

1. Describe the assessment processes used to gather the data upon which the Evaluation of Course Outcome is based

Assessment Process

The assessment process includes various components such as tutorial questions, assignments, seminars, internally developed assessment exams, project presentations, and external exams for both theory and laboratory subjects.

Assessment Process for Data Collection

Outcome-Based Education (OBE)

The institution conducts assessments to identify, analyze, and evaluate data towards achieving Course Outcomes (COs). This is an essential exercise in Outcome-Based Education (OBE). Initially, COs for each course are defined based on Program Outcomes (POs) and other requirements. At the end of each course, COs are assessed and evaluated to determine their attainment.

Assessment Methodology

The department carries out the assessment by identifying, collecting, and consolidating data to evaluate the achievement of program outcomes. Attainment is defined as achieving a standard result towards desired goals, primarily observed through test or examination results. Examination and test results are meticulously reviewed to facilitate the accomplishment of desired goals.

Measurement of CO Attainment

Direct Methods: These involve evaluating the student's knowledge and skills from their performance in various assessment methods such as internal assessments, assignments, quizzes, and external university examinations. These methods provide a comprehensive summary of student learning.

Indirect Methods: Surveys and interviews analyze our graduates opinions and thoughts.

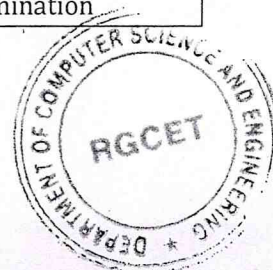
For laboratory courses, CO attainment is continuously assessed through observation notes, record marks, viva performance, and experiment marks.

Assessment Process for Different Courses

Table 1: Assessment Process for Theory Courses

Assessment Tool	Assessment Period	Assessed By	Reviewed By
Internal 1	Once after every two units	Subject in charge	Internal Examination Committee
Internal 2	Once after every	Subject in charge	Internal Examination

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	two units		Committee
Model Exam	Once after all five units	Subject in charge	Internal Examination Committee
University Exam	Once per semester	Pondicherry University	Department Result Analysis Committee


Table 2: Assessment Process for Practical Courses

Assessment Tool	Assessment Period	Assessed By	Reviewed By
Internal Lab Exam	Once per semester	Subject in charge	Internal Examination Committee
University Exam	Once per semester	Pondicherry University	Department Result Analysis Committee

Table 3: Assessment Process for Project Work

Assessment Tool	Assessment Period	Assessed By	Reviewed By
1st Review	4 weeks after commencement of class work	Project Review Committee	Internal Examination Committee
2nd Review	4 weeks after the first review	Project Review Committee	Internal Examination Committee
3rd Review	4 weeks after the second review	Project Review Committee	Internal Examination Committee
Project Viva-Voce	Once per semester	Internal and External examiners appointed by Pondicherry University	Department Result Analysis Committee




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2. Record the attainment of Course Outcomes of all courses with respect to set Attainment levels

Assessment Process

Examples of data collection processes may include, but are not limited to, specific exam/tutorial questions, assignments, laboratory tests, project evaluations, student portfolios (a portfolio is a collection of artifacts that demonstrate skills, personal characteristics, and accomplishments created by the student during the study period), internally developed assessment exams, project presentations, and oral exams.

Assessment of Student Learning

Assessment of the student's learning is carried out not only by conventional methods such as assignments, tutorial questions, laboratory tests, and project evaluations, but also through real-time working models prepared by students. These models are duly acknowledged, appreciated, and demonstrated in the classroom, and marks are awarded as part of the internal assessment. This exercise has significantly strengthened our faculty and students' knowledge, skill portfolios, and augmented the attainment of our Course Outcomes.

The following three tools are used to assess the Course Outcomes:

1. Internal Tests and Assignments
2. University Examination
3. Course Outcome Feedback


COs Assessment Process - Theory Courses

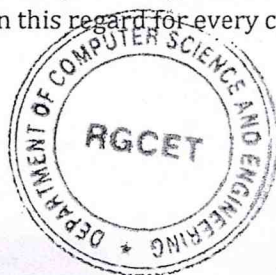
The attainment process of COs is derived from three assessment tools: Internal Tests, University Examination and Course Outcome Feedback. Internal Tests and University Examination are considered for direct attainment, while Course Outcome Feedback is considered for indirect attainment.

