

KARPAGAM INSTITUTE OF TECHNOLOGY

COIMBATORE – 641 105

INTERNAL QUALITY ASSURANCE CELL

TEACHING LEARNING PROCESS MANUAL



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MANUAL

ABOUT THE INSTITUTION

Karpagam Institute of Technology (KIT) is a self-financing Engineering College approved by All India Council for Technical Education, New Delhi and affiliated to Anna University, Chennai. The Institute was inducted into educational service from 2008. The college was founded by a foresighted educationist, Dr. R. Vasantha Kumar, who with a noble cause wanted to make higher education in engineering and technology accessible to one and all. The college is situated on NH47 near Eachnari, Coimbatore, Tamil Nadu. The Engineering College stands out as a premier learning hub in Coimbatore with state-of-the-art infrastructure. Well-equipped labs and departments help in imparting excellence in top quality technical education and research. The institution has six undergraduate programmes handled by highly skilled faculties. Understated, the institution is fondly preferred destination for willing students.

VISION

To impart quality technical education emphasizing innovations and research with social and ethical values.

MISSION

- Establishing state-of-the-art infrastructure, effective procedures for recruitment of competent faculty and innovative teaching practices.
- Creating a conducive environment for nurturing innovative ideas and encouraging research skills.
- Inculcating social and ethical values through co-curricular and extra-curricular activities.

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- Inculcating social and ethical values through co-curricular and extra-curricular activities.

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.

1. Modern Teaching Methodologies

- 1. Case Studies:** A case study is an in-depth study of one person, group, or event. In a case study, nearly every aspect of the subject's life and history is analysed to seek patterns and causes of behaviour.
- 2. Collaborative Learning:** A collaborative (or cooperative) learning approach involves pupils working together on activities or learning tasks in a group small enough to ensure that everyone participates. People in the group may work on separate tasks contributing to a common overall outcome, or work together on a shared task.
- 3. Context-Based Learning:** Context-based learning (CBL) refers to the use of real-life and fictitious examples in teaching environments in order to learn through the actual, practical experience with a subject rather than just its mere theoretical parts.
- 4. Crossover Learning:** Crossover learning is learning combining of both formal and informal learning. Crossover learning is the process by learning, here all of the material, method and about what do the teacher teach in the class contained in the innovation of pedagogy.
- 5. Experiential Learning:** Experiential Learning is the process of learning by doing. By engaging students in hands-on experiences and reflection, they are better able to connect theories and knowledge learned in the classroom to real-world situations.
- 6. Flipped Classroom:** A flipped classroom is structured around the idea that lecture or direct instruction is not the best use of class time. Instead students encounter information before class, freeing class time for activities that involve higher order thinking.
- 7. Gamified learning:** Gamification in education means that educators apply game design elements to an educational setting.
- 8. Group discussion:** A group discussion is a discussion between a group of participants on a given subject. A group discussion typically forms a part of the selection process used by organisations and educational institutions.
- 9. Individual Projects:** A project work is a planned and definitely formulated piece of study involving a task or problem taken up by the learner, either individually or in a group, to supplement and apply classroom and laboratory transactions. It follows the approach of Learning by Doing.
- 10. Inquiry-Based Learning:** Inquiry-based learning is a learning process that engages students by making real-world connections through exploration and high-level questioning. It is an approach to learning that encourages students to engage in problem-solving and experiential learning.
- 11. Inquisitive Learning:** Inquisitive Learning is learning which is intrinsically motivated.

12. **Jig-saw:** The jigsaw technique is a method of organizing classroom activity that makes students dependent on each other to succeed. It breaks classes into groups that each assemble a piece of an assignment and synthesize their work when finished.
13. **Peer-to-Peer Teaching:** A kinesthetic-tactile learning style requires that you manipulate or touch material to learn. Kinesthetic-tactile techniques are used in combination with visual and/or auditory study techniques, producing multi-sensory learning.
14. **Quiz:** to ask somebody a lot of questions in order to get information.
15. **Role Play:** Role play is the act of imitating the character and behaviour of someone who is different from yourself.
16. **Stealth Learning:** Stealth learning is when an instructor uses clever, disguised ways to introduce learning objectives through non-traditional tools, such as games, to encourage students to have fun and learn.
17. **Think Pair Share:** Think-pair-share (TPS) is a collaborative learning strategy where students work together to solve a problem or answer a question about an assigned reading.
18. **Competency Based Learning:** it is learning by students through demonstration of the knowledge, skills, values and attitudes
19. **The One-Minute Paper:** A one-minute paper is simply that: students are given 60 seconds—either at the end of a section of work, or at the end of a lecture period—to jot down on paper some anonymous responses to an aspect of that day's class session.
20. **Open Ended Problem:** Open-ended tasks have more than one right answer, solution or outcome and can be completed in more than one way. They can take the form of statements, questions, tasks, projects or teaching methods. Different learners may use different types of thinking; and there are no predetermined correct outcomes.
21. **Sketch noting:** It is the creative and graphic process through which an individual can record their thoughts with the use of illustrations, symbols, structures, and texts.

2. Functioning of IQAC

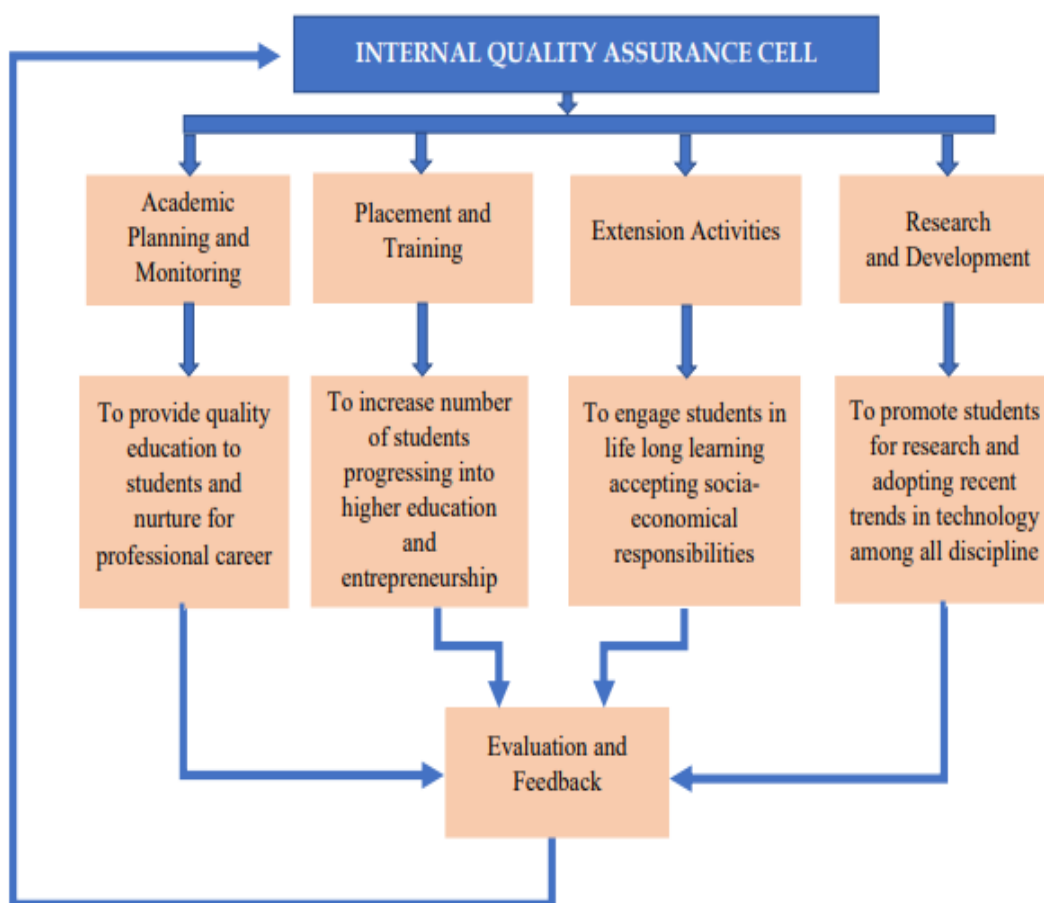
IQAC functions under the guidance of the Management and Principal. IQAC ensures the effective implementation of quality initiatives through continuous reviews and periodic meetings. The following activities are periodically reviewed

