

Attainment of Program Outcomes and Program Specific Outcomes

1. Description of Assessment Tools and Processes for Measuring the Attainment of Program Outcomes (POs) and Program Specific Outcomes (PSOs)

Direct Assessment Tools:

Several direct assessment tools are employed to measure the direct attainment of POs and PSOs. These tools include:

Internal Exam Tests I and II: Conducted according to the university schedule, these internal exams are crucial for assessing student performance and understanding.

Project Presentation: Conducted thrice in the final semester, project presentations are reviewed and assessed by the Project Review Committee, providing a comprehensive evaluation of students' practical and theoretical knowledge.

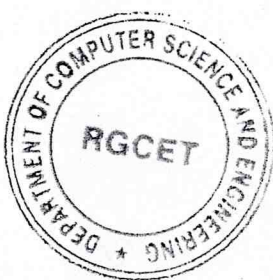
University Exams: University exams are conducted once per semester. The University Lab Exams are assessed by both internal and external examiners appointed by the university, ensuring an unbiased evaluation. The University Theory Exams are evaluated externally. The attainment of POs and PSOs is measured based on the semester results. The detailed assessment process for POs and PSOs attainment is illustrated in Table 3.6.

Indirect Assessment Tools:

Indirect assessment tools provide additional insights into the attainment of POs and PSOs. These tools include:

Student Exit Level Feedback: Feedback is collected from final-year (8th semester) students to evaluate the attainment of POs and PSOs from the students' perspective.

Alumni Survey: Feedback is collected from alumni to track the growth and success of our graduates, providing valuable information for assessing the attainment of POs and PSOs. The detailed assessment process for measuring the attainment of POs and PSOs in an outcome-based education framework is depicted in Figure 1.




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Figure 1: Assessment Process for Measuring the Attainment of POs and PSOs

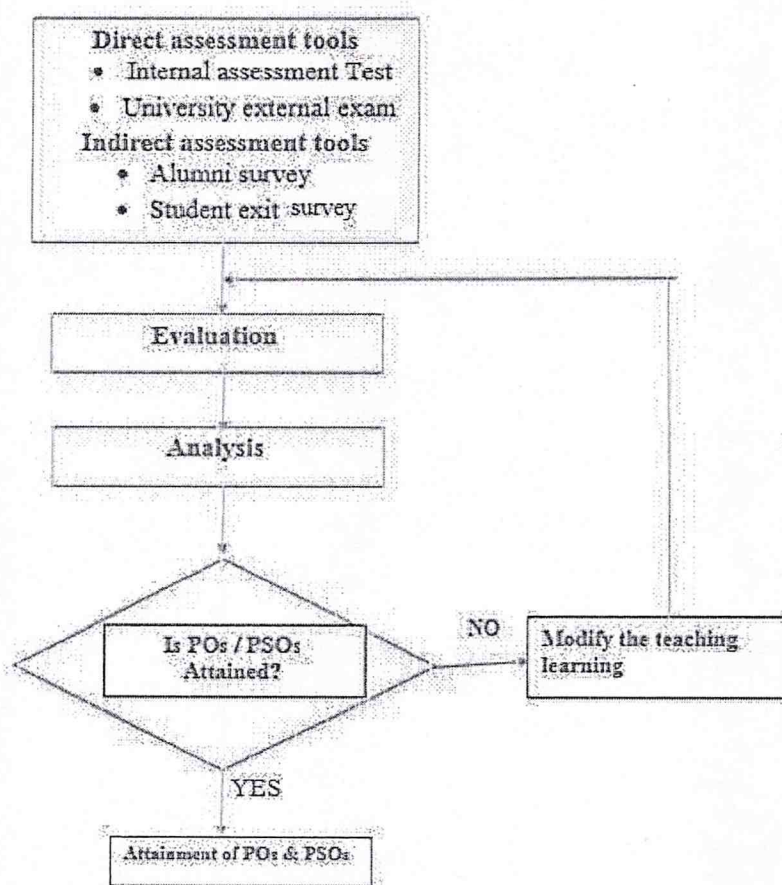
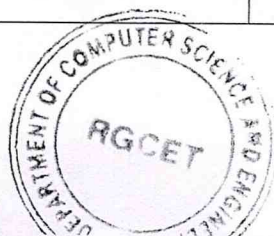


Table 6: Assessment Tools for POs and PSOs Attainment

Assessment Type	Assessment Method	Assessment Period	Assessed and Reviewed By
Direct Assessment	Internal I and II	Once after every two units	Subject In-charge & Internal Examination Committee
Direct Assessment	Model Exam	As per the schedule	Subject In-charge & Internal Examination Committee
Direct Assessment	University Exam	Once per semester	External Assessment and Valuation. Results are externally reviewed by PUK.
Indirect Assessment	Student Exit Survey	Once per year	Faculty Coordinator
Indirect Assessment	Alumni Survey	Once per year	Faculty Coordinator

