METHODIST
COLLEGE OF ENGINEERING & TECHNOLOGY
(An UGC-AUTONOMOUS INSTITUTION)
Accredited by NAAC with A+ and NBA
Estd : 2008
Affliated to Osmania University & Approved by AICTE

DEPARTMENT OF CIVIL ENGINEERING

CO - PO/PSO ASSESSMENT AND ATTAINMENT PROCESS MANUAL

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1. INSTITUTE VISION AND MISSION

VISION

To produce ethical, socially conscious and innovative professionals who would contribute to sustainable technological development of the society.

MISSION

M1: To impart quality engineering education with latest technological developments and interdisciplinary skills to make students succeed in professional practice.

M2: To encourage research culture among faculty and students by establishing state of art laboratories and exposing them to modern industrial and organizational practices.

M3: To inculcate humane qualities like environmental consciousness, leadership, social values, professional ethics and engage in independent and lifelong learning for sustainable contribution to the society.

2. DEPARTMENTAL VISION AND MISSION

VISION

To evolve into a centre of excellence for imparting holistic civil engineering education contributing towards sustainable development of the society.

MISSION

M1: To impart quality civil engineering education blended with contemporary and interdisciplinary skills.

M2: To provide enhanced learning facilities and professional collaborations to impart a culture of continuous learning.

M3: To involve in trainings and activities on communication skills, teamwork, professional ethics, environmental protection and sustainable development.

2.1. Process for Defining Vision and Mission of the Department

Steps for Defining Vision and Mission of the Department

The process for defining Vision and Mission of the Department was discussed and formulated through a consultative process involving the stakeholders of the department. The department vision and mission process flow chart is as shown in Figure 1. In formulating the Vision and Mission of the Department, the following steps are followed:

1. Vision and Mission of the college and sample Vision & Mission statements of other institutions are taken as reference.
2. Views are taken from various internal stakeholders of the Department such as students and faculty members through SWOC.
3. With step 1 and 2 the draft vision mission of the department were formulated by Program Assessment Committee and shared with external stakeholder through various meetings for their inputs/suggestions.
4. The Department Committee (DC) reviews the draft Vision and Mission of the department and checks the consistency with the Vision and Mission of the Institute and sends the same to Department Advisory Committee (DAC) for any refinement of the statements.
5. DC finalises Vision and Mission statements and sends the same to Principal for approval.
6. Vision and Mission statements of the department are published, displayed and disseminated among Stakeholders.

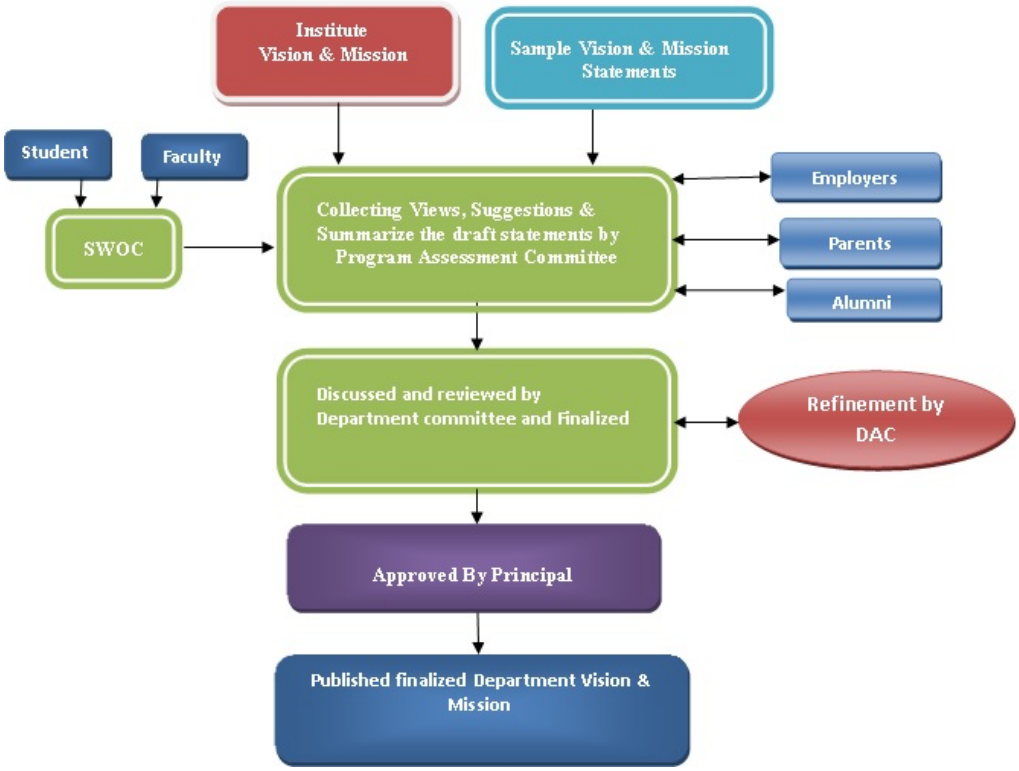


Fig.1 : Department Vision and Mission process flowchart

3. PROGRAM EDUCATIONAL OBJECTIVES, PROGRAM OUTCOMES AND PROGRAM SPECIFIC OUTCOMES

Program Educational Objectives (PEOs):

Program educational objectives are broad statements that describe the career and professional accomplishments that the program is preparing graduates to achieve.

Program Outcomes (POs):

Program outcomes describe what students are expected to know and would be able to do by the time of graduation. These relate to the skills, knowledge, and behaviours that students acquire as they progress through the program.

Program Specific Outcomes (PSOs):

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

3.1 PROGRAM EDUCATIONAL OBJECTIVES (PEOs):

Steps for Defining Program Educational Objectives for the Program

The process for defining PEOs were discussed and formulated through a consultative process involving the stakeholders of the department. The PEOs process flow chart as shown in Figure 2.

1. Vision and Mission of the institute, department and graduate attributes/POs are taken as reference for framing PEOs.
2. Views are taken from various internal stakeholders of the Department such as students and faculty members through SWOC and draft PEOs statements were framed.
3. With step 1 and 2 the draft PEOs were formulated by Program Assessment committee and shared with external stakeholder through various meetings for their inputs/suggestions.

4. The Department Committee (DC) reviews the draft PEOs and sends the same to

Department Advisory Committee (DAC) for any refinement of the statements.

5. DC finalizes PEOs and sends the same to Principal for approval.
6. PEOs were published, displayed and disseminated among Stakeholder

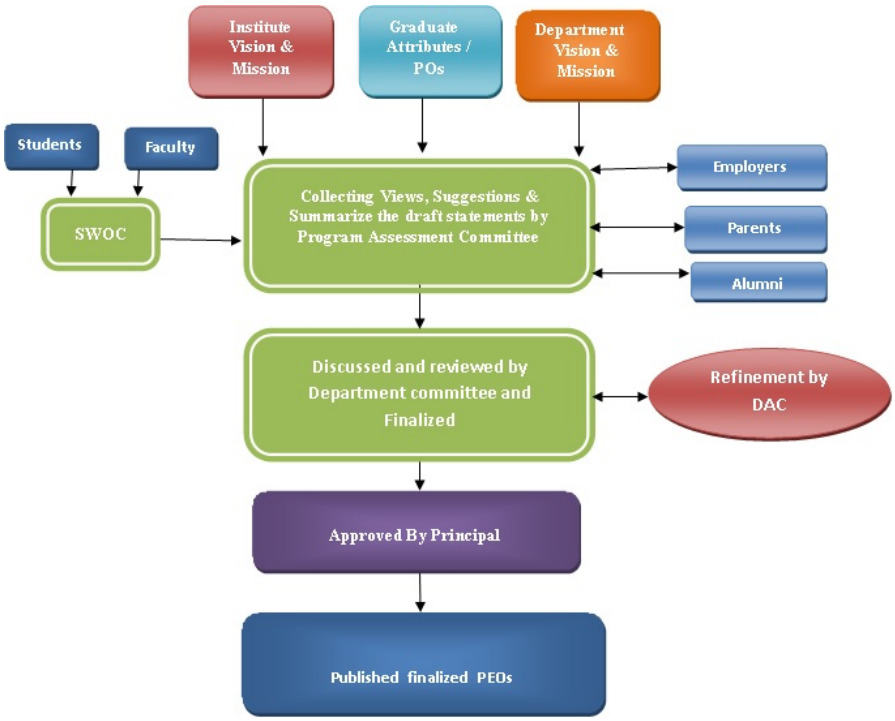


Fig.2 PEOs Process Flowchart

3.1.1 PEOs of CE:

PEO 1: Engage in planning, analysis, design, construction, operation and maintenance of built environment.

