



Harmal Panchakroshi Shikshan Mandal's
Ganpat Parsekar College Of Education

Vidya Sankul, Bhom Plateau, Harmal - Goa

(Affiliated to Goa University, Recognised by NCTE)

Recognised under Section 2(f) of the UGC Act, 1956

OUTCOME BASED EDUCATION
(MANUAL)



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Outcome-Based Education (OBE) is an educational philosophy and approach that emphasizes the achievement of specific learning outcomes or goals. Instead of focusing primarily on the content delivered or the process of teaching, OBE centres on what students are expected to learn and be able to do by the end of their education. As OBE emphasizes on the need and progress of students, instruction is often adapted to meet different learning styles and paces, ensuring that all students have the opportunity to achieve the desired outcomes.

Outcome-Based Education (OBE) and the National Education Policy (NEP) 2020 in India are closely related, as NEP 2020 supports and incorporates the principles of OBE into its framework for educational reform. The NEP 2020 emphasizes the need for education to be more outcome-oriented. It stresses that learning should be focused on acquiring knowledge, skills, and competencies rather than merely completing a set syllabus. OBE supports curriculum design that is directly aligned with desired learning outcomes. This means curricula can be adapted to ensure they meet evolving industry standards and student needs, making them more relevant and flexible as envisioned by NEP 2020. OBE aligns with the quality assurance goals mentioned in NEP 2020 by providing a framework for continuous assessment and improvement. NEP 2020's emphasis on learning outcomes, flexibility, holistic education, quality assurance, and student-centric approaches aligns seamlessly with the principles of OBE.

Outcome-Based Education (OBE) and the National Assessment and Accreditation Council (NAAC) are closely connected in the context of higher education. NAAC emphasizes continuous improvement and quality assurance in higher education. OBE aligns with these goals by ensuring that educational practices are continuously refined based on assessment results.

