NO.	CO Percentage	CO ATM Level
1	CO1	93.33	3
2	CO2	66.67	2
3	CO3	66.67	2
4	CO4	80.00	3
5	CO5	66.67	2

Action Taken Report	
COs	Action Taken
CO1	Attained
CO2	Attained
CO3	Attained
CO4	Attained
CO5	Attained

Head of the Department
Applied Science and Humanities



KASHI INSTITUTE OF TECHNOLOGY
DEPARTMENT OF CIVIL ENGINEERING
CO-PO ATTAINMENT

Course : B.Tech Semester: 3 Academic Year: 2021-2022
Course Code : KOE043 Course Name :
Engineering

CO-PO & PSO MAPPING

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

CO-PO & PSO COMPUTATION

COs	CO Attainment %	PO1		PO2		PO3		PO4		PO5		PO6		PO7		PO8		PO9		PO10		PO11		PO12		PSO1		PSO2		PSO3			
		P	A	P	A	P	A	P	A	P	A	P	A	P	A	P	A	P	A	P	A	P	A	P	A	P	A	P	A	P	A		
CO1	73.33	2	1.5	1	0.73	2	1.5	2	1.47	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	2.2	1	0.73	-	-		
CO2	93.33	2	1.9	1	0.93	3	2.8	1	0.93	1	0.93	1	0.93	1	0.93	1	0.93	1	0.93	1	0.9	1	0.93	1	0.93	3	2.8	1	0.95	1	0.9		
CO3	66.67	2	1.3	1	0.67	2	1.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
CO4	86.67	2	1.7	1	0.87	1	0.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	0.87	-	-		
CO5	60.00	2	1.2	1	0.6	1	0.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	0.6	-	-		
TOTAL		10	7.6	5	3.8	9	7.1	3	2.4	1	0.93	1	0.93	1	0.93	1	0.93	1	0.93	1	0.9	1	0.93	1	0.93	1	0.93	7	5.67	4	3.13	1	0.9
Attainment %		76		76		79		80		93.3		93.3		93.3		93.3		93.3		93		93.3		93.3		81		78.3		93			
Attained Level		3		3		3		3		3		3		3		3		3		3		3		3		3		3		3			
WEIGHTED AVERAGE VALUE OF POs/PSOs		1.52		0.76		1.41		1.20		0.93		0.93		0.93		0.93		0.93		0.93		0.93		0.93		1.89		0.78		###			

P = PLANNED A = ATTAINED

S.N.	COs NO.	CO Percentage	CO ATM Level
1	CO1	73.33	3
2	CO2	93.33	3
3	CO3	66.67	2
4	CO4	86.67	3
5	CO5	60.00	2

COs	Action Taken
CO1	Attained
CO2	Attained
CO3	Attained
CO4	Attained
CO5	Attained

Head of the Department
Applied Science and Humanities

KASHI INSTITUTE OF TECHNOLOGY
DEPARTMENT OF CIVIL ENGINEERING
CO-PO ATTAINMENT

Course : B.Tech Semester: 2 Academic Year: 2021-2022
Course Code : ECE 301 Course Name :
Engineering

CO-PO & PSO MAPPING

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

CO-PO & PSO COMPUTATION

COs	CO Attainment %	PO1		PO2		PO3		PO4		PO5		PO6		PO7		PO8		PO9		PO10		PO11		PO12		PSO1		PSO2		PSO3		
		P	A	P	A	P	A	P	A	P	A	P	A	P	A	P	A	P	A	P	A	P	A	P	A	P	A	P	A			
CO1	85.00	2	1.7	1	0.85	2	1.7	2	1.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	2.55	1	0.85	-	-	
CO2	95.00	2	1.9	1	0.95	3	2.9	1	0.95	1	0.95	1	0.95	1	0.95	1	0.95	1	0.95	1	1	1	0.95	1	0.95	3	2.85	1	0.95	1	0.95	
CO3	70.00	2	1.4	1	0.7	2	1.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	0.75	-	-	
CO4	75.00	2	1.5	1	0.75	1	0.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	0.7	-	-	
CO5	70.00	2	1.4	1	0.7	1	0.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	0.7	-	-	
TOTAL		10	7.9	5	3.95	9	7.4	3	2.65	1	0.95	1	0.95	1	0.95	1	0.95	1	0.95	1	1	1	1	0.95	1	0.95	7	6.1	4	3.25	1	0.95
Attainment %		79		79		82		88.3		95		95		95		95		95		95		95		95		87.1		81.3		95		
Attained Level		3		3		3		3		3		3		3		3		3		3		3		3		3		3		3		
WEIGHTED AVERAGE VALUE OF POs/PSOs		1.58		0.79		1.48		1.33		0.95		0.95		0.95		0.95		0.95		0.95		0.95		0.95		2.03		0.81		0.95		

P = PLANNED A = ATTAINED

S.N.	COs NO.	CO Percentage	CO ATM Level
1	CO1	85.00	3
2	CO2	95.00	3
3	CO3	70.00	2
4	CO4	75.00	3
5	CO5	70.00	2

COs	Action Taken
CO1	Attained
CO2	Attained
CO3	Attained
CO4	Attained
CO5	Attained

Head of the Department
Civil Engineering Department



KASHI INSTITUTE OF TECHNOLOGY																															
DEPARTMENT OF CIVIL ENGINEERING																															
CO-PO ATTAINMENT																															
Course : B.Tech			Semester : 6			Academic Year:																									
2021-2022																															
Course Code : KCE 064						Course Name :																									
Foundation Design																															
CO-PO & PSO MAPPING																															
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3																
CO1	2	1	2	2	-	-	-	-	-	-	-	-	3	1	-																
CO2	2	1	3	1	1	1	1	1	1	1	1	1	1	1	1																
CO3	2	1	2	-	-	-	-	-	-	-	-	-	1	-	-																
CO4	2	1	1	-	-	-	-	-	-	-	-	-	-	1	-																
CO5	2	1	1	-	-	-	-	-	-	-	-	-	-	1	-																
CO- PO & PSO COMPUTATION																															
COs	CO Attainment %	PO1		PO2		PO3		PO4		PO5		PO6		PO7		PO8		PO9		PO10		PO11		PO12		PSO1		PSO2		PSO3	
		P	A	P	A	P	A	P	A	P	A	P	A	P	A	P	A	P	A	P	A	P	A	P	A	P	A	P	A	P	A
CO1	90.00	2	1.8	1	0.9	2	1.8	2	1.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	2.7	1	0.9	-	-
CO2	90.00	2	1.8	1	0.9	3	2.7	1	0.9	1	0.9	1	0.9	1	0.9	1	0.9	1	0.9	1	0.9	1	0.9	1	0.9	3	2.7	1	0.9	1	0.9
CO3	70.00	2	1.4	1	0.7	2	1.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	0.75	-	-
CO4	75.00	2	1.5	1	0.75	1	0.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	0.7	-	-
CO5	70.00	2	1.4	1	0.7	1	0.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	0.7	-	-
TOTAL		10	7.9	5	3.95	9	7.4	3	2.7	1	0.9	1	0.9	1	0.9	1	0.9	1	0.9	1	0.9	1	0.9	1	0.9	7	6.1	4	3.25	1	0.9
Attainment %		79	79	82	79	82	79	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	87.1		81.3		90	
Attained Level		3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
WEIGHTED AVERAGE VALUE OF POs/PSOs		1.58		0.79		1.47		1.35		0.90		0.90		0.90		0.90		0.90		0.90		0.90		0.90		2.03		0.81		###	
P = PLANNED		A = ATTAINED																													
CO Attainments				Action Taken Report																											
S.N.	COs NO.	CO Percentage	CO ATM Level	COs	Action Taken																										
1	CO1	90.00	3	CO1	Attained																										
2	CO2	90.00	3	CO2	Attained																										
3	CO3	70.00	2	CO3	Attained																										
4	CO4	75.00	3	CO4	Attained																										
5	CO5	70.00	2	CO5	Attained																										