Assessment Tool - Internal Tests and Assignments

As per the Curriculum of Pondicherry University, the student has to write two internal examinations each semester in a particular course. Each internalexam is conducted for 50 marks. The coverage of syllabus for INTERNAL 1 includes the first two units, and the remaining three units are covered in INTERNAL 2 and Model Exam. The marks obtained for each question and the corresponding COs to which these questions are mapped are collected for each subject and then CO attainment is calculated. The CO assessment is calculated by measuring the percentage of students crossing a predefined benchmark.

A correlation is established between COs and POs on a scale of 1 to 3, where 1 indicates a slight correlation (low), 2 indicates a moderate correlation (medium), and 3 indicates a substantial correlation (high). A mapping matrix is prepared in this regard for every course in the program.


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CO attainment levels can be measured based on the results of the internal assessment and the external examination conducted by the university. This is a form of direct measurement of attainment. As per university regulations, three internal assessment tests are conducted for each course in a semester. In each test, the percentage of students crossing a set target level in each question is calculated, and that value decides the level of attainment of COs correlated to that question.

Attainment Level 1: If the percentage of students crossing the set target level is up to 60%

Attainment Level 2: If the percentage of students crossing the set target level is between 60% and 80%

Attainment Level 3: If the percentage of students crossing the set target level is above 80%

Assessment Tool - University Examination

At the end of the semester, the University conducts an examination for 75 marks for every course. The grade points obtained for each student are calculated to measure the attainment. After the declaration of the university results, the percentage of students crossing a set target level is measured. Here, it is ensured that the questions answered by a student cover all the course outcomes defined for that course.

Attainment Level 1: If the percentage of students crossing the set target level is up to 60%

Attainment Level 2: If the percentage of students crossing the set target level is between 60% and 80%

Attainment Level 3: If the percentage of students crossing the set target level is above 80%

Table 4 University Examination Grade Points

Letter Grade	Grade Points
S	10
A	9
B	8
C	7
D	6
E	5
F	0

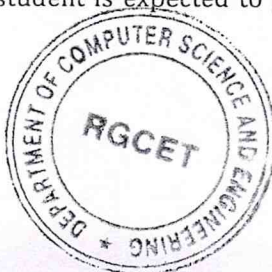
Laboratory Course Attainment Procedure

Out of 100 marks for each lab, 50 marks are for internal and 50 marks are for the external examination. In internal assessment, out of 50 marks, 20 marks are for day-to-day evaluation, 10 marks for record evaluation, and 20 marks for the internal examination. By combining all marks for each student, the CO attainment is calculated. The calculation process is as follows: Internal Exam (20%), External Exam (80%), and Total 100%.

CO Feedback Methodology

At the end of the course, CO feedback forms are collected from students to get feedback on COs. For each CO, a question is prepared and shared with students. For example, if a course has six COs, then six questions are asked. The student is expected to grade the feedback as Excellent,

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Very Good, Good, Satisfactory, or Poor. These feedback forms are collected, and the data is consolidated.

Course Outcome Attainment

The attainment process is explained through an example:

Direct Attainment

Attainment level through University Examination considered as Moderate i.e., 2

Attainment level through Internal Examination considered as Moderate i.e., 2

Assuming 80% weightage to University Examination and 20% weightage to Internal Assessment,

The Rubric for direct attainment calculations will be:

(80% of University level) + (20% of Internal level)

i.e. $80\% \text{ of } 2 + 20\% \text{ of } 2 = 0.8 \times 2 + 0.2 \times 2 = 2$

Indirect Attainment

It is measured from the course outcome feedback given by students for a course. Let's assume that it is at a Substantial level i.e., 3.

