Process Manual

for

CO, PO & PSO Attainment

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CHAPTER 1: Institute Vision and Mission

VISION

Fostering a culture of educational excellence, empowering engineers through innovation and collaboration for a brighter, sustainable future.

MISSION

IM1: To provide high-quality education that equips engineers with the knowledge and skills to excel in a rapidly changing technological landscape.

IM2: To encourage innovation through research and practical applications, promoting a spirit of creativity and problem-solving.

IM3: To foster collaboration by building strong partnerships with industry, academia, and the community to address real-world challenges.

IM4: To instill a sense of responsibility for sustainability and environmental awareness, preparing engineers to contribute to a greener, more sustainable future.

CHAPTER 2: Process for Defining Vision and Mission

The Department must establish the Vision and Mission through a consultation process involving the stakeholders of the department, considering the societal requirements. The department's Vision and Mission are framed within the department that are derived from the Institutional Vision and Mission statements. The Programme Assessment Committee (PAC) circulates these statements among the stakeholders of the programme such as Industry, Faculty, Alumni, Parents & Employer and collects the views to refine the draft Vision and Mission statements. These draft statements are forwarded to the Department Committee (DC) to look into the relevance and consistency with the Vision and Mission of the institute. The DC consolidates these statements and the statements that are presented to the

Board of Studies for suggestions. The Academic council will approve the finalized Vision and Mission statements of the department as shown in figure 2.1. The department takes measures to disseminate these statements among the stakeholders.
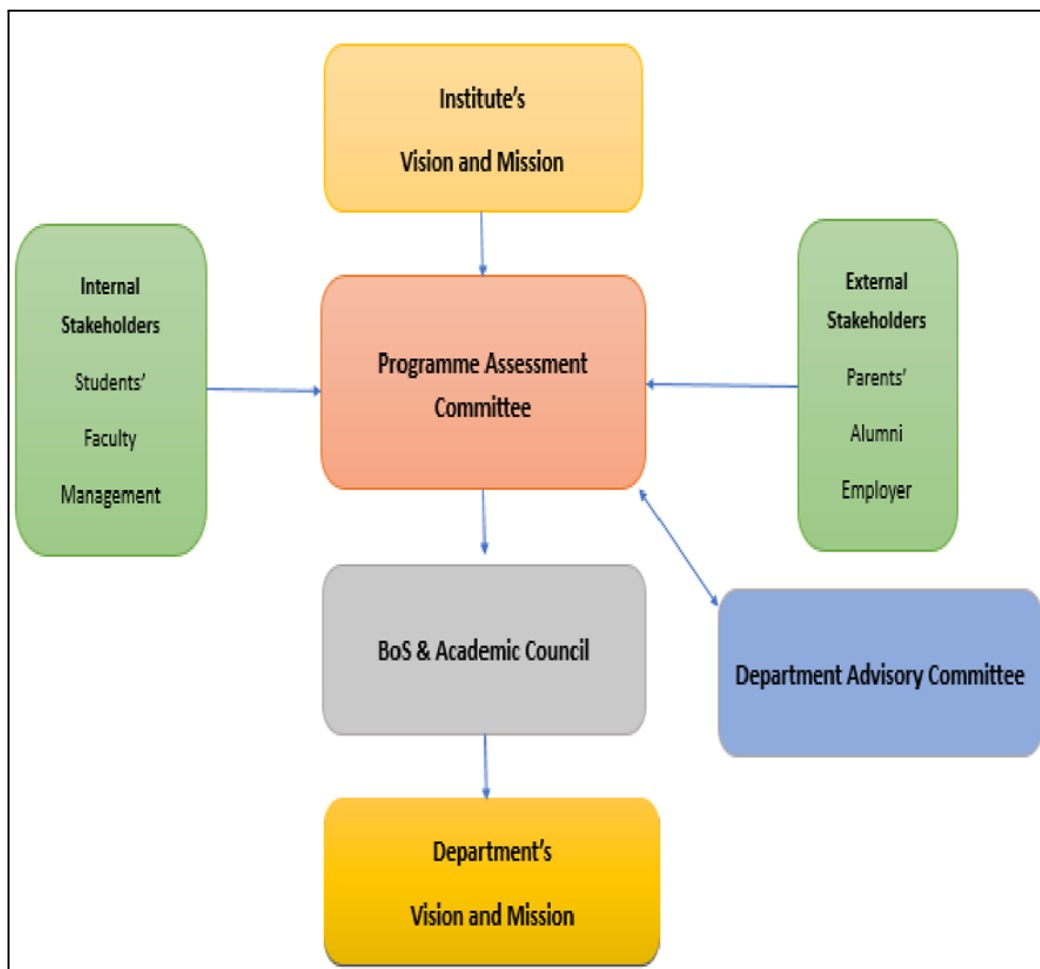
Fig 2.1: Process of defining Vision and Mission Statements

Appropriateness of Vision & Mission of the department with the Institute Vision & Mission:

<<Each programme need to enter their appropriateness of Department vision and mission with the Institute's Vision and Mission statements>>

CHAPTER 3: Programme Educational Objectives (PEOs)

3.1 Program Educational Objectives (PEOs): PEOs are broad statements that describe the career and professional accomplishments that the program is preparing graduates to achieve.

Process of defining PEOs: Program Educational Objectives are broad statements that determine what the programme is preparing graduates for their career and professional life. These statements are designed inline with the Vision and Mission statements of the institute, Vision and Mission statements of the department and the Programme Outcomes. Programme outcomes are statements that define what graduates are able to do by the time they graduate. The programme aims at achieving the educational objectives through these Outcomes and the Process of defining PEOs is given in the figure 3.1.

The programme assessment committee will prepare PEOs by collecting views from the stakeholders such as Faculty, Students, Alumni, Employer and Parents.

The department advisory committee deliberates on the PEOs submitted by the PAC, recommends modifications and forwards the draft PEOs to the BoS for suggestions.

BoS reviews the PEOs and submits its recommendations. The final version of the PEOs are forwarded to the Academic Council by the department for approval.

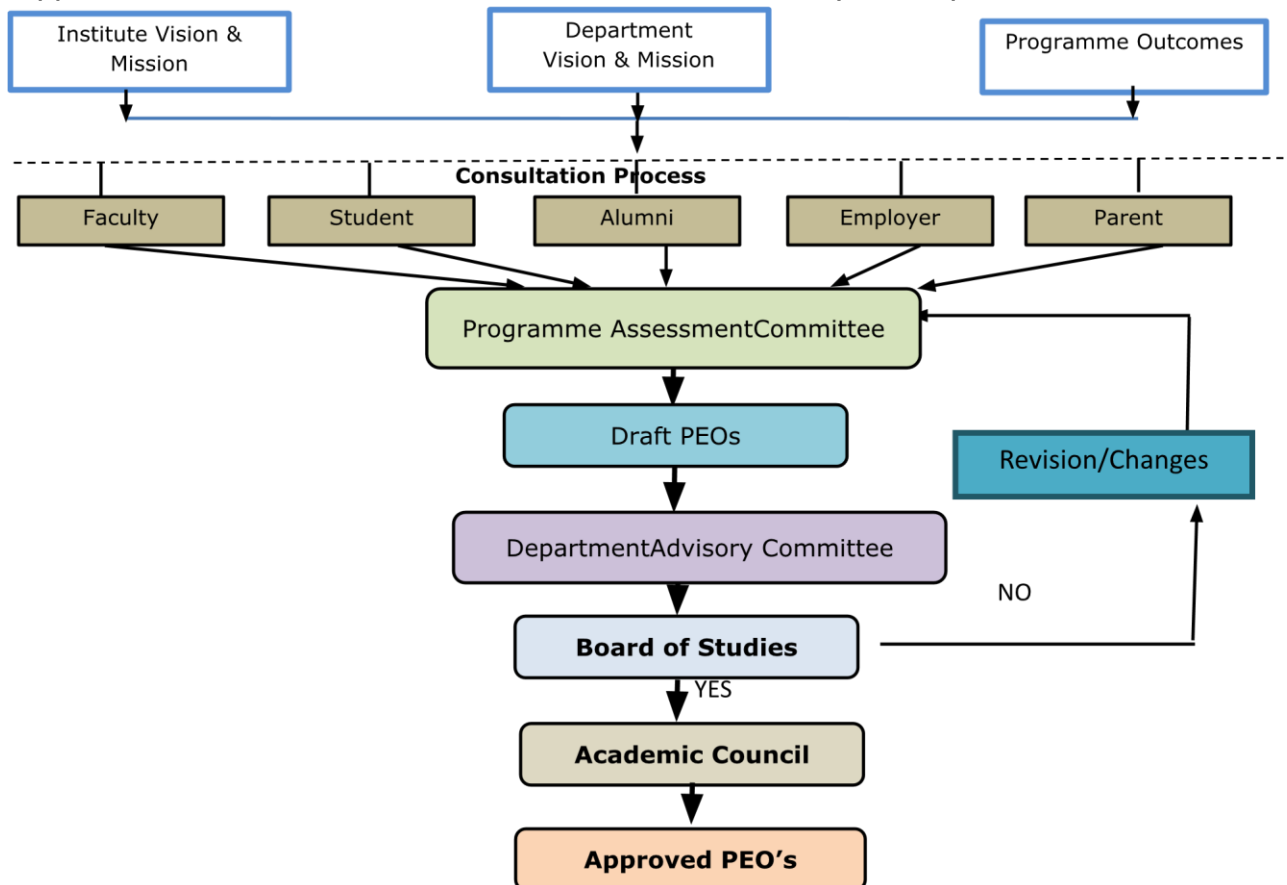The approved PEOs are disseminated to all the stakeholders by the department.

Fig 3.1: Process of defining PEOs

3.2 Dissemination of Vision, Mission and PEOs

The Mission, Vision and PEOs are widely publicized through the following ways

Table 3.1: Dissemination of Vision, Mission & PEOs

Category of Media	Medium/Place of Dissemination	Stakeholders
Print Media	Student Handbook	Students, Faculty, Parents
	Syllabus Books and Lab Manuals	Students and Faculty
	Department Newsletters	Students, Faculty, Alumni, Employers and Parents
	Conference/Workshop Brochures	Students, Faculty, Alumni, Employers, Parents and Society
	Conference Proceedings	Students, Faculty, Alumni, Employers, Parents and Society
	Course Files	Faculty, External Resource Person
Display Media	HOD Office	Students, Faculty, Supporting Staff, All visitors
	Faculty Room	Students, Faculty, Supporting Staff, All visitors
	Common Areas	Students, Faculty, Supporting Staff, All visitors
	Laboratories	Students, Faculty, Supporting Staff, All visitors
	Notice Boards in the Department	Students, Faculty, Parents, Supporting Staff, On campus recruiters, Invited speakers, Alumni, All visitors
Electronic Media	College Website	Students, Faculty, Alumni, Employers, Parents and Society
	Alumni website (https://www.vcealumni.org/page/departments-vision-and-mission)	Students, Faculty, Alumni, Employers, Parents and Society

Communication Media	Emails	Students, Alumni
	Conference website	Faculty, Resource persons, Participants, Professional Bodies
Interactions	Stakeholders Meeting	All stakeholders in the meeting
	Alumni Meet	Alumni
	Induction Program for First year students	Students, Parents
	Orientation Program for Lateral Entry students when they take admission in Second year	Students, Parents
	Board of Studies Meetings	Faculty, BoS Members, External Experts, Alumni
	Parents Teacher Meeting	Students, Parents

3.3 Process of Dissemination among Stakeholders

Institute Vision, Mission, Department Vision, Mission and PEOs, POs & PSOs are disseminated as follows:

Table 3.2: Process of Dissemination

S. No.	Stakeholder	Frequency
1	To All first year admitted students and parents during the first day of the Induction program through Power Point Presentation by the Head of the Department.	Once every year
2	To All lateral entry students admitted in 3rd Semester and parents on the day of joining the program through PowerPoint Presentation by the Head of the Department.	Once every year
3	To All Second Year students during orientation for choosing open electives.	Once every semester
4	To All Third Year students during orientation for choosing open electives.	Once every semester
5	To students of all years during the semester through Department Newsletter	Once every semester
6	To students of all years during the semester through technical magazine - ByteQuest	Once in Fortnight
7	To outgoing students through the exit Survey Questionnaire	Once every year

8	To faculty and society through the workshop, conference brochures and outreach programmes	For every activity
9	To alumni through alumni survey	Once every year
10	To academicians and industry experts through the BoS meetings	Twice every year

CHAPTER 4: Programme Outcomes (POs) & Programme Specific Outcomes (PSOs)

The Institute started adopting Outcome Based Education (OBE) in 2012. The main objective of implementing OBE is to impart education by adopting a student centric approach and deliver outcome oriented teaching for the students. Every programme identifies Program Outcomes (POs), Program Specific Outcomes (PSOs), and Course Outcomes (COs) in accordance with the vision and mission statements of the programme.

