



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



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Attainment Calculation Procedure

Report on CO-PO 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 marks

For example, the data from the "1st Sessional" sheet is shown below:

SUSHANT UNIVERSITY

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Assignment (Even Semester 2023-24)

Program:

BHM

Semester :

VIII

Assignment
ent
Date:

02-02-
2024

Course Code:

20BHM-
0TT42T

Course
Name:

Tourism
and
Travelling

Faculty
Name:

AASHIY
AN



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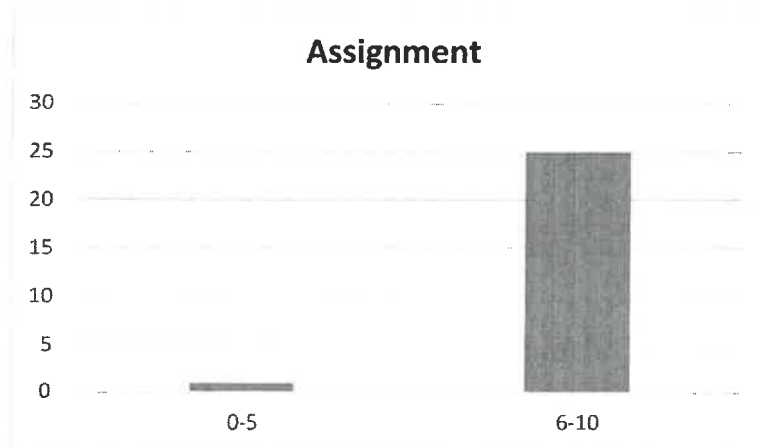
S. No.	Enrolment No.	Student Name	Batch No	Q1 (10 Marks)	Attainment	Total Marks (10)
				CO1	CO1 (10 Marks)	
1	200BHM002	Bhavay Arora	2020-2024	7	7	7
2	200BHM003	Gurman Singh Bindra	2020-2024	8	8	8
3	200BHM007	Harsh Sehrawat	2020-2024	8	8	8
4	200BHM011	Lakshay Rana	2020-2024	6	6	6
5	200BHM012	Prapti Syal	2020-2024	7	7	7
6	200BHM013	Kuldeep Yadav	2020-2024	7	7	7
7	200BHM016	Lisuka H Ayemi	2020-2024	8	8	8
8	200BHM017	Tahir Khan	2020-2024	6	6	6
9	200BHM018	Ruby Singh	2020-2024	8	8	8
10	200BHM029	Yuvraj Ahaan Bisht	2020-2024	8	8	8
11	200BHM010	Amrit	2020-2024	9	9	9
12	200BHM021	Akshat Wadhwa	2020-2024	7	7	7
13	200BHM022	Eknoor Singh Sandhu	2020-2024	6	6	6
14	200BHM024	Himanshu Sehrawat	2020-2024	7	7	7
15	200BHM026	Ravtej Oberoi	2020-2024	7	7	7
16	200BHM027	Ritesh Pratap Singh	2020-2024	7	7	7
17	200BHM030	Shubham	2020-2024	8	8	8
18	200BHM031	Naman Ohri	2020-2024	8	8	8
19	200BHM032	Tanuj Makkar	2020-2024	7	7	7
20	200BHM033	Tulsi Shukla	2020-2024	7	7	7
21	200BHM035	Aman	2020-2024	8	8	8
22	200BHM036	Ankit Singh Negi	2020-2024	7	7	7



23	200BHM037	Anuj Kerketta	2020-2024	8	8	8
24	200BHM039	Sanjay Singh	2020-2024	8	8	8
25	200BHM040	Sourav Yadav	2020-2024	0	0	0
26	200BHM041	Abhishek Yadav	2020-2024	8	8	8
Total Students						26
Average					7.115384615	7.81
Total Students Appeared In Assignment 1 (N)						25
Number of students scored average% and above marks (P)					12	
CO attainment (P/N)*100					48.00%	

Average Marks	Max Marks	Min. Marks	Std Deviation	Less than 40%
7	9	0	1.63	4.00%

Students Marks	0-5	6-10	
Assignment	1	25	



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



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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

SUSHANT UNIVERSITY Vatel Hotel & Tourism Business School Result Analysis (Even Semester 2023-24)				
Program:	BHM	Sem:	VIII	
Course			20BHM-	
Name:	Tourism and Travelling	Course Code:	0TT42T	
Faculty		Date of		
Name:	AASHIYAN	Analysis:	27-05-2024	
Consolidated CO Attainment (Internal)				
Mid term 20 : Assignment/Presentation 20				
COs	Assessment Tools			Total
	Mid-Term	Assignment	Presentation	
CO1	2	1		0.55
CO2	3			0.45
CO3	1			0.15
CO4			3	0.75
CO5			1	0.25
Consolidated CO Attainment (Internal+External)				
Internal 40 : External 60				
COs	Internal (Mid term+Assignment+Presentation)	End Term (ESE)	Total	
CO1	0.55	2	1.42	
CO2	0.45	2	1.38	
CO3	0.15	2	1.26	
CO4	0.75	2	1.5	
CO5	0.25	2	1.3	



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Step 4: Indirect Attainment Calculation

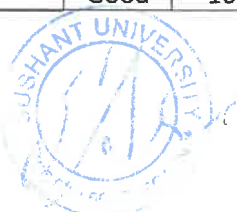
Indirect attainment is derived from surveys, reflecting students' perceived achievement of the COs. These are combined with direct attainment to calculate overall CO attainment.