Head of the Department
Civil Engineering Department

KASHI INSTITUTE OF TECHNOLOGY																															
DEPARTMENT OF CIVIL ENGINEERING																															
CO-PO ATTAINMENT																															
Course : B.Tech			Semester : 6			Academic Year:2021-2022																									
Course Code : KCE061						Course Name : Concrete Technology																									
CO-PO & PSO MAPPING																															
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3																
CO1	3	2	1	2	-	-	-	-	-	-	-	-	2	2	-																
CO2	3	2	1	2	-	-	1	1	1	1	1	1	3	1	1																
CO3	3	1	2	-	-	-	-	-	-	-	-	-	3	1	-																
CO4	3	2	1	-	-	-	-	-	-	1	-	-	-	1	-																
CO5	3	2	2	-	-	1	-	-	-	-	-	-	-	1	-																
CO- PO & PSO COMPUTATION																															
COs	CO Attainment %	PO1		PO2		PO3		PO4		PO5		PO6		PO7		PO8		PO9		PO10		PO11		PO12		PSO1		PSO2		PSO3	
		P	A	P	A	P	A	P	A	P	A	P	A	P	A	P	A	P	A	P	A	P	A	P	A	P	A	P	A		
CO1	80.28	3	2.4	2	1.61	1	0.8	2	1.61	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	1.61	2	1.61	-	-	
CO2	76.11	3	2.3	2	1.52	1	0.8	2	1.52	-	-	-	-	-	1	0.76	1	0.76	1	0.76	1	0.76	3	2.28	3	2.28	3	0.8	-	-	
CO3	80.14	3	2.4	1	0.8	2	1.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	0.71	-	-	
CO4	70.56	3	2.1	2	1.41	1	0.7	-	-	-	-	-	-	-	1	0.7	-	-	-	-	-	-	-	-	-	-	1	0.81	-	-	
CO5	81.25	3	2.4	2	1.63	2	1.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	0.761	-	
TOTAL		15	12	9	6.97	7	5.5	4	3.13	-	-	1	0.81	-	1	0.76	1	0.76	2	1.5	1	0.76	1	0.76	8	6.29	6	4.69	1	0.761	
Attainment %		78	77.4	79	78.2	-	81.3	-	76.1	76.1	73	76.1	76.1	78.1	78.1	78.1	78.1	78.1	78.1	78.1	78.1	78.1	78.1	78.1	78.1	78.1	78.1	78.1	78.1	78.1	
Attained Level		3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	
WEIGHTED AVERAGE VALUE OF POs/PSOs		2.33		1.39		1.10		1.56		-		0.81		-		0.76		0.76		0.73		0.76		0.76		2.10		0.94		0.76	
P = PLANNED		A = ATTAINED																													
CO Attainments				Action Taken Report																											
S.N.	COs NO.	CO Percentage	CO ATM Level	COs	Action Taken																										
1	CO1	80.28	3.00	CO1	Attained																										
2	CO2	76.11	3.00	CO2	Attained																										
3	CO3	80.14	3.00	CO3	Attained																										
4	CO4	70.56	2.00	CO4	Attained																										
5	CO5	81.25	3.00	CO5	Attained																										

Head of the Department
Civil Engineering



KASHI INSTITUTE OF TECHNOLOGY														
DEPARTMENT OF CIVIL ENGINEERING														
CO-PO ATTAINMENT														
Course : B.Tech		Semester : 7		Academic Year:2021-2022										
Course Code : KCE374		Course Name : Design of Steel Structures												
CO-PO & PSO MAPPING														
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2/PSO3
CO1	2	2	2	2	-	-	-	-	-	-	-	-	2	2
CO2	3	3	2	1	-	-	-	1	2	2	1	2	3	1
CO3	2	1	2	1	-	-	-	-	-	-	-	-	3	1
CO4	3	2	1	1	-	-	-	-	-	1	-	-	-	1
CO5	2	3	2	-	-	1	-	-	-	-	-	-	-	1

CO-PO & PSO COMPUTATION																															
COs	CO Attainment %	PO1		PO2		PO3		PO4		PO5		PO6		PO7		PO8		PO9		PO10		PO11		PO12		PSO1		PSO2		PSO3	
		P	A	P	A	P	A	P	A	P	A	P	A	P	A	P	A	P	A	P	A	P	A	P	A	P	A	P	A	P	A
CO1	80.00	2	1.6	2	1.6	2	1.6	2	1.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	1.6	2	1.6	-	-
CO2	76.39	3	2.3	3	2.29	2	1.5	1	0.76	-	-	-	-	-	1	0.76	2	1.53	2	1.5	1	0.76	2	1.53	3	2.29	-	-	1	0.81	0.764
CO3	80.69	2	1.6	1	0.81	2	1.6	1	0.81	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	0.706
CO4	70.56	3	2.1	2	1.41	1	0.7	1	0.71	-	-	-	-	-	-	-	-	-	-	1	0.7	-	-	-	-	-	-	-	1	0.81	-
CO5	81.25	2	1.6	3	2.44	2	1.6	-	-	-	-	-	1	0.81	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	0.81	-
TOTAL		12	9.2	11	8.55	9	7.1	5	3.88	-	-	-	1	0.81	-	1	0.76	2	1.53	3	2.2	1	0.76	2	1.53	8	6.31	3	2.41	3	2.276
Attainment %		77		77.7		79		77.5		-		81.3		-		76.4		76.4		74		76.4		78.9		80.4		75.88			
Attained Level		3		3		3		3		3		3		3		3		3		3		3		3		3		3			
WEIGHTED AVERAGE VALUE OF POs/PSOs		1.85		1.71		1.41		0.97		-		0.81		-		0.76		1.53		1.12		0.76		1.53		2.10		1.21		0.76	
P = PLANNED		A = ATTAINED																													

CO Attainments			
S.N.	COs NO.	CO Percentage	CO ATM Level
1	CO1	80.00	3
2	CO2	76.39	3.00
3	CO3	80.69	3.00
4	CO4	70.56	2.00
5	CO5	81.25	3.00

Action Taken Report	
COs	Action Taken
CO1	Attained
CO2	Attained
CO3	Attained
CO4	Attained
CO5	Attained

Head of the Department
Civil Engineering

KASHI INSTITUTE OF TECHNOLOGY														
DEPARTMENT OF CIVIL ENGINEERING														
CO-PO ATTAINMENT														
Course : B.Tech		Semester : 8		Academic Year:2021-2022										
Course Code : KCE302		Course Name : Structure Analysis												
CO-PO & PSO MAPPING														
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2/PSO3
CO1	3	2	1	2	-	-	-	-	-	-	-	-	2	2
CO2	3	2	1	2	-	-	-	1	1	1	1	1	3	1
CO3	3	1	2	-	-	-	-	-	-	-	-	-	3	1
CO4	3	2	1	-	-	-	-	-	-	1	-	-	-	1
CO5	3	2	2	-	-	1	-	-	-	-	-	-	-	1

CO-PO & PSO COMPUTATION																															
COs	CO Attainment %	PO1		PO2		PO3		PO4		PO5		PO6		PO7		PO8		PO9		PO10		PO11		PO12		PSO1		PSO2		PSO3	
		P	A	P	A	P	A	P	A	P	A	P	A	P	A	P	A	P	A	P	A	P	A	P	A	P	A	P	A		
CO1	80.26	3	2.4	2	1.61	1	0.8	2	1.61	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	1.61	2	1.61	-	-
CO2	76.11	3	2.3	2	1.52	1	0.8	2	1.52	-	-	-	-	1	0.76	1	0.76	1	0.8	1	0.76	1	0.76	3	2.28	1	0.76	1	0.81	0.761	
CO3	80.69	3	2.4	1	0.81	2	1.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	0.71	-
CO4	70.56	3	2.1	2	1.41	1	0.7	-	-	-	-	-	-	-	-	-	-	-	-	1	0.7	-	-	-	-	-	-	1	0.81	-	
CO5	81.25	3	2.4	2	1.63	2	1.6	-	-	-	-	1	0.81	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	0.81	-	
TOTAL		15	12	9	6.97	7	5.5	4	3.13	-	-	1	0.81	-	1	0.76	1	0.76	2	1.5	1	0.76	1	0.76	8	6.31	6	4.69	1	0.761	
Attainment %		78		77.5		79		78.2		-		81.3		-		76.1		76.1		73		76.1		76.1		78.9		78.2			
Attained Level		3		3		3		3		3		3		3		3		3		3		3		3		3		3			
WEIGHTED AVERAGE VALUE OF POs/PSOs		2.33		1.39		1.10		1.56		-		0.81		-		0.76		0.76		0.73		0.76		0.76		2.10		0.94		0.76	
P = PLANNED		A = ATTAINED																													