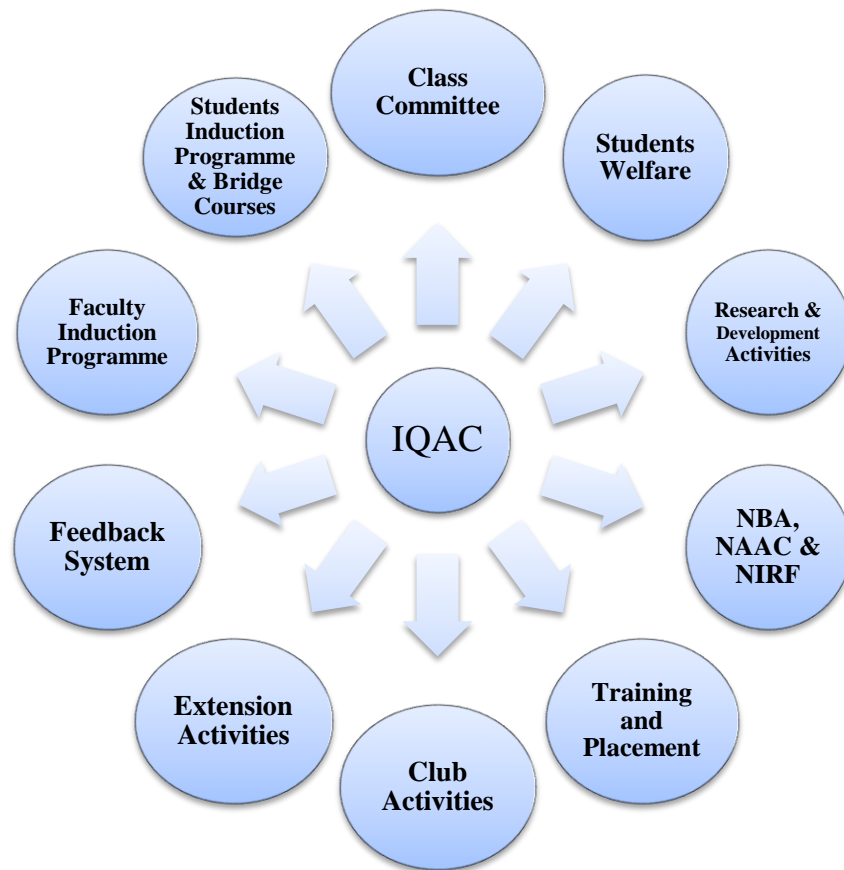
- Academic schedule planning.
- Placement and training offered and maintaining placement database.
- Monitoring and conducting CIA and University exams.
- Needs for the department & budget.
- Hosting activities of the department and institute in website.

- Planning and Conduction of Academic Audits at regular intervals.
- Ensure the conduction of Class committee meetings and review its minutes.
- Review the class room observation by HOD.
- Review the Department Meeting Minutes and Actions taken thereof.
- Result analysis of CIAs and End Semester examination and propose corrective actions.
- Review of Students' Feedback.

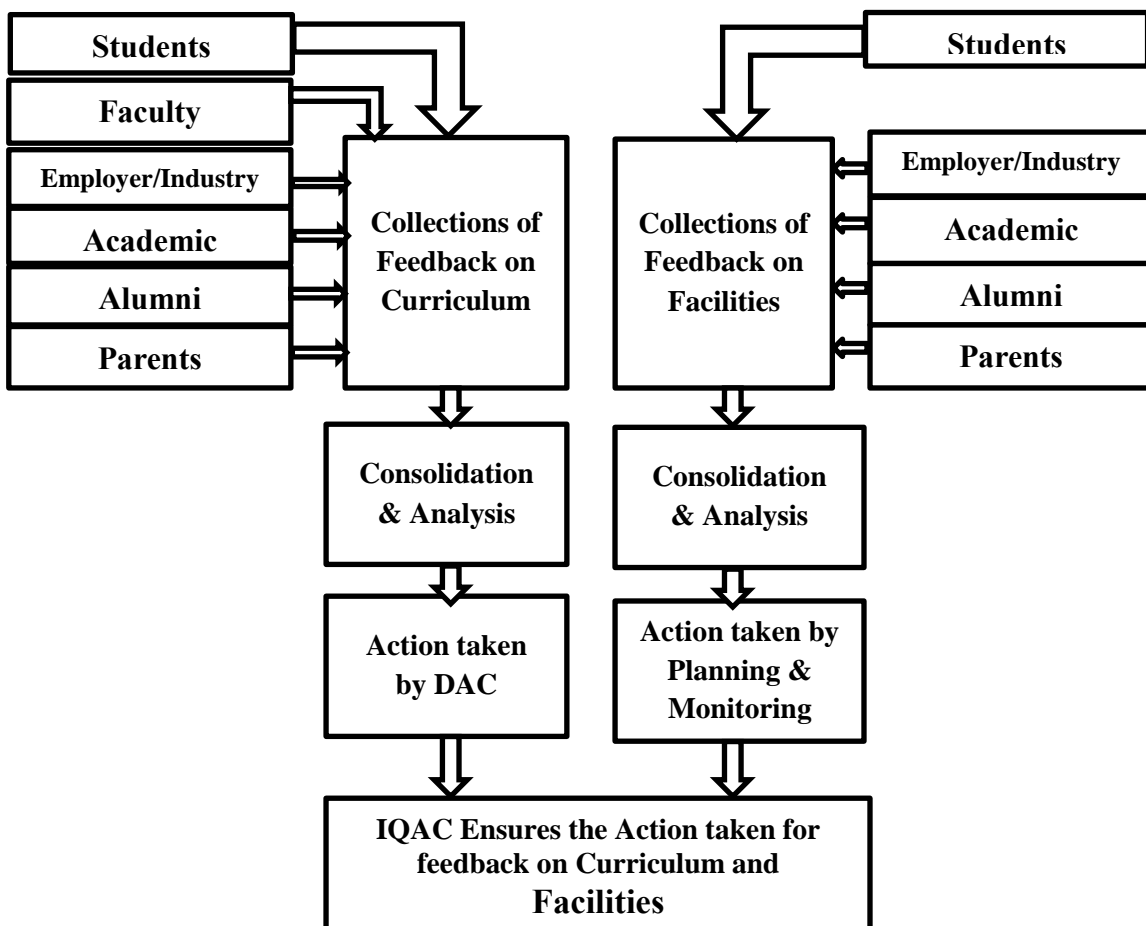
IQAC Audit Process

- Once in six months Internal Audit is conducted. The scope of the audit is to assess the quality of teaching learning process.
- Once in year External Audit is conducted. The scope of the audit is to assess the quality of academic activities and institutional policies.
- IQAC coordinator reviews the observations made by auditors and ensures actions taken thereof.

