Vishwakarma Government Engineering College, Chandkheda
Information Technology Department

Policy- II

Date: 20/01/2020

PURPOSE:-

To determine the process for attainment calculation of COs.

PROCESS:-

Evaluation Scheme:

Sr. No.	Exam Type	Component Name	Sub Component/ Marks	Exam Conducted By	Remark
1	Theory	ESE(E) : End Semester Exam	**(70 Marks)**	University	Results are given in the form of Grades
2	Theory	PA(M) : Progressive Assessment (Mid Semester Exam)	**(30 Marks)** PA : Progressive Assessment (20 Marks) ALA : Active Learning Assessment (10 Marks)	Department	Results are given in the form of Grades by the University. Exam is Conducted at the Institute and Institute will provide marks to GTU -
3	Practical	ESE (V) : End Semester Practical/Viva Exam	**(30 Marks)** ESE: End Semester Viva Exam (20 Marks) OEP: Open Ended Program (10 Marks).	University	For the final year and pre-final year, practical examinations will be conducted by examiners nominated by GTU, while for the first and second years, the course coordinator will conduct them at the end of the semester.
4	Practical	PA(I): Progressive Assessment	**(20 Marks)** Progressive Assessment	Department	It is based on continuous practical Performance, Assignments ,Mini Projects, Presentations, Viva-voce and Term Work Submission etc.

Table-1: Component wise Weightage of a subject prescribed by the university

Process for attainment calculation:-

Departmental Quality Assurance Cell (DQAC) in consultation with department faculty members formalized the assessment process listed below:

Step 1: Follow the evaluation scheme prescribed by GTU (University) for the courses offered in the program.

Step 2: Fix the assessment components of the evaluation scheme before commencement of the semester.

Step 3: Set the evaluation Plan.

Step 4: Set the Criteria for CO attainment Level.

Step 5: Tabulate marks of each student for external and internal assessment components.

Step 6: Indirect assessment is calculated from the course exit survey for each course.

Step 7: Obtain the final CO attainment of a course using direct and indirect assessment.

Step-1 Follow the evaluation scheme prescribed by GTU (University) for the courses offered in the program

Our Institute is affiliated to Gujarat Technological University. There are four major components defined by the University for evaluating the performance of the students. The number of components for the particular course may vary.

The component wise distribution of marks is as shown in Table -1.

Step-2: Fix the assessment components of the evaluation scheme before commencement of the semester.

The component wise weightage of marks is shown in Table-1. Each student assessment is divided into internal assessment and External assessment. Internal assessment is carried out by the Institute and external assessment is carried out by the University.

