



NANDHA ENGINEERING COLLEGE

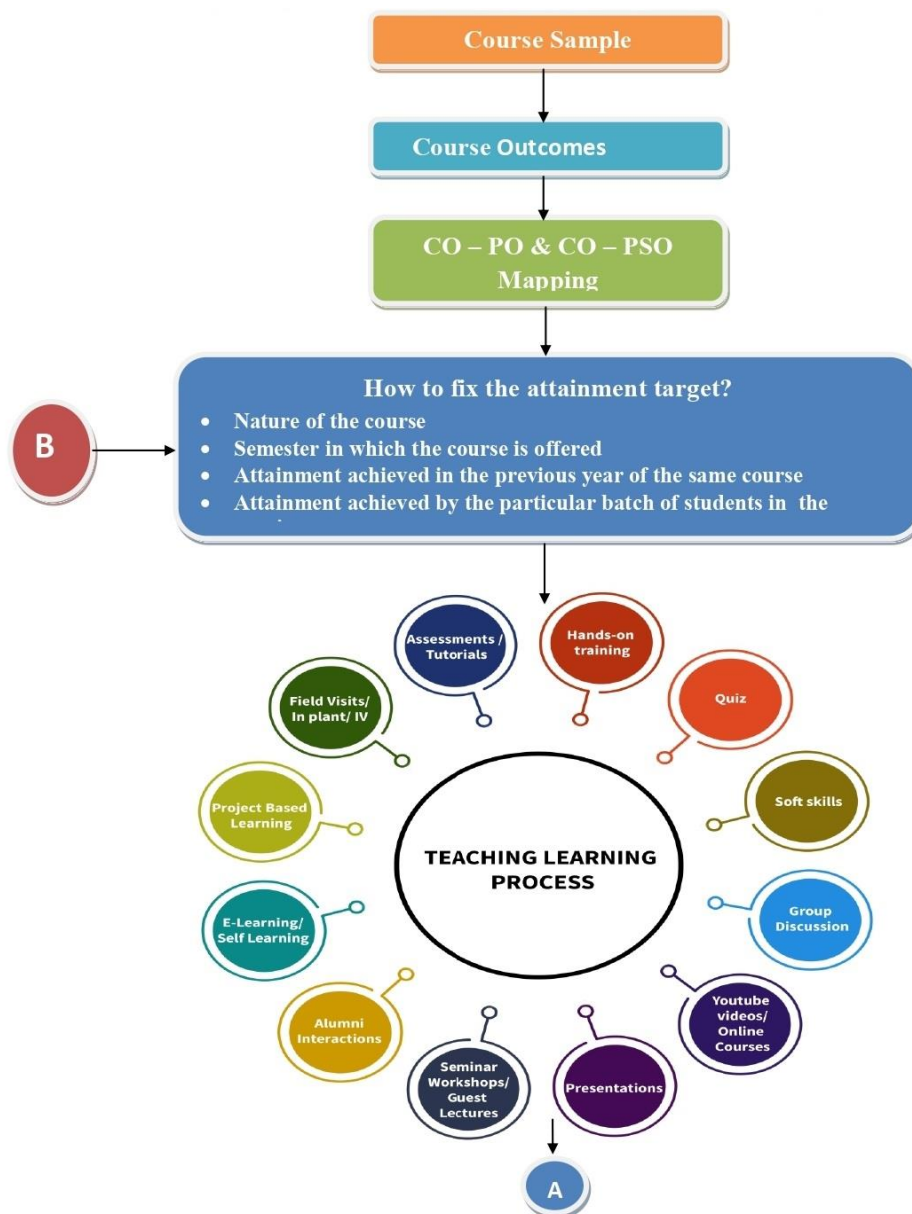
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Attainment of Course Outcomes (COs), Program Outcomes (POs) and Program Specific Outcomes (PSOs)

The PO and PSO are evaluated using Microsoft excel that simplifies CO, PO and PSO attainment calculation for every course.

