

Attainment Procedures

The assessment process can be divided into two categories:

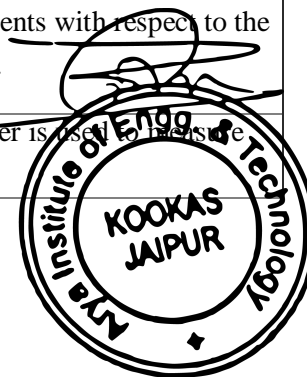
Direct Assessment and Indirect Assessment:

In the **Direct Assessment**, the tools such as tests, assignments, examinations etc. are taken on the questions that relate to specific course outcomes in each course. Presentations and seminars are aimed towards wider scope of the subject including its impact on society and environment as a whole. The questions at the presentations/seminars make the scope even wider and relate with the course outcomes and give the student a feel that things are almost never complete, thus the need for continuous independent life-long learning is emphasized.

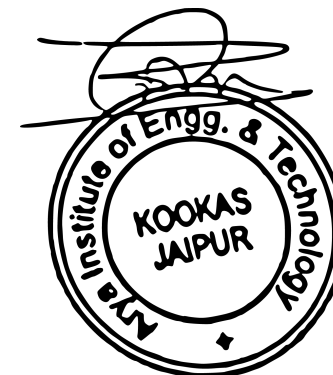
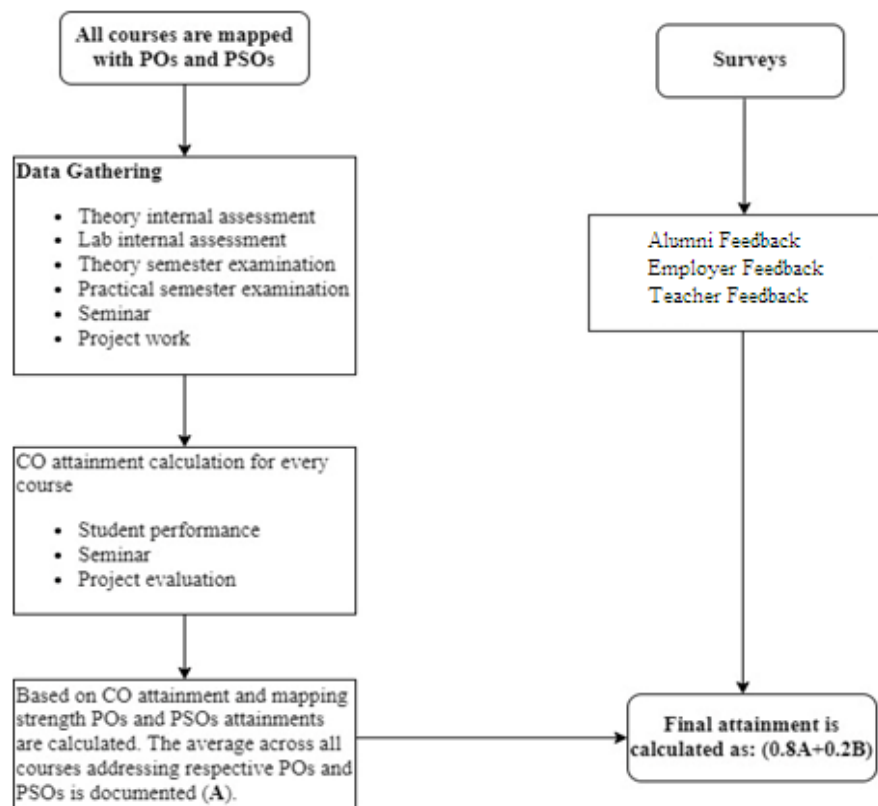
Another element, included in the assessment of attainment of programme outcomes is the opinion of exiting graduates about the attainment of each programme outcome. This survey is taken near the end of the semester of the final year. Besides, a survey on the attainment of each programme outcome is also taken from the recent alumni, employers and performance in tests. Which gives us an idea about the strength, weakness of each course outcome, thus providing a basis for revision of COs? They all contribute equally towards indirect attainment of course outcomes.

Tools used in measuring CO:

Assessment Tool Type	Assessment Tool Title	Tool Description
Direct Assessment Tools	Assignment	The assignment is a qualitative performance assessment tool designed to assess students knowledge of engineering practices, framework, and problem solving. It also helps to guide written presentation skills and improve the thinking capability of the students.
	Internal practical Assessment	This is mainly to assess student's practical knowledge with their designing capabilities. The students are tested for their confidence in terms of design of experimentation and viva voce.
	Midterm exams	Midterm examination is conducted twice per semester. Midterm examination is metric for assessing whether the entire COs is attained or not. Examination is more focused on attainment of course outcomes and program outcomes using a descriptive exam.
	Final university exam (theory + practical)	External examination is conducted at the end of the semester by the Rajasthan Technical University. This tool examines at all cognitive levels the ability & understanding of the students with respect to the concepts taught and their applicability in solving complex engineering problems.
	Industrial Internship	The industrial internship offered at the end of the fourth semester & sixth semester is used to measure the CO.