4.1 Program Outcomes (POs)

Program Outcomes (POs) represent the student learning outcomes that are defined as the knowledge, skills, or behaviours that a student should be able to demonstrate upon completion of the programme and are statements written in accordance to the graduate attributes.

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

PO2 - Problem analysis : Identify, formulate, 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 solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.

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

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

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

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

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

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

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.

4.2 Programme Specific Outcomes (PSOs)

Program Specific Outcomes (PSOs) are specifically defined outcomes of the programme which the graduates have to acquire by the end of the programme.

<< Each programme need to enter their Programme Specific Outcomes (PSOs)>>

The following are the various means for disseminating Program Outcomes (POs), Program Specific Outcomes (PSOs) of all Programmes:

Print Media	Student Handbook
	Syllabus Books
	Department News Letters
Display Media	HOD Room
	Faculty Room
	Common Areas
	Laboratories
	Department Library
	Notice Boards in the Department
	Other prominent locations in the department
Electronic and Communication Media	Web site - www.vce.ac.in
	Emails
	Conference website
	Stakeholders Meeting
	Alumni Meet

CHAPTER 5: Course Outcomes

5.1 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.
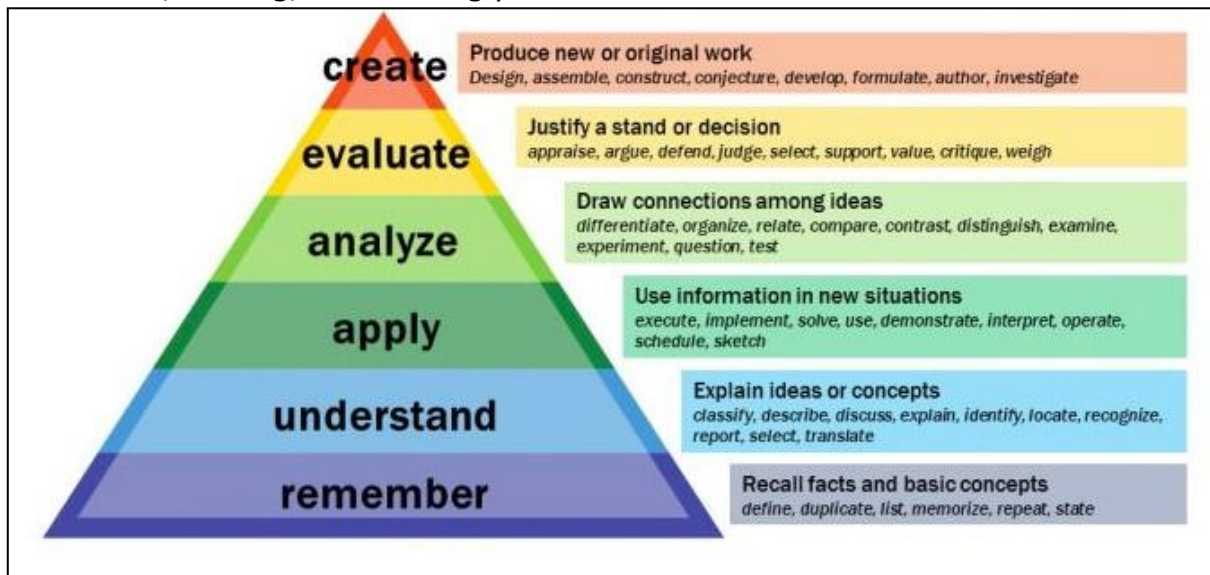
Fig 5.1: Bloom's Taxonomy

Remembering : the basic recall of information presented through various methods. When we "remember" something, we are able to name it, locate it, define it, etc. We are able to take the content and paint a visual for the learner.

Understanding : the demonstration of what we remember. When we "understand" something, we are able to apply that knowledge in a myriad of ways. We may compute, illustrate, or show others how we interpret that particular concept.

Applying : the solving of problems associated with basic understanding: When we "apply" something, we try to understand its relevance in new situations.

Analyzing : the investigation of the concept for which we previously demonstrated understanding. When we "analyze" something, we break it down so that we can find connections that make the parts a whole.

Evaluating : the process in which the content is examined for validity. When we "evaluate" something, we have to prepare for debate and discussion on prior analysis.
Creating : the development or production of new ideas based on an extensive assessment of a concept. When we "create" something, we are able to build new and interesting phenomena based on the discernment we gained from the previous stages of the model.

Table 5.1 Revised Bloom's Taxonomy Action Verbs

REVISED Bloom's Taxonomy Action Verbs

Definitions	I. Remembering	II. Understanding	III. Applying	IV. Analyzing	V. Evaluating	VI. Creating
Bloom's Definition	Exhibit memory of previously learned material by recalling facts, terms, basic concepts, and answers.	Demonstrate understanding of facts and ideas by organizing, comparing, translating, interpreting, giving descriptions, and stating main ideas.	Solve problems to new situations by applying acquired knowledge, facts, techniques and rules in a different way.	Examine and break information into parts by identifying motives or causes. Make inferences and find evidence to support generalizations.	Present and defend opinions by making judgments about information, validity of ideas, or quality of work based on a set of criteria.	Compile information together in a different way by combining elements in a new pattern or proposing alternative solutions.
Verbs	• Choose • Define • Find • How • Label • List • Match • Name • Omit • Recall • Relate • Select • Show • Spell • Tell • What • When • Where • Which • Who • Why	• Classify • Compare • Contrast • Demonstrate • Explain • Extend • Illustrate • Infer • Interpret • Outline • Relate • Rephrase • Show • Summarize • Translate	• Apply • Build • Choose • Construct • Develop • Experiment with • Identify • Interview • Make use of • Model • Organize • Plan • Select • Solve • Utilize	• Analyze • Assume • Categorize • Classify • Compare • Conclusion • Contrast • Discover • Dissect • Distinguish • Divide • Examine • Function • Inference • Inspect • List • Motive • Relationships • Simplify • Survey • Take part in • Test for • Theme	• Agree • Appraise • Assess • Award • Choose • Compare • Conclude • Criteria • Criticize • Decide • Deduct • Defend • Determine • Disprove • Estimate • Evaluate • Explain • Importance • Influence • Interpret • Judge • Justify • Mark • Measure • Opinion • Perceive • Prioritize • Prove • Rate • Recommend • Rule on • Select • Support • Value	• Adapt • Build • Change • Choose • Combine • Compile • Compose • Construct • Create • Delete • Design • Develop • Discuss • Elaborate • Estimate • Formulate • Happen • Imagine • Improve • Invent • Make up • Maximize • Minimize • Modify • Original • Originate • Plan • Predict • Propose • Solution • Solve • Suppose • Test • Theory

Anderson, L. W., & Krathwohl, D. R. (2001). A taxonomy for learning, teaching, and assessing, Abridged Edition. Boston, MA: Allyn and Bacon.

5.2 Course Outcomes : Course Outcomes (COs) are clear statements of what students should be able to demonstrate upon completion of a course. They should be measurable. CO statement should have these three components performance, condition and criteria.

Process of defining Course Outcomes:

The course outcomes of each course are prepared by the course coordinator in consultation with the faculty teaching the same course. The COs must be prepared in accordance with the Bloom's Taxonomy levels. A Course Outcome should Start with an Action verb from Bloom's taxonomy set of verbs. For every course, four to six COs are drafted in accordance with the Curriculum, they are discussed in the Department committee and modified based on the suggestions if any. Approval for the Syllabus and COs is obtained from the Board of Studies (BoS).

Sample Course Outcomes:

Web Programming and Services (PC610CS)

CO No.	Course Outcome At the end of the course, Students will be able to
PC610CS.1	Apply HTML, CSS & JavaScript to design web pages.
PC610CS.2	Develop applications using JDBC API to connect to a database.Design XML documents and apply styles using XSLT.
PC610CS.3	Explain architectural styles and develop dynamic web applications using Servlets.
PC610CS.4	Design and develop server side programs using JSP & PHP.
PC610CS.5	Publish web services and explain serverless computing

CHAPTER 6: CO-PO and CO-PSO Mapping

6.1 Correlation Matrices

The COs of every course are published in the syllabus copy, and on the department page of the institute website. The following correlation matrices maintained by every programme in the Outcome Based Education.

1. COs to POs and COs to PSOs: Course outcomes of each course are mapped to the Program Outcomes with a level of correlation value as 3: being highly correlated 2: being medium correlation and 1: being low correlation. Similarly, a correlation table is maintained for COs that have a correlation value to PSOs

2. Course to POs and Course to PSOs: Average of the correlation values of all Course outcomes corresponding to a single PO derives the Course to PO mapping. Similarly, a correlation table is maintained for Course that have an average correlation value to PSOs.

3. Survey questionnaire (SQ) to POs and Survey questionnaire to PSOs: Average of the correlation values (3: being highly correlated 2: being moderate correlation and 1: being low correlation) of all questions corresponding to a single PO derives the SQ to PO mapping. Similarly, a correlation table is maintained for Survey questionnaires that have an average correlation value to PSOs.

4. Program level statistics: For every batch of outgoing students, the programme outcome assessment is measured through the student participation in various co-curricular and extra-curricular activities. Few tools used for measuring include students' participation in workshops/ seminars/ conferences/ paper presentations/ internships/ Guest Lectures etc. are prepared. Each of these activities are mapped to POs and PSOs. Average of the correlation values (3: being highly correlated 2: being moderate correlation and 1: being low correlation) of all questions corresponding to a single PO derives the Program level statistics to PO mapping. Similarly, a correlation table is maintained for Program level statistics that have an average correlation value to PSOs.

Eg: Course Articulation Matrix for Programming and Problem Solving (CO to PO Mapping for PPS)

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	2	3	2	1								
CO2	3	2	2	2	1							

CO3	2	1	1	1									
CO4	3	1	1	1									
CO5	3	2	2	2	1								

Course to PO Mapping for PPS

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
PPS	2.6	1.8	1.6	1.4	1							

CO to PSO Mapping for PPS

PSO	PSO1	PSO2	PSO3
CO1	2		
CO2	3		
CO3	3	1	1
CO4	2	1	
CO5	3	1	1

Course to PSO Mapping for PPS

Course	PSO1	PSO2	PSO3
PPS	2.6	1	1

The Course to PO, Course to PSO mapping must be defined and justification must be included in the course file. The mapping is ratified by the Programme Assessment Committee.