CO Attainments			
S.N.	COs NO.	CO Percentage	CO ATM Level
1	CO1	80.26	2.83
2	CO2	76.11	2.50
3	CO3	80.69	2.78
4	CO4	70.56	2.67
5	CO5	81.25	2.67

Action Taken Report	
COs	Action Taken
CO1	Attained
CO2	Attained
CO3	Attained
CO4	Attained
CO5	Attained

Head of the Department
Civil Engineering



KASHI INSTITUTE OF TECHNOLOGY																															
DEPARTMENT OF CIVIL ENGINEERING																															
CO-PO ATTAINMENT																															
Course : B.Tech														Semester III							Academic Year:2021-2022										
Course Code : KCE 301														Course Name : Engineering Mechanics																	
CO-PO & PSO MAPPING																															
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3																
CO1	3	2	2	2	-	-	-	-	-	1	-	-	3	-	-																
CO2	2	1	1	1	1	1	-	-	-	1	-	-	2	-	1																
CO3	3	2	2	-	-	-	-	-	-	1	-	-	1	-	-																
CO4	3	2	1	-	2	2	-	-	-	1	1	2	-	2	-																
CO5	3	1	1	-	3	-	-	-	-	1	2	1	-	2	-																
CO- PO & PSO COMPUTATION																															
COs	PO1		PO2		PO3		PO4		PO5		PO6		PO7		PO8		PO9		PO10		PO11		PO12		PSO1		PSO2		PSO3		
	P	A	P	A	P	A	P	A	P	A	P	A	P	A	P	A	P	A	P	A	P	A	P	A	P	A	P	A	P	A	P
CO1	46.67	3	1.4	2	0.93	2	0.9	2	0.93	-	-	-	-	-	-	-	-	-	-	1	0.5	-	-	-	3	1.4	-	-	-	-	
CO2	26.67	2	0.5	1	0.27	3	0.8	1	0.27	1	0.27	1	0.27	-	-	-	-	-	-	-	1	0.3	-	-	-	2	0.53	-	-	1	0.3
CO3	93.33	3	2.8	2	1.87	2	1.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	0.93	-	-	-	-	
CO4	86.67	3	2.6	2	1.73	1	0.9	-	-	2	1.73	2	1.73	-	-	-	-	-	-	-	1	0.9	1	0.87	2	1.73	-	-	2	1.73	
CO5	80.00	3	2.4	1	0.8	1	0.8	-	-	3	2.4	-	-	-	-	-	-	-	-	-	1	0.8	2	1.6	1	0.8	-	-	2	1.6	
TOTAL		14	9.7	8	5.6	9	5.3	3	1.2	6	4.4	3	2	-	-	-	-	-	-	5	3.3	3	2.47	3	2.53	6	2.87	4	3.33	1	0.3
Attainment %			70		70		59		40		73.3		66.7								67	82.2		84.4		47.8		83.1		26.7	
Attained Level			1		1		1		2		3		2		3		3		3		2		3		3		2		3		2
WEIGHTED AVERAGE VALUE OF POs/PSOs			1.95		1.12		1.05		0.60		1.47		1.00		-		-		-		0.67		1.23		1.27		0.96		1.67		0.27
P = PLANNED														A = ATTAINED																	

CO Attainments			
S.N.	COs NO.	CO Percentage	CO ATM Level
1	CO1	46.67	1
2	CO2	26.67	1
3	CO3	93.33	1
4	CO4	86.67	1
5	CO5	80.00	1

Action Taken Report	
COs	Action Taken
CO1	Attained
CO2	Attained
CO3	Attained
CO4	Attained
CO5	Attained

Faculty Sign

Head of the Department
Civil Engineering Department

KASHI INSTITUTE OF TECHNOLOGY																															
DEPARTMENT OF CIVIL ENGINEERING																															
CO-PO ATTAINMENT																															
Course : B.Tech														Semester V							Academic Year:2021-2022										
Course Code : KCE 086														Course Name : Engineering Hydrology																	
CO-PO & PSO MAPPING																															
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3																
CO1	3	2	2	3	-	-	1	-	-	-	-	1	3	1	-																
CO2	2	2	3	2	1	-	-	-	1	-	-	1	3	1	1																
CO3	3	1	1	1	-	-	-	-	-	-	-	-	-	1	-																
CO4	3	3	3	-	1	1	-	1	-	-	-	-	-	-	1																
CO5	3	2	1	-	-	-	-	-	-	-	-	-	-	-	1																
CO- PO & PSO COMPUTATION																															
COs	PO1		PO2		PO3		PO4		PO5		PO6		PO7		PO8		PO9		PO10		PO11		PO12		PSO1		PSO2		PSO3		
	P	A	P	A	P	A	P	A	P	A	P	A	P	A	P	A	P	A	P	A	P	A	P	A	P	A	P	A	P	A	P
CO1	60.00	3	1.8	2	1.2	2	1.2	3	1.8	-	-	-	1	0.8	-	-	-	-	-	-	1	0.6	3	1.8	1	0.6	-	-	-	-	
CO2	55.00	2	1.1	2	1.1	3	1.7	2	1.1	1	0.55	-	-	-	-	-	-	-	-	-	1	0.55	3	1.65	1	0.55	1	0.55	1	0.55	
CO3	75.00	3	2.3	1	0.75	1	0.8	1	0.75	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	0.75	-	-	-	-	
CO4	70.00	3	2.1	3	2.1	3	2.1	-	-	1	0.7	1	0.7	-	-	1	0.7	-	-	-	-	-	-	-	-	-	1	0.65	-	-	
CO5	65.00	3	2	2	1.3	1	0.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	0.65	-	-	
TOTAL		14	9.2	10	6.45	10	6.4	6	3.65	2	1.25	1	0.7	1	0.6	1	0.7	1	0.55	-	-	-	2	1.15	7	4.2	4	2.5	1	0.55	
Attainment %			86		64.5		84		80.8		62.5		70		60		70		55		-		57.5		60		62.5		55		55
Attained Level			2		2		2		2		2		2		2		2		2		3		3		2		2		2		2
WEIGHTED AVERAGE VALUE OF POs/PSOs			1.84		1.29		1.27		1.22		0.63		0.70		0.60		0.70		0.55		-		-		0.58		1.40		0.63		0.6
P = PLANNED														A = ATTAINED																	

CO Attainments			
S.N.	COs NO.	CO Percentage	CO ATM Level
1	CO1	60.00	2
2	CO2	55.00	2
3	CO3	75.00	3
4	CO4	70.00	3
5	CO5	65.00	2

Action Taken Report	
COs	Action Taken
CO1	Attained
CO2	Attained
CO3	Attained
CO4	Attained
CO5	Attained

Faculty Sign

Head of the Department
Department of civil Engineering



KASHI INSTITUTE OF TECHNOLOGY																															
DEPARTMENT OF CIVIL ENGINEERING																															
CO-PO ATTAINMENT																															
Course : B.Tech												Semester: VI								Academic Year:2021-2022											
Course Code : ECE 603												Course Name : Environmental Engineering																			
CO-PO & PSO MAPPING																															
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3																
CO1	3	3	3	2	1	1	2	-	-	1	-	1	3	1	1																
CO2	2	2	2	1	-	1	1	-	-	1	1	1	1	2	1																
CO3	2	1	2	-	-	1	-	-	-	1	-	-	1	-	-																
CO4	3	2	1	2	1	1	1	1	-	1	1	-	1	-	-																
CO5	2	1	1	-	-	1	-	-	-	1	-	-	1	-	-																
CO- PO & PSO COMPUTATION																															
COs	CO Attainment %	PO1		PO2		PO3		PO4		PO5		PO6		PO7		PO8		PO9		PO10		PO11		PO12		PSO1		PSO2		PSO3	
		P	A	P	A	P	A	P	A	P	A	P	A	P	A	P	A	P	A	P	A	P	A	P	A	P	A	P	A	P	A
CO1	60.00	3	1.8	3	1.8	3	1.8	2	1.2	1	0.6	1	0.6	2	1.2	-	-	-	-	1	0.6	-	-	1	0.6	3	1.8	1	0.6	1	0.6
CO2	50.00	2	1	2	1	2	1	1	0.5	-	-	1	0.5	1	0.5	-	-	-	-	1	0.5	1	0.5	1	0.5	2	1	1	0.5	-	-
CO3	45.00	2	0.9	1	0.45	2	0.9	-	-	-	-	-	-	-	1	0.45	-	-	-	-	1	0.5	-	-	-	1	0.45	-	-	-	-
CO4	35.00	3	1.1	2	0.7	1	0.4	2	0.7	1	0.35	1	0.35	1	0.35	1	0.35	-	-	1	0.4	1	0.35	-	-	-	1	0.2	-	-	-
CO5	20.00	2	0.4	1	0.2	1	0.2	-	-	-	-	-	-	-	1	0.2	-	-	-	-	-	-	-	-	-	1	0.2	-	-	-	-
TOTAL	12	5.2	9	4.15	9	4.1	5	2.4	2	0.95	3	1.45	6	2.7	1	0.35	-	-	5	2.1	2	0.85	2	1.1	8	3.8	2	1.1	1	0.6	
Attainment %		43		46.1		47		48		47.5		48.3		45		35		42		42.5		55		47.5		55		80			
Attained Level		2		2		2		2		2		2		2		2		3		2		2		2		2		2			
WEIGHTED AVERAGE VALUE OF POs/PSOs		1.03		0.83		0.85		0.80		0.48		0.48		0.54		0.35		-		0.42		0.43		0.55		0.76		0.55		0.60	
P = PLANNED	A = ATTAINED																														
CO Attainments				Action Taken Report																											
S.N.	COs NO.	CO Percentage	CO ATM Level	COs	Action Taken																										
1	CO1	60.00	2	CO1	Attained																										
2	CO2	50.00	2	CO2	Attained																										
3	CO3	45.00	1	CO3	Attained																										
4	CO4	50.00	1	CO4	Attained																										
5	CO5	20.00	1	CO5	Attained																										