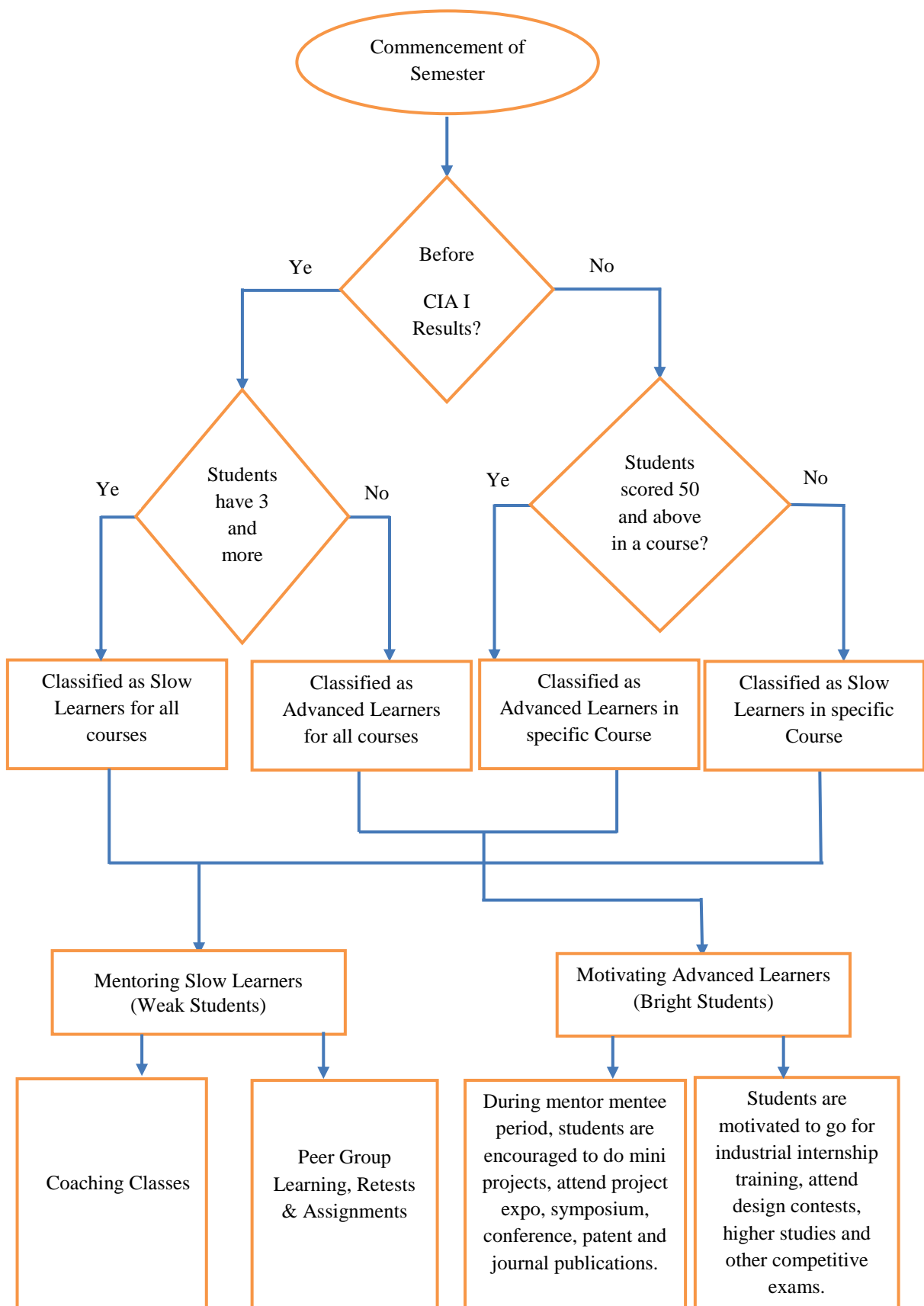




3. Feedback System



4. Methodologies to support Slow Learners and encourage Advanced Learners



Identification of Slow Learners and Advanced Learners (Bright and Weak Students)

- Advanced and Slow Learners are identified based on the performance of students in University exams and Continuous Internal Assessment.
- Before CIA-I Results, a student having 3 or more arrears in the University exam is identified as Advanced Learner.
- After the CIA-I results, students who have got below 50% are considered as Slow Learners in a specific course.
- Students who have above 50% in CIA-I and below 3 arrears in previous year's University examination are considered as Advanced Learners.

Activities for Slow Learners

- Special Coaching classes and Retests are conducted for each course to Slow Learners in order to improve their academic performance.
- Assignments and Peer group Learning are assigned to students to improve the performance in upcoming Assessments.

Activities for Advanced Learners

- Students are motivated to attend industrial internship training, design contests, higher studies and other competitive exams.
- During mentor mentee period, students are encouraged to do mini projects, attend project expo, symposium, conference, file patent and journal publications.
- Best outgoing students and Department toppers are rewarded during Annual Day for good performance in academics.