Programme Articulation Matrix (sample)

Program articulation matrix depicts the correlation between all the courses of the programme and Programme Outcomes
Example:

Course Code	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
HS110EH										3	3	3
BS110MA	3	2.8										2.8
BS120PH	3	2										1

Course	1	2	3	4	5	6	7	8	9	10	11	12
BS130CH	3	2				1.8						1.4
ES110CS	2.6	1.8	1.6	1.4	1							1.3
ES120EE	3	2	1		1	1	1	1	1	1		1
ES130CE	2	2								2		
HS111EH									3	3		3
BS111PH	3	2.8		2								2
BS121CH	3	2							2			1
ES111CS	2.6	2	2	1.8	1							
OE310MA	1	1										1
OE310ME	2		2	1.7	2.3							
PC311CS	2.6	2.4	1.8	1	1				1			1
ES321EC	3	2	2.5	1					1.3			
BS410MA	3	2										1
PC530CS	1.8	2.4	2	1		1						1
PC540CS	2.2	2.5	2.5	1	1							1.6
HS500EH			2	2					1		2	1
HS510EH												2
PE850CS	3	2	1									
PW819CS	2	3	2.5	3	3	2	1.8	3	3	3	2	3

Chapter 7: CO Assessment and PO Assessment Tools

7.1 CO Assessment Tools:

Various tools used for assessing the attainment of each Course Outcome.

1. Assignments
2. Quizzes
3. Internal Examination
4. Sem-end Examination
5. Rubrics for evaluation of Projects & Project Seminar
6. Viva- Voce for Project
7. Course-end survey

Assignments, quizzes and examinations contribute to the assessment of students' ability to apply fundamental concepts; quantitative, numerical and analytical skills. Assignments are given frequently to the students, which involve application of concepts for solving a wide range of problems. Each of these assessment tools test the abilities of the students at various cognitive levels as described in Table 5.1.

Continuous evaluation of Laboratory work and mini projects contribute towards the assessment of necessary skills to implement ideas and techniques.

Project work evaluation contributes towards the assessment of necessary skills to use modern tools and demonstrate proficiency in the chosen field of interest. Reports, presentation and viva-voce contribute to the assessment of communication skills and dissemination of ideas.

These assessments listed in Table 7.1 are carried out periodically and hence allow the faculty members to continuously monitor and help the students to attain the course outcomes.

Direct Assessment Tools

➢ **Assignment** - The assignment is a qualitative performance assessment tool designed to assess students' knowledge of engineering practices, framework, and problem solving at the knowledge, application, and synthesis levels of Bloom's taxonomy. Evaluation will be done by the subject faculty to assess students' knowledge with respect to the learning outcomes associated with the scenario tool.

➢ **Quiz** - Quiz is a theory-based examination conducted as a surprise test consists of Multiple-Choice Questions and Subjective Questions that test the students' knowledge in engineering, analytical and problem solving skills and their capability to provide solutions to engineering problems. Evaluation will be done by the subject faculty to assess students' knowledge with respect to the learning outcomes associated with the scenario tool.

➢ **Internal Examination** - This type of performance assessment is carried out twice a semester. Every internal exam tests the students' course outcome attainment at

all levels of Bloom's Taxonomy such as remembering, understanding, applying, analyzing, evaluating and creating.

➢ **Semester End Examination** - Semester End examination is a metric for assessing whether all the POs are attained or not. Examination is more focused on attainment of course outcomes and program outcomes using a descriptive exam testing the students at all levels of Bloom's taxonomy.

➢ **Rubrics** - A rubric explains to students the criteria against which their work will be judged with the "scoring rules". It is used by faculty in assessing the course outcome attainment in projects and seminars during third year and final year. This tool is designed to evaluate the students' capability of self- learning, innovativeness and team management and communication skills. It makes a public key criterion that students can use in developing, reviewing, and judging their own work.

Indirect Assessment Tools

➢ **Survey reports** - Indirect assessment strategies include Graduate/Exit Survey, Alumni Survey, Employer Survey and Parent Survey. Exit survey is conducted every year for the passing out batches. Alumni Survey is conducted during alumni meets and whenever alumni visit the campus. Employer Survey and Parent Survey are conducted annually.

➢ **Program level statistics** - For every batch of outgoing students, the programme outcome assessment is measured through the student participation in various co-curricular and extra-curricular activities. Few tools used for measuring include students' participation in workshops/ seminars/ conferences/ paper presentations/ internships/ Guest Lectures etc. are prepared.

Table 7.1 Tools

S. No.	Type of course	Tool	Frequency
1	Theory	Quiz	Thrice per semester
		Assignment	Thrice per semester
		Internal exam	Twice per semester
		Semester end exam	Once per semester
		Course end survey	Once per semester

2	Laboratories	Internal exam	Once per semester
		Semester end exam	Once per semester
		Course end survey	Once per semester
3	Project Seminar	Rubrics for evaluation of seminar	Once per semester
		Course end survey	Once per semester
4	Projects	Rubrics for evaluation of Projects (Internal)	Twice per semester
		Viva-voce (Sem-end exam)	Once per semester
		Course end survey	Once per semester
5	Massive Open Online Courses (MOOCs)	Proctored Exam	Once

The following tables show the rubrics for assessment of Project work and seminar.

Rubric is to be aligned to the COs.

Table 7.2 Rubrics for Project Seminar

Grade/ Criteria	Satisfactory (1)	Good (2)	Very Good (3)	Outstanding (4)
Literature Survey & Selection of a topic	Moderate literature review and Fair description of the selected topic	Moderate literature review and Clear description of the selected topic	Good literature review and Good description of the selected topic	Very Good literature review and Very Good description of the selected topic
Presentation	Fair Presentations of the selected topic	Clear Presentations of the selected topic	Good Presentations of the selected topic	Very Good Presentations of the selected topic

Communication	Fair description of the Concept/Techniques related to the selected topic	Clear description of the Concept/Techniques related to the selected topic	Good description of the Concept/Techniques related to the selected topic	Very Good description of the Concept/Techniques related to the selected topic
Documentation	Fair documentation of the Selected topic	Clear documentation of the Selected topic	Good documentation of the Selected topic	Very Good documentation of the Selected topic
Conclusion	Fair conclusion of the selected topic	Clear conclusion of the selected topic	Good conclusion of the selected topic	Very Good conclusion of the selected topic

Table 7.3 Rubric used for Mini Project/Theme-based Project/Project Evaluation

The criteria mentioned in the rubric are to be aligned to the COs

Grade/ Criteria	Satisfactory (1)	Good (2)	Very Good(3)	Outstanding (4)
Literature Survey	Moderate literature review and no references	Moderate literature review and incomplete references	Good literature review and proper references	Very Good literature review and proper references
Problem Analysis	Fair description of the problem statement	Clear description of the problem statement	Good description of the problem statement	Very Good description of the problem statement
Design/ Methodology	Methodology is suitable, described properly but no system design	Methodology is suitable, described properly and system design is included	Methodology is suitable, described properly and system design is included with explanation of its adoption	Methodology is suitable, described properly and system design is included with explanation of its adoption and examples

Implementation, Results & Conclusion	Result i s explained and brief discussion is provided	Result is explained and moderate discussion is provided	Result is explained and good discussion is provided with respect to the problem statement	Result is explained and thorough discussion is provided with respect To the problem statement
Presentation &	Clear presentation of the problem	Good presentation of the	Good presentation of the	Very good presentation of the problem
Documentation	statement with documentation	problem statement and documentation	problem statement and good documentation	with well documentation

However there is a flexibility given to the Departments to devise their own rubrics

7.2 PO Assessment Tools:

The following tables show the rubrics for assessment of ECA (Extra Curricular Activities) and CCA (Co-Curricular Activities) activities

Table 7.4 Rubric for CCA Activities

Criteria	Score		
	3	2	1
Guest lectures	Number of guest lectures conducted are greater than or equal to 6 in four years	Number of guest lectures conducted are between 3 to 5 in four years	Number of guest lectures conducted are less than 2 in four years
Workshops	Number of student workshops conducted are greater than or equal to 3 in four years	Number of student workshops conducted is two in four years	Number of student workshops conducted is one in four years
Student competitions	Number of student competitions conducted are greater than or equal to 6 in four years	Number of student competitions conducted are between 3 to 5 in four years	Number of student competitions conducted are between less than 3 in four years

Internships	Number of students attending internships are greater than or equal to 10 for program with one section and 20 for program with two sections.	Number of students attending internships are between 3 to 9 for program with one section and 6 to 18 for program with two sections	Number of students attending internships are less than 3 for program with one section and 6 for program with two sections
Professional Practice School	Conducted greater than or equal to two weeks PPS training to students	Conducted one week PPS training to students	Conducted less than one week PPS training to students
Industrial Visit	Conducted greater than or equal to three industrial visits	Conducted two industrial visits	Conducted less than two industrial visits
Student presentations	100 % of the students have given presentations.	90 – 99 % of the students have given presentations.	Less than 90 % of the students have given presentations.

Table 7.5 Rubric for ECA Activities

Criteria	Score		
	3	**2**	**1**
NSS (includes Sahay, Street cause and all extension activities)	Number of activities are greater than or equal to 4	Number of activities are 3	Number of activities are 1 or 2
Extra-curricular clubs	100 % of the students participate in the club	90 – 99 % of the students participate in the club	Less than 90 % of the students participate in the club
Sports	Number of activities are greater than or equal to 8	Number of activities are between 6 or 7	Number of activities are between 1 to 5
Entrepreneurship (SWAYAM/ED CELL)	Number of activities are greater than or equal to 4	Number of activities are between 2 or 3	Number of activity is 1

Inter institute literary and cultural activities	Number of activities are greater than or equal to 10	Number of activities are between 5 to 9	Number of activities are between 1 to 4

Table 7.6 Rubric for Surveys

Attainment Level 3:	If attainment percentage is >=60%
Attainment Level 2:	If attainment percentage is >=50% to <60%
Attainment Level 1:	If attainment percentage is >=10% to <50%