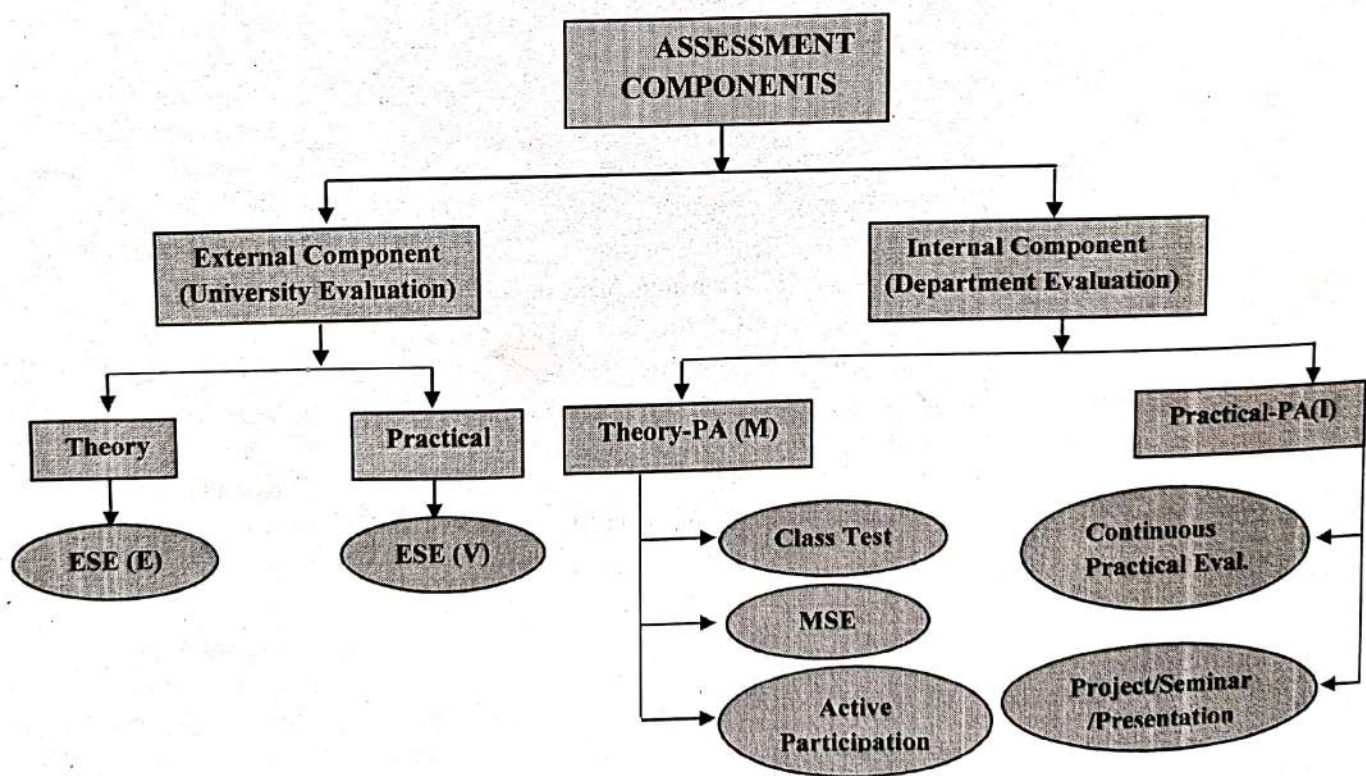Figure 1 and Figure 2 depicts the assessment components for first two years and pre-final/final year.

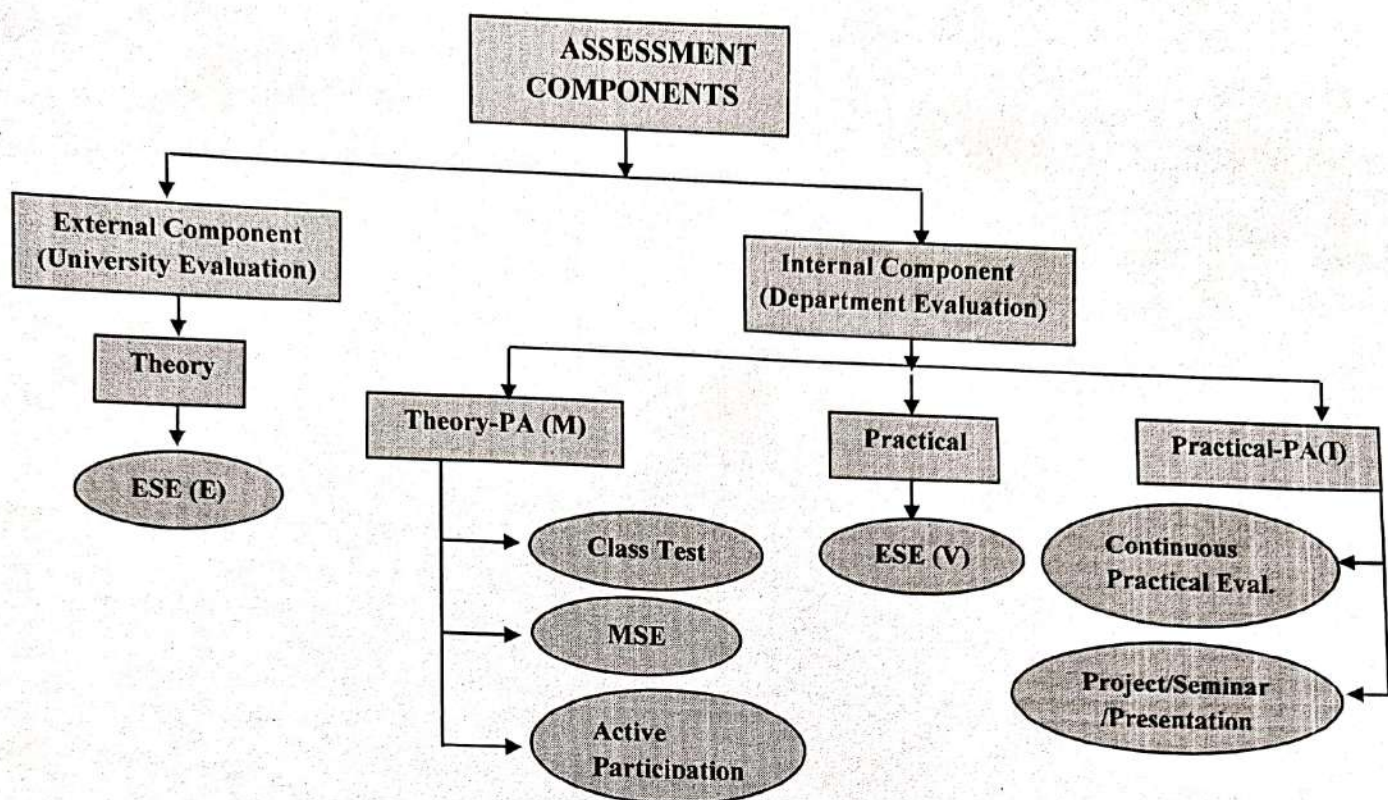**Figure-1:** Assessment Components for Pre-Final and Final year