Faculty Sign.

Head of the Department
Department of Civil Engineering

KASHI INSTITUTE OF TECHNOLOGY																															
DEPARTMENT OF CIVIL ENGINEERING																															
CO-PO ATTAINMENT																															
Course : B.Tech												Semester: VI								Academic Year:2021-2022											
Course Code : KCE 056												Course Name : GIS and Remote Sensing																			
CO-PO & PSO MAPPING																															
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3																
CO1	3	2	2	2	-	1	1	-	-	1	-	-	1	1	-																
CO2	3	1	3	1	-	1	1	-	-	1	1	-	-	1	1	1															
CO3	2	2	2	-	2	1	1	-	-	1	-	-	1	-	-																
CO4	3	2	1	2	2	2	1	-	-	1	1	1	1	2	3	-															
CO5	3	1	2	-	2	2	1	-	-	1	1	-	2	-	2	-															
CO- PO & PSO COMPUTATION																															
COs	CO Attainment %	PO1		PO2		PO3		PO4		PO5		PO6		PO7		PO8		PO9		PO10		PO11		PO12		PSO1		PSO2		PSO3	
		P	A	P	A	P	A	P	A	P	A	P	A	P	A	P	A	P	A	P	A	P	A	P	A	P	A	P	A	P	A
CO1	20.00	3	0.6	2	0.4	2	0.4	2	0.4	-	-	1	0.2	1	0.2	-	-	-	-	1	0.2	-	-	-	-	1	0.2	1	0.2	-	-
CO2	15.00	3	0.5	1	0.15	3	0.5	1	0.15	-	-	1	0.15	1	0.15	-	-	1	0.15	1	0.2	-	-	-	-	1	0.15	1	0.15	1	0.15
CO3	70.00	2	1.4	2	1.4	2	1.4	-	-	2	1.4	1	0.7	1	0.7	-	-	-	-	1	0.7	-	-	-	1	0.7	-	-	-	-	
CO4	70.00	3	2.1	2	1.4	1	0.7	2	1.4	2	1.4	2	1.4	1	0.7	-	-	1	0.7	1	0.7	1	0.7	1	0.7	2	1.4	3	2.1	-	-
CO5	45.00	3	1.4	1	0.45	2	0.9	-	-	2	0.9	2	0.9	1	0.45	-	-	1	0.45	1	0.5	-	-	2	0.9	-	-	2	0.9	-	-
TOTAL	14	5.9	8	3.8	10	3.9	5	1.95	6	3.7	7	3.35	5	2.2	-	3	1.3	5	2.2	1	0.7	3	1.6	5	2.45	7	3.35	1	0.15		
Attainment %		42		47.5		39		61.7		47.9		44		44		83.3		44		70		53.3		49		47.9		15			
Attained Level		2		2		2		2		2		2		3		2		2		2		2		2		2		2			
WEIGHTED AVERAGE VALUE OF POs/PSOs		1.18		0.76		0.77		0.65		1.23		0.67		0.44		-		0.43		0.44		0.70		0.80		0.61		0.84		0.15	
P = PLANNED	A = ATTAINED																														
CO Attainments				Action Taken Report																											
S.N.	COs NO.	CO Percentage	CO ATM Level	COs	Action Taken																										
1	CO1	20.00	1	CO1	Attained																										
2	CO2	15.00	1	CO2	Attained																										
3	CO3	70.00	3	CO3	Attained																										
4	CO4	70.00	3	CO4	Attained																										
5	CO5	45.00	1	CO5	Attained																										

Faculty Sign.

Head of the Department
Department of Civil Engineering



KASHI INSTITUTE OF TECHNOLOGY
DEPARTMENT OF CIVIL ENGINEERING
CO-PO ATTAINMENT

Course : B.Tech Semester: IV Academic Year:2011-2012
 Course Code : CCE 401 Course Name : Material Testing II
 Construction Practices

CO-PO & PSO MAPPING

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

CO-PO & PSO COMPUTATION

COs	CO Attainment %	PO1		PO2		PO3		PO4		PO5		PO6		PO7		PO8		PO9		PO10		PO11		PO12		PSO1		PSO2		PSO3	
		P	A	P	A	P	A	P	A	P	A	P	A	P	A	P	A	P	A	P	A	P	A	P	A	P	A	P	A		
CO1	46.67	3	1.4	2	0.93	2	0.9	2	0.93	-	-	-	-	-	-	-	-	-	-	1	0.5	-	-	-	3	1.4	-	-	-	-	
CO2	26.67	2	0.5	1	0.27	3	0.8	1	0.27	1	0.27	1	0.27	-	-	-	-	-	-	1	0.3	-	-	-	2	0.53	-	-	1	0.3	
CO3	93.33	3	2.8	2	1.87	2	1.9	-	-	-	-	-	-	-	-	-	-	-	-	1	0.9	-	-	-	1	0.93	-	-	-		
CO4	86.67	3	2.6	2	1.73	1	0.5	-	-	2	1.73	2	1.73	-	-	-	-	-	-	1	0.9	1	0.67	2	1.73	-	-	2	1.73		
CO5	80.00	3	2.4	1	0.8	1	0.8	-	-	3	2.4	-	-	-	-	-	-	-	-	1	0.8	2	1.6	1	0.8	-	-	2	1.6		
TOTAL		14	9.7	8	5.6	9	5.3	3	1.2	6	4.4	3	2	-	-	-	-	-	-	5	1.3	1	2.47	1	2.53	6	2.87	4	3.33	1	0.3
Attainment %		70		70		59		40		73.3		66.7		-		-		-		67		82.2		84.4		47.8		81.3		26.7	
Attained Level		1		1		1		1		2		1		2		3		3		2		3		1		2		3		2	
WEIGHTED AVERAGE VALUE OF POs/PSOs		1.95		1.12		1.05		0.60		1.47		1.00		-		-		-		0.67		1.23		1.27		0.96		1.67		0.27	

P = PLANNED A = ATTAINED

S.N.	COs NO.	CO Percentage	CO ATM Level
1	CO1	46.67	1
2	CO2	26.67	1
3	CO3	93.33	3
4	CO4	86.67	1
5	CO5	80.00	3

COs	Action Taken
CO1	Attained
CO2	Attained
CO3	Attained
CO4	Attained
CO5	Attained

Faculty Sign

Head of the Department
 Civil Engineering Department

KASHI INSTITUTE OF TECHNOLOGY
DEPARTMENT OF CIVIL ENGINEERING
CO-PO ATTAINMENT

Course : B.Tech Semester: VIII Academic Year:2011-2012
 Course Code : KHE 302 Course Name : Project Management and Entrepreneurship