Chapter 8: Course Outcome (CO) Attainment

8.1 PROCESS USED FOR CO ATTAINMENT:

CO Attainment is calculated using the performance of every student through the Continuous Internal Evaluation (which includes Assignments, Quiz and Internal exams) and the Semester end examinations. The below figure 8.1 shows a flowchart that describes the process used for CO Attainment.
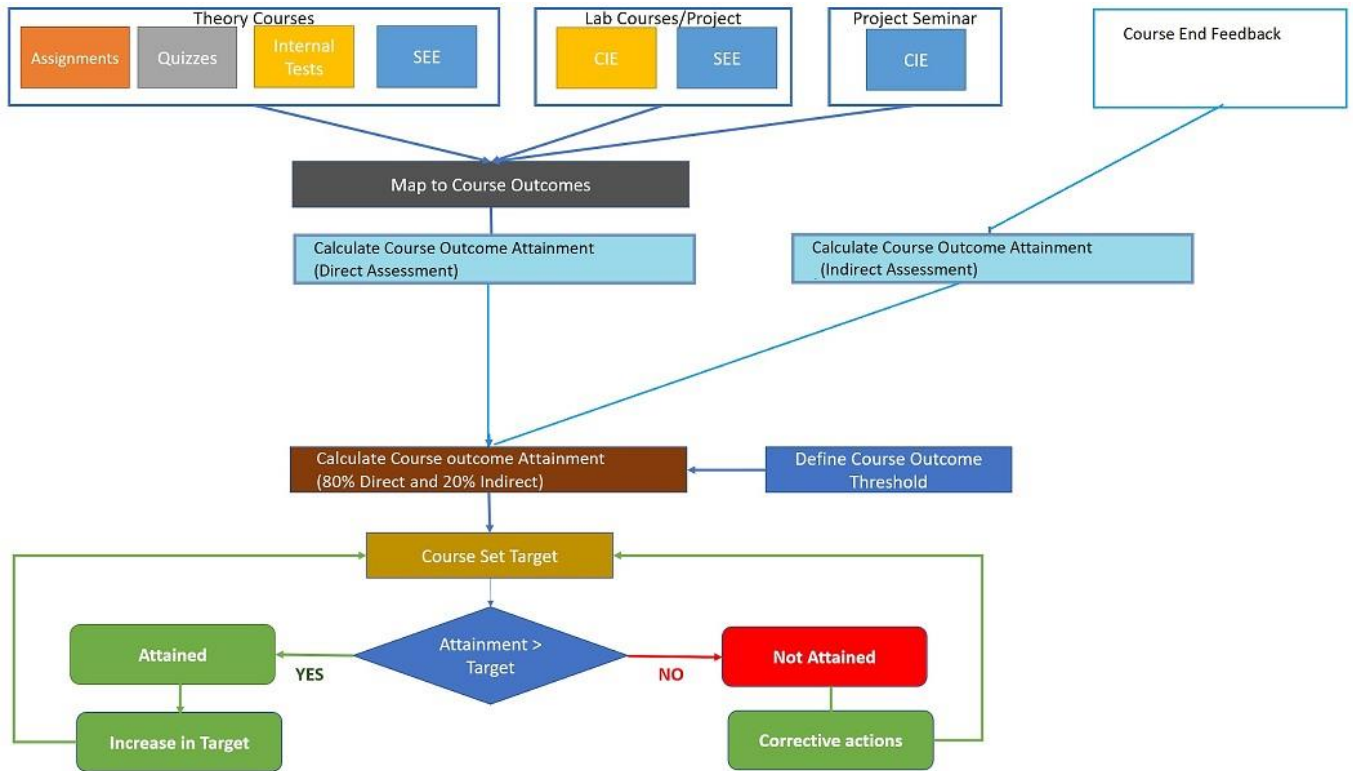
Fig: 8.1: Course Outcome Attainment Process

a. Metrics used for CO Attainment:
The CO Attainment is computed by using the following metrics

Threshold : Is the minimum percentage of marks that students have to score in a course. Eg: The Threshold for the course is set as >=60% marks.

CO Attainment Levels : Every course will have to set the CO Attainment levels using the threshold. Three attainment levels namely Attainment Level 3, Attainment Level 2 & Attainment Level 1 have been identified as shown below, where 3 is the highest and 1 being lowest. Each level is defined as the % of students scoring more than the threshold.

Attainment Level is 3: if >=60% of students scoring >= 60% marks
Attainment Level is 2: if >=50% to <60% of students scoring >= 60% marks
Attainment Level is 1: if >=10% to <50% of students scoring >= 60% marks

All the programmes must maintain only three attainment levels i.e. Attainment Level 3 , Attainment Level 2 and Attainment Level 1.

However there is flexibility given to the Programme Assessment Committee (PAC) in the Department to change the percentage of students in Attainment Levels.

Set Target for the Course: At the beginning of the semester, the course coordinator needs to define Set Target as a baseline for the course, for achieving the CO Attainment.

If the course is attained in the current academic year then the set target for the next academic year may be incremented by a small percentage.

If the Course attainment is less than the Set Target in the current academic year, then the Set Target for the next academic year may be retained or redefined by the course coordinator.

For any new course introduced in the program, the Set Target has to be defined by the course coordinator in consultation with the program coordinator.

b. CO Attainment procedure

COs are attained through direct and indirect methods.

- Direct Assessment: Assignments, Quizzes, Internal exams and Sem-End Exam question papers are framed to test the students level of understanding of all COs. Each question framed in these assessment tools are mapped against the course outcomes. Marks obtained by each student for each question in Internal Exam and Sem-End Exam are recorded for outcome analysis. The attainment computation is done by considering the percentage of students scoring more than or equal to the threshold for all the questions that correspond to a particular CO. The calculated average of the CO is compared with the Attainment Levels as described above.
- Indirect Assessment: Course end survey taken at the end of the semester is considered.
- CO Attainment of the course is computed by giving 80% weightage to direct assessment and 20% to indirect assessment.

8.2 CO Attainment for Theory Courses

a.   Measuring CO attainment (Direct) through Internal Assessments:

The CO attainment calculation for the internal assessment is computed using Internal Examination-I, Internal Examination-II, Assignments & Quizzes. The templates for assessment are given below in the Figures 8.2, 8.3 & 8.4.

Mother Theressa College of Engineering and Technology
DEPARTMENT OF _____

CO Attainment – I – Internal Exam

Faculty :
Course :
Year /Semester: Class:

Date:
Academic Year:
Strength of the Class:

Question No.	1	2	3	4	5	6	7	8	9	10	11 (a)	11 (b)	12 (a)	12 (b)
Max Marks	1													
No of Students >= 60% marks	40													
% of students >= 60%														
CO1														
CO2														
CO3														
CO4														
CO5														

Course Outcome	CO1	CO2	CO3	CO4	CO5
CO Attainment (Avg.)					
CO Attainment Level					

Attainment Rubrics:
Level 3: >=60% students scoring >=60% marks
Level 2: >=50% to <60% students scoring >=60% marks
Level 1: >=10% to <50% students scoring >=60% marks

(Signature of the faculty)

Fig 8.2: CO Attainment for Internal I

Mother Theressa College of Engineering and Technology
DEPARTMENT OF _____

CO Attainment – II – Internal Exam

Faculty :
Course :
Year /Semester: Class:

Date:
Academic Year:
Strength of the Class:

Question No.	1	2	3	4	5	6	7	8	9	10	11 (a)	11 (b)	12 (a)	12 (b)
Max Marks														
No of Students >= 60% marks														
% of students >= 60%														
CO1														
CO2														
CO3														
CO4														
CO5														

Course Outcome	CO1	CO2	CO3	CO4	CO5
CO Attainment (Avg.)					
CO Attainment Level					

Attainment Rubrics:
Level 3: >=60% students scoring >=60% marks
Level 2: >=50% to <60% students scoring >=60% marks
Level 1: >=10% to <50% students scoring >=60% marks

(Signature of the faculty)

Fig 8.3: CO Attainment for Internal II

Mother Theressa College of Engineering and Technology

DEPARTMENT OF _____

CO Attainment – Assignments –Quizzes

Faculty: Date:
Course: Academic Year:
Year /Semester: Class:
Strength of the Class:

	Assignment (Avg.)	Quiz (Avg.)
Max Marks		
No. of Students scoring >= 60% marks		
% of students scoring >= 60%		
CO Attainment Level		

Attainment Rubrics:
Level 3: >=60% students scoring >=60% marks
Level 2: >=50% to <60% students scoring >=60% marks
Level 1: >=10% to <50% students scoring >=60% marks

(Signature of the faculty)

Fig 8.4: CO Attainment for Assignments & Quizzes

b.   Measuring CO   attainment   (Direct)   through   Semester End Examination (SEE)

The CO attainment calculation for the Sem-end examination is mentioned below in Figure 8.5.

Mother Theressa College of Engineering and Technology

DEPARTMENT OF _____

CO Attainment – Sem-End Exam

Faculty :   Date:
Course :   Academic Year:
Year /Semester: Class: Strength of the Class :

Question No.	1	2	3	4	5	6	7	8	9	10	11 (a)	11 (b)	12 (a)	12 (b)	13 (a)	13 (b)	14 (a)	14 (b)	15 (a)	15 (b)	16 (a)	16 (b)	17 (a)	17 (b)	17 (c)
Max Marks																									
No of Students >= 60% marks																									
% of students >= 60%																									
CO1																									
CO2																									
CO3																									
CO4																									
CO5																									

Course Outcome	CO1	CO2	CO3	CO4	CO5
CO Attainment (Avg.)					
CO Attainment Level					

Attainment Rubrics:
Level 3: >=60% students scoring >=60% marks
Level 2: >=50% to <60% students scoring >=60% marks
Level 1: >=10% to <50% students scoring >=60% marks

(Signature of the faculty)

Fig 8.5: CO Attainment for Sem-End Exam (Theory course)

Table 8.1: Weightages for the Direct Assessment Tools for a Theory Course

Assessment Tool	Weightage
Quizzes	5 %
Assignments	5 %
Internal tests	30 %
Semester End Exam	60 %

For Eg: CO attainment - Direct: Calculation for a course with the total marks for internal exam as 30 marks, assignment as 5 marks, quiz as 5marks and semester end exam as 60 marks will be obtained by considering 30% weightage to Continuous Internal Evaluation, 5 % to the Assignments, 5 % to the Quizzes and 60% weightage to Semester end examination.

CO Attainment (Direct) = 30% of Internal Exams + 5% of Assignments + 5% of Quizzes +60% of Sem-End Exam (SEE)

c.   Measuring Indirect CO attainment through Course-end Survey

The indirect assessment is based on the course-end survey taken at the end of the semester. The options Excellent, Good and Satisfactory are mapped to 3,2 and 1 respectively.

Mother Theressa College of Engineering and Technology
DEPARTMENT OF _____

Course-End Survey Analysis - CO Attainment- Indirect

Date: _____

Name of the Course: _____
Name of the faculty: _____   Sem: ___   Section: ____   AY: _____

Role No	NAME OF THE STUDENT	CO 1	CO 2	CO 3	CO 4	CO 5
22861A0201	JANGILI SAVITHA	3	2	3	2	3
22861A0202	JIJULA SAI KEERTHANA	2	2	2	3	2
22861A0401	BANAVATH DIVYA	3	3	3	3	3
22861A0402	BANDARI KRISHNAVENI	3	2	3	3	3
22861A0403	CHEDANKA ANIL KUMAR	2	3	2	2	3
22861A0404	CHOUHAN SONU	3	2	3	3	2
22861A0405	DEGAE SWAPNA	3	3	2	2	2
22861A0406	DONAKANTI MANJULA	2	2	1	3	1
22861A0407	DURGAM SHARATH KUMAR	3	2	3	3	3
22861A0408	DURVA SRIDEVI	3	3	2	2	3
22861A0409	JADHAV MOUNIKA	3	3	2	3	2
22861A0410	KANAKA LAKKUBAI	3	2	2	3	3
22861A0411	KONDALWAR LAVANYA	3	3	3	2	3
22861A0412	KUSHANAPALLI JYOTHSNA	3	3	3	3	2
22861A0413	MESHRAM ASHWINI	2	3	3	3	3
22861A0414	MUDAVATH SOUJANYA	1	3	2	3	3
Average		2.63	2.56	2.44	2.69	2.56
Attainment %= (Average/3)*100		87.50	85.42	81.25	89.58	85.42
Attainment Level		3	3	3	3	3

(Signature of the faculty)

Rubric:
Attainment Level 3: If attainment percentage is >=60%
Attainment Level 2: If attainment percentage is >=50% to <60%
Attainment Level 1: If attainment percentage is >=10% to <50%

Fig 8.6: Indirect CO Attainment for Theory Course

d. Final course outcome attainment for theory courses based on direct and indirect attainment

Course Attainment = 80% of Direct Attainment + 20% of Indirect Attainment

8.3 CO Attainment for Laboratory Courses

a. Measuring Direct CO attainment for Laboratory course

The CO attainment calculation for the Laboratory courses is mentioned below in Figure 8.7.