Continuous Assessment in the Laboratory

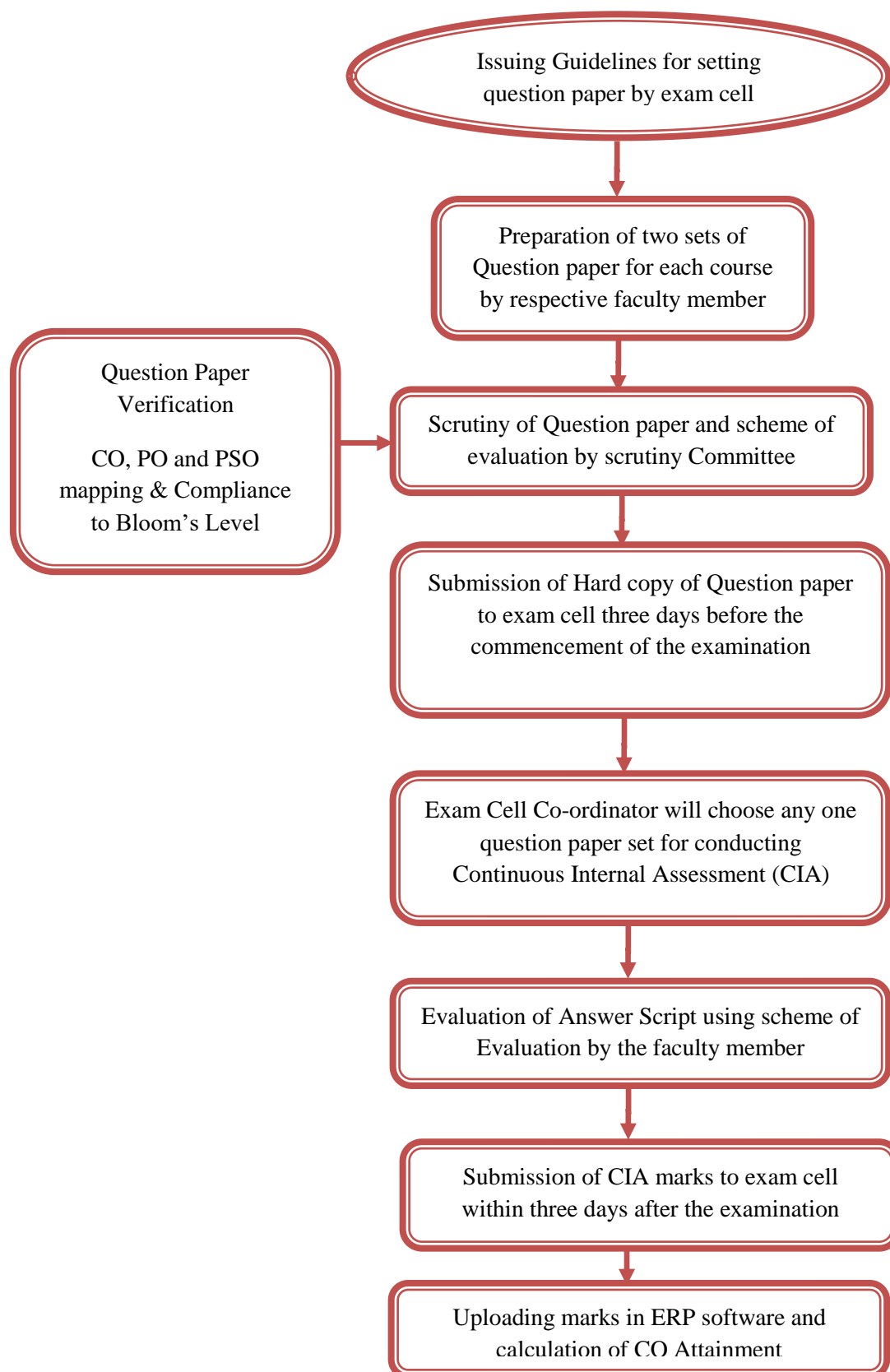
- Continuous Assessment for Laboratory is carried out based on the performance of students in individual experiments and timely submission of record notebooks.

Marks allocation for every individual experiment is given as:

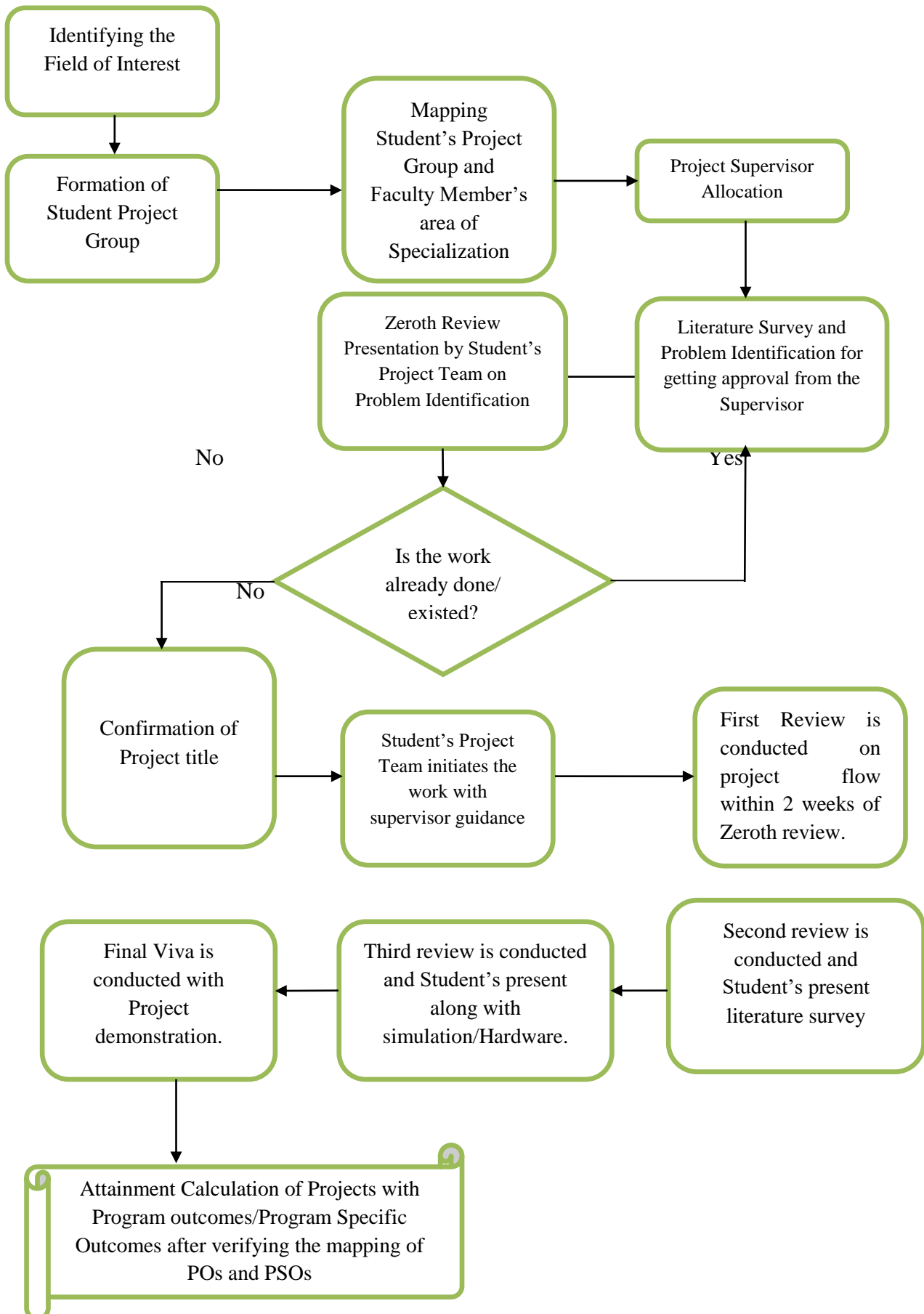
S. No.	Particulars	Marks
1.	Practical Assessment	25
2.	Record	15
3.	Viva-voce	10
Total		50

- Internal mark is allocated based on the Continuous Assessment (15 Marks) in the laboratory and performance in the Model Examination (5 Marks).