CO-PO & PSO MAPPING

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

CO-PO & PSO COMPUTATION

COs	CO Attainment %	PO1		PO2		PO3		PO4		PO5		PO6		PO7		PO8		PO9		PO10		PO11		PO12		PSO1		PSO2		PSO3	
		P	A	P	A	P	A	P	A	P	A	P	A	P	A	P	A	P	A	P	A	P	A	P	A	P	A	P	A		
CO1	44.44	1	0.4	1	0.44	1	0.4	1	0.44	-	-	-	-	1	0.44	1	0.44	-	-	2	0.9	-	-	-	1	0.44	1	0.44	-	-	
CO2	38.89	1	0.4	1	0.39	1	0.4	1	0.39	-	-	-	-	1	0.39	-	-	-	-	1	0.4	1	0.39	-	1	0.39	-	-	-	-	
CO3	44.44	1	0.4	1	0.44	1	0.4	-	-	-	-	-	-	-	-	-	-	-	-	1	0.4	1	0.44	-	-	-	-	-	-	-	
CO4	22.22	1	0.2	1	0.22	-	-	-	-	-	-	-	-	1	0.22	1	0.22	-	-	-	1	0.2	-	-	-	-	1	0.22	-	-	
CO5	5.56	1	0.1	1	0.06	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	0.1	-	-	-	-	-	-	-	-	-	
TOTAL		5	1.6	5	1.56	3	1.3	2	0.83	-	-	-	-	3	1.06	2	0.67	-	-	6	2	2	0.83	-	-	2	0.83	2	0.67	-	
Attainment %		31		31.1		43		41.7		-		-		35.2		33.3		-		33		41.7		-		41.7		33.3		-	
Attained Level		2		2		2		2		3		3		2		2		3		2		2		3		2		2		3	
WEIGHTED AVERAGE VALUE OF POs/PSOs		0.31		0.33		0.43		0.42		-		-		0.35		0.33		-		0.40		0.42		-		0.42		0.33		-	

P = PLANNED A = ATTAINED

S.N.	COs NO.	CO Percentage	CO ATM Level
1	CO1	44.44	1
2	CO2	38.89	1
3	CO3	44.44	1
4	CO4	22.22	1
5	CO5	5.56	1

COs	Action Taken
CO1	Attained
CO2	Attained
CO3	Attained
CO4	Attained
CO5	Attained

Faculty Sign.

Head of the Department
 Department of Civil Engineering

KASHI INSTITUTE OF TECHNOLOGY																																
DEPARTMENT OF CIVIL ENGINEERING																																
CO-PO ATTAINMENT																																
Course : B.Tech		Semester: V		Academic Year:2021-2022																												
Course Code : SCE 603		Course Name : Quality Estimation &																														
Construction Management																																
CO-PO & PSO MAPPING																																
COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3																	
CO1	3	2	2	3	-	-	1	-	-	-	-	1	3	1	-																	
CO2	2	2	3	2	1	-	-	-	1	-	-	1	3	1	1																	
CO3	3	1	1	1	-	-	-	-	-	-	-	-	1	-	-																	
CO4	3	3	3	-	1	1	-	1	-	-	-	-	-	-	1																	
CO5	3	2	1	-	-	-	-	-	-	-	-	-	-	-	1																	
CO- PO & PSO COMPUTATION																																
COs	CO Attainment %	PO1		PO2		PO3		PO4		PO5		PO6		PO7		PO8		PO9		PO10		PO11		PO12		PSO1		PSO2		PSO3		
		P	A	P	A	P	A	P	A	P	A	P	A	P	A	P	A	P	A	P	A	P	A	P	A	P	A	P	A	P	A	
CO1	60.00	3	1.8	2	1.2	2	1.2	3	1.8	-	-	-	-	1	0.8	-	-	-	-	-	-	-	-	-	1	0.6	3	1.8	1	0.6	-	-
CO2	55.00	2	1.1	2	1.1	3	1.7	2	1.1	1	0.55	-	-	-	-	-	-	-	1	0.55	-	-	-	1	0.55	3	1.65	1	0.55	1	0.55	
CO3	75.00	3	2.3	1	0.75	1	0.8	1	0.75	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	0.75	-	-	-	-		
CO4	70.00	3	2.1	3	2.1	3	2.1	-	-	1	0.7	1	0.7	-	1	0.7	-	-	-	-	-	-	-	-	-	-	1	0.7	-	-		
CO5	65.00	3	2	2	1.8	1	0.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	0.65	-	-			
TOTAL		14	9.2	10	6.45	10	6.4	8	3.65	2	1.25	1	0.7	1	0.6	1	0.7	1	0.55	-	-	-	-	2	1.15	7	4.2	4	2.5	1	0.55	
Attainment %		66		64.5		64		60.8		62.5		70		60		70		55		-		-		57.5		60		62.5		55		
Attained Level		2		2		2		2		2		2		2		2		2		3		3		2		2		2		2		
WEIGHTED AVERAGE VALUE OF POs/PSOs		1.84		1.29		1.27		1.22		0.61		0.70		0.60		0.70		0.55		-		-		0.58		1.40		0.63		0.6		
P = PLANNED		A = ATTAINED																														
CO Attainments				Action Taken Report																												
S.N.	COs NO.	CO Percentage	CO ATM Level	COs	Action Taken																											
1	CO1	60.00	2	CO1	Attained																											
2	CO2	55.00	2	CO2	Attained																											
3	CO3	75.00	3	CO3	Attained																											
4	CO4	70.00	2	CO4	Attained																											
5	CO5	65.00	2	CO5	Attained																											
Faculty Sign.				Head of the Department Department of civil Engineering																												

KASHI INSTITUTE OF TECHNOLOGY																															
DEPARTMENT OF CIVIL ENGINEERING																															
CO-PO ATTAINMENT																															
Course : B.Tech		Semester: VIII		Academic Year:2021-2022																											
Course Code : EOE 608		Course Name : Quality Management																													
Management																															
CO-PO & PSO MAPPING																															
COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3																
CO1	3	2	2	2	1	-	-	-	-	1	-	1	3	1	-																
CO2	2	2	3	1	1	-	-	-	-	1	1	1	3	1	1																
CO3	2	1	2	-	-	1	-	-	-	-	-	-	1	-	-																
CO4	3	2	1	-	-	-	-	-	-	-	-	-	-	-	1																
CO5	3	1	1	1	-	-	-	-	-	-	-	-	-	-	1																
CO- PO & PSO COMPUTATION																															
COs	CO Attainment %	PO1		PO2		PO3		PO4		PO5		PO6		PO7		PO8		PO9		PO10		PO11		PO12		PSO1		PSO2		PSO3	
		P	A	P	A	P	A	P	A	P	A	P	A	P	A	P	A	P	A	P	A	P	A	P	A	P	A	P	A		
CO1	55.00	3	1.7	2	1.1	2	1.1	2	1.1	1	0.55	-	-	-	-	-	-	-	1	0.5	-	-	1	0.55	3	1.65	1	0.55	-	-	
CO2	40.00	2	0.8	2	0.8	3	1.2	1	0.4	1	0.4	-	-	-	-	-	-	-	1	0.4	1	0.4	1	0.4	3	1.2	1	0.4	1	0.40	
CO3	70.00	2	1.4	1	0.7	2	1.4	-	-	-	-	1	0.7	-	-	-	-	-	-	-	-	-	-	-	1	0.7	-	-	-		
CO4	65.00	3	2	2	1.3	1	0.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	0.65	-	-		
CO5	50.00	3	1.5	1	0.5	1	0.5	1	0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	0.5	-	-		
TOTAL		13	7.3	8	4.4	9	4.9	4	2	2	0.95	1	0.7	-	-	-	-	-	2	1	1	0.4	2	0.95	7	3.55	4	2.1	1	0.40	
Attainment %		56		55		54		50		47.5		70		-		-		48		40		47.5		50.7		52.5		40.00			
Attained Level		2		2		2		2		2		2		3		3		3		2		2		2		2		2			
WEIGHTED AVERAGE VALUE OF POs/PSOs		1.46		0.88		0.97		0.67		0.48		0.70		-		-		-		0.48		0.40		0.48		1.18		0.51		0.40	
P = PLANNED		A = ATTAINED																													
CO Attainments				Action Taken Report																											
S.N.	COs NO.	CO Percentage	CO ATM Level	COs	Action Taken																										
1	CO1	55.00	2	CO1	Attained																										
2	CO2	40.00	1	CO2	Attained																										
3	CO3	70.00	3	CO3	Attained																										
4	CO4	65.00	2	CO4	Attained																										
5	CO5	50.00	2	CO5	Attained																										
Faculty Sign.				Head of the Department Department of Civil Engineering																											