Final CO Attainment

The Rubric for final attainment calculations will be:

(80% of Direct attainment) + (20% of Indirect attainment)

$= 2 * 0.8 + 3 * 0.2 = 1.6 + 0.6 = 2.2$




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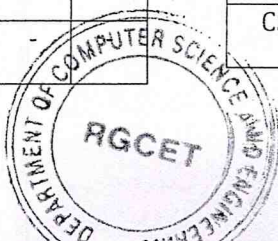
**Attainment of Course Outcomes for All Courses
in the Programme (CSE) Batch (2019-2023)**

SUB CODE						
I SEM	CO1	CO2	CO3	CO4	CO5	CO6
T101	2	2.5	2.5	2	2	-
T102	3	2.5	2.5	3	2.5	-
T103	2.5	2.5	2.5	2	2.5	-
T104	2.5	2.5	2.5	2	3	-
T105	2	3	2	3	3	-
T106	2	1	1	0	-	-
P101	2	1	1	0	-	-
P102	2	3	3	3	3	-
P103	2.5	2.5	2.5	2.5	3	-
II SEM	CO1	CO2	CO3	CO4	CO5	CO6
T107	3	3	3	3	3	-
T108	3	3	3	3	3	-
T109	3	3	3	3	3	-
T110	3	3	2	3	3	-
T111	3	3	3	3	3	-
T112	2	2.5	2.5	2	2	-
P104	3	3	3	3	3	-
P105	3	3	3	3	3	-
P106	3	3	3	3	3	-
P107	3	3	3	3	3	-
III SEM	CO1	CO2	CO3	CO4	CO5	CO6
MA T31	2.5	2.5	3	2.5	-	-
CS T32	3	2.5	-	-	-	-
CS T33	3	2.5	3	-	-	-
CS T34	2	2.5	3	-	-	-

CS T35	2.5	2.5	-	-	-	-
CS T36	2	2.5	3	2.5	3	-
CS P31	3	3	3	-	-	-
CS P32	3	2.5	2.5	-	-	-
CS P33	2.5	2.5	3	3	-	-
IV SEM	CO1	CO2	CO3	CO4	CO5	CO6
MA T41	2.5	2.5	3	-	-	-
CS T42	2.5	3	2.5	2.8	-	-
CS T43	2.5	3	2.5	3	-	-
CS T44	2.5	2.5	3	-	-	-
CS T45	2.5	2.5	3	1	1	-
CS T46	2.5	2.3	3	-	-	-
CS P41	2.5	2.5	3	3	0	-
CS P42	2.5	3	2.5	0	0	-
CS P43	3	3	2	2	0	0
V SEM	CO1	CO2	CO3	CO4	CO5	CO6
CS T51	1	1	0.5	0	0	-
CS T52	2	1.5	1.33	1	1	-
CS T53	1.6	0.3	1	0	0	-
CS T54	3	1	3	0	-	-
CS T55	1.5	0.3	1	0	1	-
CS P51	2.4	2.6	2.8	3	3	2.2
CS P52	2.6	2.8	2.4	2.6	2.2	3
CS P53	3	3	2.2	2.4	2.6	2
HS P54	2.4	2.6	3	3	2	-
VI SEM	CO1	CO2	CO3	CO4	CO5	CO6
CS T61	2.5	2	2.6	-	-	-
CS T62	0	0	0	2	0	-
CS T63	1	0	-	-	-	-

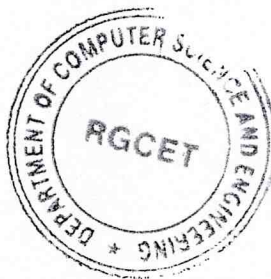
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CS E61	0.5	0	0.5	0	1	-
CS E63	0.66	1.33	1.6	1	0	-
CS P61	2.5	3	2.8	2.4	2.6	3
CS P62	3	2.4	2	3	2.8	-
CS P63	3	2.4	2.8	2	3	-
HS P65	3	3	2.4	2.8	2.6	-
VII SEM	CO1	CO2	CO3	CO4	CO5	CO6
CS T71	3	0	0	-	-	-
CS T72	0.5	0	0	-	-	-
CS T73	0.6	2	0	0	0.5	-
CS E77	0.6	0	0	0	0.5	-
CS P71	2	2	2.8	2.8	-	-

CS P72	2	2.4	2.5	2.6	-	-
CS P73	3	2	1	1	-	-
CS PW7	3	3	3	2	-	-
VIII SEM	CO1	CO2	CO3	CO4	CO5	CO6
CS T81	2.5	2	2.7	1	2	-
CS T82	2	0	2.5	-	-	-
CS T83	2.5	2	2.6	1	2	-
CS E84	0	0	0	1	-	-
CS E85	0	0	0	1	-	-
CS P81	3	3	3	2.8	-	-
CS P82	2.5	3	3	3		
CS PW8	3	3	3	3	-	-




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