Attainment of COs, POs and PSOs

The University has a systematic process of collecting and evaluating data related to course outcomes and programme outcomes to redesign pedagogy and other specific measures to improve the learning eco system for the students.

The assessment of each course are done through internal continuous assessment(CA) by concerned course faculty and End Semester(ES) written examination conducted by QA cell. The internal assessment of a course for theory component includes MCQ test, presentation, written assignment and Learning Record(LR) whereas the external assessments is done through written exam where the type of questions are defined and aligned to meet specific COs. The practice component of courses is evaluated through demonstration of experiments/software tools/handing equipment by course faculty as internal (50%) and external faculty (50%). The Project component is evaluated through display hardware project/product/research findings and analysis/patent/publication.

The Programme Specific outcomes is assessed considering the attainment of course outcomes and additionally supported by course feedback taken from students. Apart from this the programme outcome is judged from the feedback by recruiters during campus drives, progression towards higher education, qualifying various competitive and entrance examinations such as NET, GATE, CAT, GRE, GMAT etc.

Procedure for attaining COs, POs and PSOs.

> ➤ **Evaluation of Course Outcome**

Each courses are defined with course type (Theory+Practice+Project), that define the pedagogy to use and have well-defined COs, attainment of which are assessed using a combination of direct and indirect methods.

Two major components:
> 1. Internal Evaluation 1 & 2 and Continuous Assessment (CA) (Assignments, Quizzes, Class Tests, Laboratory performance, Projects, Presentations)
>
> 2. End Semester Examination (ES) (Written examination)

Setting targets for performance attainment: The measurement is through a direct assessment method and is based on the attainment of marks as per the set threshold.
Achievement Level:

Marks secured	Level
≥ 55% of student got ≥ 50% of mark	3
≥ 50% < 55% 0f student got ≥ 50% mark	2
≥ 45% < 50% of students got ≥ 50% mark	1
< 45% of the student got > 50% of marks or not attempted the question	0

Note: If target level of attainment is achieved in current year, threshold is increased for next year.

Course outcome Attainment Level: COs are given equal weightage in all the three Internal Tests (CIE)/ Semester End Examinations (SEE)

Benchmark for CO (0.xx X maximum marks of CA or ES Mark)	CA	ES
	xx	xx
No. of Students Above Benchmark	yy	yy
$\% \ of \ students = \dfrac{No \ of \ students \ above \ benchmark}{Total \ no \ of \ students} \times 100$	zz	zz
Attainment Level	A	B
Final CO Attainment Level	$\dfrac{A+B}{2}$	

Target attainment level: The target attainment can be different for programme/course wise for a particular batch

>=70%	3
>=60%	2
>=50%	1

Centurion University of Technology & Management

EXAMINATION

Question Paper: XXXXX

Course Name : XXXXX XXXX   **Department :**

Course Code : BTABXXXX   **Max Marks :100**

		% of student that should have attained level 3		CO Attainment Target	Student Perf Threshold for all COs	Attainment level		Affinity Level of CO-PO mapping
		40% students are in level 3						
		CO-PO is attained			>=55%	3		3
		CA	XXX		>=45%	2		2
		ES	YYY		>=35%	1		1
		Avg CO Attainment of all the COs	ZZZ	60.00%	<35%	0		
		CO	Achieved/ Not AChived					

Example of curriculum mapping to outcomes 3.:PO1-PO12

High (3) topics are fully introduced, developed and reinforced throughout the course in course lectures, labs, homework assignments, tests, exams, projects ; an "application knowledge"

Medium (2) Topics are introduced and further developed and reinforced in course lectures, labs, assignments, tests, etc., a "Working knowledge"

Low (1) Topics are introduced in course lectures, labs, homework, assignments, etc. "Talking knowledge" or "awareness"

(0) does not relate

		CA	score/ %	ES	score/ %																	
	Question	All Questions		All Questions																		
	Blooms Level	L3		L3,L4,L5																		
	Course Outcome	CO 1, 2, 3		CO 1, 2, 3																		
	Max Marks	50	27.5	50	27.5		PO1	PO2	P03	P04	P05	P06	P07	P08	P09	P010	PO11	PO12	PSO1	PSO2	PSO3	
1	170101170007	32	70	24	36	CO1	3.00		1.0	3		3.0	3.0				3.0	3.0		1.0	3.0	
2	170101170011	34	XXX	22	YYY	CO2	3.00	2.0	2.0	3.0	2.0	3.0	3.0				3.0	3.0		1.0	3.0	
3	170101170013	44		41		CO3	3.00	2.0	2.0	2.0	2.0	2.0	2.0				2.0	2.0		1.0	2.0	
4	170101170014	46		26		Avg of CO-PO affinity levels	3.00	2.00	1.67	2.67	2.00	2.67	2.67				2.67	2.67		1.00	2.67	
5	170101170015	46		47		PO Attainment	2.239	1.493	1.244	1.991	1.493	1.991	1.991		0.000		1.991	1.991		0.746	1.991	

Level of POs and PSOs attainment range

PO attainment is calculated taking average score of each PO

Target for Attainment of POs(Say 60%)	
>1.8	Achieved
<1.8	Not achieved

Target levels for attainment of POs/PSOs will be set based on the performance of the previous year.

Same procedure is also used for obtaining attainment of PSOs.

Programme articulation matrix of a Batch

Course	PO1	PO2	PO3	PO4	PO5
1	2	2.5			
2	3	1.5	1.2		
3	1.5	1.8	2.2		2
4	1.4	2	1.3	2.2	2
5	3	2.5	1.8	2	
6	1.4			2.5	
7	3	1		2.7	1
8	2	1.8			2.1
9	2.8	1.8	2.2	2.4	
10	3		2.4		1.4
Attainment	2.31	1.49	1.11	1.18	0.85