PEO 2: Apply the knowledge of civil engineering to pursue research or to engage in professional practice.

PEO 3: Work effectively as individuals and as team members in multidisciplinary projects with organizational and communication skills.

PEO 4: Demonstrate the spirit of lifelong learning and career enhancement aligned to professional and societal needs.

3.2 PROGRAM OUTCOMES (POs):

3.2.1 POs of CE Department:

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

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

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

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

PO5. Modern tool usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modelling to complex civil engineering activities with an understanding of the limitations.

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

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

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

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

PO10. Communication: Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.

PO11. Project management and finance: Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.

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 change.

3.3 PROGRAM SPECIFIC OUTCOMES (PSOs):

3.3.1 PSOs of CE:

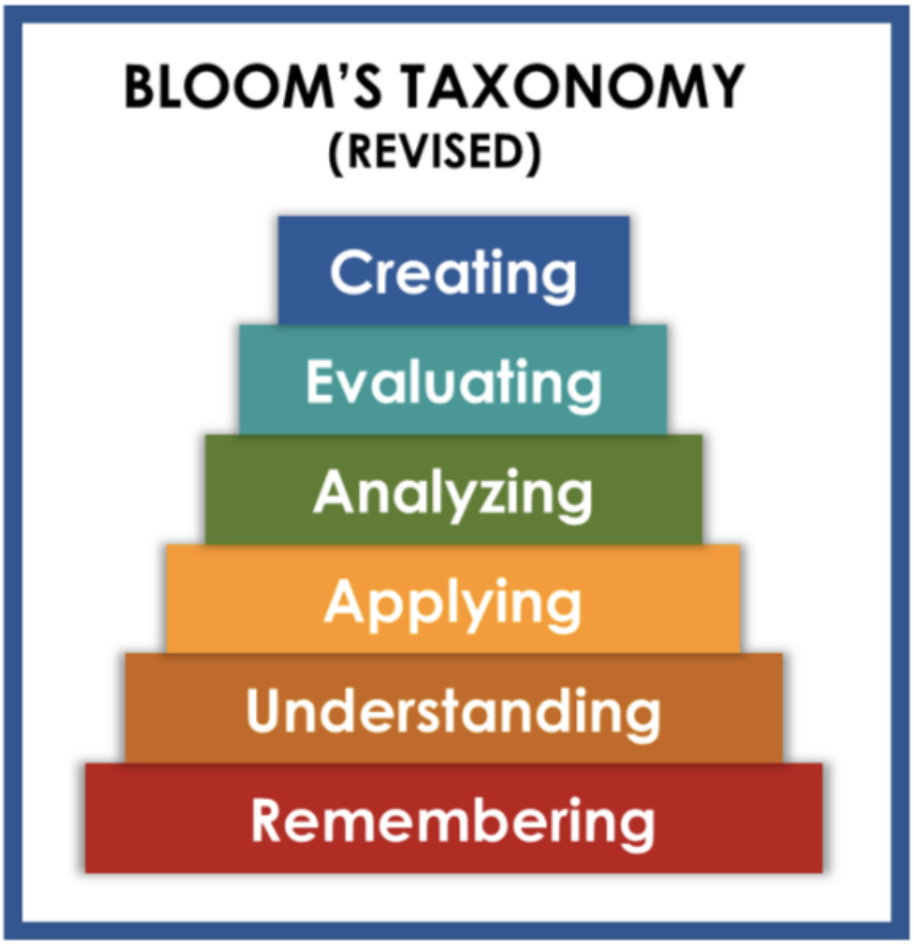
PSO1: Investigate properties of traditional and latest construction materials using standard testing methods.

PSO2: Use AutoCAD, STAAD Pro, ETABS, Revit Architecture and ANSYS software for computer aided structural analysis and design.

PSO3: Describe the principles of sustainable development and green buildings for environmental preservation.

4. 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.



Bloom's Taxonomy is hierarchical, which means that learning at a higher level requires the skills at the lower level are attained.

5. COURSE OUTCOMES

Course Outcomes (COs):

After the course (subject) allotment from the department, the course in-charge of the course has to write appropriate COs for their corresponding course. It should be narrower and measurable statements. By using the action verbs of learning levels, CO's will be designed. CO statements should describe what the students are expected to know and able to do at the end of each course, which are related to the skills, knowledge and behaviour that students will acquire through the course.

Every Course leads to some Course Outcomes. The CO statements are defined by considering the course content covered in each module/unit 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. For Autonomous syllabus, it is decided by the Assessment committee of the college to have 5 COs for all courses. COs are written for each course in which, the action verbs corresponding to the Bloom's taxonomy level for cognitive learning is identified and highlighted.

The Course outcomes for a particular course will be framed **as per Taxonomy level but not unit wise**. This can be achieved, by listing possible COs of different taxonomy levels per unit wise in initial stage, and after wards integrating them.

FRAMING COURSE OUTCOMES (SAMPLE):

Course: Surveying and Geomatics
Course Code: 2PC303CE

Initial stage: Framing all possible COs of different taxonomy levels per unit wise.

Unit 1:

1) Explain the basic concepts of Chaining, Compass surveying & Plane tabling - **Understanding**
2) Demonstrate the instruments involved in linear and angular measurements - **Understanding**
3) Calculate the lengths & bearings using chain & prismatic compass **- Applying**
4) Plot the ground using plane table – **Applying**

Unit 2:

1) Explain the basic concepts of Levelling, contouring - **Understanding**
2) Demonstrate the instruments involved in levelling and contouring **- Understanding**
3) Calculate the reduced levels, areas and volumes **- Applying**

Unit 3 :

1) Explain the concepts & terminologies of theodolite, tacheometry, EDMs - **Understanding**
2) Demonstrate the instruments like theodolite, EDM and total station - Understanding
3) Calculate the horizontal angles, vertical angles & heights of inaccessible points - **Applying**
4) Analysing the closure error in a traverse and finding out the missing data using omitted measurements **– Analysing**

Unit 4:

1) Explain the concepts of horizontal and vertical curves- **Understanding**
2) Setting out the curves using linear and angular methods – **Applying**

Unit 5:

1) Explain the technologies like Photogrammetric surveying, GPS, RS and GIS **Understanding**

Final stage: Integrating COs of same taxonomy level, from the possible COs framed in the initial stage.

The below table shows the consolidated COs for a surveying course after integrating COs of same taxonomy level from different units.

On successful completion of this course, students should be able to:

CO No.	Course Outcome	Taxonomy Level
303.1	**Explain** the concepts, working principles involved in basic as well as modern surveying equipment & technologies and also defines the concepts of horizontal and vertical curves.	Understanding
303.2	**Apply** the knowledge of surveying & levelling in calculating lengths, bearings, areas, Volumes, reduced levels, elevation differences and plotting of a ground	Applying
303.3	**Apply** the knowledge of theodolite and trigonometry in finding horizontal and vertical angles, heights of inaccessible points	Applying
303.4	**Make use of** knowledge of curves concept in surveying, in setting out both horizontal and vertical curves for the purpose of roadway and railway alignment	Applying
303.5	**Analyse** the amount of closing error of a traverse after finding out the omitted measurements in traverse and compute the missing data	Analysing

6. CO – PO/PSO MAPPING OF COURSES

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 various correlation levels are:

"1" - Low Correlation

"2" – Moderate Correlation

"3" – High Correlation

"-" indicates there is no correlation.

