



Criteria 2.6. Student Performance and Learning Outcomes

2.6.1 The institution has stated learning outcomes (Program and Course outcomes), graduate attributes, which are integrated into the assessment process and widely published through the website and other documents, and the attainment of the same is evaluated by the institution

Attainment calculation procedure

Introduction

The Course Outcome (CO) to Program Outcome (PO) mapping is a crucial aspect of academic quality assurance, especially for accreditation purposes. This report outlines a systematic procedure to calculate CO-PO attainment using assessment data, surveys, and predefined mappings. An example with 10 students is used for illustration, and screenshots of relevant data and calculations are provided.

Procedure for CO-PO Calculation

Step 1: Data Collection

Assessment data is gathered from multiple sources, such as:

Direct Source:

- Assignments
- Mid Term Exam or Sessional Exams (I and II, applicable for PCI allied course only)
- Group Projects or Presentations
- End-Term Examinations

Indirect Source:

- Course Exit Survey

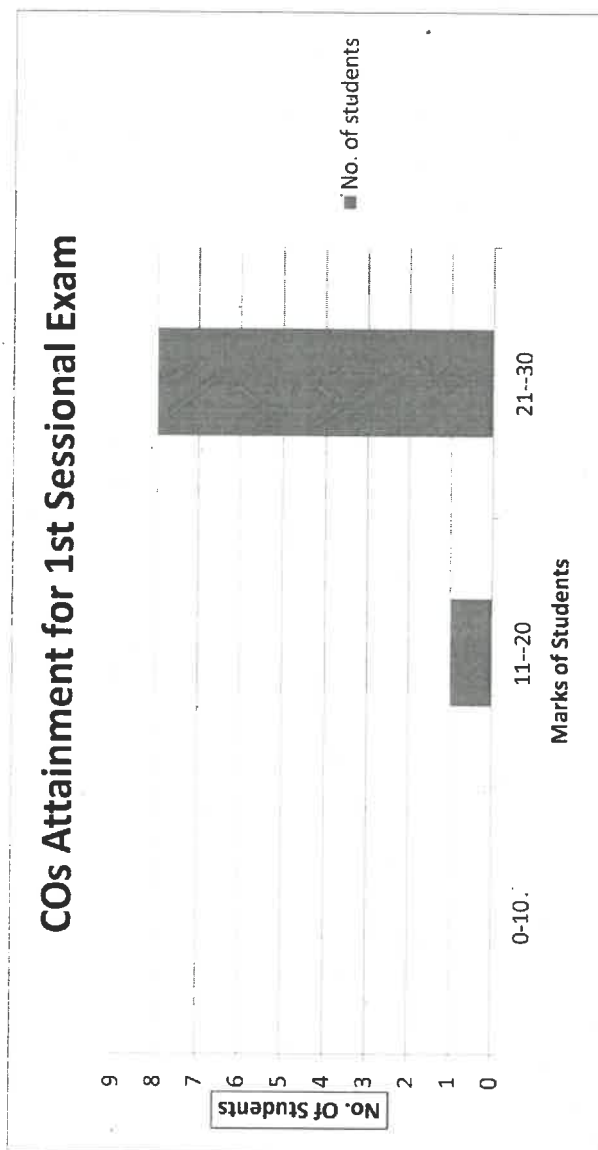
Table 1. Course attainment Levels.

Assessment Methods	Attainment Levels		
Final Grade	Level 1	Less than 50% students scoring more than average % marks.	
	Level 2	50% to less than 60% students scoring more than average % marks.	
	Level 3	more than 60% students scoring more than average % marks in internal assessment tools	



Average Marks	Max Marks	Min. Marks	Std Deviation	Less than 40% (12)	More than 90% (27)
23	26	20	2.15	0.00%	0.0%

Marks of students	0-10	11--20	21--30
No. of students	0	1	8



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Step 2: CO Mapping

Each assessment component contributes to specific Course Outcomes (COs). Weightages are assigned based on the relative importance of the assessment. These weightages are predefined and reflected in the "CO Direct Attainment" sheet, which aggregates scores from all assessments:

Step 3: Direct Attainment Calculation

Direct attainment is calculated using the weighted averages of the scores from various assessments. The formulae for these calculations are embedded in the file and reflect:

Where *Score*, is the student's score in the assessment contributing to the CO, and *Weightage* is the corresponding weight.