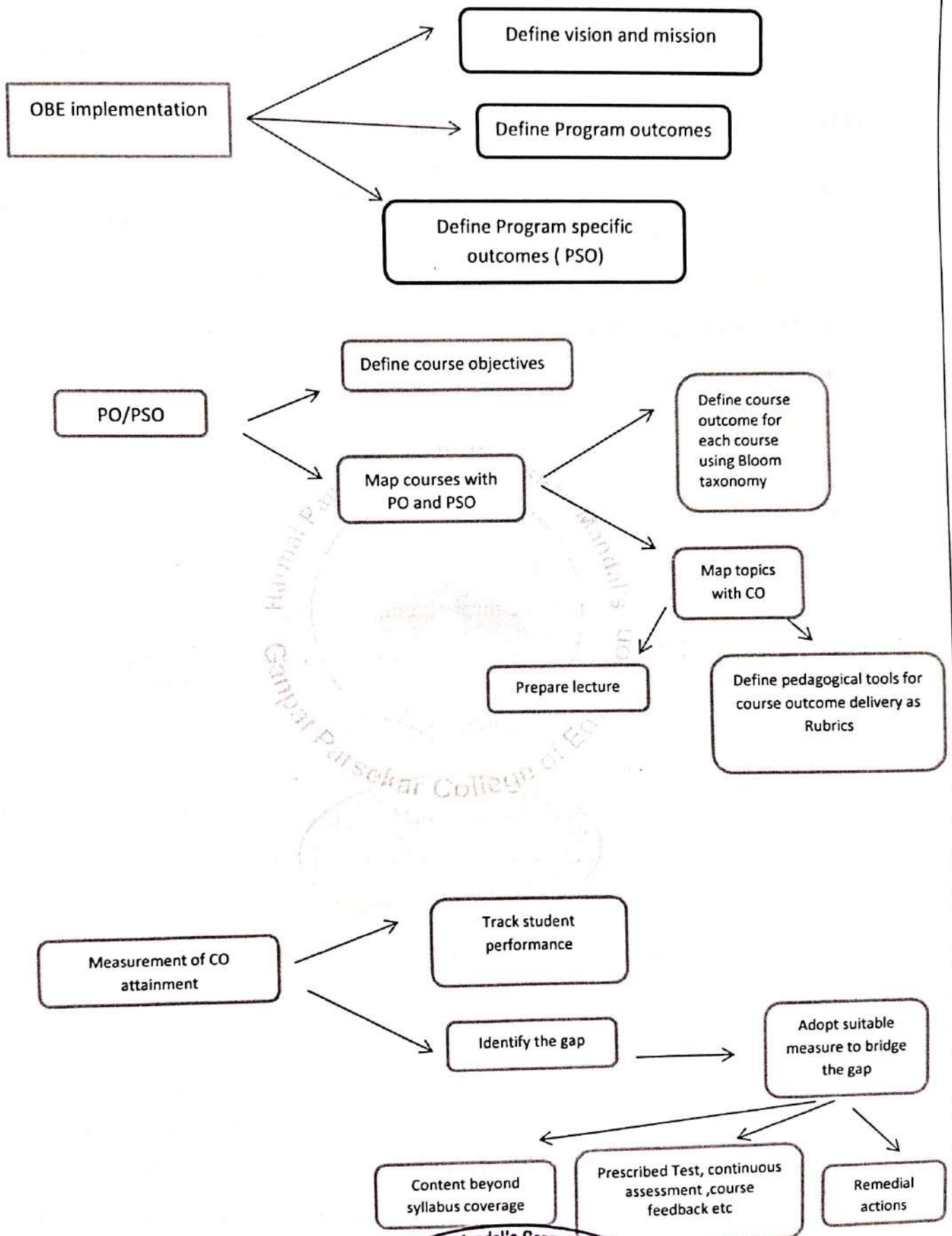


The OBE is a continuous process of education wherein the curriculum, TL process and assessment tools are improved continuously. OBE process include for steps –

1. Planning
2. Implementation
3. Assessment/ Measure
4. Respond / improve



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OBE Implementation:

- Define vision and mission
- Define Program outcomes
- Define program specific outcome and course objective
- Define course outcomes with Bloom's Taxonomy for each course
- Map topics with CO
- Map lecture wise course lesson plan
- Define pedagogical tools for CO delivery
- Define rubrics for assessments
- Use tools of assessments as
- Track students' performance through continuous assessment
- Identify gaps in the curriculum and TL process and bridge the gap
- Assess the attainment



Vision and Mission Statements -

Vision statement

Holistic, Innovative and transformative education, for the future educators.

Mission statement

At Ganpat Parsekar College of Education, we are committed to promoting holistic, multidisciplinary, innovative education to teacher trainees across the state. We engage in the development of value systems and nation-building as the core of the training. We aim to create a new generation of “future ready” teachers.

Program learning outcomes-

B.Sc B.Ed Program

The four-year B.Sc.-B.Ed. program aims at preparing quality teachers in science and mathematics for upper primary and secondary stages of education by integrating general studies comprising science and mathematics, language studies to enhance communication skills, and professional studies comprising foundations of education, pedagogy of school subjects, and practicum related to the tasks and functions of a school teacher. It maintains a balance between theory and practice, and coherence among the components of the program, representing a wide knowledge base of a secondary school teacher. The program shall be of four academic years consisting of eight semesters including school-based experiences and internship-in-teaching. Student teachers shall, however, be permitted to complete the program within a maximum period of six years from the date of admission to the program. On successful completion of the program, they may enter the teaching profession or opt for higher education in their respective areas of interest.



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	Programme Outcome B.Sc B.Ed	Level (RBT)
1	Demonstrates the ability to recall, connect, and apply concepts from Zoology, Physics, Chemistry, Botany, and Mathematics to develop a cohesive and interdisciplinary approach to science education.	<i>Remember Understand, Apply</i>
2	Analyzes educational concepts and theories to understand the foundations of teaching and learning, and applies subject content knowledge and pedagogical approaches to optimize the teaching-learning process, ensuring students comprehend and master complex concepts	<i>Analyse, Apply, Understand</i>
3	Engages students in hands-on activities that integrate scientific exploration, supplementing practical experiences to reinforce both theoretical knowledge and quantitative skills.	<i>Apply</i>
4	Demonstrates pedagogical skills and teaching competencies in classroom instruction, applies pedagogical theories and skills in practical activities such as internships, community work, and co-curricular activities, and evaluates their effectiveness to enhance teaching practices	<i>Apply, Evaluate</i>
5	Integrates technology effectively to enhance the teaching and learning of interdisciplinary scientific concepts, utilizing digital tools and resources to demonstrate the interconnectedness of sciences and mathematics in educational settings	<i>Apply Understand</i>
6	Designs instructional plans that incorporate diverse	<i>Create</i>