Mother Theressa College of Engineering and Technology

DEPARTMENT OF _____

CO Attainment – Laboratory Course

Faculty :   Date:
Course :   Academic Year:
Year /Semester :   Class :
Strength of the Class:

	Continuous Internal Evaluation (CIE)	Sem-End Exam (Marks)
Max Marks		
No of Students scoring >= 60% marks		
% of students scoring >= 60%		
Course Attainment Level		

Attainment Rubrics:
Level 3: >=60% students scoring >=60% marks
Level 2: >=50% to <60% students scoring >=60% marks
Level 1: >=10% to <50% students scoring >=60% marks

(Signature of the faculty)

Fig 8.7: CO Attainment (Direct) for Lab Course

Table 8.2: Weightages for the Direct Assessment Tools for a Lab Course

Assessment Tool	Weightage
Continuous Internal Evaluation (CIE)	40 %
Semester End Exam (Grade)	60 %

b. Measuring Indirect CO attainment through Course-end Survey The
indirect assessment is based on the course-end survey taken at the end of the

semester. The options Excellent, Good and Satisfactory are mapped to 3,2 and 1 respectively.

Mother Theressa College of Engineering and Technology
DEPARTMENT OF _____

Course-End Survey Analysis - CO Attainment- Indirect

Date: _____

Name of the Course: _____
Name of the faculty: _____   Sem: ___   Section: ____   AY: _____

Role No	NAME OF THE STUDENT	CO 1	CO 2	CO 3	CO 4	CO 5
22861A0201	JANGILI SAVITHA	3	2	3	2	3
22861A0202	JIJULA SAI KEERTHANA	2	2	2	3	2
22861A0401	BANAYATH DIVYA	3	3	3	3	3
22861A0402	BANDARI KRISHNAVENI	3	2	3	3	3
22861A0403	CHEDANKA ANIL KUMAR	2	3	2	2	3
22861A0404	CHOUHAN SONU	3	2	3	3	2
22861A0405	DEGAE SWAPNA	3	3	2	2	2
22861A0406	DONAKANTI MANJULA	2	2	1	3	1
22861A0407	DURGAM SHARATH KUMAR	3	2	3	3	3
22861A0408	DURVA SRIDEVI	3	3	2	2	3
22861A0409	JADHAV MOUNIKA	3	3	2	3	2
22861A0410	KANAKA LAKKURAJ	3	2	2	3	3
22861A0411	KONDALVAR LAVANYA	3	3	3	2	3
22861A0412	KUSHANAPALLI JYOTHSNA	3	3	3	3	2
22861A0413	MESHRAM ASHWINI	2	3	3	3	3
22861A0414	MUDAVATH SOUJANYA	1	3	2	3	3
Average		2.63	2.56	2.44	2.63	2.56
Attainment %= (Average/3)*100		87.50	85.42	81.25	89.58	85.42
Attainment Level		3	3	3	3	3

(Signature of the faculty)

Rubric:
Attainment Level 3: If attainment percentage is >=60%
Attainment Level 2: If attainment percentage is >=50% to <60%
Attainment Level 1: If attainment percentage is >=10% to <50%

Fig 8.8: Indirect CO Attainment for Lab Course

c. **Final course outcome attainment for lab courses based on direct and indirect attainment**

Course Attainment = 80% of Direct Attainment + 20% of Indirect Attainment

8.4 Measuring CO attainment for Projects
a. Measuring CO attainment Direct
The CO attainment through Internal evaluation for Projects is computed based on Rubrics as mentioned in **Table 7.3**.

Eg: The internal evaluation sheet based on the Rubrics as shown below

S. No.	Roll No.	Student Name	Title of the Project	Literature Survey (10M) CO1	Problem Analysis/SRS (10M) CO2	Design / Methodology (10M) CO3	Implementation, Results & Conclusion (10M) CO4	Presentation and Documentation (10M) CO5	Total (50M)
1	20865A0214	K Vishnu Priya	XXXXXX	8	8	8	8	7	39
	20865A0216	C Sai Suman		7	8	8	9	8	40
2	20865A0318	Janga Mallikarjun	YYYYYY	6	8	8	7	7	36
	20865A0320	Kampela Saikrishna		8	8	9	9	9	43

Mother Theressa College of Engineering and Technology

DEPARTMENT OF _____

CO Attainment – Project

Faculty :   Date:
Course :   Academic Year:
Year /Semester :   Class :
Strength of the Class:

	Continuous Internal Evaluation (CIE)	Sem-End Exam (Grade)
Max Marks		
No of Students scoring >= 60% marks		
% of students scoring >= 60%		
Course Attainment Level		

Grade	Academic Performance (%)
A+	90 to 100
A	80 to <90
B+	70 to <80
B	60 to <70
C	50 to <60
F	<50

Attainment Rubrics:
Level 3: >=60% students scoring >=60% marks
Level 2: >=50% to <60% students scoring >=60% marks
Level 1: >=10% to <50% students scoring >=60% marks

(Signature of the faculty)

Fig 8.9: CO Attainment (Direct) for Project Table 8.2: Wieghtages for Direct Assessment Tools for Project

Assessment Tool	Weightage
Continuous Internal Evaluation (CIE)	50 %
Semester End Exam (Grade)	50 %

b. Measuring Indirect CO attainment through Course-end Survey The indirect assessment is based on the course-end survey taken at the end of the semester. The options Excellent, Good and Satisfactory are mapped to 3,2 and 1 respectively.

Mother Theressa College of Engineering and Technology

DEPARTMENT OF _____

Course-End Survey Analysis - CO Attainment- Indirect

Date: _____

Name of the Course: _____
Name of the faculty: _____   Sem: __   Section: ____   AY: _____

Role No	NAME OF THE STUDENT	CO 1	CO 2	CO 3	CO 4	CO 5
220G1A0201	JANGILI SAYITHA	3	2	3	2	3
22861A0202	JIJULA SAI KEERTHANA	2	2	2	3	2
22861A0401	BANAVATH DIVYA	3	3	3	3	3
22861A0402	BANDARI KRISHNAVENI	3	2	3	3	3
22861A0403	CHEDANKA ANIL KUMAR	2	3	2	2	3
22861A0404	CHOUHAN SONU	3	2	3	3	2
22861A0405	DEGAE SWAPNA	3	3	2	2	2
220G1A0406	DONAKANTI MANJULA	2	2	1	3	1
22861A0407	DURGAM SHARATH KUMAR	3	2	3	3	3
22861A0408	DURVA SRIDEVI	3	3	2	2	3
22861A0409	JADHAV MOUNIKA	3	3	2	3	2
22861A0410	KANAKA LAKKUBAI	3	2	2	3	3
22861A0411	KONDALWAR LAVANYA	3	3	3	2	3
22861A0412	KRISHANAPALLI JYOTHSNA	3	3	3	3	2
22861A0413	MESHRAM ASHWINI	2	3	3	3	3
22861A0414	MUDAVATH SOUJANYA	1	3	2	3	3
Average		2.63	2.56	2.44	2.69	2.56
Attainment %= (Average/3)*100		87.50	85.42	81.25	89.58	85.42
Attainment Level		3	3	3	3	3

(Signature of the faculty)

Rubric:
Attainment Level 3: If attainment percentage is >=60%
Attainment Level 2: If attainment percentage is >=50% to <60%
Attainment Level 1: If attainment percentage is >=10% to <50%

Fig 8.10: Indirect CO Attainment for Project

c. Final course outcome attainment for Project based on direct and indirect attainment

Course Attainment = 80% of Direct Attainment + 20% of Indirect Attainment

8.5 Measuring CO attainment for Project Seminar

a. **Measuring CO Attainment (Direct) for Project Seminar**

The CO attainment for seminar to be computed based on Rubrics mentioned in Table 7.2.

Mother Theressa College of Engineering and Technology

DEPARTMENT OF _____

_____

CO Attainment – Seminar

Faculty :   Date:
Course   :   Academic Year:
Year /Semester :   Class :
Strength of the Class:

	Continuous Internal Evaluation (CIE)
Max Marks	
No of Students scoring >= 60% marks	
% of students scoring >= 60%	
Course Attainment Level	

Grade	Academic Performance (%)
A+	90 to 100
A	80 to <90
B+	70 to <80
B	60 to <70
C	50 to <60
F	<50

Attainment Rubrics:
Level 3: >=60% students scoring >=60% marks
Level 2: >=50% to <60% students scoring >=60% marks
Level 1: >=10% to <50% students scoring >=60% marks

(Signature of the faculty)

Fig 8.11: CO Attainment (Direct) for Project Seminar Table 8.5: Weightage for the Direct Assessment Tool for Project Seminar

Assessment Tool	Weightage
Continuous Internal Evaluation (CIE)	100 %

b. **Measuring CO Attainment (Indirect) for Project Seminar**

Mother Theressa College of Engineering and Technology

DEPARTMENT OF _____

Course-End Survey Analysis - CO Attainment- Indirect

Date: _____

Name of the Course: _____
Name of the faculty: _____   Sem: ___   Section: ____   AY: _____

Role No	NAME OF THE STUDENT	CO 1	CO 2	CO 3	CO 4	CO 5
22861A0201	JANGILI SAYItHA	3	2	3	2	3
22861A0202	JIJULA SAI KEERTHANA	2	2	2	3	2
22861A0401	BANAYATH DIVYA	3	3	3	3	3
22861A0402	BANDARI KRISHNAVENI	3	2	3	3	3
22861A0403	CHEDANKA ANIL KUMAR	2	3	2	2	3
22861A0404	CHOUHAN SONU	3	2	3	3	2
22861A0405	DEGAE SWAPNA	3	3	2	2	2
22861A0406	DONAKANTI MANJULA	2	2	1	3	1
22861A040T	DURGAM SHARATH KUMAR	3	2	3	3	3
22861A0408	DURVA SRIDEVI	3	3	2	2	3
22861A0409	JADHAV MOUNIKA	3	3	2	3	2
22861A0410	KANAKA LAKKUBAI	3	2	2	3	3
22861A0411	KONDALWAR LAVANYA	3	3	3	3	3
22861A0412	KUSHANAPALLI JYOTHSNA	3	3	3	3	2
22861A0413	MESHRAM ASHWINI	2	3	3	3	3
22861A0414	MUDAVATH SUUJANTA	1	3	2	3	3
Average		2.63	2.56	2.44	2.69	2.56
Attainment %= (Average/3)*100		87.50	85.42	81.25	89.58	85.42
Attainment Level		3	3	3	3	3

(Signature of the faculty)

Rubric:
Attainment Level 3: If attainment percentage is >=60%
Attainment Level 2: If attainment percentage is >=50% to <60%
Attainment Level 1: If attainment percentage is >=10% to <50%

Fig 8.11: Indirect CO Attainment for Project Seminar

c. **Final course outcome attainment for Project Seminar is based on direct and indirect attainment**

Course Attainment = 80% of Direct Attainment + 20% of Indirect Attainment

8.6 Measuring CO attainment for Open Elective Courses

The process for CO attainment followed for the theory courses is applicable for open elective courses.