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PO Attainment Process Explained with an Example

Example:

1. It is assumed that a particular PO is mapped to four courses: C211, C311, C321, and C411.
2. The attainment level for each of the four courses is determined as shown in the examples.
3. PO attainment level is based on the attainment levels of both direct assessment and indirect assessment.
4. For affiliated, non-autonomous colleges, 80% weightage is given to direct assessment and 20% weightage to indirect assessment through surveys from students (largely) and employers (to some extent). Programs may have different weightages with appropriate justification.
5. Assuming the following actual attainment levels:

Direct Assessment:

- C211: High (3)
- C311: Medium (2)
- C321: Low (1)
- C411: High (3)

Attainment level will be the summation of levels divided by the number of courses:

$$(3+2+1+3)/4 = 9/4 = 2.25$$

Indirect Assessment:

Surveys, analysis, customized to an average value as per levels 1, 2, and 3. Assumed level: 2

PO Attainment level will be 80% of direct assessment plus 20% of indirect assessment:

$$(0.8 \times 2.25) + (0.2 \times 2) = 1.8 + 0.4 = 2.2$$

Correlation Levels:

- 1 – Light correlation
- 2 – Moderate correlation
- 3 – Strong correlation

2. Provide Results of Evaluation of Each PO & PSO

The program shall set Program Outcome (PO) attainment levels for all POs and Program Specific Outcomes (PSOs). The attainment levels, assessed both directly (student performance) and indirectly (surveys), are to be presented through a Program level Course – PO & PSO matrix as indicated.

PO Attainment

Note: A similar table should be prepared for PSOs.

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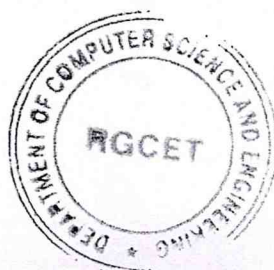


PO Attainment table for all the courses in the CSE program Batch (2019-2023) is shown in Table 7 below.

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
T101	3.0	3.0	-	-	-	-	-	-	-	-	-	-
T102	2.5	2.5	-	-	-	-	-	-	-	-	-	-
T103	2.3	2.3	-	-	-	-	-	-	-	-	-	-
T104	2.6	0.2	2.1	1.4	2.6	1.4	0.9	2.2	0.9	0.4	0.5	2.7
T105	2.3	2.3	0.8	0.8	-	0.8	-	-	-	-	-	-
T106	2.8	2.8	1.4	0.9	0.7	0.2	0.7	-	0.5	0.2	-	2.1
P101	2.8	2.8	1.4	0.9	0.7	0.2	0.7	-	0.5	0.2	-	2.1
P102	2.8	1.6	1	1.5	-	-	0.5	-	-	-	-	-
P103	2.8	3	2.8	1.8	2.2	1.2	0.6	0.4	3	0.6	-	0.4

I YEAR I SEMESTER												
T107	2.9	2.9	0.6	1.0	1.5	-	0.8	0.8	-	-	-	1.7
T108	3.0	3.0	-	-	-	-	-	-	-	-	-	-
T109	3.0	3.0	-	-	-	-	-	-	-	-	-	-
T110	3.0	3.0	-	-	-	-	-	-	-	-	-	-
T111	3.0	3.0	0.6	1.0	1.6	-	0.8	-	-	-	-	-
T112	3.0	3.0	1.6	0.8	1.2	2	2	-	-	-	-	-
P104	2.9	2.9	1.0	1.0	-	1.0	-	-	-	-	-	-
P105	3.0	3.0	-	-	-	-	-	-	-	-	-	-
P106	3.0	3.0	-	-	-	-	-	-	-	-	-	-
P107	2.8	2.8	0.6	0.9	1.5	-	-	-	-	-	-	-

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IIYEARIII SEMESTER												
MAT31	1.7	1.7	1.1	1.7	-	-	-	-	-	-	-	2.3
CST32	2.1	2.1	1.7	-	2.1	-	0.7	-	-	-	-	1.4
CST33	2.8	2.8	1.4	0.9	1.6	0.2	0.7	-	0.5	0.2	-	2.1
CST34	2.6	0.9	2.6	0.9	1.0	-	0.7	-	-	-	-	1.4
CST35	2.1	2.1	1.7	-	2.1	-	0.7	-	-	-	-	1.4
CST36	2.6	2.4	2.6	2.3	2.1	-	1.7	-	2.6	-	-	1.7
CS P31	2.6	2.6	1.7	1.7	-	-	-	-	0.9	-	-	0.9
CS P32	2.6	2.6	1.7	1.7	-	-	-	-	0.9	-	-	0.9
CS P33	2.6	2.6	1.7	1.7	-	-	-	-	0.9	-	-	0.9