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	teaching strategies to meet the varying needs of learners, ensuring an inclusive and supportive learning environment.	
7	Encourages innovation by applying interdisciplinary approaches that combine sciences and mathematics, leading to the development of novel teaching methods and practices that engage students in meaningful learning experiences	<i>Create</i>
8	Promotes sustainability by teaching how sciences and mathematics interact within ecosystems and natural processes, helping students appreciate the importance of preserving natural resources	<i>Evaluate</i> <i>Understand</i>
9	Facilitates the development of a mindset for lifelong learning by encouraging students to analyse and synthesize scientific ideas across different fields, applying these connections throughout their educational journey	<i>Analyse,</i> <i>Apply</i>



B.A.B.Ed Program

The four-year integrated B.A.B.Ed. program aims at preparing quality teachers in Social Sciences(SS) and Languages for upper primary and secondary stages of education by integrating general studies comprising SS and language studies to enhance communication skills, and professional studies comprising foundations of education, pedagogy of school subjects, and practicum related to the tasks and functions of a school teacher. It maintains a balance between theory and practice, and coherence among the components of the program, representing a wide knowledge base of a secondary school teacher. The program is of four academic years consisting of eight semesters including Field Experiences(FE, i.e. Multicultural Placement, Internship-in-teaching and Community work). On successful completion of the program, they may enter the teaching profession or opt for higher education in their respective areas of interest.

	Programme Outcome	Level (RBT)
1	Demonstrates the ability to recall, connect, and apply knowledge from languages, history, geography, and education to develop a cohesive and interdisciplinary approach to social science and language education.	<i>Remember Understand, Apply</i>
2	Analyzes educational concepts and theories to understand the foundations of teaching and learning, and applies subject content knowledge and pedagogical approaches to optimize the teaching-learning process, ensuring students comprehend and master complex concepts.	<i>Analyse, Apply, Understand</i>
3	Engages students in hands-on activities that integrate	<i>Apply</i>

	historical analysis, linguistic exploration, and geographical study, supplementing practical experiences to reinforce both theoretical knowledge and critical thinking skills.	
4	Demonstrates pedagogical skills and teaching competencies in classroom instruction, applies pedagogical theories and skills in practical activities such as internships, community work, and co-curricular activities, and evaluates their effectiveness to enhance teaching practices.	<i>Apply, Evaluate</i>
5	Integrates technology effectively to enhance the teaching and learning of interdisciplinary concepts in languages and Social Sciences, utilizing digital tools and resources to demonstrate the interconnectedness of these subjects in educational settings	<i>Apply, Understand</i>
6	Designs instructional plans that incorporate diverse teaching strategies to meet the varying needs of learners, ensuring an inclusive and supportive learning environment across languages and Social Sciences.	<i>Create</i>
7	Encourages innovation by applying interdisciplinary approaches that combine languages and Social Sciences, leading to the development of novel teaching methods and practices that engage students in meaningful learning experiences.	<i>Create</i>
8	Promotes cultural and environmental awareness by teaching how languages, historical events, and geographical factors interact within societies and natural processes, helping students appreciate the importance of	<i>Apply, Understand</i>