6.1 Process involved in CO-PO/PSO Mapping:

After writing the CO statements, COs will be mapped with PO/PSO 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 and finalising the CO statements and the CO-PO/PSO mapping for that course, which has been done with the help of course in-charges.

To map COs with POs/PSOs appropriately, performance indicators (PIs) for POs provided by AICTE will be used. For a framed CO statement, depending on PI, the revelant POs will be mapped.

Performance Indicators (PIs): (Engineering programs other than CSE/IT)

PI	PI Description
1.1.1	Apply mathematical techniques such as calculus, linear algebra, and statistics to solve problems
1.1.2	Apply advanced mathematical techniques to model and solve civil engineering problems
1.2.1	Apply laws of natural science to an engineering problem
1.3.1	Apply fundamental engineering concepts to solve engineering problems
1.4.1	Apply Civil engineering concepts to solve engineering problems.
2.1.1	Articulate problem statements and identify objectives
2.1.2	Identify engineering systems, variables, and parameters to solve the problems
2.1.3	Identify the mathematical, engineering and other relevant knowledge that applies to a given problem
2.2.1	Reframe complex problems into interconnected subproblems
2.2.2	Identify, assemble and evaluate information and resources.
2.2.3	Identify existing processes/solution methods for solving the problem, including forming justified approximations and assumptions
2.2.4	Compare and contrast alternative solution processes to select the best process.
2.3.1	Combine scientific principles and engineering concepts to formulate model/s (mathematical

	or otherwise) of a system or process that is appropriate in terms of applicability and required accuracy.
2.3.2	Identify assumptions (mathematical and physical) necessary to allow modeling of a system at the level of accuracy required.
2.4.1	Apply engineering mathematics and computations to solve mathematical models
2.4.2	Produce and validate results through skillful use of contemporary engineering tools and models
2.4.3	Identify sources of error in the solution process, and limitations of the solution.
2.4.4	Extract desired understanding and conclusions consistent with objectives and limitations of the analysis
3.1.1	Recognize that need analysis is key to good problem definition
3.1.2	Elicit and document, engineering requirements from stakeholders
3.1.3	Synthesize engineering requirements from a review of the state-of-the-art
3.1.4	Extract engineering requirements from relevant engineering Codes and Standards such as IS and ASCE.
3.1.5	Explore and synthesize engineering requirements considering health, safety risks, environmental, cultural and societal issues
3.1.6	Determine design objectives, functional requirements and arrive at specifications
3.2.1	Apply formal idea generation tools to develop multiple engineering design solutions
3.2.2	Build models/prototypes to develop diverse set of design solutions
3.2.3	Identify suitable criteria for evaluation of alternate design solutions
3.3.1	Apply formal decision making tools to select optimal engineering design solutions for further development
3.3.2	Consult with domain experts and stakeholders to select candidate engineering design solution for further development
3.4.1	Refine a conceptual design into a detailed design within the existing constraints (of the resources)
3.4.2	Generate information through appropriate tests to improve or revise design
4.1.1	Define a problem, its scope and importance for purposes of investigation
4.1.2	Examine the relevant methods, tools and techniques of experiment design, system calibration, data acquisition, analysis and presentation
4.1.3	Apply appropriate instrumentation and/or software tools to make measurements of physical quantities
4.1.4	Establish a relationship between measured data and underlying physical principles.
4.2.1	Design and develop experimental approach, specify appropriate equipment and procedures
4.2.2	Understand the importance of statistical design of experiments and choose an appropriate experimental design plan based on the study objectives
4.3.1	Use appropriate procedures, tools and techniques to conduct experiments and collect data
4.3.2	Analyze data for trends and correlations, stating possible errors and limitations
4.3.3	Represent data (in tabular and/or graphical forms) so as to facilitate analysis and explanation of the data, and drawing of conclusions
4.3.4	Synthesize information and knowledge about the problem from the raw data to reach appropriate conclusions
5.1.1	Identify modern engineering tools such as computer aided drafting, modeling and analysis; techniques and resources for engineering activities
5.1.2	Create/adapt/modify/extend tools and techniques to solve engineering problems
5.2.1	Identify the strengths and limitations of tools for (i) acquiring information, (ii) modeling and simulating, (iii) monitoring system performance, and (iv) creating engineering designs.
5.2.2	Demonstrate proficiency in using discipline specific tools
5.3.1	Discuss limitations and validate tools, techniques and resources
5.3.2	Verify the credibility of results from tool use with reference to the accuracy and limitations, and the assumptions inherent in their use.
6.1.1	Identify and describe various engineering roles; particularly as pertains to protection of the public and public interest at global, regional and local level
6.2.1	Interpret legislation, regulations, codes, and standards relevant to your discipline and explain its contribution to the protection of the public
7.1.1	Identify risks/impacts in the life-cycle of an engineering product or activity

7.1.2	Understand the relationship between the technical, socio economic and environmental dimensions of sustainability
7.2.1	Describe management techniques for sustainable development
7.2.2	Apply principles of preventive engineering and sustainable development to an engineering activity or product relevant to the discipline
8.1.1	Identify situations of unethical professional conduct and propose ethical alternatives
8.2.1	Identify tenets of the IS & ASCE professional code of ethics
8.2.2	Examine and apply moral & ethical principles to known case studies
9.1.1	Recognize a variety of working and learning preferences; appreciate the value of diversity on a team
9.1.2	Implement the norms of practice (e.g. rules, roles, charters, agendas, etc.) of effective team work, to accomplish a goal.
9.2.1	Demonstrate effective communication, problem solving, conflict resolution and leadership skills
9.2.2	Treat other team members respectfully
9.2.3	Listen to other members; Maintain composure in difficult situations
9.3.1	Present results as a team, with smooth integration of contributions from all individual efforts
10.1.1	Read, understand and interpret technical and non-technical information
10.1.2	Produce clear, well-constructed, and well supported written engineering documents
10.1.3	Create flow in a document or presentation - a logical progression of ideas so that the main point is clear
10.2.1	Listen to and comprehend information, instructions, and viewpoints of others
10.2.2	Deliver effective oral presentations to technical and nontechnical audiences
10.3.1	Create engineering-standard figures, reports and drawings to complement writing and presentations
10.3.2	Use a variety of media effectively to convey a message in a document or a presentation
11.1.1	Describe various economic and financial costs/benefits of an engineering activity
11.1.2	Analyze different forms of financial statements to evaluate the financial status of an engineering project
11.2.1	Analyze and select the most appropriate proposal based on economic and financial considerations.
11.3.1	Identify the tasks required to complete an engineering activity, and the resources required to complete the tasks.
11.3.2	Use project management tools to schedule an engineering project so it is completed on time and on budget
12.1.1	Describe the rationale for requirement for continuing professional development
12.1.2	Identify deficiencies or gaps in knowledge and demonstrate an ability to source information to close this gap
12.2.1	Identify historic points of technological advance in engineering that required practitioners to seek education in order to stay current
12.2.2	Recognize the need and be able to clearly explain why it is vitally important to keep current regarding new developments in your field
12.3.1	Source and comprehend technical literature and other credible sources of information
12.3.2	Analyze sourced technical and popular information for feasibility, viability, sustainability, etc.

COs mapped to POs using PIs (Sample):

Course: Surveying and Geomatics

Course Code: 2PC303CE

Mapping of COs to POs as per Performance Indicators													
PO / CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO 10	PO 11	PO 12	PS01	PSO2	PSO3
CO1	1.3.1								9.2.1	10.1.1					
CO2	1.1.1, 1.3.1				5.1.1			8.1.1	9.1.2						
CO3	1.1.1, 1.3.1				5.1.1			8.1.1	9.1.2						
CO4	1.1.1, 1.3.1							8.1.1	9.1.2						
CO5		2.1.2						8.1.1	9.1.2						

6.2 Assigning Correlation level in a CO-PO/PSO matrix:

After CO-PO/PSO mapping, from the detailed lesson plan, the ratio “Total no.of classes devoted to a particular PO for a given CO / Total no.of classes devoted for a given CO” is used to assign the level of correlation.