Figure-2: Assessment Components for First Year and Second Year

Step 3: Set the Evaluation Plan

Sample evaluation plan is shown in Table 2. Similar method is applied for all the subjects.

Course Outcome	Class Test (20 Marks)	MSE (30 Marks)	Active Participation (5 Marks)	Total Internal Theory Marks PA(M) CT+ MSE+ Active Participation (55 Marks)	ESE (E) (70 Marks)
CO1	4	2.5	0.8	7.3	11.7
CO2	11	8.5	0.8	20.3	11.7
CO3	5	6	0.8	11.8	11.7
CO4	0	0	0.8	0.8	11.7
CO5	0	0	0.8	0.8	11.7
CO6	0	13	0.8	13.8	11.7
TOTAL	20	30	5	55	70

Table-2: Evaluation Plan of theory components for BDA [2171607]

Each course coordinator designs the evaluation plan to evaluate Course Outcome using assessment tools of their respective course. Sample evaluation plan is shown in Table 2. Being tier 2 institute, equal weightage is assigned to external theory/practical component as shown in last two columns of Table 2. Course coordinator decides the weightage for internal assessment tools which is in line with the weightage assigned to each CO by the university.

For example, in the above Table-2 evaluation plan is given for the particular course. In the given Evaluation plan CO1 has weightage of marks 4 in Class Test (CT) and marks 2.5 in MSE exam and 0.8 marks for active participation. So, CO1 has a total weightage of 7.3 marks out of 55.

Similarly, the course coordinator designs a CO Wise evaluation plan for practical progressive assessment.

Step-4: Set the Criteria for CO attainment Level as per policy-I

Level 1	50% of students will get more than 40% of marks
Level 2	50% of students will get more than 63% of marks
Level 3	50% of students will get more than 68% of marks

Table-3: Attainment Level criteria set for BDA [2171607]

At the end of each course, the CO attainment is determined for all assessment components. The attainment level is set by the course coordinator with the reference of previous results.

Step 5: Tabulate marks of each student for external and internal assessment components.

As per the University Guideline, they provide us a specific marks range for given grades. For e.g. If a student gets marks in between 85 to 100 then the student get AA grade. Our department has considered the mid value of range to convert grade into marks for external components as shown in Table 4. For internal components we use actual marks obtained by the students.

Final Grade	Mark Range	Mid value of Range (Out of 70 Marks)	Mid value of Range (Out of 30 Marks)
AA	85 to 100	64.75	27
AB	75 to 84	56	25
BB	65 to 74	49	23
BC	55 to 64	42	21
CC	45 to 54	35	19
CD	40 to 44	29.4	17
DD	35 to 39	25.9	15
FF	<35	0	0

Table-4: Grade to Marks Conversion

As per the Figure-1, our department has considered four assessment components to evaluate students internally, i.e. CT, MSE, Active Participation and Progressive assessment.
Following Table-5 shows the process of getting direct course outcome in internal and external assessment for individual CO.