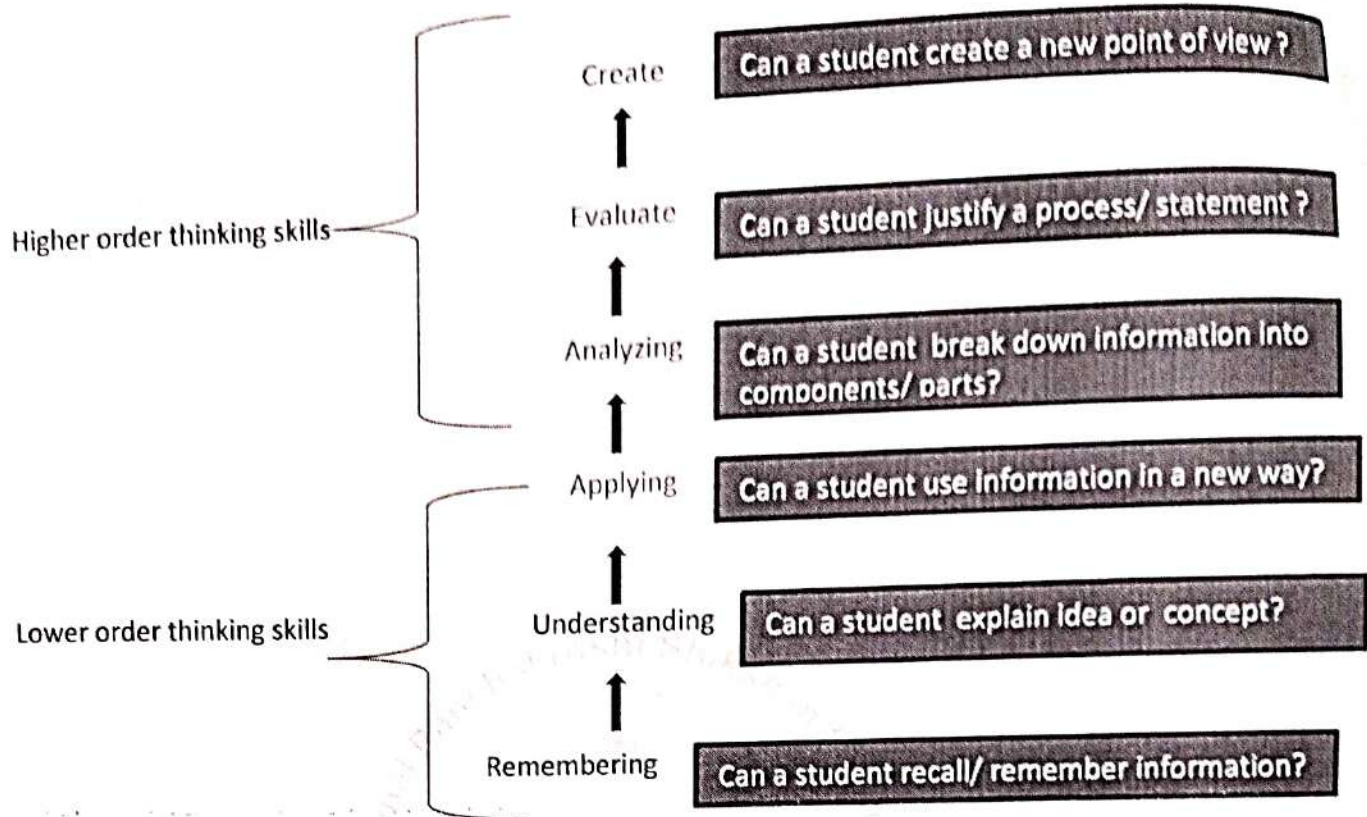
Rules to develop CO:

- **Specific**- Students will be aware of what they should be able to achieve at the completion of the course, by reading the outcomes.
- **Measurable** – Students will be able to recognize “when” and “how much” they have achieved the outcomes.
- **Achievable** – The CO should be possible to complete in time and with the give resources.
- **Realistic**- The CO should be appropriate for the student
- **Time bound**- CO have a time limit for completion

Action verbs for Course Outcomes: Bloom’s revised taxonomy

- There are six levels of cognitive learning according to the revised version of Bloom’s Taxonomy.
- Each level is conceptually different. The six levels are remembering, understanding, applying, analyzing, evaluating, and creating.
- Bloom’s Taxonomy is frequently used in writing the course outcomes as it provides a readymade structure and list of action verbs.
- All levels of Bloom’s taxonomy of thinking skills can be incorporated into expected learning outcome statements.
- Anderson and Krathwohl (2001) adapted Bloom’s model to include language that is oriented towards the language used in expected learning outcome statem





The sample action words that can be used when creating the student outcomes –

Remember	Understand	Apply	Analyze	Evaluate	Create
Cite	Add	Acquire	Analyze	Appraise	Animate
Define	Articulate	Allocate	Blueprint	Assess	Arrange
Describe	Associate	Apply	Characterize	Compare	Assemble
Draw	Characterize	Ascertain	Classify	Conclude	Categorize
Enumerate	Clarify	Assign	Compare	Contrast	Compile
Identify	Classify	Attain	Confirm	Criticize	Compose
Index	Compare	Calculate	Contrast	Defend	Construct
Indicate	Contrast	Capture	Correlate	Determine	Create
Label	Convert	Change	Detect	Estimate	Cultivate
List	Defend	Classify	Diagnose	Evaluate	Depict
Match	Describe	Complete	Discriminate	Explain	Design
Name	Detail	Compute	Distinguish	Judge	Develop
Outline	Differentiate	Construct	Document	Justify	Devise
Point	Discuss	Demonstrate	Examine	Predict	Enhance explain
Quote	Distinguish	Derive	Explain	Recommend	Format
Recall	Elaborate	Draw	File	Summarize	Formulate
Recite	Estimate	Employ	Group	Test	Generalize
Recognize	Example	Examine	Identify	Validate	Generate
Review	Explain	Explore	Illustrate	verify	Incorporate
Select	Extrapolate	Express	Infer		Integrate
State	Generalize	Factor	Layout		Lecture
Study	Give	Figure	Investigate		Modify
Tabulate	Infer	Graph	Outline		Plan
Trace	Interpret	Illustrate	Point out		Potray
Write	Observe	Investigate	Proof read		Prepare
	Paraphrase	Modify	Relate		Program
	Predict	Predict	Select		Reconstruct
	Review	Prepare	Sub divide		Reorganize
	Summarize	Process	transform		Revise
	Translate	relate			Rewrite
	visualize	Sequence			Specify
		Show			summarize
		Simulate			
		solve			
		determine			