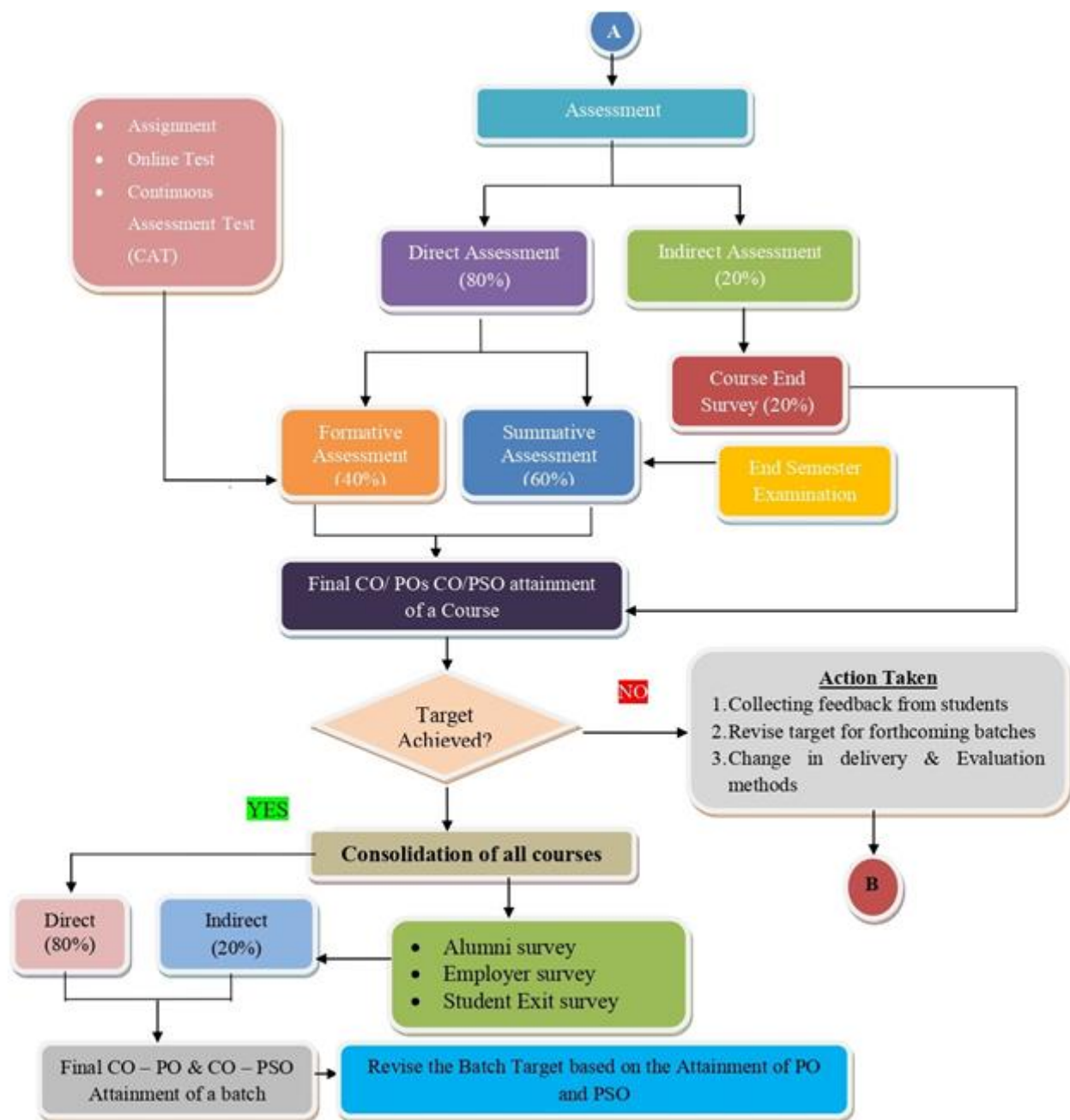




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PROCESS OF ATTAINMENT CALCULATION

Fig. 1. Assessment method to assess the attainment of the Course Outcomes



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1. Direct Assessment Tools

Assessment methods used are grouped into 4 categories:

- (1) Continuous Assessment Tests (CAT)
- (2) Assignments
- (3) Online Tests
- (4) End Semester Examination (ESE).

Direct CO Attainment = 60% Weightage of End Semester Examination + 30% of CAT + 5% of Assignment + 5% of Online test

2. Indirect Assessment Tools

Indirect assessment is calculated from **course end survey** reports collected at the end of every semester for each course. In the form students will provide their feedback on 3-point scale as follows:

- 3 – Good
- 2 – Satisfactory
- 1 – Needs to improve

After collection of individual survey forms, the marks for COs are calculated based on the following formula:

CO attainment = [(No. of Students given Good X 3 + No. of Students given Satisfactory X 2 + No. of Students given Needs to improve X 1) / (No of Students X 3)] *100

The above formula is used to calculate the marks for indirect attainment of each COs of all the courses in the curriculum in the respective regulation.