8.7 Measuring CO attainment for Massive Open Online Courses

The CO attainment calculation for the MOOC course is mentioned below in Figure 8.12.

Mother Theressa College of Engineering and Technology

DEPARTMENT OF _____

CO Attainment – MOOC Course

Faculty: Date:
Course   :   Academic Year:
Year /Semester: Class:
Strength of the Class:

	Proctored Exam (Score)
Max Marks	
No of Students scoring >= 60% marks	
% of students scoring >= 60%	
Course Attainment Level	

Attainment Rubrics:
Level 3: >=60% students scoring >=60% marks
Level 2: >=50% to <60% students scoring >=60% marks
Level 1: >=10% to <50% students scoring >=60% marks

(Signature of the Class Coordinator)

Fig 8.12: CO Attainment for MOOCs

Chapter 9: CO Attainment Analysis

Course Attainments are submitted to the Class Assessment Committee (CAC) along with the CO attainment analysis sheet in the following format. The areas of improvement are identified and an action plan is prepared. The Course Attainment is compared with the Course Set Target. If the course attainment is greater than or equal to the course Set Target then the course is Attained, else Not Attained. **9.1 CO Attainment Analysis of Theory Course**

Mother Theressa College of Engineering and Technology
DEPARTMENT OF _____

Date:

Course Outcome (CO) Attainment Analysis of Theory Course

Name of the Faculty:				Academic Year:	
Year: Semester:			Section:		
Course:					
	CO1 Attainment	CO2 Attainment	CO3 Attainment	CO4 Attainment	CO5 Attainment
Internal Exams					
Sem-End Exam					
Assignment					
Quiz					
Direct CO Attainment					
Indirect CO Attainment					
CO Attainment					
Course Attainment			Course Set Target		
Attainment Status:					
Observations:					
1.					
2.					
3.					
Action Plan for Improvement:					
1.					
2.					
3.					

Signature of HOD   (Signature of the Faculty)

	Attainment Rubrics:
• Direct CO Attainment = 30% of Internal Exams + 5% of Assignments + 5% of Quizzes +60% of Sem-End Exam (SEE) • CO Attainment=80% of Direct CO Attainment+20% of Indirect CO Attainment • Course Attainment = Average of CO Attainments Eg: (CO1+CO2+CO3+CO4+CO5)/5	Level 3: >=60% students scoring >=60% marks Level 2: >=50% to <60% students scoring >=60% marks Level 1: >=10% to <50% students scoring >=60% marks

Fig 9.1: CO Attainment Analysis of Theory Course

9.2 CO Attainment Analysis of Lab Course

Mother Theressa College of Engineering and Technology

DEPARTMENT OF _____

Date:

Course Outcome (CO) Attainment Analysis of Lab Course

Name of the Faculty:		Academic Year:
Year: Semester:		Section:
Course:		
Direct CO Attainment		Indirect CO Attainment
Course Attainment		Course Set Target
Attainment Status:		
Observations:		
1.		
2.		
3.		
Action Plan for Improvement:		
1.		
2.		
3.		

Signature of HOD   (Signature of the Faculty)

Course Attainment = 80% of Direct CO Attainment + 20% of Indirect CO Attainment

Attainment Rubrics:
Level 3: >=60% students scoring >=60% marks
Level 2: >=50% to <60% students scoring >=60% marks
Level 1: >=10% to <50% students scoring >=60% marks

Fig 9.2: CO Attainment Analysis of Lab Course

9.3 CO Attainment Analysis of Project/ Project Seminar

Mother Theressa College of Engineering and Technology

DEPARTMENT OF _____

Date:

Course Outcome (CO) Attainment Analysis of Project

Name of the Faculty:		Academic Year:
Year:	Semester:	Section:
Course:		
Direct CO Attainment		Indirect CO Attainment
Course Attainment		Course Set Target
Attainment Status:		
Observations:		
1.		
2.		
3.		
Action Plan for Improvement:		
1.		
2.		
3.		

Signature of HOD   (Signature of the Faculty)

Course Attainment = 80% of Direct CO Attainment + 20% of Indirect CO Attainment

Attainment Rubrics:
Level 3: >=60% students scoring >=60% marks
Level 2: >=50% to <60% students scoring >=60% marks
Level 1: >=10% to <50% students scoring >=60% marks

Fig 9.3: CO Attainment Analysis of Project/Project Seminar

9.4 Departments having multiple sections: CO Attainment is obtained by taking average of CO Attainment of all the sections.

Mother Theressa College of Engineering and Technology
DEPARTMENT OF _____

Date:

Multiple Sections - Average of Course Outcome (CO) Attainment

	CO1 Attainment	CO2 Attainment	CO3 Attainment	CO4 Attainment	CO5 Attainment
Name of the Course Coordinator:				Academic Year:	
Year:			Semester:		
Course:					
Set Target:					
SECTION A					
SECTION B					
Average CO Attainment					
Average Course Attainment:					

Signature of the HOD   Course Coordinator

Fig 9.4: Average CO Attainment

9.5 Attainment of Course Outcomes of all courses with respect to set attainment levels

A table with all the courses outcomes, co attainment, set target along with status to be listed.

Table 9.1 Attainment Levels for all the courses (sample)

Course Code	CO1	CO2	CO3	CO4	CO5	CO6	CO7	CO A ainment	Course Set Target	A ained
HS110EH	2.25	2.5	2.25	2.25	2.75			2.4	2.3	A ained
PC410CS	3	2.6	3	2.6	2.3			2.70	2.16	A ained
PC420CS	3	3	1.95	3	1.85			2.56	2.7	Not A ained
PC430CS	2.1	2.1	2.1	2.2	2.3			2.16	2.4	Not A ained

PC440CS	2.9	2.65	2.3	3	2.65			2.70	2.7	A ained
HS410EH	3	1.8	2.1	2.4	1.8			2.22	2	A ained
MC320CE	2.2	2.2	2.2	2.2				2.20	2.25	Not A ained
PC520CS	3	2	3	3	1			2.40	2.4	A ained
PC530CS	2.7	2.7	2.6	2.2	2.7			2.58	2.63	Not A ained
PC540CS	3	3	3	2.5	3			2.90	1.9	A ained
.										
.										
.										
.										
HS500EH	3	2.9	2.55	2.8	1.5			2.55	1.6	A ained
MC500EH	3	2.9	2.8	2.9	2.9	2.8		2.88	3	Not A ained
HS510EH	3	3	3	3	3			3.00	2	A ained
MC510CS	3	3	3	3				3.00	2	A ained
PE610CS	2.82	2.82	2.82	2.82	2.82			2.82	2.45	A ained
HS610EH	3	2.1	3	2.1				2.55	2	A ained
MC610CS	3	3	3	3				3.00	2.25	A ained
PC611CS	3	3	3	3	3			3.00	2.73	A ained
PC621CS	3	3	3	3	3			3.00	2.75	A ained
PC631CS	2.6	2.6	2.6	2.6	2.6			2.60	2.02	A ained
PW619CS	3	3	3	3	3			3.00	3	A ained
PE850CS	3	2.6	2	2	2.6			2.44	2	A ained

Chapter 10: PO and PSO Attainment

10.1 Tools and processes used in assessment of the achievement of POs

Type of Assessment tool	Assessment Tool	Assessment Criteria	Data Collection Frequency
Direct	Course Performance	Based on the Set Target and CO-PO Mapping	Once every semester
Indirect	Alumni Survey	Level of Achievement	Once every year
	Parents Survey	Analysis of Responses	
	Student Exit Survey	Analysis of Responses	
	Employer Survey	Performance of Alumni	
	Co-Curricular Activities	Participation and contribution	
	Extra Curricular Activities	Participation and contribution	

10.2 Attainment of POs and PSOs:

PO attainment levels and PSO attainment levels are based on attainment levels of direct and indirect assessment tools. For the overall attainment of each PO and PSO, 80 % weightage is given to direct assessment and 20 % weightage is given to indirect assessment. The assessment process involved in the assessment of PO/PSO is shown in the Figure. 10.1.
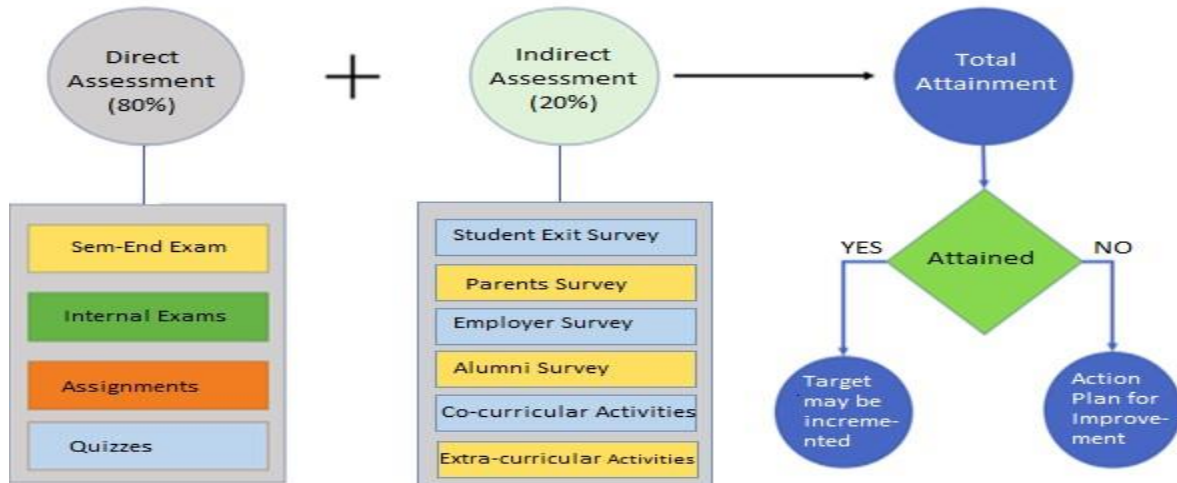
Fig: 10.1: PO/PSO Attainment Procedure

Eg: To compute the PO attainment and PSO attainment for the batch of students graduating in the academic year 'AY', we need to consider the Course to PO & PSO matrices and the respective course outcome attainments in the following academic years.

> ➢ 1 st year I Semester & II Semester courses of AYm3 Academic year
> ➢ 2 nd year I Semester & II Semester courses of AYm2 Academic year
> ➢ 3 rd year I Semester & II Semester courses of AYm1 Academic year ➢
> 4 th year I Semester & II Semester courses of AY Academic year

Setting Target for PO/PSO:

The Target of PO/PSO for the current admitted batch (Eg: 2021-25) is based on the PO/PSO attainments of the previously graduated batch (Eg: 2017-21).

If the PO/PSO attainment of the previous graduating batch is attained then the Target for the current admitted batch may be incremented by a small percentage.

If the PO/PSO attainment of the previous graduating batch is not attained then the Target for the current admitted batch may be retained or redefined by the program coordinator.

However a flexibility is given to the Departments to set the Target for PO/PSO attainment.

10.3 PO/PSO Attainment for the Graduating Batch – Direct Attainment

The PO/PSO attainment direct is computed considering all the courses in the curriculum.

Course to PO/PSO Attainment:

The PO/PSO attainment of a course is computed by taking the weighted average of CO Attainment with PO/PSO mapping.