IIYEARIV SEMESTER												
MAT41	2.2	2.2	1.4	2.2	-	-	-	-	-	-	-	-
CST42	2.0	2.0	1.3	2.0	-	-	-	-	-	-	-	-
CST43	2.0	1.8	2.0	1.7	1.6	-	1.3	-	2.0	-	-	2.7
CST44	2.9	2.9	2.9	2.9	-	-	-	-	-	-	-	1.3
CST45	2.8	2.1	1.4	1.2	1.6	0.7	0.7	-	0.5	0.2	-	2.9
CST46	2.6	-	-	-	2.3	0	0.6	-	-	-	-	2.1
CS P41	2.8	2.8	1.9	1.9	-	0.9	-	-	0.5	-	-	1.5
CS P42	2.8	2.8	1.9	1.9	-	-	-	-	0.9	-	-	0.5
CS P43	2.6	2.6	1.7	1.7	-	-	-	-	0.9	-	-	0.9

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IIIYEARVSEMESTER												
CST51	2.6	2.1	2.6	2.3	1.2	-	-	-	-	0.2	1.6	2.3
CST52	2.8	2.8	1.5	1.7	2.0	0.6	1.1	1.1	0.4	2.0	0.7	1.7
CST53	2.7	2.5	2.7	2.4	2.2	-	1.8	-	2.7	-	-	1.8
CST54	2.8	2.8	1.9	0.2	0.5	0.7	0.7	-	0.5	0.2	-	2.1
CST55	2.7	2.7	2.7	1.1	-	-	-	-	-	0.2	0.9	2.1
CS P51	3	2.9	2.8	3	2.9	3	2.9	2.7	2.8	2.5	2	1.5
CS P52	3	2.5	2.8	2.8	3	2.4	2.6	2.8	3	3	2.8	2.8
CS P53	2.8	2.6	2.4	2.8	3	3	3	2.4	2.8	2.6	3	3
HSP54	3	3	2.8	2.6	2.4	2.6	2.8	3	2.4	2.6	2.8	1.9

IIIYEARVISEMESTER												
CST61	2.9	2.9	1.9	2.3	1.9	1.9	1.3	0.6	1.6	1.3	1.3	2.9
CST62	2.0	1.8	2.0	1.7	1.6	-	1.3	-	2.0	-	-	1.3
CST63	2.0	2.0	2.0	2.0	2.0	2.0	-	1.3	-	-	-	1.3
CS E61	2.7	2.7	0.5	0.9	1.4	-	0.7	-	-	-	-	1.6
CS E63	2.74	2.7	2.7	1.1	-	-	-	-	-	0.2	0.9	2.2
CS P61	2.7	2.9	3	2.7	2.9	2.8	3	3	2.4	2.6	2.8	3
CS P62	3	2.4	2.9	2.6	2.8	2.2	2.8	2.9	3	3	2.4	2.6
CS P63	2.6	2.8	2.4	2.6	3	3	2.8	2.9	1.9	2.7	2.8	3
HSP65	3	3	2.8	2.6	2.4	2.8	3	3	2.9	2.8	2.4	2.6

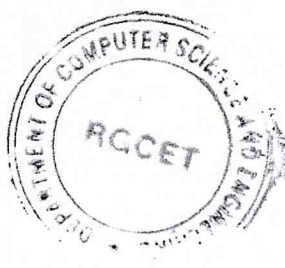
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IVYEARVIISEMESTER												
CST71	1.8	1.8	2.0	1.4	1.6	-	0.9	-	-	-	-	1.4
CST72	2.0	2.0	0.4	0.7	1.0	-	0.5	-	-	-	-	1.2
CST73	2.0	1.9	2.0	1.8	1.7	-	1.3	-	2.0	-	-	1.3
CS E77	2.0	1.9	2.0	1.8	1.7	-	1.3	-	2.0	-	-	-
CS P71	3	3	2.0	3	2.5	3	3	3	3	2	2	2
CS P72	1.8	2	2.5	3	3	3	2.5	2.5	3	3	3	2
CS P73	1.8	2	2	2	3	3	3	3	2	3	2	2
CSPW7	3	3	3	3	2	2.5	3	3	3	3	3	2.5