Final Overall CO Attainment

Final CO attainment for each course is calculated based on the contribution of direct and indirect assessments as per the weightage given below:

1. Direct Assessment (80%)
2. Indirect Assessment (20%)

Final CO attainment level = (80% Direct assessment + 20 % Indirect assessment)



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Table 1 Internal and End Semester Mark Split-up for various Courses of

S.No.	Category of Course	Internal Marks	End Semester Exam (ES) Marks	Total Marks
a.	Theory course	40	60	100
b.	Embedded course	40	60	100
c.	Laboratory courses /Project work	50	50	100
d.	Employability Enhancement courses (EEC), Mini project, Human excellence courses, constitution of India, etc.,	100	-	100

Regulation 2022

Table 2 Ratio of Internal and End Semester Mark Split up for various Courses

S.No.	Category of Course	Internal Marks	End Semester Exam (ES) Marks	Total Marks
a.	Theory course	40	60	100
b.	Embedded course	50	50	100
c.	Laboratory courses	60	40	100
d.	Project work	50	50	100
e.	Employability Enhancement courses (EEC), Mini project, Human excellence courses, constitution of India, etc.,	100	-	100



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INTERNAL ASSESSMENT PROCESS

Table 3 Internal Assessment Process for Theory Courses

S. No	Components for Continuous Assessment Marks	Syllabus Coverage for the test	Duration of the test in Hrs.	Marks (max.)
1	Continuous Assessment I	1- 2.5 units	1.5 Hrs.	50 Marks is reduced to 15. 2x15 = 30
2	Continuous Assessment II / Project Based Learning Review	2.5 -5 units	1.5 Hrs.	
4	Assignment I	1- 2.5 units	-	2.5
5	Assignment II	2.5 -5 units	-	2.5
6	Online Test I	1- 2.5 units	1	2.5
7	Online Test II	2.5 -5 units	1	2.5
TOTAL				40

Table 4 Internal Assessment Process for Laboratory Courses

S. No.	Components for Internal Marks	Marks (max.)
1	Record Marks (Out of 100)	$\frac{\text{Record Marks} + \text{Model Exam Marks (I + II)}}{4}$
2	Model Exam I (Out of 50)	
3	Model Exam II (Out of 50)	
TOTAL		50

Table 5 Internal Assessment for Embedded Courses

S.No.	Components for Continuous Assessment Marks	Syllabus Coverage for the test	Duration of the test in Hrs.	Marks (max.)
1	Continuous Assessment I	1- 2.5 units	1.5Hrs.	2 x 7.5 = 15
2	Continuous Assessment II	2.5 -5 units	1.5Hrs.	
5	Continuous assessment of all experiments	All Experiments	-	5
6	End Semester Exam for Lab	All Experiments	3Hrs	20
TOTAL				40



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END SEMESTER ASSESSMENT PROCESS

Table 6 Scheme of Assessment for Non-Embedded Courses

S.No.	Course Type	Marks Breakup*										
		Continuous Assessment Components							End Semester Components			
		CAT 1	CAT 2	Other Assessments #	Average of marks for all Experiments & viva voce	Model exam / report	Zeroth Review	Review 1	Review 2	Written exam	Practical exam and Viva-voce	Project Report and Viva-voce
1	Theory	15 (50)	15 (50)	10	-					60 (100)		
2	Lab				40	10					50 (100)	
3	Project						10 (20)	20 (40)	20 (40)			50 (100)

Mark weightage (denoted in red) and maximum marks for the exam conducted (inside brackets). The maximum marks could vary depending on the credit component for lecture/ laboratory/ project.

Assignments and online tests



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Table 7 Assessment Process for Theory Embedded Courses

S.No.	Course Type	Mark Breakup*										
		Continuous Assessment Components								End Semester Components		
		CAT I	CAT II	Other Assessments #	Average of all Experiments	End Semester Exam for Lab	Review 1	Review 2	Project Report	Written exam	Practical exam	Practical Exam Viva-voce
1	Theory	7.5 (50)	7.5 (50)							60 (100)		
	Lab				5	20						
Component Weightage ratio for final mark calculation				The final mark of a student for an embedded course will be the weighted average of the marks obtained in the theory and lab components, with weights proportional to the credits of the corresponding component.								

* Mark weightage (denoted in red) and maximum marks for the exam conducted (inside brackets). The maximum marks could vary depending on the credit for lecture/ laboratory/ project.