LESSON PLAN FOR SURVEYING (2022-23)

S.No	No.of Classes	Topics	Taxonomy of the topic	Target CO	Learning activities	PO number to which CO is mapped (Related to Topic)	Assessment methods
1	1	Vision & Mission of department; Introduction to Surveying; Course outcomes of Surveying	Understanding	CO1	Chalk & Talk; Power point presentation	PO1	Exam/Assignment/Quiz
2	1	Uses and classification of surveying; Principles of surveying; Accessories for linear measurement	Understanding	CO1	Chalk & Talk; Live demo of instruments; Student seminar	PO1,PO9,PO10	Exam/Assignment/Quiz/Seminar
3	1	Direct and indirect ranging; Chain/tape too short & too long concept	Understanding	CO1	Chalk & Talk; Video lecture	PO1	Exam/Assignment/Quiz
4	1	Problems on chain too short/too long; Corrections of chain & tape	Applying	CO2	Chalk & Talk	PO1,PO8,PO9	Exam/Assignment/Quiz
5	1	Corrections of chain & tape. Also a problem to be solved	Applying	CO2	Chalk & Talk	PO1,PO8,PO9	Exam/Assignment/Quiz
6	2	Chain Surveying; Compass Surveying - Types of meridians, Types of Bearing systems (WCB,QB & RB), Fore bearing and Back bearing, Problems on conversions of Bearing systems and Bearings	Understanding & Applying	CO1, CO2	Chalk & Talk; Power point presentation	PO1,PO5	Exam/Assignment/Quiz
7	1	Problems on Included angle	Applying	CO2	Chalk & Talk	PO1,PO8	Exam/Assignment/Quiz
8	1	Problems on Closed traverse. Magnetic declination and its related problems	Understanding & Applying	CO1,CO2	Chalk & Talk	PO1	Exam/Assignment/Quiz
9	1	Checks on Closed and Open traverse. Accessories of Plane Table	Understanding	CO1	Chalk & Talk; Power point presentation	PO1	Exam/Assignment/Quiz
10	1	Radiation and Intersection method of Plane Tabling	Understanding	CO1	Chalk & Talk; Power point presentation	PO1	Exam/Assignment/Quiz
11	2	Traversing and Resection in Plane Tabling; Orientation; Advantages & disadvanatges of Plane Table; Introdcution to levelling	Understanding & Applying	CO1,CO2	Chalk & Talk; Power point presentation; Student seminar	PO1,PO5,PO9,PO10	Exam/Assignment/Quiz/Seminar
12	1	Dumpy level demonstration along with temporary adjustments; Methods of finding Reduced level	Understanding & Applying	CO1,CO2	Chalk & Talk; Live demo of instrument	PO1,PO5	Exam/Assignment/Quiz
13	1	Problems on HI method	Applying	CO2	Chalk & Talk	PO1,PO8,PO9	Exam/Assignment/Quiz
14	1	Problems on Rise & Fall method	Applying	CO2	Chalk & Talk	PO1,PO8,PO9	Exam/Assignment/Quiz
15	2	Curvature & refraction corrections; sensitiveness of bubble tube; Reciprocal levelling; Characteristics of contour	Understanding & Applying	CO1,CO2	Chalk & Talk; Power point presentation	PO1	Exam/Assignment/Quiz
16	1	Methods of contouring	Understanding	CO1	Chalk & Talk	PO1	Exam/Assignment/Quiz
17	1	Calculation of Areas using simpson's rule & Trapezoidal rule	Applying	CO2	Chalk & Talk	PO1,PO8,PO9	Exam/Assignment/Quiz

LESSON PLAN FOR SURVEYING (2022-23)

S.No	No.of Classes	Topics	Taxonomy of the topic	Target CO	Learning activities	PO number to which CO is mapped (Related to Topic)	Assessment methods
18	1	Calculation of Volumes using simpson's rule & Trapezoidal rule	Applying	CO2	Chalk & Talk	PO1,PO8,PO9	Exam/Assignment/Quiz
19	1	Introduction to theodolite; Definitions; Fundamnetal lines; Temporary adjustments	Understanding	CO1	Chalk & Talk; Video lecture; Student seminar	PO1,PO5,PO9,PO10	Exam/Assignment/Quiz/Seminar
20	2	Coordinates & their computations - Problems on omitted measurements	Analysing	CO5	Chalk & Talk	PO2,PO8,PO9	Exam/Assignment/Quiz
21	1	Problems on omitted measurements	Analysing	CO5	Chalk & Talk	PO2,PO8,PO9	Exam/Assignment/Quiz
22	1	Horizontal & vertical angle measurments; Basics of Tacheometry	Understanding & Applying	CO1, CO3	Chalk & Talk	PO1,PO5	Exam/Assignment/Quiz
23	1	EDM & Total station	Understanding	CO1	Power point presentation; Student seminars	PO1,PO9,PO10	Exam/Assignment/Quiz/Seminar
24	2	Trigonometrical levelling problems	Applying	CO3	Chalk & Talk	PO1,PO8,PO9	Exam/Assignment/Quiz
25	1	Theory of Simple curves; Problems on setting out of curves by linear methods	Understanding & Applying	CO1,CO4	Chalk & Talk; Power point presentation	PO1,PO8,PO9	Exam/Assignment/Quiz
26	1	Problems on setting out of curves by linear methods	Applying	CO4	Chalk & Talk	PO1,PO8,PO9	Exam/Assignment/Quiz
27	1	Problems on setting out of curves by angular methods	Applying	CO4	Chalk & Talk	PO1,PO8,PO9	Exam/Assignment/Quiz
28	1	Problems on setting out of curves by angular methods	Applying	CO4	Chalk & Talk	PO1,PO8,PO9	Exam/Assignment/Quiz
29	1	Elements of compound curve and reverse curve	Understanding	CO1	Power point presentation	PO1,PO8,PO9	Exam/Assignment/Quiz
30	2	Elements of transition curve-Length of transition curve; Types of vertical curves - Length of vertical curve	Understanding & Applying	CO1,CO4	Chalk & Talk; Power point presentation	PO1	Exam/Assignment/Quiz
31	1	Global positioning system and Remote sensing concepts	Understanding	CO1	Power point presentation; Video Lecture; Student seminar	PO1,PO9,PO10	Exam/Assignment/Quiz/Seminar
32	1	Geographic Information system	Understanding	CO1	Power point presentation; Video Lecture; Student seminar	PO1,PO9,PO10	Exam/Assignment/Quiz/Seminar
33	2	Photogrammetric Surveying	Understanding	CO1	Power point presentation; Video Lecture; Student seminar	PO1,PO9,PO10	Exam/Assignment/Quiz/Seminar

COs	No.of classes devoted for CO	No.of classes devoted to Particular PO for a given CO														
		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	25	25								11	9					
	% --->	100								44	36					
CO2	15	15				5			7	8						
	% --->	100				33.3333			46.6667	53.3333						
CO3	3	3				1			2	2						
	% --->	100				33.3333			66.6667	66.6667						
CO4	6	6							4	4						
	% --->	100							66.6667	66.6667						
CO5	3		3						3	3						
	% --->		100						100	100						

CO-PO&PSO Correlation level = $\frac{\text{Total no.of classes devoted to a particular PO for a given CO}}{\text{Total no.of classes devoted for a given CO}}$ **X 100**

Rubric for CO-PO mapping	
<5%	0
5%-25%	1
25%-40%	2
>40%	3

CO-PO/PSO mapping with correlation levels:

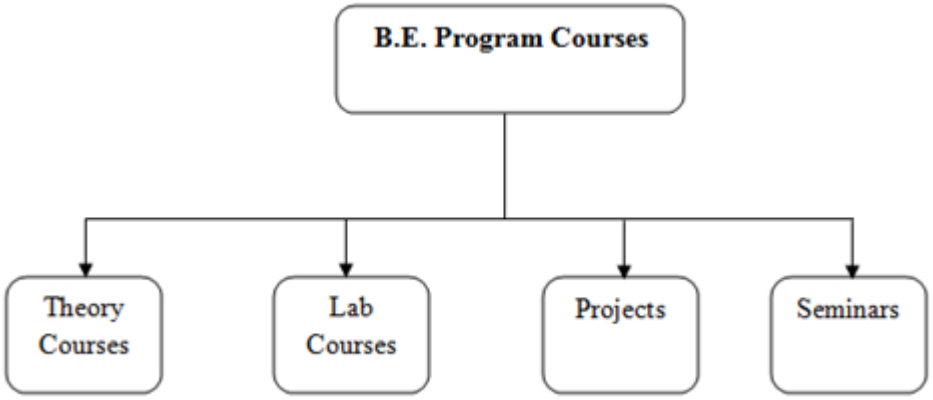
MAPPING OF COs WITH POs & PSOs (Curriculum):
Correlation Level: High – 3; Medium – 2; Low – 1

CO / PO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PS01	PSO 2	PSO 3
C303.1	3	-	-	-	-	-	-	-	3	2	-	-	-	-	-
C303.2	3	-	-	-	2	-	-	3	3	-	-	-	-	-	-
C303.3	3	-	-	-	2	-	-	3	3	-	-	-	-	-	-
C303.4	3	-	-	-	-	-	-	3	3	-	-	-	-	-	-
C303.5	-	3	-	-	-	-	-	3	3	-	-	-	-	-	-
C303	**3**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**3**	**2**	**-**	**-**	**-**	**-**	**-**

7.ASSESSMENT PROCESS

CO Attainment Procedure:

Bachelor of Engineering program consists of a range of courses which are categorised as Theory courses, Lab courses, Projects, Seminars/Summer Internship.



Each of the course is assessed both using Direct Assessment Method and Indirect Assessment Method.

7.1 Direct Assessment of Theory Courses:

Direct Assessment process for theory courses involves Continuous Internal Evaluation (CIE) and Semester End Evaluation (SEE).

OU CURRICULUM:

The scheme of evaluation and grading for each course is as shown below :

S. No	Component	Duration	Maximum Marks
	Continuous Internal Evaluation		
1.	Internal Examination – I	60 minutes	20
2.	Internal Examination - II	60 minutes	20
	Average of the two internal exams		**20**
3.	Assignments	-	**5**
4.	Quizzes	-	**5**
	CIE (Total)		**30**
5.	**Semester End Examination (SEE)**	3 hours	**70**
		TOTAL	**100**

Marks Range	85-100	70 to < 85	60 to < 70	55 to < 60	50 to < 55	40 to < 50	< 40	Absent
Grade	S	A	B	C	D	E	F	Ab
Grade Point	10	9	8	7	6	5	0	-

In general, for theory courses the continuous internal evaluation (CIE) process consists of two Mid-term examinations of 20 marks each, which is split into the following set of questions.

Question Type	No. of Questions	Marks per Question	Choices (Yes or No)
Short Answers	4	2	No
Long Answers	2	6	Yes (Two Choices within each question)

AUTONOMOUS CURRICULUM:

The scheme of evaluation and grading for each course is as shown below :

S. No	Component	Duration	Maximum Marks
	Continuous Internal Evaluation		
1.	Internal Examination – I	80 minutes	25
2.	Internal Examination - II	80 minutes	25
	Average of the two internal exams		**25**
3.	Assignments	-	**5**
4.	Quizzes	-	**5**
5.	Class Assessment	-	**5**
	CIE (Total)		**40**
6.	**Semester End Examination (SEE)**	3 hours	**60**
		TOTAL	**100**

Academic Performance(%)	Letter Grade	Grade Points
95≤Marks≤100	S+	10
90≤Marks≤95	S	10
80≤Marks<90	A	9
70≤Marks<80	B	8
60≤Marks<70	C	7
50≤Marks<60	D	6
40≤Marks<50	E	5
<40	F	0

In general, for theory courses the continuous internal evaluation (CIE) process consists of two Mid-term examinations of 25 marks each, which is split into the following set of questions.

Question Type	No. of Questions	Marks per Question	Choices (Yes or No)
Short Answers	5	2	No
Long Answers	3	5	Yes (Three Choices out of four questions)

Attainment of Course Outcomes (CO):

- COs are written for each course in which, the action verbs corresponding to the Bloom's taxonomy level for cognitive learning is identified and highlighted.
- Internal Question paper analysis is done in which, each question is mapped with a CO. The CO percentage score (representing the maximum extent to which the CO can be attained) is computed based on ratio of **the number of students attained base mark to the number of students attempted the question**. It is made sure that the entire COs of a course are covered in two internal examinations.
- Assignments, quizzes & Class Assessments also cover the entire COs. The CO percentage score is computed same as above and is assigned to each question based on class assessment, assignment, quiz question paper analysis done in prior. **[Note: Class assessments are there only in Autonomous Curriculum]**
- CO percentage scores for Internals are computed by taking the average of scores computed for mid-term examinations, assignments, quizzes and class assessments.
- Since there is no local control on the question paper in the Semester End Examination (SEE) conducted in both Osmania University/Autonomous curriculum, SEE Question Paper analysis is being done to check whether all COs

are addressed. CO percentage scores for Semester End Examination (SEE) is also computed as above and is assigned to all the COs covered in the university question paper analysis.

Finally, the overall CO percentage score is computed by taking the weighted average of Internal I, Internal II and Semester End Examinations. The weightage for SEE is given as 50%, as we don't have any control on the Question paper to cover all COs. This score is finally converted to CO attainment rubric based on the following table.

CO Percentage score	CO attainment rubric
%CO ≥ 60	3
50 ≤ %CO < 60	2
%CO < 50	1

7.2. Indirect Assessment of Theory Courses:

In indirect assessment method, CO based feedback is collected from the students at the end of the semester, wherein students rate all COs of the course in a scale of 3.

Level of CO	Student Rating
Excellent	3
Satisfactory	2
Improvements required	1

Finally, based on the feedback obtained from the students, averages are calculated for each CO and overall course attainment is computed by considering Direct attainment as 80% and Indirect attainment as 20% weightage.

Note: The Set Target for all the courses of CE department are enhanced by 10% (i.e. increased from 50% to 60%) from A.Y.2022-23.

Sample of Theory course attainment:

METHODIST
COLLEGE OF ENGINEERING & TECHNOLOGY
(An Autonomous Institution)
Approved by AICTE, New Delhi & Affiliated to Osmania University
Accredited by NBA and NAAC with A+ Grade
Estd : 2008

Course Attainment (Internal 1)

Academic Year 2022-2023

Course Name with Code	Surveying (2PC303CE)
Class	BE Civil - III Semester
Faculty Name	Shaik Mohammad Imran

Question Number	Part A					Part B				Assignment	Quiz	Class Test
	1	2	3	4	5	6	7	8	9			
Max.Marks of the question	2	2	2	2	2	5	5	5	5	5	5	5
Average marks of student	1.59	1.37	1.53	1.36	1.19	3.6	2.73	3.15	4.23	5	5	5
Satisfactory base mark	1	1	1	1	1	2.5	2.5	2.5	2.5	2.5	2.5	2.5
No. of students scored above Base mark	45	38	30	26	35	25	16	26	15	51	51	51
No. of students attempted	49	48	39	36	42	35	30	41	17	51	51	51
% Students scored above Base mark	91.83	79.16	76.92	72.22	83.33	71.43	53.33	63.4	88.24	100	100	100

CO Attainment	1	2	3	4	5	6	7	8	9	A	Q	CT	Over all %
CO 1	91.83	79.16			83.33					100	100	100	92.38
CO 2			76.92	72.22		71.43	53.33	63.4	88.24	100		100	78.19
CO 3													
CO 4													
CO 5													

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Accredited by NBA and NAAC with A+ Grade
Estd : 2008

Course Attainment (Internal 2)

Academic Year 2022-2023

Course Name with Code	Surveying (2PC303CE)
Class	BE Civil - III Semester
Faculty Name	Shaik Mohammad Imran