KASHI INSTITUTE OF TECHNOLOGY
DEPARTMENT OF CIVIL ENGINEERING
CO-PO ATTAINMENT

Course : B.Tech Semester VII Academic Year:2021-2022
Course Code : KIU 701 Course Name : RURAL DEVELOPMENT, ADMINISTRATION AND PLANNING

CO-PO & PSO MAPPING

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

CO- PO & PSO COMPUTATION

COs	CO Attainment %	PO1		PO2		PO3		PO4		PO5		PO6		PO7		PO8		PO9		PO10		PO11		PO12		PSO1		PSO2		PSO3			
		P	A	P	A	P	A	P	A	P	A	P	A	P	A	P	A	P	A	P	A	P	A	P	A	P	A	P	A				
CO1	55.00	3	1.7	2	1.1	2	1.1	2	1.1	1	0.55	-	-	-	-	-	-	-	-	-	1	0.6	-	-	1	0.55	3	1.65	1	0.55	-	-	
CO2	40.00	2	0.8	2	0.8	3	1.2	1	0.4	1	0.4	-	-	-	-	-	-	-	-	-	1	0.4	1	0.4	1	0.4	3	1.2	1	0.4	1	0.40	
CO3	70.00	2	1.4	1	0.7	2	1.4	-	-	-	-	-	-	1	0.7	-	-	-	-	-	-	-	-	-	-	-	-	1	0.65	-	-		
CO4	65.00	3	2	2	1.3	1	0.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	0.5	-	-		
CO5	50.00	3	1.5	1	0.5	1	0.5	1	0.5	-	-	-	-	-	-	-	-	-	-	-	2	1	1	0.4	2	0.95	7	3.55	4	2.1	1	0.40	
TOTAL		13	7.3	8	4.4	9	4.9	4	2	2	0.95	1	0.7	-	-	-	-	-	-	-	48	40	47.5	50.7	52.5	46.00							
Attainment %		56		55		54		50		47.5		70		-		-		-		-		48		40		47.5		50.7		52.5		46.00	
Attained Level		2		2		2		2		2		2		3		3		3		3		4		4		4		4		4		4	
WEIGHTED AVERAGE VALUE OF POs/PSOs		1.46		0.88		0.97		0.67		0.48		0.70		-		-		-		-		0.48		0.40		0.48		1.18		0.53		0.40	

P = PLANNED A = ATTAINED

CO Attainments			
S.N.	COs NO.	CO Percentage	CO ATM Level
1	CO1	55.00	2
2	CO2	40.00	1
3	CO3	70.00	3
4	CO4	65.00	2
5	CO5	50.00	2

Faculty Sign.

Action Taken Report

COs	Action Taken
CO1	Attained
CO2	Attained
CO3	Attained
CO4	Attained
CO5	Attained

Head of the Department
Department of Civil Engineering

KASHI INSTITUTE OF TECHNOLOGY
DEPARTMENT OF CIVIL ENGINEERING
CO-PO ATTAINMENT

Course : B.Tech Semester VII Academic Year:2021-2022
Course Code : KA1102T Course Name : Renewable Energy Resources

CO-PO & PSO MAPPING

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

CO- PO & PSO COMPUTATION

COs	CO Attainment %	PO1		PO2		PO3		PO4		PO5		PO6		PO7		PO8		PO9		PO10		PO11		PO12		PSO1		PSO2		PSO3			
		P	A	P	A	P	A	P	A	P	A	P	A	P	A	P	A	P	A	P	A	P	A	P	A	P	A	P	A				
CO1	55.00	3	1.7	2	1.1	2	1.1	2	1.1	1	0.55	-	-	-	-	-	-	-	-	-	1	0.6	-	-	1	0.55	3	1.65	1	0.55	-	-	
CO2	40.00	2	0.8	2	0.8	3	1.2	1	0.4	1	0.4	-	-	-	-	-	-	-	-	-	1	0.4	1	0.4	1	0.4	3	1.2	1	0.4	1	0.40	
CO3	70.00	2	1.4	1	0.7	2	1.4	-	-	-	-	-	-	1	0.7	-	-	-	-	-	-	-	-	-	-	-	-	1	0.65	-	-		
CO4	65.00	3	2	2	1.3	1	0.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	0.5	-	-		
CO5	50.00	3	1.5	1	0.5	1	0.5	1	0.5	-	-	-	-	-	-	-	-	-	-	-	2	1	1	0.4	2	0.95	7	3.55	4	2.1	1	0.40	
TOTAL		13	7.3	8	4.4	9	4.9	4	2	2	0.95	1	0.7	-	-	-	-	-	-	-	48	40	47.5	50.7	52.5	46.00							
Attainment %		56		55		54		50		47.5		70		-		-		-		-		48		40		47.5		50.7		52.5		46.00	
Attained Level		2		2		2		2		2		2		3		3		3		3		4		4		4		4		4		4	
WEIGHTED AVERAGE VALUE OF POs/PSOs		1.46		0.88		0.97		0.67		0.48		0.70		-		-		-		-		0.48		0.40		0.48		1.18		0.53		0.40	

P = PLANNED A = ATTAINED

CO Attainments			
S.N.	COs NO.	CO Percentage	CO ATM Level
1	CO1	55.00	2
2	CO2	40.00	1
3	CO3	70.00	3
4	CO4	65.00	2
5	CO5	50.00	2

Faculty Sign.

Action Taken Report

COs	Action Taken
CO1	Attained
CO2	Attained
CO3	Attained
CO4	Attained
CO5	Attained

Head of the Department
Department of Civil Engineering



KASHI INSTITUTE OF TECHNOLOGY																																	
DEPARTMENT OF CIVIL ENGINEERING																																	
CO-PO ATTAINMENT																																	
Course : B.Tech																																	
Semester: III																																	
Academic Year: 2021-2022																																	
Course Name : Surveying and Geomatics																																	
CO-PO & PSO MAPPING																																	
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3																		
CO1	3	2	2	2	-	-	-	-	-	1	-	-	3	-	-																		
CO2	2	1	3	1	1	1	-	-	-	1	-	-	2	-	1																		
CO3	3	2	2	-	-	-	-	-	-	1	-	-	1	-	-																		
CO4	1	2	1	-	2	2	-	-	-	1	1	2	-	2	-																		
CO5	3	1	1	-	3	-	-	-	-	1	2	1	-	2	-																		
CO- PO & PSO COMPUTATION																																	
COs	CO Attainment %	PO1		PO2		PO3		PO4		PO5		PO6		PO7		PO8		PO9		PO10		PO11		PO12		PSO1		PSO2		PSO3			
		P	A	P	A	P	A	P	A	P	A	P	A	P	A	P	A	P	A	P	A	P	A	P	A	P	A	P	A	P	A		
CO1	46.67	3	1.4	2	0.93	2	0.9	2	0.93	-	-	-	-	-	1	0.5	-	-	-	-	3	2.4	-	-	-	-	-	-	-	-	-	1	0.3
CO2	26.67	2	0.5	1	0.27	3	0.8	1	0.27	1	0.27	1	0.27	-	-	-	-	-	-	-	1	0.9	-	-	-	-	1	0.93	-	-	-	-	-
CO3	93.33	3	2.8	2	1.87	2	1.9	-	-	-	-	-	-	-	-	-	-	-	-	-	1	0.9	1	0.87	2	1.73	-	-	2	1.73	-	-	-
CO4	86.67	3	2.6	2	1.73	1	0.9	-	-	2	1.73	2	1.73	-	-	-	-	-	-	-	1	0.8	2	1.6	1	0.8	-	-	2	1.6	-	-	-
CO5	80.00	3	2.4	1	0.8	1	0.8	-	-	3	2.4	-	-	-	-	-	-	-	-	-	5	3.3	3	2.47	3	2.51	6	2.87	4	1.33	1	0.3	
TOTAL		14	9.7	8	5.6	9	5.3	3	1.2	6	4.4	3	2	-	-	-	-	-	-	-	5	3.3	3	2.47	3	2.51	6	2.87	4	1.33	1	0.3	
Attainment %		70		70		50		40		73.1		66.7								67		82.2		84.4		47.8				81.3		26.7	
Attained Level		1		1		1		1		2		3		2		3		3		3		3		3		2		3		3		2	
WEIGHTED AVERAGE VALUE OF POs/PSOs		1.95		1.12		1.05		0.60		1.47		1.00								0.67		1.23		1.27		0.96		1.67		0.27			
P = PLANNED		A = ATTAINED																															