Table 8 Assessment Process for Laboratory Courses

S.No.	Description	Weightage
1	Continuous Assessment Test (CAT)	
	a. Record Max.marks (100)	$\frac{\text{RecordMarks} + \text{Model Exam (I + II)}}{4}$
	b. Model Exam I Max.marks (50)	
	c. Model Exam II Max. marks (50)	
	d. Total	50
2	End Semester Exam Marks (ESM)	
	a. Practical Examination Max. marks (100)	50
	Total	100



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INTERNAL ASSESSMENT PROCESS

Table 9 Internal Assessment Process for Theory Courses

S. No	Components for Continuous Assessment Marks	Syllabus Coverage for the test	Duration of the test in Hrs.	Marks (max.)
1	Continuous Assessment I	1- 2.5 units	1.75 Hrs.	60
2	Continuous Assessment II	2.5 -5 units	1.75 Hrs.	60
4	Assignment I	1- 2.5 units	-	20
5	Assignment II	2.5 -5 units	-	20
6	Online Test I	1- 2.5 units	-	15
7	Online Test II	2.5 -5 units	-	15
8	Seminar	1 – 5 units	Max 0.5 Hrs.	10
TOTAL				200 (Converted to 40 marks)

Table 10 Internal Assessment Process for Laboratory Courses

S. No.	Components for Internal Marks	Marks (max.)	Weightage
1	Record Marks	100	75
2	Model Exam I	50	12.5
3	Model Exam II	50	12.5
TOTAL			100 (Converted to 60 marks)



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Table 11 Internal Assessment for Embedded Courses

S.No.	Component	Components for Continuous Assessment Marks	Syllabus Coverage for the test	Duration of the test in Hrs.	Marks (max.)
1	Theory	Continuous Assessment I	1- 2.5 units	1.75 Hrs.	200 (Converted to 25 marks) Marks split-up are explained in Table H
2		Continuous Assessment II	2.5 -5 units	1.75 Hrs.	
4		Assignment I	1- 2.5 units	-	
5		Assignment II	2.5 -5 units	-	
6		Online Test I	1- 2.5 units	-	
7		Online Test II	2.5 -5 units	-	
8		Seminar	1 – 5 units	Max 0.5 Hrs.	
9		Experiments	Record Marks (Max. Marks 100, Converted to 75 marks)	All experiments	
10	Model Exam I (Max. Marks 50, Converted to 12.5 marks)		First half of the experiments	2.5 Hrs	
11	Model Exam II (Max. Marks 50, Converted to 12.5 marks)		second half of the experiments	2.5 Hrs	
TOTAL					50



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END SEMESTER ASSESSMENT PROCESS

Table 12 Scheme of Assessment for Non-Embedded Courses

S.No.	Course Type	Marks Breakup*									
		Continuous Assessment Components							End Semester Components		
		CAT 1	CAT 2	Other Assessments #	Average of marks for all Experiments & viva voce	Model exam / report	Zeroth Review (100)	Review 1 (100)	Review 2 (100)	Written exam	Practical exam and Viva-voce
1	Theory	40 (200)							60 (100)		
2	Lab				60 (75 + 12.5 + 12.5) (100 + 50 + 50)					40 (100)	
3	Project						50 (20 + 40 + 40) (100 + 100 + 100)				50 (100)

* Mark weightage (denoted in red) and maximum marks for the exam conducted (inside brackets).

The maximum marks could vary depending on the credit component for lecture/ laboratory/ project.

Assignments, seminar and online tests



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Table 13 Assessment Process for Theory Embedded Courses

S.No.	Course Type	Mark Breakup*										
		Continuous Assessment Components							End Semester Components			
		CAT I	CAT II	Other Assessments #	Average of all Experiments	Review 1	Review 2	Project Report	Written exam	Practical exam	Practical Exam Viva-voce	
1	Theory	25 (200)								50 (100)		
	Lab				25 (75 + 12.5 + 12.5) (100 + 50 + 50)							
Component Weightage ratio for final mark calculation			The final mark of a student for an embedded course will be the weighted average of the marks obtained in the theory and lab components, with weights proportional to the credits of the corresponding component.									

* Mark weightage (denoted in red) and maximum marks for the exam conducted (inside brackets). The maximum marks could vary depending on the credit for lecture/ laboratory/ project.

Table 14 Assessment Process for Laboratory Courses

S.No.	Description	Weightage
1	Continuous Assessment Test (CAT)	
	e. Record Max.marks (100)	75
	f. Model Exam I Max.marks (50)	12.5
	g. Model Exam II Max. marks (50)	12.5
	h. Total	100 (Converted to 60 marks)
2	End Semester Exam Marks (ESM)	
	b. Practical Examination Max. marks (100)	40
	Total	100



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

Program shall set Course Outcome attainment levels for all courses.