#	Enrollment No	CT[I] (4 Marks)	MSE[I] (2.5 Marks)	Active Participation[I] (0.8 Marks)	ESE (E)[E] (11.67 Marks)	Progressive Assessment[I] (10 Marks)	ESE (V)[E] (5 Marks)	Sum of Internal (I) Components	Sum of External (E) Components	Total (0.65*I + 0.35*E)	Attainment in Percentage	Direct Attainment Level
		CO1										
		Theory				Practical						
1	170170116001	2	2.5	0.58	8.17	5	5.00	11	12	11	63	2
2	170170116002	2	2.5	0.58	7.00	5	4.17	11	11	11	61	1
3	170170116003	3	2.5	0.58	8.17	7	4.17	14	12	13	74	3
4	170170116004	1	0	0.75	5.83	5	4.17	8	9	8	46	0
5	170170116007	1	2.5	0.58	8.17	8	3.50	13	12	13	70	3
6	170170116008	3	2.5	0.75	8.17	7	3.83	15	13	14	79	3
7	170170116009	1	2.5	0.66	9.33	8	4.50	14	14	14	78	3
8	170170116011	3	2.5	0.66	9.33	8	4.50	15	13	14	79	3
9	170170116012	2	2.5	0.75	7.00	7	3.83	14	11	13	72	3
10	170170116013	3	2.5	0.58	8.17	8	4.17	16	12	15	81	3
	.	.	.	.	.	.	.	.	.	.	.	.
	.	.	.	.	.	.	.	.	.	.	.	.
									Direct Attainment of CO1 (D)		2.59

[Table-5: Sample Evaluation for CO1 of Course BDA [2171607]]

As per the above table, the second column shows the enrolment number of students as allotted by the University. Here we considered ten students' records for a particular subject as a sample data. The third column of the table shows marks obtained by students in the class test (CT) exam in CO1 out of 4. The weightage of CO1 for CT exam (i.e. 4 marks) was already decided by the course coordinator in the evaluation plan as per the Table -2. Similar evaluation is done for MSE, Active Participation and Practical

PA. Then the course coordinator will add all internal (I) and external (E) components marks of CO1 and sum is shown in column number 9 and 10 respectively. Being a Tier-2 institution, we considered 65% weightage of internal attainment and 35% weightage of external attainment for obtaining final direct attainment of particular CO. Finally, calculate the percentage for each student to determine the level of CO1 attainment using policy I for target setting.

Now, direct attainment of CO1 is obtained by taking the average of attainment level of each students as shown in last column of Table 5. Similarly calculate the direct attainment level of other COs of the given subject.

Step 6: Indirect assessment is calculated from course exit survey for each course.

The sample course exit survey is shown in Table 6. Use policy I for setting the target to obtain the level of indirect attainment. Indirect attainment of CO1 is obtained by taking the average of indirect attainment level of each students as shown in sixth column of Table 6.

Sr. No.	Enrollment	Name	CO1	Percentage Scale	Indirect Attainment Level		CO 6	Percentage Scale	Indirect Attainment Level
1	170170116001	ADITYA APOORVA	5	100	3	....	5	100.00	3
2	170170116002	AHUJA JEET MUKESHKUMAR	5	100	3		5	100.00	3
3	170170116003	BHANDERI JAY PRADIPBHAI	5	100	3		5	100.00	3
4	170170116004	CHAUDHARI ARTIMKUMAR ARJUN	4	80	3		4	80.00	3
5	170170116007	CHAVDA HARSH CHANDRESHKUMAR	5	100	3		5	100.00	3
6	170170116008	CHOKSHI NISARG DEVESH	4	80	3	...	4	80.00	3
7	170170116009	CHUNARA NIMESH RAJESHBHAI	5	100	3		5	100.00	3
8.	170170116011	DANKHARA DHRUVIN LALITBHAI	5	100	3		5	100.00	3
9	170170116012	DAVE VEDANT NIMESHBHAI	3	60	1	....	3	60.00	1
10	170170116013	DODIYA ADITYA HITESH	5	100	3	.	5	100.00	3
	.		.	.	.	.	.	.	.
	.		.	.	.	.	.	.	.
	Average Indirect Attainment (ND)		CO1	94	2.92		CO6	96	2.87

Table-6: Sample Course Exit Survey of Course BDA [2171607]

Step 7: Obtain the final CO attainment of a course using direct and indirect assessment

CO attainment of a particular course is obtained by considering 80% of direct attainment (D) and 20% of indirect attainment (ND).

$$\text{Final Attainment of CO1} = 0.8*D + 0.2 * ND$$

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