Vatel Hotel & Tourism Business School, Sushant University, Gurugram										
Academic Year - Even 2023-24										
Course Exit Survey										
Program: BHM			Sem: VIII							
Course Name: Tourism and Travelling			Course Code: 20BHM-0TT42T							
Faculty Name: HIY AN			Date of Survey: 26-04-2024							
Student Full Name	CO1		CO2		CO3		CO4		CO5	
	Course Exit survey parameter 1	Attainment of CO1	Course Exit survey parameter 2	Attainment of CO2	Course Exit survey parameter 3	Attainment of CO3	Course Exit survey parameter 4	Attainment of CO4	Course Exit survey parameter 5	Attainment of CO5
Bhavay Arora	Good	12	Good	12	Excellent	20	Good	12	Good	12
Gurman Singh Bindra	Very Good	16	Excellent	20	Very Good	16	Good	12	Very Good	16
Harsh Sehrawat	Very Good	16	Good	12	Very Good	16	Good	12	Very Good	16
Lakshay Rana	Excellent	20	Excellent	20	Excellent	20	Excellent	20	Very Good	16
Prapti Syal	Good	12	Excellent	20	Very Good	16	Fair	8	Fair	8
Kuldeep Yadav	Excellent	20	Very Good	16	Very Good	16	Good	12	Very Good	16
Lisuka H Ayemi	Very Good	16	Very Good	16	Very Good	16	Very Good	16	Very Good	16
Tahir Khan	Very Good	16	Excellent	20	Very Good	16	Excellent	20	Very Good	16
Ruby Singh	Poor	4	Poor	4	Poor	4	Poor	4	Poor	4



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Yuvraj Ahaan Bisht	Poor	4	Poor	4	Poor	4	Poor	4	Poor	4
Amrit	Excellent	20	Good	12	Good	12	Good	12	Very Good	16
Akshat Wadhwa	Very Good	16	Very Good	16	Very Good	16	Very Good	16	Very Good	16
Eknoor Singh Sandhu	Excellent	20	Excellent	20	Excellent	20	Excellent	20	Excellent	20
Himanshu Sehrawat	Very Good	16	Very Good	16	Very Good	16	Very Good	16	Very Good	16
Ravtej Oberoi	Excellent	20	Excellent	20	Excellent	20	Excellent	20	Excellent	20
Ritesh Pratap Singh	Excellent	20	Excellent	20	Excellent	20	Excellent	20	Very Good	16
Shubham	Very Good	16	Good	12	Good	12	Excellent	20	Very Good	16
Naman Ohri	Fair	8	Good	12	Good	12	Excellent	20	Very Good	16
Tanuj Makkar	Fair	8	Good	12	Good	12	Very Good	16	Very Good	16
Tulsi Shukla	Very Good	16	Very Good	16	Very Good	16	Very Good	16	Very Good	16
Aman	Excellent	20	Excellent	20	Excellent	20	Excellent	20	Excellent	20
Ankit Singh Negi	Excellent	20	Excellent	20	Excellent	20	Excellent	20	Very Good	16
Anuj Kerketta	Very Good	16	Very Good	16	Good	12	Excellent	20	Very Good	16
Sanjay Singh	Very Good	16	Very Good	16	Good	12	Excellent	20	Very Good	16
Sourav Yadav	Very Good	16	Very Good	16	Good	12	Excellent	20	Very Good	16
Abhishek Yadav	Very Good	16	Very Good	16	Good	12	Excellent	20	Very Good	16



Average	15.38 46153 8	15.53 84615 4	14.92 30769 2	16	15.07 69230 8
No of students >=Avg	20	18	16	18	22
Total students	26	26	26	26	26
Attainment Level (%)	76.92 %	69.23 %	61.54 %	69.23 %	84.62 %
Attainment Level	3	3	3	3	3

Assessment Methods	Attainment Levels
Assessment	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

SUSHANT UNIVERSITY Vatel Hotel & Tourism Business School CO Attainment (Even Semester 2023-24)			
Program:	BHM	Sem:	VIII
Course Name:	Tourism and Travelling	Course Code:	20BHM-0TT42T
Faculty Name:	AASHIYAN	Date of Analysis:	27-05-2024
COs	Direct (80%)	Indirect (20%)	Total (100%)
CO1	1.42	3	1.736
CO2	1.38	3	1.704
CO3	1.26	3	1.608
CO4	1.5	3	1.8
CO5	1.3	3	1.64

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



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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-PSO Mapping (Even Semester 2023-24)																
Program:	BHM			Sem:	VIII											
Course Name:	Tourism and Travelling			Course Code:	20BHM-0TT42T											
Faculty Name:	AASHIYAN			Date of Analysis:	27-05-2024											
COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4
CO1	2				3		3	3	2	2			3	1	3	2
CO2	2				3		3	3	2	2			1	3	1	2
CO3	2				3		3	3	2	2			1	1	3	3
CO4	2	2	3	3	3		3	3	2	2			2	3	3	1
CO5	2	2	3	3	3		3	3	2	2			3	2	1	3
COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4
CO1	3.68	0	0	0	5.208	0	5.208	5.208	3.472	3.472	0	0	5.208	1.736	5.208	3.472
CO2	3.408	0	0	0	5.112	0	5.112	5.112	3.408	3.408	0	0	1.704	5.112	1.704	3.408
CO3	3.216	0	0	0	4.824	0	4.824	4.824	3.216	3.216	0	0	1.608	1.608	4.824	4.824
CO4	3.6	3.6	5.4	5.4	5.4	0	5.4	5.4	3.6	3.6	0	0	3.6	5.4	5.4	1.8
CO5	3.6	3.6	5.4	5.4	5.4	0	5.4	5.4	3.6	3.6	0	0	5.4	3.6	1.8	5.4
Attainment	1.74	1.80	1.80	1.80	1.71	#DIV/0!	1.71	1.71	1.71	1.71	#DIV/0!	#DIV/0!	1.73	1.73	1.71	1.69

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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