Measuring CO attainment through Cumulative Internal Examinations (CIE)

Target may be stated in terms of percentage of students getting more than class average marks or set by the program in each of the associated COs in the assessment instruments (midterm tests, assignments, mini projects, reports and presentations etc. as mapped with the COs)

Measuring Course Outcomes attained through Semester End Examinations (SEE)

Target may be stated in terms of percentage of students getting equal or more than the target set by the Program in SEE for each CO.



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THEORY COURSE

SAMPLE ATTAINMENT FORMAT



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CONTINUOUS ASSESSMENT TEST - I ANALYSIS																								
ACADEMIC YEAR:												COURSE NAME & CODE :												
SEMESTER :												FACULTY NAME:												
Each question expected level of attainment :																								
TOTAL STRENGTH																								
ROLL NO	A1(2)	A2(2)	A3(2)	A4(2)	A5(2)	A6(2)	B1(a)	B1(b)	B2(a)	B2(b)	B3(a) i	B3(a) ii	B3(a) iii	B3(b) i	B3(b) ii	B3(b) iii	TEST SCORE	Marks Secured in CO1	Marks Secured in CO2	Marks Secured in CO3	Attainment %			
Marks	2	2	2	2	2	2	16	16	16	16	4	4	8	4	4	8	60	24	24	12	CO1	CO2	CO3	
Expected Marks to attainment																					Target : %			
CO	1	1	2	2	3	3	1	1	2	2	1	2	3	1	2	3		1	2	3				
21AG001																								
21AG002																								
21AG003																								
21AG004																								
21AG005																								
21AG006																								
21AG007																								
21AG008																								
.																								
.																								
.																								
.																								
No of students scores upto expected level																						Average attainment %		
% of scoring above the attainment level																								
2. Course Outcome attainment level indicator																								
%	>69	>49	<50																					
3 point scale	3	2	1																					
ATTAINMENT LEVEL OF ALL CO	CO1	CO2	CO3																					
ATTAINMENT %																								
ATTAINMENT IN 3 POINT SCALE(1,2 or 3)																								
Mapping with PO																								
Mapping with PSO																								

Fig. 2. Assessment method to assess the Continuous Assessment Test – I



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CONTINUOUS ASSESSMENT TEST - II ANALYSIS																							
ACADEMIC YEAR:																				COURSE NAME & CODE :			
SEMESTER :																				FACULTY NAME:			
Each question expected level of attainment :																							
TOTAL STRENGTH																		Marks Secured in CO3	Marks Secured in CO4	Marks Secured in CO5	Attainment %		
ROLL NO	A1(2)	A2(2)	A3(2)	A4(2)	A5(2)	A6(2)	B1(a)	B1(b)	B2(a)	B2(b)	B3(a) i	B3(a) ii	B3(a) iii	B3(b) i	B3(b) ii	B3(b) iii	TEST SCORE				CO3	CO4	CO5
Marks	2	2	2	2	2	2	16	16	16	16	4	4	8	4	4	8	60	12	24	24	Target : %		
Expected Marks to attainment																							
CO	3	3	4	4	5	5	4	4	5	5	4	5	3	4	5	3		3	4	5			
21AG001																							
21AG002																							
21AG003																							
21AG004																							
21AG005																							
21AG006																							
21AG007																							
21AG008																							
.																							
.																							
.																							
.																							
No of students scores upto expected level (70%)																					Average attainment %		
% of scoring above the attainment level																							

2. Course Outcome attainment level indicator			
%	>69	>49	<50
3 point scale	3	2	1
ATTAINMENT LEVEL OF ALL CO	CO3	CO4	CO5
ATTAINMENT %			
ATTAINMENT IN 3 POINT SCALE(1,2 or 3)			
Mapping with PO			
Mapping with PSO			

Fig. 3. Assessment method to assess the Continuous Assessment Test – II



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ASSIGNMENT I ANALYSIS							
ACADEMIC YEAR:		COURSE NAME & CODE :					
SEMESTER :		FACULTY NAME:					
Each question Expected Level of attainment -							
TOTAL STRENGTH =							
ROLL NO	A1(2)	A2(2)	A3(2)	A4(2)	A5(6)	TEST SCORE	OUT OF 2.5
CO	1	1	2	2	1	20	
Marks	4	4	4	4	4		
Expected Marks to attainment							
21AG001							
21AG002							
21AG003							
21AG004							
21AG005							
21AG006							
21AG007							
21AG008							
.							
.							
.							
.							
No of students scores upto expected level							
% of scoring above the attainment level							
2. Course Outcome attainment level indicator							
Range of attainment			3	2	1		
			>70	50-70	<50		
Mapping with CO	CO1	CO1	CO2	CO2	CO1		
Attainment level of each CO							
ATTAINMENT LEVEL OF ALL CO	CO1	CO2	CO3				
ATTAINMENT IN 3 POINT SCALE(1,2 or 3)							
Mapping with PO							
Mapping with PSO							