Mother Theressa College of Engineering and Technology

DEPARTMENT OF _____

Date:

Course Outcome (CO) to PO and CO to PSO Attainment

Name of the Faculty:		Academic Year:
Year:	Semester:	Section:
Course:	Target:	

Course Outcome	CO Attainment	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1																
CO2																
CO3																
CO4																
CO5																
Course to PO & PSO attainment																

Signature of the HOD
(Course Coordinator)

Example:

Course Outcome	CO Attainment	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	2.3	1			2	3				1			1	2		
CO2	3	1	2	2	2	3				1				1		
CO3	2.3	1	2	2	2	3				1			1		1	
CO4	3	1	2	2	2	3				1			1		1	

CO5	1.6	1	2	2	2	3			1			1		1	
Course to PO & PSO attainment		2.4	2.5	2.5	2.4	2.4			2.4			1 2.3		2.53 2.3	

For eg: PO1 attainment = [(2.3*1)+(3*1)+(2.3*1)+(3*1)+(1.6*1)]/(1+1+1+1+1) = 2.4 A table to be prepared with all the courses with PO attainment computed based on the above method.

Table 10.1: PO Attainment for the Graduating Batch – Direct Attainment

Course code	Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
HS11EH	English-I									2.4	2.4		2.4
OE430PH	Fundamentals of Cryogenics	2.5	2.5			3	3						2.5
OE450PH	Fundamentals of Thin Film Technology	2.8	2.8										2.8
OE440PH	Smart Materials and Applica ons	2.1	2.1										2.1
PC411CS	Java Lab	3	3	3	3	3		3	3				3
PC421CS	Opera ng System Lab	3	3	3	3	3		3					3
PC510CS	Database Management Systems	2.6	2.6	2.7	2.7								2.6
PC520CS	Microprocessors and Interfacing	2.4	2.5	2.3	2.4	2.4							
PC530CS	Computer Networks	2.6	2.6	2.6	2.7		2.7						2.7
.													
.													
.													
.													
PC621CS	So ware Engineering Lab	3	3	3	3	3							

PC631CS	Compiler Construc on Lab	2.6	2.6	2.6	2.6		2.6						
PC720CS	Internet of Things	2.2	2.3	2	2	2	3						
PE710CS	Elec ve-II: Data Mining	2.1	2.1	2				2.1					2
PE780CS	Elec ve-III: Informa on Security	2.2	2.2				2.1		2.1				

Direct attainment level of a PO is determined by taking average across all courses addressing that PO.

	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO10	PO11	PO12
DIRECT ATTAINMENT	2.65	2.62	2.64	2.65	2.70	2.69	2.84	2.84	2.76	2.77	2.77	2.64

10.4 PO Attainment for the Graduating Batch – Indirect Attainment

Indirect Assessment tools such as Alumni Survey, Parent Survey, Employer Survey, Exit Survey and Parent Survey are used to compute indirect PO attainment.

Indirect Assessment tools are mentioned below in Table 10.2. Each of these tools have questionnaires which contain questions that can be mapped strongly, moderately and weakly to the programme outcomes. The Departments are given flexibility to map questionnaires with POs. The rubrics for evaluation of ECA and CCA activities are presented in Table 7.4 and 7.5 in Chapter 7.

Table 10.2: PO Attainment for the Graduating Batch – Indirect Attainment

Example:

Alumni Survey	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	Attainment	Attainment Level
The study of basic sciences and core engineering helped you in analyzing the problems at your workplace/higher studies	3												79.03	3
Are you able to identify and define the requirements for a given problem which is appropriate to its solution?		3											81.30	3
Are you able to design/develop a component/process/algorithm as per the specified requirements at your workplace?			3										79.49	3
Are you able to conduct investigations to solve complex engineering problems?				3									76.62	3
Are you able to select and use modern engineering/IT tools at your workplace?					3								77.68	3
Are you able to take contextual decisions in your professional engineering practice by considering societal and cultural issues?						3							77.98	3
Are you able to apply the knowledge of societal/environmental contexts, while arriving at a professional engineering solutions?							3						74.96	3
Are you able to work in a respectful and ethical manner with team members to complete the task?								3					87.78	3

Are you able to work effec vely as an individual and/or in mul disciplinary teams?									3				86.73	3
Are you able to comprehend and communicate effec vely using appropriate verbal, non-verbal communica on and documenta on skills?										3			82.81	3

Are you able to handle the projects/allocated works as an individual, also as a member in a team by applying engineering and management principles?											3		85.37	3
Have you taken any cer fica on/short-term courses to enhance your professional career? Have you contributed to publica ons, patents or scien fic knowledge? Give brief informa on Have you received any Awards/Recogni on? Give brief informa on											3		55.27	3
Alumni Survey A ainment	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**		
Parent Survey	*PO1*	*PO2*	*PO3*	*PO4*	*PO5*	*PO6*	*PO7*	*PO8*	*PO9*	*PO10*	*PO11*	*PO12*	*A ain ment*	
Are you sa sfied with the performance of your son/daughter?	1	1	1	1	1	1	1	1	1	1	1	1	78.97	3
As you sa sfied with the improvement in the personality of your son/daughter as compared to the me of joining the Ins tute?	2	2	2	2	2	2	2	2	2	2	2	2	77.95	3
There is improvement in the studentas communica on skills as compared to the me of joining the Ins tute?	3	3	3	3	3	3	3	3	3	3	3	3	75.90	3
How well did we do in transforming your ward into a good and responsible ci zen so far?						1	2	3		1		2	80.00	3
Parent Survey A ainment	**3**	**3**	**3**	**3**	**3**	**2.65**	**2.65**	**3**	**3**	**3**	**3**	**3**		

Exit Survey	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	A ain ment	
I will be able to apply engineering knowledge and concepts learnt in the Program to solve problems	3												89.03	3
I will be able to analyze engineering problems.		3											89.30	3
I will be able to design and develop engineering systems based on the inputs obtained from the Program.			3										75.49	3
I will be able to conduct inves ga ons of complex engineering, analyze, interpret the data.				3									73.62	3
I am confident of using the modern tools for solving engineering problems.					3								77.68	3
The program has ins lled a sense of global/societal responsibility and knowledge on the societal, legal and cultural issues related to engineering.						3							76.98	3
The Program provides an understanding of the impact of engineering on environment and design the systems that provide sustainable development.							3						75.26	3
The Program has provided an understanding of professional and ethical responsibility.								3					82.87	3
I am confident of working effec vely as an individual, as a team and a leader working with diverse teams.									3				86.73	3
I can communicate effec vely on engineering problems, write effec ve reports, dra documents and make presenta ons.										3			84.81	3

I am confident of using knowledge and understanding of engineering principles in project management, finance and work in mul disciplinary environments.											3		81.70	3
I am confident of being engaged in independent & life-long learning throughout my professional life.												3	66.27	3

Exit Survey A ainment	3	3	3	3	3	3	3	3	3	3	3	3		
Employers Survey	**P O 1**	**P O 2**	**P O 3**	**P O 4**	**P O 5**	**P O 6**	**P O 7**	**P O 8**	**P O 9**	**P O 1 0**	**P O 1 1**	**P O 1 2**	**A ain ment**	
Job specific skills	3	3	3	3	3	3	3	3	3	3	3	3	88.89	3
Problem solving skills	3	3	3	3									91.11	3
Individual and team work skills								3					90.00	3
Human Values and Professional Ethical Values							3						80.02	3
Modern Tool Usage			2	2	3								94.44	3
Verbal & Wri en Capabili es										3			88.23	3
Leadership skills										3	3		76.28	3
Overall job performance	3	3	3	3	3	3	3	3	3	3	3	3	83.33	3
Approach towards lifelong learning skills												3	84.44	3
Employer Sa sfac on Survey A ainment	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**		

Survey	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
Alumni Survey A ainment	3	3	3	3	3	3	3	3	3	3	3	3
Parent Survey A ainment	3	3	3	3	3	2.65	2.65	3	3	3	3	3
Exit Survey A ainment	3	3	3	3	3	3	3	3	3	3	3	3
Employer Sa sfac on Survey A ainment	3	3	3	3	3	3	3	3	3	3	3	3
A ainment through Surveys	3	3	3	3	3	2.91	2.91	3	3	3	3	3

Program Level Sta s cs:

CCA Ac vi es	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	No of Ac vit ies	A ainm ent
Guest Lectures	2	2	2	2	2			2	2	2		2	12	3
Workshops	2	2	2	2	2			2				3	3	3
Student compe ons	3	3	3	3	3	2	2	2	3	2	1	3	6	3
Internships	3	3	3	3	3	3	3	3	3	3	3	3	100	3
Student presenta ons	2	2	1			1		2	2	3		2	140	3
CRT	1	3							3			3	140	3

ECA Ac vi es	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	No of Ac vit ies	A ainm ent
ECA clubs	2	2			2		1	2	3	3		3	5	3
Entrepreneurship(SWAYAM/ED CELL)								2	3	3	2	3	5	3
NSS(includes Sahay, Street cause and all extension ac vi es)						2	2	2	1	3	1	3	5	3
Sports								3	3	2		3	5	3

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
Inter ins tute literary and cultural ac vi es						2	3	3		3	5		3
INDIRECT TTAINMENT	3	3	3	3	3	3	3	3	3	3	3	3

Table 10.3: PO Attainment for the Graduating Batch – Total Attainment

	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
DIRECT ATTAINMENT	2.65	2.62	2.64	2.65	2.70	2.69	2.84	2.84	2.76	2.77	2.77	2.64
INDIRECT ATTAINMENT	3	3	3	3	3	2.91	2.91	3	3	3	3	3
PO ATTAINMENT	2.72	2.69	2.71	2.72	2.76	2.75	2.88	2.87	2.81	2.81	2.82	2.71

PO Attainment = 80 % of Direct Attainment + 20% of Indirect Attainment Table 10.4: PSO Attainment for the Graduating Batch – Direct Attainment

Course Code	Course Name	PSO1	PSO2	PSO 3
ES110CS	Computer Programming and Problem solving using C	2.5	2.1	2.5
PC440CS	Computer Architecture		2.7	
PC411CS	Java Lab	3	3	3
PC421CS	Opera ng System Lab	3	3	3
PC510CS	Database Management Systems	2.6	2.6	
.				
.				
.				
.				
PC520CS	Microprocessors and Interfacing	2.3	2.3	
PC511CS	Database Management Systems Lab	3	3	
PC521CS	Microprocessors and Interfacing Lab	3	3	3
PC531CS	Computer Network Lab	3	3	3
PW519CS	Mini Project	3	3	3
PC610CS	Web Programming & Services	2.9	2.8	2.7
DIRECT ATTAINMENT		2.70	2.69	2.70

Indirect attainment is carried out through the program level statistics.