Question Number	Part A					Part B				Assignment	Quiz	Class Test
	1	2	3	4	5	6	7	8	9			
Max.Marks of the question	2	2	2	2	2	5	5	5	5	5	5	5
Average marks of student	0.56	1.48	1.23	1.63	1.19	2.80	2.90	3.20	3.09	5	5	5
Satisfactory base mark	1	1	1	1	1	2.5	2.5	2.5	2.5	2.5	2.5	2.5
No. of students scored above Base mark	11	37	32	36	31	21	19	26	13	50	50	50
No. of students attempted	32	42	43	43	42	40	30	40	22	50	50	50
% Students scored above Base mark	34.38	88.1	74.42	83.72	73.81	52.5	63.33	65	59.09	100	100	100

CO Attainment	1	2	3	4	5	6	7	8	9	A	Q	CT	Over all %
CO 1	34.38	88.1	74.42	83.72	73.81					100	100	100	81.80
CO 2								65	59.09	100		100	81.02
CO 3										100			100
CO 4							63.33						63.33
CO 5						52.5							52.5

Course Attainment (SEE)

Academic Year 2022-2023

Course Name with Code	Surveying (2PC303CE)
Class	BE Civil - III Semester
Faculty Name	Shaik Mohammad Imran
Type of Exam	SEE

	SEE
Maximum external marks	60
Satisfactory set Grade	D
No. of students scored set Grade and above	42
No. of students attempted	49
% Students scored above set Grade	85.71

CO Attainment	**%**
CO 1	85.71
CO 2	85.71
CO 3	85.71
CO 4	85.71
CO 5	85.71

Course Attainment

Academic Year 2022-2023

Course Name with Code	Surveying (2PC303CE)
Class	BE Civil - III Semester
Faculty Name	Shaik Mohammad Imran

CO Attainment	Internal I	Internal II	SEE	Overall (%)	Direct Rubric	Indirect Rubric	Overall Rubric
CO 1	92.38	81.80	85.71	86.4	3	2.9	2.98
CO 2	78.19	81.02	85.71	82.65	3	2.9	2.98
CO 3		100	85.71	92.85	3	2.9	2.98
CO 4		63.33	85.71	74.52	3	2.9	2.98
CO 5		52.5	85.71	69.10	3	2.8	2.96
Overall Course Attainment							**2.97**
Set Target for the course							**1.8**
Course Attainment Status(Yes/No)							**Yes**

Percentage of students attained CO	CO attainment rubric
%CO ≥ 60	3
50 ≤ %CO < 60	2
%CO < 50	1

7.3. Direct Assessment of Lab Courses:

Direct Assessment process for lab courses involves Continuous Internal Evaluation (CIE) and Semester End Evaluation (SEE).

The scheme of evaluation and grading for each course is as shown below:

OU CURRICULUM:

S. No	Component	Duration	Maximum Marks
1.	**Continuous Internal Evaluation (CIE)**	**---**	25
	CIE (Total)		**25**
2.	**Semester End Examination**	3 hours	**50**
		TOTAL	**75**

Marks Range	85-100	70 to < 85	60 to < 70	55 to < 60	50 to < 55	40 to < 50	< 40	Absent
Grade	S	A	B	C	D	E	F	Ab
Grade Point	10	9	8	7	6	5	0	-

AUTONOMOUS CURRICULUM:

S. No	Component	Duration	Maximum Marks
1.	**Continuous Internal Evaluation (CIE)**	**---**	40
	CIE (Total)		**40**
2.	**Semester End Examination**	3 hours	**60**
		TOTAL	**100**

Academic Performance(%)	Letter Grade	Grade Points
95≤Marks≤100	S+	10
90≤Marks≤95	S	10
80≤Marks<90	A	9
70≤Marks<80	B	8
60≤Marks<70	C	7
50≤Marks<60	D	6
40≤Marks<50	E	5
<40	F	0

In general, after completion of each experiment marks will be allotted and the average score of all the experiments is considered as Continuous Internal Evaluation (CIE).

In Autonomous curriculum, at the end of each experiment, the student is evaluated by allocating marks as given under:

1) Observation and Results – 20 marks
2) Viva Voce – 10 marks
3) Record – 10 marks.

Average of marks obtained in all experiments is considered as the marks obtained in CIE.

In SEE, the distribution of marks will be as : Procedure – 10 marks; Execution, calculations and results – 30 marks; Viva Voce – 20 marks.

Attainment of Course Outcomes (CO):

- COs are written for lab course in which, the action verbs corresponding to the Bloom's taxonomy level for cognitive learning is identified and highlighted.
- Lab courses consist of continuous internal evaluation (CIE) process which has continuous evaluation sheets averaging to 40 marks
- Each experiment is mapped with a CO. The CO percentage score (representing the maximum extent to which the CO can be attained) is computed based on the ratio of **the number of students attained base marks the number of students attempted the question**. It is made sure that the entire COs are covered in all the ten experiments.
- The Semester End Examination (SEE) is conducted by the faculty of the respective college under the supervision of External Examiner. CO percentage scores for Semester End Examination (SEE) is also computed as above and is assigned to all the COs.

Finally, the overall CO percentage score is computed by taking the average of continuous internal evaluation (CIE) and Semester End Examinations. This score is finally converted to CO attainment rubric based on the following table.

CO Percentage score	CO attainment rubric
%CO ≥ 60	3
50 ≤ %CO < 60	2
%CO < 50	1

7.4.Indirect Assessment of Lab Courses:

In indirect assessment method, CO based feedback is collected from the students at the end of the semester, wherein students rate all COs of the course in a scale of 3.

Level of CO	Student Rating
Excellent	3
Satisfactory	2
Improvements required	1

Finally, based on the feedback obtained from the students, averages are calculated for each CO and overall course attainment is computed by considering Direct attainment as 80% and Indirect attainment as 20% weightage.

Sample lab course attainment sheet

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COLLEGE OF ENGINEERING & TECHNOLOGY
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Accredited by NAAC with A+ and NBA
Estd : 2008 Affiliated to Osmania University & Approved by AICTE

Course Attainment

Academic Year 2022-2023

Course Name with Code	Surveying lab; 2PC351CE
Class	BE Civil III Sem
Faculty Name	Shaik Mohammad Imran

CO Attainment	CIE	SEE	Overall (%)	Direct Rubric	Indirect Rubric	Over all Rubric
CO 1	100	98	99	3	2.9	2.98
CO 2	100	98	99	3	2.8	2.96
CO 3	100	98	99	3	2.8	2.96
CO 4	100	98	99	3	2.8	2.96
CO 5	100	98	99	3	2.8	2.96
Overall Course Attainment						**2.96**
Set Target for the course						**1.80**
Course Attainment Status(Yes/No)						**Yes**

CO Percentage score	CO attainment rubric
%CO ≥ 60	3
50 ≤ %CO < 60	2
%CO < 50	1

7.5. Direct Assessment of Project:

As per OU Curriculum, the project work for B.E Civil students is categorized in two parts. Project work-1 will be in VII semester and Project work-II in VIII Semester. The same project initiated in Project Work-I should be continued and completed in the VIII semester as Project Work –II by the same project team

Project Work-1:

Seminar:

Each student shall identify a topic of current relevance in his/her branch of engineering, get approval of faculty concerned, collect sufficient literature on the topic, study it thoroughly, prepare own report and present in the class.

Project preliminary:

In this stage, students identifies suitable project relevant to the branch of study & forms a project team (not exceeding four students).

The preliminary work to be completed:

(1) Literature survey

(2) Formulation of objectives

(3) Formulation of hypothesis/design/methodology

(4) Formulation of work plan

(5) Seeking funds

(6) Preparation of preliminary report

Evaluation:

Evaluation of Project-1 should be based on the progress reported by the student and certified by the supervisor. Two progress evaluations, mid semester and end semester, are mandatory. The project work-1 is evaluated as CIE for 50 marks.