Fig. 3. Assessment method to assess the Continuous Assignment – I



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ASSIGNMENT II ANALYSIS						
ACADEMIC YEAR:		COURSE NAME & CODE :				
SEMESTER :		FACULTY NAME:				
Each question Expected Level of attainment -						
TOTAL STRENGTH =						
ROLL NO	A1(2)	A2(2)	A3(2)	A4(2)	A5(6)	TEST SCORE
CO	3	4	4	5	5	20
Marks	4	4	4	4	4	
Expected Marks to attainment						OUT OF 2.5
21AG001						
21AG002						
21AG003						
21AG004						
21AG005						
21AG006						
21AG007						
21AG008						
.						
.						
.						
.						
No of students scores upto expected level						
% of scoring above the attainment level						
2. Course Outcome attainment level indicator						
Range of attainment			3	2	1	
			>70	50-70	<50	
Mapping with CO	CO3	CO4	CO4	CO5	CO5	
Attainment level of each CO						
ATTAINMENT LEVEL OF ALL CO	CO3	CO4	CO5			
ATTAINMENT IN 3 POINT SCALE(1,2 or 3)						
Mapping with PO						
Mapping with PSO						

Fig. 4. Assessment method to assess the Continuous Assignment – II



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NANDHA ENGINEERING COLLEGE, PERUNDURAI, ERODE-638052 DEPARTMENT OF DEPARTMENT OF AGRICULTURAL ENGINEERING ONLINE TEST-1 ANALYSIS COURSE NAME & CODE : FACULTY NAME: Each question Expected Level of attainment -																	
TOTAL STRENGTH =																	
ROLL NO	A1(1)	A2(1)	A3(1)	A4(1)	A5(1)	A6(1)	A7(1)	A8(1)	A9(1)	A10(1)	A11(1)	A12(1)	A13(1)	A14(1)	A15(1)	TEST SCORE	
CO	1	1	1	1	1	1	2	2	2	2	2	2	3	3	3		
Expected Marks to attainment																	
21AG001																	
21AG002																	
21AG003																	
21AG004																	
21AG005																	
21AG006																	
21AG007																	
21AG008																	
.																	
.																	
.																	
No of students scores upto expected level																	
% of scoring above the attainment level																	
2. Course Outcome attainment level indicator																	
Range of attainment							3	2	1								
							>70	50-70	<50								
Mapping with CO	CO1	CO1	CO1	CO1	CO1	CO1	CO1	CO2	CO2	CO2	CO2	CO2	CO2	CO2	CO3	CO3	CO3
Attainment level of each CO																	
ATTAINMENT LEVEL OF ALL CO	CO1	CO2	CO3														
ATTAINMENT IN 3 POINT SCALE(1,2 or 3)																	
Mapping with PO																	
Mapping with PSO																	

Fig. 5. Assessment method to assess the Continuous Online Test - I



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ONLINE TEST-2 ANALYSIS																
COURSE NAME & CODE :																
FACULTY NAME:																
Each question Expected Level of attainment -																
TOTAL STRENGTH =																
ROLL NO	A1(1)	A2(1)	A3(1)	A4(1)	A5(1)	A6(1)	A7(1)	A8(1)	A9(1)	A10(1)	A11(1)	A12(1)	A13(1)	A14(1)	A15(1)	TEST SCORE
CO	3	3	3	4	4	4	4	4	4	5	5	5	5	5	5	
Expected Marks to attainment																
21AG001																
21AG002																
21AG003																
21AG004																
21AG005																
21AG006																
21AG007																
21AG008																
.																
.																
.																
No of students scores upto expected level																
% of scoring above the attainment level																
2. Course Outcome attainment level indicator																
Range of attainment						3	2	1								
						>70	50-70	<50								
Mapping with CO	CO3	CO3	CO3	CO4	CO4	CO4	CO4	CO4	CO4	CO5	CO5	CO5	CO5	CO5	CO5	
Attainment level of each CO																
ATTAINMENT LEVEL OF ALL CO	CO3	CO4	CO3													
ATTAINMENT IN 3 POINT SCALE(1,2 or 3)																
Mapping with PO																
Mapping with PSO																