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Result Analysis (Odd Semester 2024-25)					
Program:	B. Pharm	Sem:	V		
Course Name:	Pharmacology-II	Course Code:	BP503T		
Faculty Name:	Ms Damini				
Consolidated CO Attainment (Internal)					
Mid-term/ Sessional Exam 15 : Assignment/Presentation 10					
	Sessional 1	Sessional 2	Assignment	Group Project/ Presentation	Total
CO1	3	3		3	1.2
CO2		1		3	0.45
CO3	1	2	3	3	1.05
CO4	3	3	3		1.2



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Result Analysis (Odd Semester 2024-25)				
Program:	B. Pharm	Sem:	V	
Course Name:	Pharmacology-II	Course Code:	BP503T	
Faculty Name:	Ms Damini			
Consolidated CO Attainment (Internal+External)				
Internal : External 60				
COs	Internal (Mid-term +Assignment+ Group Presentation)	End Term (ESE)	Total	
CO1	1.2	2	1.8	
CO2	0.45	1	0.8625	
CO3	1.05	3	2.5125	
CO4	1.2	2	1.8	

For (Internal) PCI	
Assessment	Marks
For Sessional 1	15
For Sessional 2	
Assignment	10
Group Projects/ presentaion	

For (Internal) General	
Assessment	Marks
For Mid Term	15
For Assignment	10
Quiz presentaion	10

Step 4: Indirect Attainment Calculation

Indirect attainment is derived from surveys; reflecting students' perceived achievement of the COs. These are combined with direct attainment to

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Course Exit Survey

Program:	B. Pharmacy		Sem:		V			
Course Name:	Pharmacology-II		Course Code:		BP4503T			
Faculty Name:	Ms Damini		Date of Survey:		10.01.2024			
Student Full Name	CO1		CO2		CO3		CO4	
	Course Exit survey parameter1	Attain ment of CO1	Course Exit survey parameter2	Attain ment of CO2	Course Exit survey parameter3	Attain ment of CO3	Course Exit survey parameter4	Attain ment of CO4
	Good	12	Good	12	Good	12	Good	12
	Very Good	16	Very Good	16	Very Good	16	Very Good	16
	Very Good	16	Very Good	16	Very Good	16	Very Good	16
	Very Good	16	Very Good	16	Very Good	16	Very Good	16
	Excellent	20	Excellent	20	Excellent	20	Excellent	20
	Poor	4	Poor	4	Poor	4	Poor	4
	Very Good	16	Very Good	16	Very Good	16	Very Good	16
	Good	12	Good	12	Good	12	Good	12
Sachin Kumar	Very Good	16	Very Good	16	Very Good	16	Very Good	16
Rakhi	Excellent	20	Excellent	20	Excellent	20	Excellent	20
Average		14.8		14.8		14.8		14.8
No of students >=Avg		7		7		7		7
Total students		10		10		10		10
Attainment Level (%)		70.00%		70.00%		70.00%		70.00%
Attainment Level		3		3		3		3



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Assessment Methods	Attainment Levels	
	Level1	Less than 50% students scoring more than average % marks.
	Level2	50% to less than 60% students scoring more than average % marks.
	Level3	more than 60% students scoring more than average % marks in internal assessment tools
Assessment		

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Odd Semester 2024-25				
Program:	B. Pharm	Sem:	V	
Course Name:	Pharmacology-II	Course Code:	BP503T	
Faculty Name:	Ms Damini			
CO Attainment				
COs	Direct	Indirect	Total	
CO1	1.8	3	2.04	
CO2	0.8625	3	1.29	
CO3	2.5125	3	2.61	
CO4	1.8	3	2.04	

Step 5: PO Mapping

Each CO is mapped to specific POs and PSOs with predefined weightages, which are documented in the "PO-PSO Attainment" sheet. An example of this mapping is shown below:

Step 6: Attainment Levels

The overall attainment for each PO is calculated as a weighted sum of the CO contributions. This is summarized in the "PO-PSO Attainment" sheet.



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CO-PO-PSOs Attainment Analysis (Odd Semester 2024-25)													
Program:	B. Pharm	Sem: V											
Course Name:	Pharmacology-II	Course Code: BP503T											
Faculty Name:	Ms Damini												
Course Outcomes (COs)	Program Outcomes (POs)										Program Specific Outcomes (PSOs)		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1	3	1	1	1	3	2	3	2	3	1	3	1	1
CO2	1	1	1	1	3	2	3	1	3	1	1	1	1
CO3	3	3	1	1	3	3	3	2	3	1	3	2	1
CO4	1	3	1	1	3	3	3	2	3	1	1	2	1
1=Lightly mapped 2= Moderately mapped 3=Strongly mapped													

Course Outcomes (COs)	Program Outcomes (POs)										Program Specific Outcomes (PSOs)		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PSO1	PSO2	PSO3
CO1=2.04	6.12	2.04	2.04	2.04	6.12	4.08	6.12	4.08	6.12	2.04	6.12	2.04	2.04
CO2=1.29	1.29	1.29	1.29	1.29	3.87	2.58	3.87	1.29	3.87	1.29	1.29	1.29	1.29
CO3=2.61	7.83	7.83	2.61	2.61	7.83	7.83	7.83	5.22	7.83	2.61	7.83	5.22	2.61
CO4=2.04	2.04	6.12	2.04	2.04	6.12	6.12	6.12	4.08	6.12	2.04	2.04	4.08	2.04
Attainment	2.16	2.16	1.995	1.995	1.995	2.061	1.995	2.095714	1.995	1.995	2.16	2.105	1.995

Conclusion

This procedure ensures a structured approach to CO-PO attainment calculation, integrating both direct and indirect measures. By using systematic mapping and aggregation, institutions can effectively monitor and enhance the alignment of course outcomes with program objectives.

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