Seminar:25 marks	**Activity**	**Weightage**
Distribution of Marks	Presentation	10
	Ability to answer questions	8
	Report	7
Project Preliminary: 25 marks	Progress evaluation by supervisor	10
Distribution of marks	Progress evaluation by the internal departmental committee excluding external expert	15

Project Work-2:

Internal Evaluation

Maximum Marks: 50

Distribution of marks for the Project final is as follows:

(i) Two progress assessments: **20 marks** by the faculty supervisor(s)

(ii) Assessments and final project report: **30 marks** by the internal faculty coordinator / review committee

External Evaluation by University appointed external examiner

Maximum Marks: 100

Distribution of marks for the Project final is as follows:

i) Project presentation and viva-voce: **50 marks**

ii) Project Report Assessment: **50 marks**

Sample of mapping projects to POs/PSOs:

METHODIST COLLEGE OF ENGINEERING AND TECHNOLOGY
DEPARTMENT OF CIVIL ENGINEERING
A.Y: 2022-23 B.E VIII SEMESTER SECTION - B
PROJECT PO/PSO MAPPED

S. No	Batch No	Roll No	Student Name	Guide Name	Project Title	PO's/PSO'S
1	1B	160718732113	P. JHANSI RANI	Mr. Shaik Mohammad Imran	Snow Cover mapping using NDSI technique for Kullu Manali region	PO1,PO2,PO4,PO5,PO6,PO8,PO9,PO10,PO12
2		160719732066	G. ISHWARYA			
3		160719732075	E. NANDINI			
4		160719732076	AFIFA TAZEEN			
5		160719732335	C. KAVERI			
6	2B	160718732015	MOHAMMED SAIFULLAH SIDDIQUI	Mrs. Shaista Begum	Analysis and Design of Multistorey Structure with floating columns on STAAD PRO	PO1,PO2,PO3,PO4,PO5,PO6,PO8,PO9,PO10,PO12,PSO2
7		160718732072	FAISAL ZAKI			
8		160718732093	MUSAVIR			
9		160718732115	NAIF MOHAMMED JAVED			
10		160719732334	MOHAMMED OSMAN HUSSAIN SIDDIQUI			
11	3B	160719732063	MOHD EHTHESHAM UDDIN	Mrs. Shaista Begum	Earthquake Analysis and Design of Flat Slab Strutural System using ETABS	PO1,PO2,PO3,PO4,PO5,PO6,PO8,PO9,PO10,PO12,PSO2
12		160719732074	MOHD UMER ANWAR			
13		160719732078	MOHD ANWAR ULLAH ANSARI			
14		160719732083	MOHD ABRAR ARIF			
15		160719732087	MOHD ABDUL NAVEED			
16	4B	160719732082	MOHAMMED AKBAR	Mrs Prasanna Kumari	Analysis and Design of Multistorey buidling using ETABS	PO1,PO2,PO3,PO4,PO5,PO6,PO8,PO9,PO10,PO12,PSO2
17		160719732079	BILAL RAZIUDDIN HABEEB			
18		160719732084	SYED MUKARRAM			
19		160719732092	MOHAMMED QAMERUDDIN NAVEED			
20		160717732003	MOHAMMED SHAHEBAZ ALI			

A Sample Course Attainment process for a Project batch/Team:

AY: 2022-23 **Name of the Guide:** Mr. Shaik Mohammad Imran

NAME OF PROJECT : Flood Susceptibility Mapping using GIS

Batch Number 1A

S.No.	Roll No. ↓	Mid Semester	End Semester	Superviser evalauation	University Examination
	Max. Marks →	**15**	**15**	**20**	**(S/A/B/C/D/E/F)**
1	160719732004	*13*	*14*	*18*	S
2	160719732012	*13*	*14*	*18*	S
3	160719732016	*13*	*14*	*18*	S
4	160719732020	*13*	*14*	*18*	S
5	160719732056	*13*	*14*	*18*	S
	Average Mark	13	14.00	18.00	
	% Marks	87%	93%	90%	90%
	Attainment*	***3***	***3***	***3***	***3***
	Mapping:				
	CO 1	√		√	√
	CO 2	√	√	√	√
	CO 3		√	√	√
	CO 4		√	√	√
	CO 5	√	√	√	√
	CO 6	√	√	√	√

	Attainment:					Overall
	CO 1	3		3	3	3.00
	CO 2		3	3	3	3.00
	CO 3		3	3	3	3.00
	CO 4	3	3	3	3	3.00
	CO 5	3	3	3	3	3.00
	CO 6	3	3	3	3	3.00
					Attainment based on Academic Performance	**3.00**

	Attainment
Academic performance (60% Weightage)	3.00
Project Outcomes(Utility Project/Publications/Best project) (40%)	2
Overall	2.60

*** Attainment Rubrics:**

Academic Peformance	**Attainment**
<=70%	1
70-80%	2
>=80%	3

Project Outcomes	Status	Count
Utility Project	Yes	1
Publications	No	0
Best project by examiner	Yes	1
Project Outcomes		2

7.6.Indirect Assessment of Project:

In indirect assessment method, CO based feedback is collected from the students at the end of the semester, wherein students rate all COs of the course in a scale of 3.

Level of CO	Student Rating
Excellent	3
Satisfactory	2
Improvements required	1

Finally, based on the feedback obtained from the students, averages are calculated for each CO and overall course attainment is computed by considering Direct attainment as 80% and Indirect attainment as 20% weightage.

7.7. Direct Assessment of Seminars/Internship:

Direct Assessment process for seminars course involves only Continuous Internal Evaluation (CIE) of 50 marks.

The scheme of evaluation and grading for each course is as shown below:

Internship Evaluation: 50 Marks	Activity	Maximum Marks
Distribution of Marks	Type of Problem/Work Handled	10
	Report	10
	Presentation	15
	Ability to answer questions	15

- Seminar courses consist of only continuous internal evaluation (CIE) process which constitutes for 50 marks.

The overall CO percentage score is computed by taking the values of continuous internal evaluation (CIE) only. This score is finally converted to CO attainment rubric based on the following table.

CO Percentage score	CO attainment rubric
%CO ≥ 60	3
50 ≤ %CO < 60	2
%CO < 50	1

7.8 Indirect Assessment of Seminar/Internship:

In indirect assessment method, CO based feedback is collected from the students at the end of the semester, wherein students rate all COs of the course in a scale of 3.

Level of CO	Student Rating
Excellent	3
Satisfactory	2
Poor	1

Finally, based on the feedback obtained from the students, averages are calculated for each CO and overall course attainment is computed by considering Direct attainment as 80% and Indirect attainment as 20% weightage.

7.9. Attainment of the Program Outcomes (POs) & the Program Specific Outcomes (PSOs):

Firstly, Program Outcomes (PO) and Program Specific Outcomes (PSOs) are defined for the Bachelor of Engineering Program by the Head of the Department.

The target attainment for a particular PO/PSO is calculated by taking the average of the mapping values related to respective PO/PSO from all courses.

The Attainment of POs & PSOs will be done in both Direct and Indirect modes. To get the overall PO/PSO attainment, weighted average of direct (80%) & indirect (20%) attainments will be calculated.

7.9.1. Direct Method:

The PO and PSO attainments are calculated for a course from the weighted average of the CO attainments of that course (i.e 80% of direct CO attainment value + 20% of indirect CO attainment value) to overall CO attainment of that course . The formula used to calculate PO and PSO Attainment is given below:

PO Attainment= {Over all CO Attained*(corresponding PO from CO-PO Mapping table)}/ 3

PSO Attainment={Over all CO Attained*(corresponding PSO from CO-PSO Mapping table)}/ 3

The PO/PSO attainments are averaged over all the courses of a batch to get the final attainments of the POs/PSOs using direct method.

Note: After completion of course attainment, PO/PSO attainment of a course, each faculty should write the **observations** i.e., related to which COs are poorly attained, any issues faced by students at some topics etc. After that, necessary **plan of action** has to be given, to overcome the issues related to observations. This sets as a guidance for the faculty who takes the same course next year.