Fig. 6. Assessment method to assess the Continuous Online Test – II



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Each question expected level of attainment :																																																																																																																								
TOTAL STRENGTH																																																																																																																								
ROLL NO	A1	A2	A3	A4	A5	A6	A7	A8	A9	A10	B11 (a)	B11 (b)	B12 (a)	B12 (b)	B13 (a)	B13 (b)	B14 (a)	B14 (b)	B15 (a)	B15 (b)	TEST SCORE	Marks Secured in CO1	Marks Secured in CO2	Marks Secured in CO3	Marks Secured in CO4	Marks Secured in CO5	Attainment %																																																																																													
Marks	2	2	2	2	2	2	2	2	2	2	16	16	16	16	10	16	12	8	12	16	100	20	20	20	20	20	CO1	CO2	CO3	CO4	CO5																																																																																									
Expected Marks to attainment																											Target : %																																																																																													
CO	1	1	2	2	3	3	4	4	5	5	1	1	2	2	3	3	4	4	5	5		1	2	3	4	5																																																																																														
21AG001																																																																																																																								
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Fig. 7. Assessment method to assess the End Semester Examination



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COURSE END SURVEY

COURSE NAME & CODE :

FACULTY NAME:

Indication:

Good	3
Satisfactory	2
Needs Improvement	1

Reg. No.	Question about understanding level of CO1	Question about understanding level of CO2	Question about understanding level of CO3	Question about understanding level of CO4	Question about understanding level of CO5
21AG001					
21AG002					
21AG003					
21AG004					
21AG005					
21AG006					
21AG007					
21AG008					
.					
.					
.					
.					
AVERAGE					

% OF ATTAINMENT in each CO = (No. of GOOD*3 + No. of SATISFACTORY*2 + No. of NEEDS IMPROVEMENT*1) / TOTAL NUMBER OF STUDENTS * 3

Fig. 8. Assessment method to assess the Course End Survey



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NANDHA ENGINEERING COLLEGE, PERUNDURAI, ERODE-638052															
DEPARTMENT OF AGRICULTURAL ENGINEERING															
OVERALL ATTAINMENT															
COURSE NAME & CODE :															
FACULTY NAME:															
DIRECT ASSEMENT	ATTAINMENT %														
	CO1	CO2	CO3	CO4	CO5										
CAT 1 (3)															
CAT 2 (3)															
AVERAGE OF CAT (3)															
Assignment 1 (3)															
Assignment2 (3)															
AVERAGE OF ASSIGNMENT (3)															
OLT1 (3)															
OLT2 (3)															
AVERAGE OF OLT (3)															
CO ATTAINMENT (Internal) (30% of CAT + 5% of Assignment + 5% of OLT)															
End Sem(3)															
60% END SEM + 40% Internal (Direct Assessment)															
Course End Survey (Indirect Assessment)															
Final CO% Attainment (80% of Direct +20% of Indirect)															
CO-PO-PSO Attrication Matrix															
CO-PO-PSO Attrication Matrix															
CO No	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	
1															
2															
3															
4															
5															
AVERAGE OUT OF 3															
PO & PSO Attainment %															
CO Attainment	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	
Overall PO/PSO ATTAINMENT OUT OF 3															
Overall PO/PSO ATTAINMENT PERCENTAGE															

Fig. 9. Assessment method to assess the overall attainment of COs, POs and PSOs



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LABORATORY COURSE
SAMPLE ATTAINMENT FORMAT



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NANDHA ENGINEERING COLLEGE,(AUTONOMOUS) ERODE - 52 DEPARTMENT OF AGRICULTURAL ENGINEERING ACADEMIC YEAR/ CLASS/ SEMESTER: COURSE CODE & NAME:			
FACULTY NAME :			
ATTAINMENT:		Average of Experiments	
SNO	REG NO	NAME	Total (75)
1	21AG001		
2	21AG002		
3	21AG003		
4	21AG004		
5	21AG005		
6	21AG006		
7	21AG007		
8	21AG008 . . .		
No of students scores upto expected level			
% of scoring above the attainment level, Total appeared for Test			
2. Course Outcome attainment level indicator			
	3	2	1
Range of attainment	> 70	50 - 70	<50
Satisfaction attainment level based on level indicator			
Mapping with CO	CO1, CO2,CO3, CO4 and CO5		
ATTAINMENT LEVEL OF ALL CO			