5. Quality of CIA Question Papers, Evaluation and Implementation



6. Quality of Student's projects



6.1 Process for monitoring and evaluation

Regulation 2021

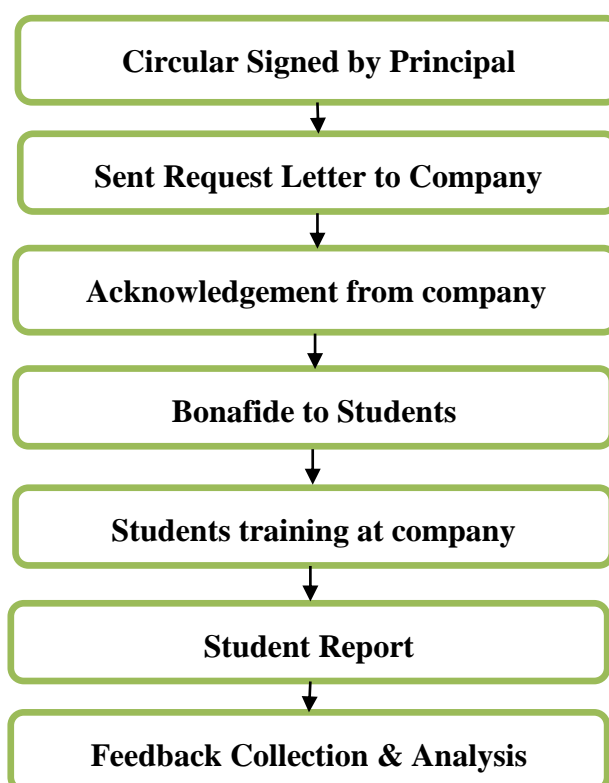
Review 1	Review 2	Review 3	End semester Examinations					Total
			Project Report Submission		Viva -Voce (50)			
			Internal	External	Internal	External	Supervisor	
10	15	15	10	10	10	20	10	100

Regulation 2017

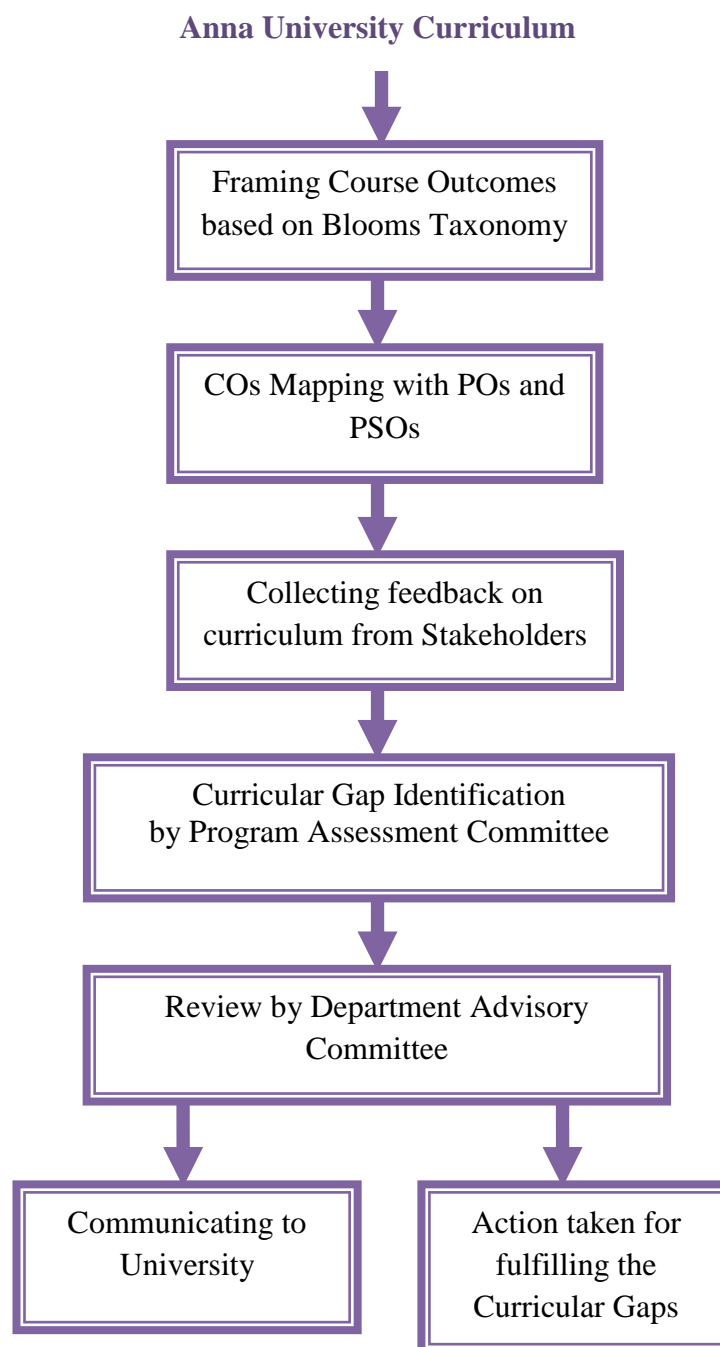
Review 1	Review 2	Review 3	End semester Examinations					Total
			Project Report Submission (30)		Viva -Voce (50)			
			Internal	External	Internal	External	Supervisor	
5	7.5	7.5	15	15	15	20	15	100

7. Initiatives related to industry internship / summer training

- Students attend Industrial Training / Internship for minimum period of two weeks as per the mandatory requirements prescribed by the University.
- Industrial Visits / Tour are arranged for students every year for Industry institute interaction. The details of Industrial Visits are given in the table.
- Industrial Training / Summer Training / Internship / Industrial Visits / Tour are arranged by Department Co-ordinators.



8. Process to identify Curriculum Gaps



Step 1: Course Outcomes (COs) are framed using Blooms taxonomy as per the curriculum and syllabi given by Anna University and correlated with relevant POs and PSOs.

Step 2: Feedback on curriculum is received from Stakeholders for identifying the gaps.

Step 3: Program Assessment Committee analyses the feedback received from Stakeholders, checks the correlation of COs with POs and PSOs and identifies the curricular gaps.

Step 4: The identified curricular gaps are reviewed by Department Advisory Committee.

Step 5: Suggestions for updating in curriculum/syllabi are communicated to University.

Step 6: Actions are taken for fulfilling the identified curricular gaps.

9. CO-PO-PSO Assessment

Bloom's Taxonomy

Bloom's Taxonomy was proposed in 1956 by Dr Benjamin Bloom, educational psychologist. Following Dr. Bloom from his theory of procedurally distributing assessment skills based on six learning levels like Remembering, Understanding, Applying, Analyzing, Evaluating and Creating

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 in 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	<ul style="list-style-type: none"> • Choose • Define • Find • How • Label • List • Match • Name • Omit • Recall • Relate • Select • Show • Spell • Tell • What • When • Where • Which • Who • Why 	<ul style="list-style-type: none"> • Classify • Compare • Contrast • Demonstrate • Explain • Extend • Illustrate • Infer • Interpret • Outline • Relate • Rephrase • Show • Summarize • Translate 	<ul style="list-style-type: none"> • Apply • Build • Choose • Construct • Develop • Experiment with • Identify • Interview • Make use of • Model • Organize • Plan • Select • Solve • Utilize 	<ul style="list-style-type: none"> • 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 	<ul style="list-style-type: none"> • 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 • Recommended • Rule on • Select • Support • Value 	<ul style="list-style-type: none"> • 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

10. Course Outcomes

Course Outcomes (COs) are rendition of a student capable to deliver at the end of a course. It is an effective ability which includes attributes like skills, and knowledge to successfully perform some activity. It is important that a CO is measurable.