CCA Ac vi es	PSO 1	P␣O	PSO 3	No of Ac vi es	A ainm ent Level
Guest Lectures	3	␣		10	3
Workshops	1		2	3	3
Student compe ons	2	␣		6	3
Internships	2	␣	2	80	3
Student presenta ons	␣	␣	␣	102	␣
ECA Ac vi es	PSO 1	␣O P ␣	PSO 3	No of Ac vi es	A ainm ent Level
CRT	2	␣	2	50	3
ECA clubs			1	5	3
Entrepreneurship(SWAYAM/ED CELL)	1			5	3
NSS(includes Sahay, Street cause and all extension ac vi es)			1	5	3
Sports			1	5	3
Inter ins tute literary and cultural ac vi es			1	5	3
Indirect A ainment	**3**	**␣**	**3**		

Table 10.6: PSO Attainment for the Graduating Batch –Total Attainment

	PSO1	PSO2	PSO3
DIRECT ATTAINMENT	2.70	2.69	2.70
INDIRECT ATTAINMENT	3	3	3
PSO ATTAINMENT	2.76	2.75	2.76

PSO Attainment = 80 % of Direct Attainment + 20% of Indirect Attainment

Appendix

MOTHER THERESSA COLLEGE OF ENGINEERING AND TECHNOLOGY
Peddabonkuru, Pedhapalli - 505174
DEPARTMENT OF _____

We are keen to hear from you. Please spend a moment and respond to this survey. This survey is important to the department as it facilitates the improvement of the programmes offered by the department based on your feedback. The Future students will get benefited from your valuable feedback. Please take some time to respond to this survey.

Personal Information

Name		Organization/Company details	
Year of Graduation		Designation	
Mobile Number		Nature of Work	
Email ID		Past Experience, if any	
Residential Address		Are you an Entrepreneur? If *"Yes"* specify the company name and address	

Use (√), for giving your consent for the following questionnaire.

S. No	Questionnaire	Details
1	Have you pursued higher education? If "yes" please specify the following	
a.	Whatis yourmasters' degree that you pursued? (M.S / M.Tech. / MBA / Anyother)	
b.	Enter you Scores (GRE,TOEFL,IELTS, CAT/XAT, GATE, GMAT)	
c.	Name & Place of the University and Year of Admission	
2	Have you taken any certification/short-term courses to enhance your professional career? If "Yes" please specify the name/s	

a.	Have you contributed to publications, patents or scientific knowledge? If "Yes", give brief information	

3	Have you received any Awards/Recognition? If "Yes", give brief information	

S. N o	Questionnaire	Strongly Agree	Agree	Disagre e
1	The study of basic sciences and core engineering helped you in analyzing the problems at your workplace/higher studies			
2	Are you able to identify and define the requirements for a given problem which is appropriate to its solution?			
3	Are you able to design/develop a component/process/algorithm as per the specified requirements at your workplace?			
4	Are you able to conduct investigations to solve complex engineering problems?			
5	Are you able to select and use modern engineering/IT tools at your workplace?			
6	Are you able to take contextual decisions in your professional engineering practice by considering societal and cultural issues?			
7	Are you able to apply the knowledge of societal/environmental contexts, while arriving at a professional engineering solutions?			
8	Are you able to work in a respectful and ethical manner with team members to complete the task?			
9	Are you able to work effectively as an individual and/or in multidisciplinary teams?			
10	Are you able to comprehend and communicate effectively using appropriate verbal communication and documentation skills?			
11	Are you able to handle the projects/allocated works as an individual, also as a member in a team by applying engineering and management principles?			

12	Suggestions, if any, for the betterment of your department 1. 2. 3.

13. Areas in which you will be interested to associate with the college (Pl. tick mark)

    a. I Can take sessions in _____(Specify technical, industry orientation, soft skills etc.)

    b. I can deliver Career guidance sessions for higher education.

    c. I can connect our college to any organization interested to provide internship, projects and placements to our students including referrals.

    d. I can institute awards for meritorious students.

    e. Any other areas. Please specify.

Date: *SIGNATURE*
Place:

MOTHER THERESSA COLLEGE OF ENGINEERING AND TECHNOLOGY
Peddabonkuru, Pedhapalli - 505174

EMPLOYER SATISFACTION SURVEY FORM

Thank you for taking me to fill out this ques onnaire. All the informa on will be kept confiden al and will be used for sta s cal purposes. The survey is intended to assist Mother Theressa College of Engineering and Technology (MTCET) for preparing students for the work environment and will be er serve your company and industry needs. If we can be of assistance or if you have any ques ons, please call 9849472523.

Company/Organiza on name :	
Name & Designa on of person filling form:	
Address:	
City/state/zip code:	
VCE Graduate/Employee name:	
VCE Graduate/Employee Designa on:	
VCE Graduate Year and Month of Joining:	
Is the graduate s ll employed by your company? (YES/NO)	

Please check the table which best indicates your level of sa sfac on demonstrated by MTCET Graduate performance for each of the following?

Criteria	Excellent	Good	Meets Expecta on
Job specific skills			
Problem solving skills			
Individual and team work skills			
Human Values & Professional Ethical values			
Modern Tool Usage			
Verbal and wri en capabili es			
Leadership skills			
Overall job performance			
Approach towards lifelong learning skills			

Any addi onal technical skillsets required, please men on.

Thank you for your assistance in helping VCE for strengthening the programme.

SIGNATURE

MOTHER THERESSA COLLEGE OF ENGINEERING AND TECHNOLOGY

Peddabonkuru, Pedhapalli - 505174

DEPARTMENT OF _____

PARENTS FEEDBACK

We request you to assist us by answering a few questions listed below in connection with our services to your wardstudying in our Institute.

This feedback would be valuable to us in improving our teaching processes to serve the needs of our students better.

Name of the Parent:	
Designa on:	
Name of the Student:	
Year of Study:	
Mobile No:	
Email ID:	

	QUESTIONNAIRE	Strongly Agree	Agree	Disagree
1	Are you sa sfied with the performance of your son/daughter?			
2	As you sa sfied with the improvement in the personality of son/daughter as compared to the me of joining the Ins tute?			
3	There is improvement in the student's communica on skills as compared to the me of joining the Ins tute?			
4	How well did we do in transforming the student into a good and responsible ci zen?			
5	The effec veness in teaching learning process meets expecta ons of my son/daughter			
6	The Facili es like Transporta on / Library / Canteen / Sports / Drinking water / sani za on meet expecta on			
7	Extra and co-curricular ac vi es are good			

8	Laboratory/Compu ng facili es meet our expecta on			
9	The Counselling/ Mentoring system adopted in the department is good			
10	The Training and placement ac vi es planned in the department meet our expecta ons			
11	The ability of your ward to cope with the needs of the curriculum has improved			
12	My level of sa sfac on with the ins tu on is high looking as the way my son/daughter is se led			
13	Will you recommend this department to others?			

Any other informa on for the improvement of the ins tute:_____

_____

_____

Name:

Date: Signature

	MOTHER THERESSA COLLEGE OF ENGINEERING AND TECHNOLOGY **DEPARTMENT OF** _____ **Student Exit Survey-YYYY** B.Tech (_____) VIII-Semester – MON YYYY

Student Particulars:

1.	Name	:	
2.	Roll Number	:	
3.	Year of Admission	:	
4	Address for Correspondence	:	
5	E-mail id	:	
6	Mobile Number	:	
7	Academic Percentage till IV Year I-Semester	:	
8	Name of the Mentor	:	
9	Placement Particulars No. of Job offers received		
	Name of the Company/ies	:	
	CTC/Pay Package	:	
10	Details about Higher Studies (as applicable)		
	GATE Score	:	
	GRE Score	:	
	TOEFEL Score	:	
	IELTS Score	:	
	CAT Score	:	
	Names of University (ies) where admission secured	:	
11	Preferred choice	:	Placement / Higher Studies/Entrepreneurship

Dear Student:

Wish you a bright future ahead. Your feedback is very valuable to us for bringing changes in the contents of the Program. Please share your honest opinion on the parameters listed below and affix a tick (✔) mark to the questionnaire below

		Strongly Agree	Agree	Disagree
1.	**Program**			
	The Program Outcomes (PO) are widely publicized.			
	The POs need modification to meet the student aspirations.			
	Satisfied with the number of courses offered as professional electives			
	Satisfied with the open elective system and the courses offered herein.			
2.	**Course Curriculum**			
	The Curriculum meets the present-day industry requirements			
	The curriculum may continue without any change.			
	The seminars are stimulating as they help broaden our views on topics and further improve our skillset			
	The project work provided me with sufficient experience to work in groups and develop skills in problem solving.			
3.	**Academic Advising & Mentoring**			
	The Mentoring system for students was clearly explained to me			
	My Mentor was always accessible to me			
	My Mentor was sufficiently familiar with the Program and Curricula to guide me			
	I was comfortable expressing my ideas to my Mentor			
	The Mentoring system can continue in the existing form			
4.	**Faculty**			
	There were faculty available whose fields of expertise satisfied my academic interests			
	The faculty were enthusiastic about their subject			
	The faculty motivated me to do my best			
	The faculty who taught me were effective teachers			
	I was intellectually challenged by my interactions with Faculty			

5.	**Resources**			
	The laboratories are well equipped and meet the requirements of the course curriculum			
	The class rooms are well ventilated and are also equipped with facilities for learning			
	The Library meets my expectations in terms of latest books and journals and the timings too are flexible			
	The sports facilities are adequate			
	The Canteen premises are neat & tidy and the quality of food served is good			
	5.6 Adequate opportunities are provided for participation in co-curricular and extra curricular activities			
	The services offered by the Bank are good and the Bank Staff are cooperative			
	The health care services provided by the in-house Health Centre are good and adequate.			
	The bus transport facility is good in terms of punctuality and service			
	The cooperative stores have the availability of all the desired stationery items and the rates are reasonable.			
6.	**Programme Outcome**			
	I will be able to apply engineering knowledge and concepts learnt in the Program to solve problems			
	I will be able to analyze engineering problems.			
	I will be able to design and develop engineering systems based on the inputs obtained from the Program.			
	I will be able to conduct investigations of complex engineering, analyze, interpret the data.			
	I am confident of using the modern tools for solving engineering problems.			
	The program has instilled a sense of global/societal responsibility and knowledge on the societal, legal and cultural issues related to engineering.			
	The Program provides an understanding of the impact of engineering on environment and design the systems that provide sustainable development.			
	The Program has provided an understanding of professional and ethical responsibility.			
	I am confident of working effectively as an individual, as a team and a leader working with diverse teams.			

	I can communicate effectively on engineering problems, write effective reports, draft documents and make presentations.			
	I am confident in using knowledge and understanding of engineering principles in project management, finance and work in multidisciplinary environments.			64
	I am confident of being engaged in independent & life-long learning throughout my professional life.			
7.	**Programme Specific Outcome**			
	PSO1			
	PSO2			
	PSO3			

Any other comments or observations:

Overall Grading of the Program:

- o Excellent o Very Good o Good o Satisfactory

- o Unsatisfactory   Signature of Student

Mother theressa College of Engineering and Technology

Department of _____

COURSE-END SURVEY (2021-22 I sem)

Name of the Student:	Roll No:
Name of the Faculty:	Class & Sem:
Name of the Course:	Date:

Tick the following options below with the rating

S.No	Questionnaire	Satisfactory	Good	Excellent
1	Coverage of syllabus			
2	Conceptual Understanding of the Course			
3	Quality of Question Papers/Quiz/Assignment			
4	Teaching Methodology			
5	Rate the Course Outcomes			
CO1	Are you able to design flowcharts and algorithms for solving a given problem using the fundamentals of programming?			
CO2	Are you able to apply decision making, looping constructs and functions to develop programs for a given problem?			
CO3	Are you able to store data using arrays and perform searching and sorting operations on the data?			
CO4	Are you able to design programs on string handling and operations on arrays using dynamic memory management techniques?			
CO5	Are you able to Develop programs to store data and perform operations using structures and files.			
6	Any new topics/experiments to be included in the course			
7	The most you liked in the course			
8	Overall rating			

All the surveys being taken from the stakeholders should include Vision, Mission, PEOs, PSOs and POs.