Fig. 10. Assessment method to assess the experiments



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			MODEL 1
FACULTY NAME:			
ATTAINMENT:			
SNO	REG NO	NAME	Total (50)
1	21AG001		
2	21AG002		
3	21AG003		
4	21AG004		
5	21AG005		
6	21AG006		
7	21AG007		
8	21AG008		
	.		
	.		
	.		
	.		
	.		
No of students scores upto expected level			
% of scoring above the attainment level, Total appeared for Test			
2. Course Outcome attainment level indicator			
	3	2	1
Range of attainment	> 70	50 - 70	<50
Satisfaction attainment level based on level indicator			
Mapping with CO		CO1, CO2, CO3	
ATTAINMENT LEVEL OF ALL CO			
Mapping with PO			
Mapping with PSO			

Fig. 11. Assessment method to assess the Model Exam – I



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ACADEMIC YEAR/ CLASS/ SEMESTER:			
COURSE CODE & NAME:			
			MODEL 2
FACULTY NAME:			
ATTAINMENT:			
SNO	REG NO	NAME	Total (50)
1	21AG001		
2	21AG002		
3	21AG003		
4	21AG004		
5	21AG005		
6	21AG006		
7	21AG007		
8	21AG008		
	.		
	.		
	.		
	.		
	.		
No of students scores upto expected level			
% of scoring above the attainment level, Total appeared for Test			
2. Course Outcome attainment level indicator			
	3	2	1
Range of attainment	> 70	50 - 70	<50
Satisfaction attainment level based on level indicator			
Mapping with CO	CO3, CO4, CO5		
ATTAINMENT LEVEL OF ALL CO			
Mapping with PO			
Mapping with PSO			

Fig. 11. Assessment method to assess the Model Exam – II



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DEPARTMENT OF AGRICULTURAL ENGINEERING														
ACADEMIC YEAR/ CLASS/ SEMESTER:														
COURSE CODE & NAME:														
FACULTY NAME:														
DIRECT ASSEMENT	ATTAINMENT %													
	CO1	CO2	CO3	CO4	CO5									
Model 1														
Model 2														
AVERAGE OF MODEL														
AVERAGE OF EXPERIMENTS														
CO ATTAINMENT (45 % of model average + 15 % of experiments average) - Internal														
End Sem(3)														
40% END SEM + 60% Internal (Direct Assessment)														
Course End Survey (Indirect Assessment)														
Final CO% Attainment (80% of Direct +20% of Indirect)														
% CO attainment														
CO-PO-PSO Attrication Matrix														
CO No	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
1														
2														
3														
4														
5														
AVG PERCENTAGE														
AVERAGE OUT OF 3														
PO & PSO Attainment %														
CO Attainment	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
0.00														
0.00														
0.00														
0.00														
0.00														
Overall PO/PSO ATTAINMENT PERCENTAGE														
Overall PO/PSO ATTAINMENT OUT OF 3														

Fig. 12. Assessment method to assess the overall attainment of laboratory course



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EMBEDDED COURSE
SAMPLE ATTAINMENT FORMAT



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For theory component,

Assessment of CAT - 1, CAT – 2, Assignment – 1, Assignment – 2, Online test – 1, Online test – 2 and End Semester Examination are shown in Fig.1, 2, 3, 4, 5, 6 and 7 respectively.

For experiment component,

Assessment of experiments, Model – 1 and Model – 2 are shown in Fig.10, 11 and 12 respectively.

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DEPARTMENT OF AGRICULTURAL ENGINEERING																
ACADEMIC YEAR/ CLASS/ SEMESTER:																
COURSE CODE & NAME:																
FACULTY NAME:																
DIRECT ASSEMENT		ATTAINMENT %														
		CO1	CO2	CO3	CO4	CO5										
CAT 1																
CAT 2																
AVERAGE OF CAT																
Assignment 1																
Assignment 2																
AVERAGE OF ASSIGNMENT																
OLT1																
OLT2																
AVERAGE OF OLT																
Model 1																
Model 2																
AVERAGE OF MODEL																
AVERAGE OF EXPERIMENTS																
CO ATTAINMENT (19 % of average of CAT + 3 % of average of assignment + 3 % of average of online tests + 16.5 % of model average + 8.5 % of experiments average) - Internal																
End Sem(3)																
50% END SEM + 50% Internal (Direct Assessment)																
Course End Survey (Indirect Assessment)																
Final CO% Attainment (80% of Direct +20% of Indirect)																
CO-PO-PSO Attircluation Matrix																
CO No	a	b	c	d	e	f	g	h	i	j	k	l				
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2		
1																
2																
3																
4																
5																
AVERAGE OUT OF 3																
PO & PSO Attainment %																
CO Attainment	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2		
Overall PO/PSO ATTAINMENT OUT OF 3																
Overall PO/PSO ATTAINMENT																

Fig. 13. Assessment method to assess the overall attainment of embedded course