Course Outcomes Assessment Methods

Assessment Process for Theory Courses

Assessment Methods	Internal Assessment		External Assessment	
	Continuous Internal Assessments	Individual Assignment / Case Study / Seminar / Mini Project		University Exam
Assessment Period	Three for 17 regulation / Two for 21 Regulation	As Required		Once Per Semester
Assessed by	Faculty Member		External Examiner	
Reviewed by	Head of the Department and Principal		University	

Internal Assessment

Attainment Level = 1, if 60% of students secured 60% of Marks and above

Attainment Level = 2, if 70% of students secured 60% of Marks and above

Attainment Level = 3, if 80% of students secured 60% of Marks and above

External Assessment

The attainment level and target levels of each course are fixed as follows:

Attainment Level = 1, if 60% of students secured B grade and above

Attainment Level = 2, if 70% of students secured B grade and above

Attainment Level = 3, if 80% of students secured B grade and above

CO Attainment calculation through direct assessment

CO Attainment Level through Direct Assessment	=	(0.5 x Attainment level based on External Assessment) + (0.5 x Attainment level based on Internal Assessment)
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Direct Assessment Process for Lab Courses:

Assessment Methods	Internal Assessment		External Assessment	
	Evaluation of Experiments	Model Exam		University Exam
Assessment Period	Once per Experiment	Once per Semester		Once Per Semester
Assessed by	Faculty Member		Internal and External Examiner	
Reviewed by	Head of the Department and Principal		University	

Internal Assessment

Attainment Level = 1, if 60% of students secured 80% of Marks and above

Attainment Level = 2, if 70% of students secured 80% of Marks and above

Attainment Level = 3, if 80% of students secured 80% of Marks and above

External Assessment

The attainment level and target levels of each course are fixed as follows:

Attainment Level = 1, if 60% of students secured more than A grade

Attainment Level = 2, if 70% of students secured more than A grade

Attainment Level = 3, if 80% of students secured more than A grade

CO Attainment calculation through direct assessment

CO Attainment Level through Direct Assessment	=	$(0.5 \times \text{Attainment level based on External Assessment}) + (0.5 \times \text{Attainment level based on Internal Assessment})$
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Direct Assessment Process for Project Work

Assessment Methods	Internal Assessment	External Assessment
	Reviews	Viva - Voce
Assessment Period	Four Reviews	Once Per Semester
Assessed by	Project Supervisor, Project Co-coordinator	Internal and External Examiner
Reviewed by	Head of the Department and Principal	University

Internal Assessment:

Attainment Level = 1, if 60% of students secured 80% of Marks and above

Attainment Level = 2, if 70% of students secured 80% of Marks and above

Attainment Level = 3, if 80% of students secured 80% of Marks and above

External Assessment:

The attainment level and target levels of each course are fixed as follows:

Attainment Level = 1, if 60% of students secured more than A grade

Attainment Level = 2, if 70% of students secured more than A grade

Attainment Level = 3, if 80% of students secured more than A grade

Table B. CO Attainment calculation through direct assessment

CO Attainment Level through Direct Assessment	=	$(0.5 \times \text{Attainment level based on External Assessment}) + (0.5 \times \text{Attainment level based on Internal Assessment})$
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Mapping of COs with POs and PSOs

“1” - Slight (Low) Correlation

“2” - Moderate (Medium) Correlation

“3” - Substantial (High) Correlation

“-” - indicates there is no correlation.

Knowledge Category

1. Engineering knowledge
2. Problem analysis
3. Design/development of solutions
4. Conduct investigations of complex problems

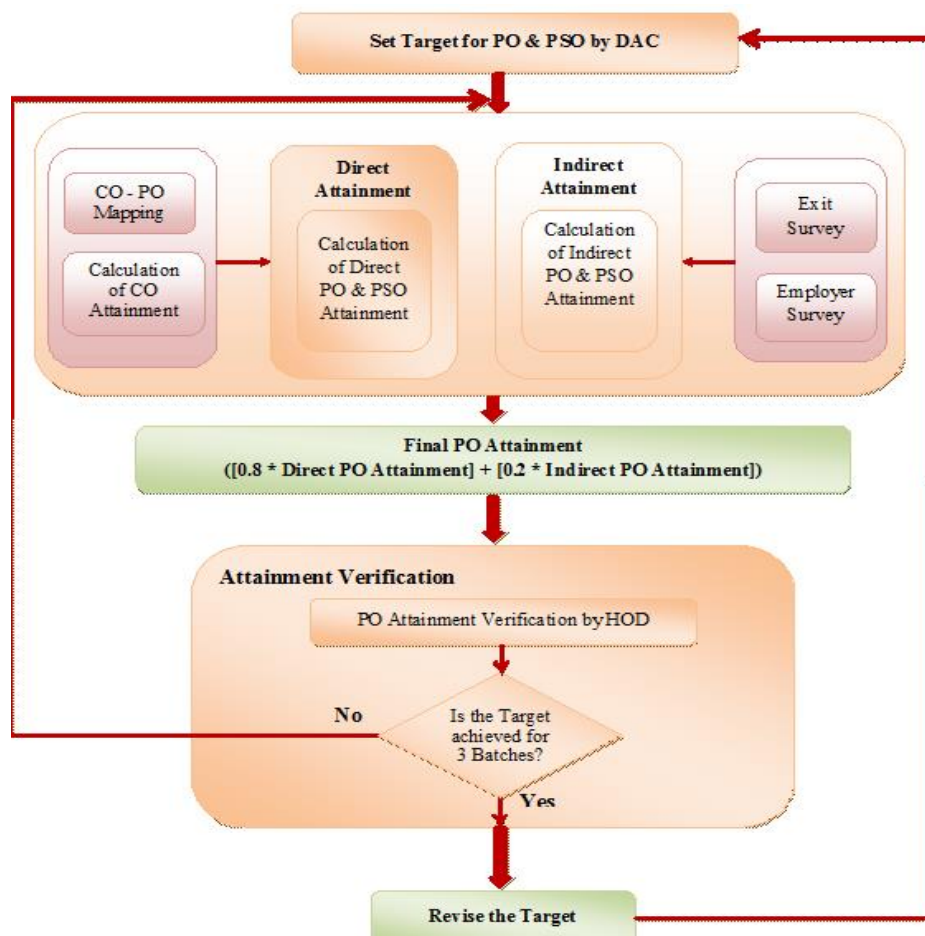
Skill Category

5. Modern tool usage
6. The engineer and society

Attitude Category

7. Environment and sustainability
 8. Ethics
 9. Individual and team work
 10. Communication
 11. Project management and finance
 12. Life-long learning
- PSO corresponds to programme specific Knowledge and Skills relished by students at the time of graduation.
 - PSOs are finalized by Department Advisory Committee based on the inputs received from stakeholders.