CO Attainments			
S.N.	COs NO.	CO Percentage	CO ATM Level
1	CO1	46.67	1
2	CO2	26.67	1
3	CO3	93.33	3
4	CO4	86.67	3
5	CO5	80.00	3

Action Taken Report	
COs	Action Taken
CO1	Attained
CO2	Attained
CO3	Attained
CO4	Attained
CO5	Attained

Faculty Sign

Head of the Department
Civil Engineering Department

KASHI INSTITUTE OF TECHNOLOGY																															
DEPARTMENT OF CIVIL ENGINEERING																															
CO-PO ATTAINMENT																															
Course : B.Tech																															
Semester: VI																															
Academic Year: 2021-2022																															
Course Name : Transportation Engineering																															
CO-PO & PSO MAPPING																															
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3																
CO1	3	3	3	2	1	1	2	-	-	1	-	1	3	1	1																
CO2	2	2	2	1	-	1	1	-	-	1	1	1	2	1	-																
CO3	2	1	2	-	-	-	1	-	-	1	-	-	1	-	-																
CO4	3	2	1	2	1	1	1	1	-	1	1	-	1	-	-																
CO5	2	1	1	-	-	-	1	-	-	1	-	-	1	-	-																
CO- PO & PSO COMPUTATION																															
COs	CO Attainment %	PO1		PO2		PO3		PO4		PO5		PO6		PO7		PO8		PO9		PO10		PO11		PO12		PSO1		PSO2		PSO3	
		P	A	P	A	P	A	P	A	P	A	P	A	P	A	P	A	P	A	P	A	P	A	P	A	P	A	P	A	P	A
CO1	60.00	3	1.8	3	1.8	3	1.8	2	1.2	1	0.6	1	0.6	2	1.2	-	-	-	-	1	0.6	-	-	1	0.6	3	1.8	1	0.6	1	0.6
CO2	50.00	2	1	2	1	2	1	1	0.5	-	-	1	0.5	1	0.5	-	-	-	-	1	0.5	1	0.5	1	0.5	2	1	1	0.5	-	-
CO3	45.00	2	0.9	1	0.45	2	0.9	-	-	-	-	-	1	0.45	-	-	-	-	-	-	1	0.5	-	-	-	1	0.45	-	-	-	-
CO4	35.00	3	1.1	2	0.7	1	0.4	2	0.7	1	0.35	1	0.35	1	0.35	1	0.35	-	-	1	0.4	1	0.35	-	-	1	0.35	-	-	-	-
CO5	20.00	2	0.4	1	0.2	1	0.2	-	-	-	-	-	1	0.2	-	-	-	-	-	-	1	0.2	-	-	-	1	0.2	-	-	-	-
TOTAL		12	5.2	9	4.15	9	4.3	5	2.4	2	0.95	3	1.45	8	2.7	1	0.35	-	-	5	2.1	2	0.85	2	1.1	8	3.8	2	1.1	1	0.6
Attainment %		43		46.1		47		48		47.5		48.3		45		35				42		42.5		55		47.5		55		60	
Attained Level		2		2		2		2		2		2		2		2		3		2		2		2		2		2		2	
WEIGHTED AVERAGE VALUE OF POs/PSOs		1.03		0.83		0.85		0.80		0.48		0.48		0.54		0.35				0.42		0.43		0.55		0.76		0.55		0.60	
P = PLANNED		A = ATTAINED																													

CO Attainments			
S.N.	COs NO.	CO Percentage	CO ATM Level
1	CO1	60.00	2
2	CO2	50.00	2
3	CO3	45.00	1
4	CO4	35.00	1
5	CO5	20.00	1

Action Taken Report	
COs	Action Taken
CO1	Attained
CO2	Attained
CO3	Attained
CO4	Attained
CO5	Attained

Faculty Sign

Head of the Department
Department of Civil Engineering



KASHI INSTITUTE OF TECHNOLOGY																															
DEPARTMENT OF CIVIL ENGINEERING																															
CO-PO ATTAINMENT																															
Course : B.Tech				Semester : 7				Academic Year:																							
2021-2022																															
Course Code : KCE 970				Course Name : Railway, Waterway and Airway Engineering																											
CO-PO & PSO MAPPING																															
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3																
CO1	2	1	2	2	-	-	-	-	-	-	-	-	3	1	-																
CO2	2	1	3	1	1	1	1	1	1	1	1	1	3	1	1																
CO3	2	1	2	-	-	-	-	-	-	-	-	-	1	-	-																
CO4	2	1	1	-	-	-	-	-	-	-	-	-	-	1	-																
CO5	2	1	1	-	-	-	-	-	-	-	-	-	-	1	-																
CO- PO & PSO COMPUTATION																															
COs	CO Attainment %	PO1		PO2		PO3		PO4		PO5		PO6		PO7		PO8		PO9		PO10		PO11		PO12		PSO1		PSO2		PSO3	
		P	A	P	A	P	A	P	A	P	A	P	A	P	A	P	A	P	A	P	A	P	A	P	A	P	A	P	A		
CO1	88.89	2	1.7778	1	0.89	2	1.7778	2	1.78	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	2.67	1	0.89	-	-		
CO2	77.78	2	1.5556	1	0.78	3	2.3333	1	0.78	1	0.78	1	0.78	1	0.78	1	0.78	1	0.78	1	0.78	1	0.78	3	2.33	1	0.78	1	0.778		
CO3	61.11	2	1.2222	1	0.51	2	1.2222	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	0.61	-	-	
CO4	66.67	2	1.3333	1	0.67	1	0.6667	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	0.67	-		
CO5	81.33	2	1.6667	1	0.83	1	0.8333	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	0.83	-		
TOTAL		10	7.5556	5	3.78	9	6.8333	3	2.56	1	0.78	1	0.78	1	0.78	1	0.78	1	0.78	1	0.8	1	0.78	1	0.78	7	5.61	4	3.17	1	0.778
Attainment %		75.556		75.6		75.926		85.2		77.8		77.8		77.8		77.8		77.8		77.8		77.8		80.2		79.2		79.2		77.78	
Attained Level		3		3		3		3		3		3		3		3		3		3		3		3		3		3		3	
WEIGHTED AVERAGE VALUE OF POs/PSOs		1.51		0.76		1.37		1.28		0.78		0.78		0.78		0.78		0.78		0.78		0.78		0.78		1.87		0.79		0.78	
P = PLANNED		A = ATTAINED																													

CO Attainments			
S.N.	COs NO.	CO Percentage	CO ATM Level
1	CO1	88.89	3
2	CO2	77.78	3
3	CO3	61.11	2
4	CO4	66.67	2
5	CO5	81.33	3

Action Taken Report	
COs	Action Taken
CO1	Attained
CO2	Attained
CO3	Attained
CO4	Attained
CO5	Attained