7.9.2. Indirect Method:

In this method, feedback forms from various categories of people are collected and assessment is done as follows:

1) Alumni Feedback form
2) Parent feedback form
3) Student exit feedback form
4) Employer feedback form

1) Alumni Feedback form:

In this method, alumni feedback forms are distributed to students to give their rating on different parameters on a scale of 1-3during the Alumni meet conducted by the institution. The various parameters of the Alumni feedback forms are mapped to Programme Outcomes and Programme Specific Outcomes using the following table:

S.No	Parameters	Relevance to PO & PSO
1	Effectiveness of teaching processes	PO2, PO3, PO4, PO5
2	Learning environment	PO8, PO9, PO10, PO12, PSO1,PSO2.PSO3
3	Faculties Helpfulness	PO2, PO3, PO4, PO5, PO11 PSO1 PSO2 PSO3
4	Course Structure	PO1-PO12, PSO1,PSO2,PSO3
5	Computing and Internet facilities	PO4, PO5, PO12 PSO1,PSO2
6	Quality of Electives	PO1, PO5, PSO2,PSO3
7	Relevance of labs with courses	PO2, PO3, PO4, PO5,PO11, PSO1,PSO2
8	Sensitization towards social issues courses	PO6, PO7, PO8, PSO3
9	Personality/Communication skills development facilities	PO8, PO9, PO10
10	Emphasis on extra learning or self-learning	PO4, PO12, PSO2, PSO3

After analysing the feedback forms, Assessment Committee members will calculate the PO Attainments based on the above table.

DEPT. of CE/CSE/EEE/ECE/ME/MBA

ALUMNI FEEDBACK

Name & Roll No:	Year of leaving:
Branch Studied:	Present status:

Please provide your valuable feedback to improve quality of the programme. Select your ranking on the scale of 1 to 3 for each of the following parameters
3- Excellent 2- Good, 1- Satisfactory

Sl. No.	Parameters	1	2	3
1.	Effectiveness of Teaching Processes			
2.	Learning environment			
3.	Faculty helpfulness			
4.	Course structure			
5.	Computing and Internet Facilities			
6.	Quality of Electives			
7.	Relevance of labs with courses			
8.	Sensitization towards social issues courses			
9.	Personality/ Communications Skills Development Facilities			
10.	Emphasis on extra learning or self learning			

2) Parent feedback form

In this method, parent feedback forms are distributed to the parents to give their rating on different parameters on a scale of 1-3 during their visit on parent-teacher interaction conducted by the department.

The various parameters of the Parent feedback forms are mapped to Programme Outcomes and Programme Specific Outcomes using the following table.

S.No	Parameters	Relevance to PO & PSO
1	Student performance	PO1, PO2, PO5, PO9,PO10,PSO1,PSO2,PSO3
2	Library facilities	PO5
3	Course content	PO1- PO5, PO9- PO12 PSO1,PSO2,PSO3
4	Student's comfort in coping with workload	PO2, PO9, PO12, PSO2
5	Student participation in college activities	PO6, PO9, PO10
6	Student's awareness towards social issues like gender equality, environment, ethics and values through courses	PO6, PO7, PO8 ,PSO3
7	Academic flexibility through elective courses	PO1,PO5, PSO2, PSO3
8	Parent interaction with faculty	PO6
9	Emphasis on soft skill development	PO5, PO9, PO10, PSO2
10	Students transformation	PO1- PO12 ,PSO1, PSO2,PSO3

After analysing the feedback forms, Assessment Committee members will calculate the PO Attainments based on the above table.

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ABIDS, HYDERABAD

DEPT. of CE/CSE/EEE/ECE/ME/MBA

PARENT FEEDBACK

Parent Name:	Student Name & Roll No:
Profession & Address:	Class & Branch:

Please provide your valuable feedback to improve quality of the programme. Select your ranking on the scale of 1 to 3 for each of the following parameters
3- Excellent 2- Good, 1- Satisfactory

Sl. No.	**Parameters**	**1**	**2**	**3**
1	Student performance			
2	Library facilities			
3	Course content			
4	Student's comfort in coping with workload			
5	Student's participation in college activities			
6	Student's awareness towards social issues like gender equality, environment, ethics and values through courses			
7	Academic flexibility through elective courses			
8	Parent interaction with faculty			
9	Emphasis on soft skill development			
10	Student transformation			

3) Student exit feedback form:

In this method, feedback forms are distributed to the students to give their rating on different parameters on a scale of 1-3, when they are about to leave the institution. The various parameters of the Student Exit feedback forms are mapped to Programme Outcomes and Programme Specific Outcomes using the following table:

S.No	Parameters	Relevance to PO & PSO
1	Satisfaction from Technical knowledge	PO1, PO2, PO3, PO4, PO5,PSO1,PSO2,PSO3
2	Employability skills	PO1- PO5, PO8- PO11,PSO1,PSO2,PSO3
3	Laboratory facilities	PO2- PO5, PO11,PSO1,PSO2
4	Extracurricular & Co-curricular activities	PO6- PO12,PSO2,PSO3
5	Overall rating on attainment of intended POs	PO1- PO12,PSO1,PSO2,PSO3

After analysing the feedback forms, Assessment Committee members will calculate the PO Attainments based on the above table.

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COLLEGE OF ENGINEERING AND TECHNOLOGY
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Department of Civil Engineering

Program Exit Survey

Name:	Academic Year
Roll No.	Class:

Please provide your valuable feedback to improve quality of the programme. Select your ranking on the scale of 1 to 3 for each of the following parameters
3- Excellent 2- Good, 1- Satisfactory

S. No.	Parameters	1	2	3
1	Satisfaction from Technical Knowledge			
2	Employability skills			
3	Laboratory facilities			
4	Extracurricular and co-curricular activities			
5	Overall rating on attainment of intended PO's			

Student Signature

4) Employer feedback form

In this method, feedback is taken from the employer of our student on different parameters on a scale of 1-3.

The various parameters of the Employer feedback forms are mapped to Programme Outcomes and Programme Specific Outcomes using the following table:

S.No	Parameters	Relevance to PO & PSO
1	Performance of the employee	PO1, PO2, PO3, PO4, PO5,PO8, PO9, PO10,PO11,PSO1,PSO2,PSO3
2	Technical skills	PO1, PO2, PO3, PO4, PO5 PSO1,PSO2,PSO3
3	Creative and innovative skills	PO4, PO5,PSO2
4	Employee enthusiasm to continuous learning	PO12,PSO1,PSO2,PSO3
5	Passion for growth	PO9,PO12,PSO1,PSO2,PSO3
6	Interpersonal kills	PO8, PO9, PO10,PO11
7	Teamwork	PO9
8	Ethical values and social responsibility	PO6, PO7,PO8,PSO3
9	Attitude towards social issues like gender equality and	PO6, PO7,PO8,PSO3
10	Do you recommend our Institution to others	PO1-PO12

After analysing the feedback forms, Assessment Committee members will calculate the PO Attainments based on the above table.

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EMPLOYER FEEDBACK

Name of the Organisation:	Name of the Employee:
Name of the officer:	Year of passing:
Designation of the officer:	Branch studied:

Please provide your valuable feedback to improve quality of the programme. Select your ranking on the scale of 1 to 3 for each of the following parameters
3- Excellent 2- Good, 1- Satisfactory

S. No.	Parameters	1	2	3
1	Performance of the Employee			
2	Technical Skill			
3	Creative and Innovative skills			
4	Employee enthusiasm to continuous learning			
5	Passion for growth			
6	Interpersonal skills			
7	Team work			
8	Ethical values and social responsibility			
9	Attitude towards social issues like gender equality & environment			
10	Do you recommend our Institution to others?			

Any suggestions: 1.

2.

Authorised Signatory

Finally, after analysing all the feedback forms, total indirect PO attainment is calculated by taking the average of all the four PO attainments calculated individually.

At last, to get the overall PO/PSO attainment, weighted average of direct (80%) & indirect (20%) attainments for PO/PSO will be calculated by the Assessment Committee.

Note: The set target for any particular PO attainment is, average of that PO strength mapped in all the courses of a program.