11. PO and PSO Assessment Methods



Direct Assessment of POs and PSOs:

Attainment of POs and PSOs are obtained through the calculation of COs of all courses

Calculation of Expected POs and PSOs Attainment Level

- A correlation matrix of COs of each course with POs and PSOs is created with appropriate levels 3- High, 2- Medium and 1- Low.
- The direct attainment of each POs and PSOs are calculated using the correlation matrix of COs to POs and PSOs.
- After mapping the POs and PSOs with COs; the average of all POs and PSOs are calculated.

Calculation of Actual POs and PSOs Attainment Level

- The PO and PSO attainment levels are calculated as follows.

Table B. 3.3.1- a. POs and PSOs Attainment calculation through direct assessment

POs and PSOs attainment level	=	$\frac{\text{Level of PO mapped with CO} \times \text{Attainment level of CO}}{3}$
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Indirect Assessment of POs and PSOs:

- Exit Survey is obtained for all the courses at the end of the VIII semester.
- In addition to this, Employer Survey is also considered for attainment calculation of POs and PSOs.

POs and PSOs Attainment calculation through indirect assessment

Overall attainment	=	$0.8 (\text{Attainment through direct assessment}) + 0.2 (\text{Attainment through indirect assessment})$
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- The frequency of data collection is every year. Similar procedure is followed for all the courses from first year to final year.
- Once the PO and PSO attainment is calculated, it is verified by the HoD.
- If the target set for POs and PSOs attainment is achieved consecutively for three batches, then the set target is revised to a higher value and the process is repeated for the next academic year. If the target set value for PO and PSO attainment is not achieved, corrective measures are taken to fill the gap and same process is repeated for next academic year.

12. Mentoring system

- The Institute has well-established mentoring system where in 15 to 20 students are assigned to each mentor.
- There will be 3 to 4 mentors in each class, among which one of them will be appointed as the Class Advisor.
- The mentors will convene meetings and interact with each mentee minimum 4 to 5 times in a semester.

13. Class Committee

Every class shall have a class committee consisting of teachers of the class concerned, student representatives and a Chairperson, who is not teaching the class. It is like the 'Quality Circle' (more commonly used in industries) with overall goal of improving the teaching learning process. The class committee for a class under a particular branch is normally constituted by the Head of the Department. However, if the students of different branches are mixed in a class (like the first semester which is generally common to all branches), the class committee is to be constituted by Head of the Institution. The class committee shall be constituted within first week of each semester. At least 4 student representatives (usually 2 boys and 2 girls) shall be included in class committee, covering all the elective courses. The first meeting of class committee shall be held within one week from the date of commencement of the semester, in order to inform the students about the nature and weightage of assessments within the framework of Regulations. Two or three subsequent meetings may be held in a semester at suitable intervals.

14. Course Committee

Each common theory course offered to more than one discipline or group, shall have a "Course Committee" comprising all teachers teaching the common course with one of them nominated as the course coordinator. The nomination of course coordinator shall be made by Head of the Department / Head of the Institution depending upon whether all teachers teaching the common course belong to a single department or to several departments. The 'Course Committee' shall meet in order to arrive at a common scheme of evaluation for the test and shall ensure a uniform evaluation of tests. Wherever feasible, Course Committee may also prepare a common question paper for the Continuous Internal Assessment test(s).

15. System of Examination

15.1 Regulation 2021

1. Performance in each course of study shall be evaluated based on (i) continuous internal assessment throughout the semester and (ii) University examination at the end of the semester.
2. Each course, both theory and practical (including project work & viva voce examinations) shall be evaluated for a maximum of 100 marks.
 - For all theory courses, the continuous internal assessment will carry 40 marks while the End Semester University examination will carry 60 marks.
 - For all theory courses with laboratory component, the continuous internal assessment will carry 50 marks while the End Semester University examination will carry 50 marks.
 - For all laboratory courses, the continuous internal assessment will carry 60 marks while the End Semester University examination will carry 40 marks.
 - The continuous internal assessment for the project work will carry 40 marks while the End Semester University examination will carry 60 marks.
3. Industrial Training and Seminar shall carry 100 marks and shall be evaluated through internal assessment only.
4. The University examination (theory and practical) of 3 hours duration shall ordinarily be conducted between October and December during the odd semesters and between April and June during the even semesters.
5. The University examination for Project Work shall consist of evaluation of the final report submitted by the student or students of the project group (of not exceeding 4 students) by an external examiner and an internal examiner, followed by a viva-voce examination conducted separately for each student by a committee consisting of the external examiner, the supervisor of the project group and an internal examiner.
6. For the University examination of practical courses including Project Work, the internal and external examiners shall be appointed by the Controller of Examinations.

Other Employability Enhancement Courses

1. The Seminar / Case Study / Mini Project course is to be considered as purely INTERNAL (with 100% internal marks only). Every student is expected to present a minimum of 2 seminars per semester before the evaluation committee and for each seminar, marks can be equally apportioned. The three member committee appointed by the Head of the Institution, consisting of the course coordinator and two experts

from the Department, will evaluate the seminar and at the end of the semester, the marks shall be consolidated and taken as the final mark. The evaluation shall be based on the seminar paper (40%), presentation (40%) and response to the questions asked during presentation (20%).

2. The Industrial / Practical Training, Summer Project, Internship, shall carry 100 marks and shall be evaluated through internal assessment only. At the end of Industrial / Practical Training / Internship / Summer Project, the student shall submit an attendance certificate from the organization where he / she has undergone training and a brief report. The evaluation will be made based on this report and a viva-voce Examination, conducted internally by a three member Departmental Committee constituted by the Head of the Institution consisting of the course coordinator and two experts from the Department. The certificates (issued by the organization) submitted by the students shall be attached to the mark list sent by the Head of the Institution to the Controller of Examinations. For all the courses under Employability Enhancement Courses Category, except the Project Work, the evaluation shall be done with 100% internal marks and as per the procedure.

Assessment for Value Added Courses

The one / two credit course shall carry 100 marks and shall be evaluated through continuous assessments only. Two Assessments shall be conducted by the Department concerned. The total marks obtained in the assessments shall be reduced to 100 marks and rounded to the nearest integer. A committee consisting of the Head of the Department, staff handling the course and a senior faculty member nominated by the Head of the Institution shall do the evaluation process. The list of students along with the marks and the grades earned shall be forwarded to the Controller of Examinations for appropriate action at least one month before the commencement of End Semester Examinations. The grades earned by the students for Value Added Courses will be recorded in the Grade Sheet, however the same shall not be considered for the computation of CGPA.