Head of the Department
Civil Engineering Department

KASHI INSTITUTE OF TECHNOLOGY																																
DEPARTMENT OF CIVIL ENGINEERING																																
CO-PO ATTAINMENT																																
Course : B.Tech				Semester : 8				Academic Year:2021-2022																								
Course Code : KCE601				Course Name : DCS																												
CO-PO & PSO MAPPING																																
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3																	
CO1	3	2	2	2	-	-	-	-	-	-	-	-	1	2	2																	
CO2	3	2	1	2	-	-	-	1	1	2	1	1	3	1	1																	
CO3	3	1	2	-	-	-	-	-	-	-	-	-	3	1	-																	
CO4	3	2	2	-	-	-	-	-	1	-	-	-	-	1	-																	
CO5	3	3	2	-	1	-	-	-	-	-	-	-	-	1	-																	
CO- PO & PSO COMPUTATION																																
COs	CO Attainment %	PO1		PO2		PO3		PO4		PO5		PO6		PO7		PO8		PO9		PO10		PO11		PO12		PSO1		PSO2		PSO3		
		P	A	P	A	P	A	P	A	P	A	P	A	P	A	P	A	P	A	P	A	P	A	P	A	P	A	P	A			
CO1	78.33	3	2.4	2	1.57	2	1.6	2	1.57	-	-	-	-	-	-	-	1	0.78	2	1.57	2	1.57	-	-	1	0.78	2	1.57	2	1.57	-	
CO2	75.28	3	2.3	2	1.51	1	0.8	2	1.51	-	-	-	-	-	1	0.75	1	0.75	2	1.5	1	0.75	1	0.75	3	2.26	3	2.26	3	0.75	1	0.753
CO3	80.69	3	2.4	1	0.81	2	1.6	-	-	-	-	-	-	-	-	-	-	-	-	-	1	0.7	-	-	-	-	-	1	0.71	-		
CO4	70.81	3	2.1	2	1.42	2	1.4	-	-	-	-	-	-	-	1	0.82	-	-	-	-	-	-	-	-	-	-	-	1	0.82	-		
CO5	81.94	3	2.5	3	2.46	2	1.6	-	-	-	-	-	-	-	1	0.82	-	-	-	-	-	-	-	-	-	-	-	1	0.82	-		
TOTAL		15	12	10	7.75	9	7	4	3.07	-	-	1	0.82	-	1	0.75	1	0.75	3	2.2	1	0.75	2	1.54	8	6.25	6	4.65	1	0.753		
Attainment %		77		77.5		78		76.8		-		81.9		-		75.3		75.3		74		75.3		76.8		78.1		77.6		75.28		
Attained Level		3		3		3		3		3		3		3		3		3		3		3		3		3		3		3		
WEIGHTED AVERAGE VALUE OF POs/PSOs		2.32		1.55		1.40		1.54		-		0.82		-		0.75		0.75		1.11		0.75		0.77		2.08		0.93		0.75		
P = PLANNED		A = ATTAINED																														

CO Attainments			
S.N.	COs NO.	CO Percentage	CO ATM Level
1	CO1	78.33	3.00
2	CO2	75.28	3.00
3	CO3	80.69	3.00
4	CO4	70.81	2.00
5	CO5	81.94	3.00

Action Taken Report	
COs	Action Taken
CO1	Attained
CO2	Attained
CO3	Attained
CO4	Attained
CO5	Attained

Head of the Department
Civil Engineering

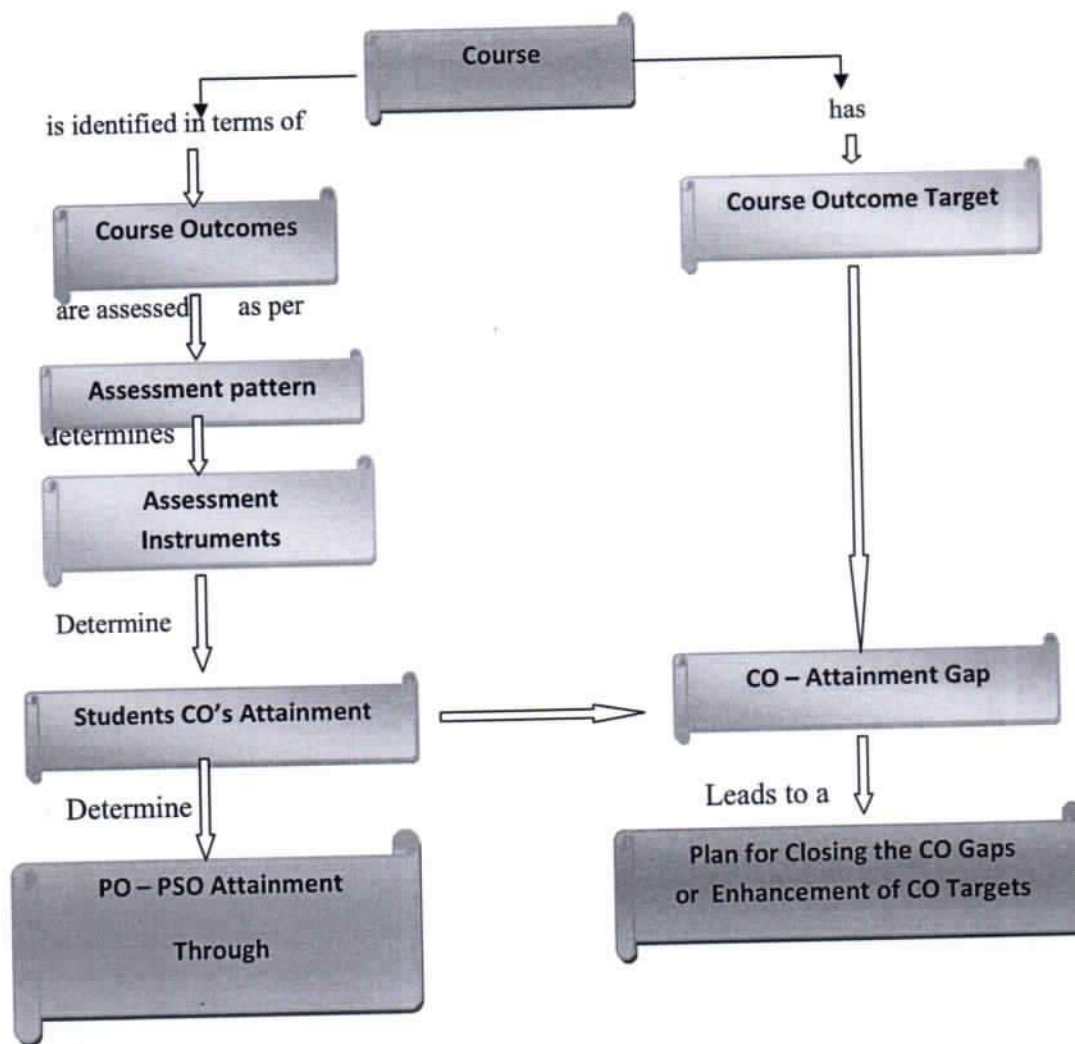


INDIRECT ATTAINMENT				
Course : B.Tech		Sem: 3rd		Academic Year: 2021-2022
Course Code : KCE 303		Name of the Faculty : Abhishek Pandey		
Course Name : Fluid Mechanics				
No	Roll No.	Name	MM (20)	%
1	1842800024	SATISH CHANDRA	15	75
2	2004280000001	AJAD SINGH	18	90
3	2004280000002	ANUPMA YADAV	19	95
4	2004280000003	HARISH CHANDRA HARISH CHANDRA	18	90
5	2004280000005	PRAKHAR TRIPATHI	13	65
6	2004280000006	SACHIN KUMAR GAUTAM	17	85
7	2004280000007	SAURABH PATEL	13	65
8	2004280000008	SHIVAM	17	85
9	2004280000009	SHUBHAM KUMAR SINGH	17	85
10	2004280000010	SINGH BHAVESH KUMAR KAUSHAL	17	85
11	2104280009001	AKASH CHAUHAN	12	60
12	2104280009002	DURGESH KUMAR MAURYA	18	90
13	2104280009004	PANKAJ KUMAR	16	80
14	2104280009005	SANDEEP CHAUHAN	16	80
15	2104280009006	SANDEEP KUMAR	17	85
Total number of Students				15
Number of Student Secured >= 70% Marks				12
% of Students Attained				80
Attainment Level				3

Action Taken Report	
COs	Action Taken
CO1, CO2, CO3, CO4, CO5	Attained



CO attainment and Gap Analysis:



Calculation of Gap Analysis:

$$\text{Gap} = \text{Target in level} - \text{Attainment in level}$$

KASHI INSTITUTE OF TECHNOLOGY					
DEPARTMENT OF CIVIL ENGINEERING					
INDIRECT ATTAINMENT					
Course : B.Tech		Semester: 3rd	Academic Year: 2021-20		
Course Code : KCE 303					
Course Name : Fluid Mechanics					
Name of the Faculty : Abhishek Pandey					
Section : A					
INDIRECT ATM LEVEL	TO END SEM	ATM LEVEL	DT*0.2+AE*0.8	Indirect ATM Level	OVERALL ATM LEVEL
2		3	2.88	3	2.94
OVERALL ATM AVG. =		2.94			

Action taken after identifying the gaps:

Convey the identified gaps to Board of Studies:

Considering the feedback from faculty, PAC committee, students and DAB committee, a representation is prepared by the department to convey the gaps and possible action plan to the Board of Studies (BOS). These inputs are taken into consideration by BOS while revising the syllabus

Following activities are planned to fulfil the identified gap.

Action taken for identified Gap
*Students are encouraged to Enrol NPTEL online certification course and to appear for certification exam.
*Remedial Classes will be conducted.
*Bridge classes for units.
*Assignments for critical topic.
*Solution for university question for unit.