Indirect Assessment Tools	Alumni Feedback	Alumni, particularly who has graduated within the 3-4 years of current academic year, feedback is taken with reference to the achievement of Pos
	Employer Feedback	Feedback is taken from the employer for the performance of students. A verbal feedback is taken from industry persons when our faculty meets them at any conference or when they come to our institute for giving lectures or training.
	Teacher Feedback	Feedback is taken from faculties regarding Indirect Assessment.



Select Type	Assessment Components	Weightage (%)
Theory	Assignments	5%
	Mid Semester Examination	15%
	End Semester Examination	80%
Practical (Lab./Project/seminar)	Internal Assessment	60%
	External Assessment	40%

Processes:

Following processes are used to obtain attainment level of Course outcomes:

- Student performance in internal assessments/ university examination with respect to the Course outcomes is tabulated. Assignment score of every student is also recorded to mention performance.
- End semester examination paper is set by the university.
- After evaluation of internal exams sheets, result announced in class and also answer sheet of each examination is shown to students.
- Academic audit of all faculty members is carried out at the end of every semester through different parameters (i.e Syllabus coverage, test conducted, assignments given etc.) which are related to course outcomes directly or indirectly.

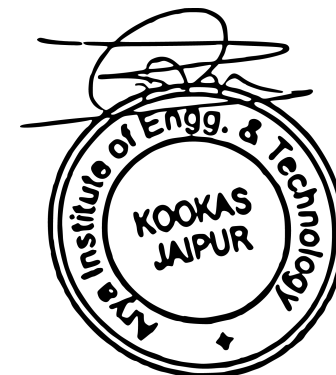
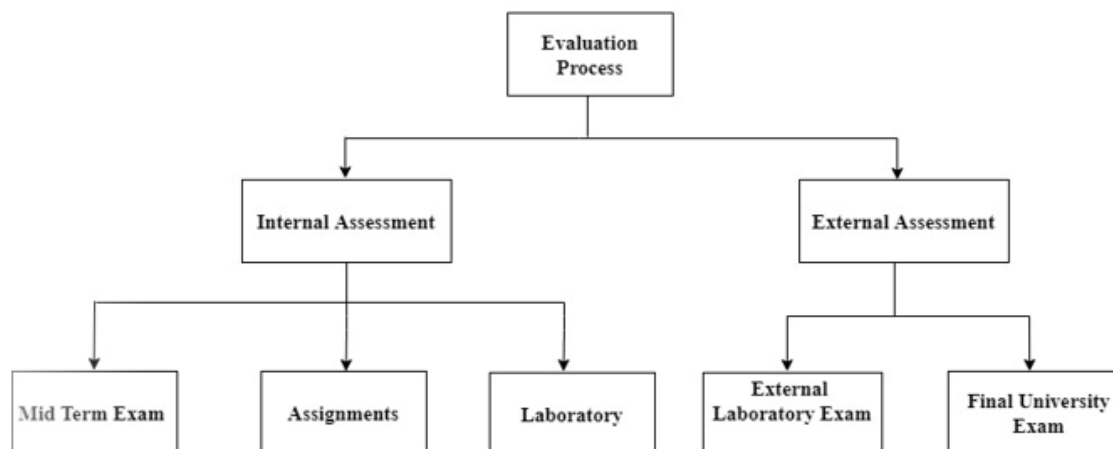


Fig 3.2(a) Process used to obtain attainment level of course outcome Attainment level:

Attainment Level 1: 60% of students score more than 60% marks out of the maximum relevant marks. (Low)

Attainment Level 2: 70% of students score more than 60% marks out of the maximum relevant marks. (Moderate)

Attainment Level 3: 80% of students score more than 60% marks out of the maximum relevant marks. (Substantial)

Course Outcome Attainment Formula :

For example:

Attainment through University Examination: Moderate i.e. 2, Attainment through Internal Assessment: Substantial i.e. 3

We have given 80% weightage to University examination and 20% weightage to Internal assessment, the attainment calculations are (80% of University level) + (20% of Internal level) = 80% of 2 + 20% of 3 = 1.6 + 0.6 = 2.2