Assessment for Online Courses

Students may be permitted to credit two online courses (which are provided with certificate), subject to a maximum of six credits. The online course of 3 credits can be considered instead of one elective course. These online courses shall be chosen from the SWAYAM platform, provided the offering organization conducts regular examination and provides marks. The credits earned shall be transferred and the marks earned shall be converted into grades and transferred, provided the student has passed in the examination as

per the norms of the offering organization. The details regarding online courses taken up by the student and marks/credits earned and the approval for the course from Centre for Academic Courses shall be sent to the Controller of Examinations, Anna University in the subsequent semester(s) along with the details of the elective(s) to be dropped.

Procedure for Awarding Marks For Internal Assessment

For all theory, laboratory courses, theory courses with laboratory component and project work the continuous assessment shall be awarded as per the procedure given below:

Theory Courses: Two assessments each carrying 100 marks shall be conducted during the semester by the Department / College concerned. The total marks obtained in all assessments put together out of 200, shall be proportionately reduced for 40 marks and rounded to the nearest integer (This also implies equal weightage to the two assessments). Two internal assessments will be conducted as a part of continuous assessment. Each internal assessment is to be conducted for 100 marks and will have to be distributed in two parts viz., Individual Assignment/Case study/Seminar/Mini project and Test with each having a weightage of 40% and 60% respectively. The tests shall be in written mode. The total internal assessment marks of 200 shall be converted into a maximum of 40 marks and rounded to the nearest integer.

Laboratory Courses: The maximum marks for Internal Assessment shall be 60 marks in case of practical courses. Every practical exercise / experiment shall be evaluated based on conduct of experiment / exercise and records to be maintained. There shall be at least one test. The criteria for arriving at the Internal Assessment marks of 60 are as follows: 75 marks shall be awarded for successful completion of all the prescribed experiments done in the Laboratory and 25 marks for the test. The total mark shall be converted into a maximum of 60 marks and rounded to the nearest integer.

Theory Courses with Laboratory Component: If there is a theory course with laboratory component, there shall be two assessments: the first assessment (maximum mark is 100) will be similar to assessment of theory course and the second assessment (maximum mark is 100) will be similar to assessment of laboratory course respectively. The weightage of first assessment shall be 40 % and the second assessment be 60 %. The weighted average of these two assessments shall be converted into 50 marks and rounded to the nearest integer.

Project Work:

1. The student shall register for Project Work-I in pre-final semester and Project Work-II in final semester. Project work may be allotted to a single student or to a group of students not exceeding 4 per group. Project Work-II may/may not be a continuation of

Project Work-I. If Project Work II is not a continuation of Project Work I, then the topic and constitution of the project team members need not be the same.

2. Project Work shall be carried out under the supervision of a “qualified teacher” in the Department concerned. In this context “qualified teacher” means the faculty member possessing (i) PG degree or (ii) Ph.D. degree.
3. The Project Work-II carried out in industry/academic/research institutions need not be a continuation of Project Work-I. In such cases, the Project Work-II shall be jointly supervised by a supervisor of the department and an expert as a joint supervisor from the organization and the student shall be instructed to meet the supervisor periodically and to attend the review committee meetings for evaluating the progress. The review meetings, if necessary, may also be arranged in online mode with prior approval from the Head of the Institution and suitable record of the meetings shall be maintained.
4. The Head of the Institutions shall constitute a review committee for Project Work for each programme. The review committee consists of supervisor, an expert from the Department and a project coordinator from the Department. If the project coordinator/expert member happens to be the supervisor, then an alternate member shall be nominated. In the case of Industrial Project, the review committee shall have the supervisor, the coordinator from industry and the project coordinator from the Department.
5. There shall be three reviews during the semesters VIII by the review committee. The student shall make presentation on the progress made by him / her before the committee. The total marks obtained in the three reviews shall be reduced for 40 marks and rounded to the nearest.
6. The project report shall carry a maximum of 20 marks. The project report shall be submitted as per the approved guidelines as given by the Director, Centre for Academic Courses. Same marks shall be awarded to every student within the project group for the project report. The viva-voce examination shall carry 40 marks. Marks are awarded to each student of the project group is based on the individual performance in the viva voce examination.

15.2 Regulation 2017

1. Performance in each course of study shall be evaluated based on (i) continuous internal assessment throughout the semester and (ii) University examination at the end of the semester.
2. Each course, both theory and practical (including project work & viva voce Examinations) shall be evaluated for a maximum of 100 marks. For all theory and

practical courses including project work, the continuous internal assessment will carry 20 marks while the End - Semester University examination will carry 80 marks.

3. Industrial training and seminar shall carry 100 marks and shall be evaluated through internal assessment only.
4. The University examination (theory and practical) of 3 hours duration shall ordinarily be conducted between October and December during the odd semesters and between April and June during the even semesters.
5. The University examination for project work shall consist of evaluation of the final report submitted by the student or students of the project group (of not exceeding 4 students) by an external examiner and an internal examiner, followed by a viva-voce examination conducted separately for each student by a committee consisting of the external examiner, the supervisor of the project group and an internal examiner.
6. For the University examination in both theory and practical courses including project work the internal and external examiners shall be appointed by the Controller of Examinations.

Procedure for Awarding Marks for Internal Assessment

For all theory and practical courses (including project work) the continuous assessment shall be for a maximum of 20 marks. The above continuous assessment shall be awarded as per the procedure given below:

Theory Courses

Three tests each carrying 100 marks shall be conducted during the semester by the Department / College concerned. The total marks obtained in all tests put together out of 300, shall be proportionately reduced for 20 marks and rounded to the nearest integer (This also implies equal weightage to all the three tests).

Laboratory Courses

The maximum marks for Internal Assessment shall be 20 in case of practical courses. Every practical exercise / experiment shall be evaluated based on conduct of experiment / exercise and records maintained. There shall be at least one test. The criteria for arriving at the Internal Assessment marks of 20 is as follows: 75 marks shall be awarded for successful completion of all the prescribed experiments done in the Laboratory and 25 marks for the test. The total mark shall be reduced to 20 and rounded to the nearest integer.

Theory Courses with Laboratory Component

If there is a theory course with Laboratory component, there shall be three tests: the first two tests (each 100 marks) will be from theory portions and the third test (maximum

mark 100) will be for laboratory component. The sum of marks of first two tests shall be reduced to 60 marks and the third test mark shall be reduced to 40 marks. The sum of these 100 marks may then be arrived at for 20 and rounded to the nearest integer.

Project Work

- 1 Project work may be allotted to a single student or to a group of students not exceeding 4 per group. The Head of the Institutions shall constitute a review committee for project work for each branch of study. There shall be three reviews during the semester by the review committee. The student shall make presentation on the progress made by him / her before the committee. The total marks obtained in the three reviews shall be reduced for 20 marks and rounded to the nearest integer.
- 2 The project report shall carry a maximum 30 marks. The project report shall be submitted as per the approved guidelines as given by Director, Academic Courses. Same mark shall be awarded to every student within the project group for the project report. The viva-voce examination shall carry 50 marks. Marks are awarded to each student of the project group based on the individual performance in the viva-voce examination.
- 3 If a candidate fails to submit the project report on or before the specified deadline, he/she is deemed to have failed in the Project Work and shall re-register for the same in a subsequent semester.



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