IVYEARVIIISEMESTER												
CST81	2.6	2.4	2.6	2.3	-	1.7	-	2.6	-	-	1.7	-
CST82	2.9	2.9	1.7	2.1	2.1	1.5	0.8	2.9	0.4	2.3	1.2	1.5
CST83	2.9	2.9	1.7	2.1	2.1	1.5	0.8	2.9	0.4	2.3	1.2	1.5
CS E84	2.6	2.4	2.6	2.3	-	1.7	-	2.6	-	-	1.7	-
CS E85	2.6	2.4	2.6	2.3	-	1.7	-	2.6	-	-	1.7	-
CS P81	3	2	3	3	3	2	2	2	3	3	3	3
CS P82	2	2	3	3	3	2	2	2	2	2	2	3
CSPW8	3	3	3	3	2.5	2	2	3	3	2	2	2
Direct Attainment	2.62	2.45	1.95	1.85	2.02	1.81	1.56	2.35	1.78	1.73	1.98	1.84
Indirect Attainment	3	3	3	3	3	3	3	3	3	3	3	3
CO Attainment	2.7	2.6	2.2	2.1	2.2	2.0	1.8	2.5	2.0	2.0	2.2	2.1


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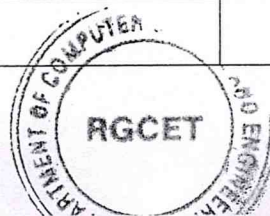


PSO Attainment for all the courses for the program CSE as shown in below table 8

	PSO1	PSO2	PSO3	PSO4
I YEAR I SEMESTER				
T101	2.4	2.4	1.3	-
T102	-	-	2.4	-
T103	2.4	2.4	1.4	-
T104	2.75	2.3	1.25	-
T105	2.4	1.6	2.4	1.6
T106	2.5	2.8	2.8	-
P101	2.5	2.8	2.8	-
P102	2.4	2.2	2.2	-
P103	2.6	2.1	2.4	-
I YEAR II SEMESTER				
T107	2.7	2.7	1.5	-
T108	-	-	2.4	-
T109	2.4	2.4	1.4	-
T110	2.6	1.8	2.0	-
T111	-	-	-	-
T112	2.8	2.8	1.6	-
P104	2.6	2.6	1.5	-
P105	2.6	2.6	1.5	-
P106	2.6	2.6	1.5	-
P107	-	-	-	-
II YEAR III SEMESTER				
MA T31	2.3	1.5	2.3	-
CST32	2.1	2.1	-	-

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CS T33	2.5	2.5	2.8	-
CS T34	2.4	2.4	-	-
CS T35	-	2.1	-	-
CS T36	2.4	2.4	2.4	-
CS P31	1.7	2.4	0	-
CS P32	1.7	2.4	-	-
CS P33	1.7	2.4	-	-
II YEAR IV SEMESTER				
MA T41	2.3	1.5	2.3	-
CS T42	2.7	1.8	2.7	-
CS T43	1.3	1.8	0.9	-
CS T44	1.9	2.9	0	-
CS T45	2.5	2.8	2.8	-
CS T46	2.3	2.6	0	-
CS P41	1.5	2.6	0	-
CS P42	1.9	1.6	0	-
CS P43	1.7	2.4	0	-
III YEAR V SEMESTER				
CS T51	2.6	2.1	2.6	-
CS T52	2.8	2.8	1.5	-
CS T53	2.5	2.8	1.6	-
CS T54	2.5	2.8	2.5	-
CS T55	2.7	2.1	2.7	-
CS P51	2.8	3	3	-
CS P52	3	2.8	2.4	-
CS P53	3	3	2.8	-
HS P54	2.8	3	2.4	-

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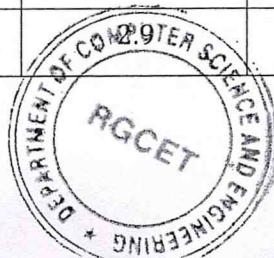
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III YEAR VI SEMESTER				
CS T61	2.9	2.9	2.9	-
CS T62	1.8	-	-	-
CS T63	2.0	2.0	1.0	
CS E61	2.4	2.4	1.6	
CS E63	2.7	2.2	2.7	
CS P61	2.8	3	3	
CS P62	3	2.8	3	
CS P63	2.8	2.6	2.4	
HS P65	3	3	2.8	
IV YEAR VII SEMESTER				
CS T71	1.8	2.0	1.1	
CS T72	1.9	1.8	1.0	
CS T73	1.0	1.5	1.5	
CS E77	1.9	0	0	
CS P71	3	3	2	
CS P72	2.9	2.9	3	
CS P73	3	3	2.5	
CS PW7	3	3	3	
IV YEAR VIII SEMESTER				
CS T81	2.6	2.4	1.5	
CS T82	2.9	2.9	2.9	
CS T83	2.9	2.9	2.9	
CS E84	2.4	0	0	
CS E85	2.5	0	0	
CS P81	3	3	2.5	
CS P82	2.9	2.9		

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CS PW8	3	3	3	
Direct Attainment	2.39	2.33	1.81	0.40
Indirect Attainment	3	3	3	3
CO Attainment	2.51	2.46	2.05	0.92


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