Process to maintain quality of the course outcomes –

- After the course allotment from the department, identify the expected learning outcomes from the course. Eg- what knowledge/ skills from this course will students acquire to perform well in future.
- Then Make a list of learning outcomes.
- Look over the list and check the most important learning outcomes.
- Identify 3-5 most important LO from the course using the action verbs
- Check how clear and how important the statement of outcomes is.
- Check how many are on list of key competencies of PO
- Existing CO shall be revised each year based on the curriculum feedback and review.

Annexure 1

PO	Action verb in PO	Blooms level for PO
1	Recall Demonstrate Apply	Remember Understand Apply
2	Analyze Understand Apply	Analyze Understand Apply
3	Engages	Apply
4	Apply Evaluate	Apply, Evaluate
5	Integrates Demonstrate	Apply Understand
6	Designs	Create
7	Encourage	Create
8	Promote	Apply
9	Facilitate Apply	Analyse Apply

Relation between PO and CO –

- Before developing the relation between PO and CO through mapping its important to understand the action verbs used in the PO statements
- The course outcome should be mapped with at least one of the PO.



- After writing the CO for the course, ensure to what extent the CO correlate with the POs and the only proceed towards PO-CO mapping.

CO-PO Correlation Guidelines-

- In most cases, appropriate keyword of PO and CO is enough for mapping.
- The mapping levels for the CO –PO is assigned a four point scale analysis-
 1. No correlation
 2. low correlation
 3. Moderate correlation
 4. High correlation

Annexure 2

Action verb used in CO	Correlation level
The action verb bears no correlation with action verb of PO and the features of PO	-
Part of PO is reflected through keyword verb of CO	low
Major part of PO is reflected through keywords action verb of CO and students can achieve the PO moderately through the given CO	Medium
Exact action verb of the PO and Critical performance is expected from students using the CO	High

Setting target for CO attainment-

- Target level for a CO is ideally decided based on the average marks of that course in the last three academic years or an average value can be chosen based on overall performance for the various courses.
- Target can be set by the faculty, separately for each CO based on the average performance of the CO in previous examination

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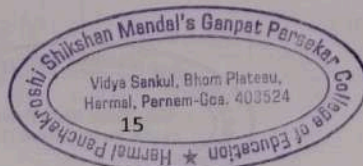
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Case 1 - Sample CO attainment (Semester End Examination only) to be used for SEE for odd semester result attainment 2024-25 –

Pre- Exam steps:

- Let's assume a classroom of **30 students** for the Course/ paper "A".
- The Course "A" has 5 CO (CO1, CO2,CO3,CO4,CO5) and max total marks allotted for SEE is 60.
- The manuscript of the question paper is prepared using given template, during the exam question paper setting.
- While preparing the manuscript, calculate the threshold target and max marks allotted for each CO and include in the manuscript.

EXAMPLE	CO1	CO2	CO3	CO4	CO5
Max. Marks allotted to each CO out of the total 60	20	10	10	10	10
Threshold Target(60% of max .marks allotted to the CO)	60% of 20 = 12	60% of 10 = 6	60% of 10 = 6	60% of 10= 6	60% of 10= 6

*** Please maintain the threshold target as 60% of max marks for all courses.

Post Exam steps:

- After assessment/ correction of answer books of course "A" complete the table as below for each CO

EXAMPLE	CO1	CO2	CO3	CO4	CO5
Max. Marks allotted to the CO	20	10	10	10	10
Threshold Target(60% of max .marks allotted to the CO)	60% of 20 = 12	60% of 10 = 6	60% of 10 = 6	60% of 10= 6	60% of 10= 6
No of students who answered/ attempted the questions of each CO out of total 30	18	15	12	20	10

students					
No: of students who have scored marks equal or above threshold target marks	10 <i>(out of 18 students who attempted CO1, 10 students have obtained marks above the threshold target of 12 marks).</i>	05 <i>(out of 15 students who attempted CO2, 05 students have obtained marks above the threshold target of 06 marks).</i>	08 <i>(out of 12 students who attempted CO3, 08 students have obtained marks above the threshold target of 06 marks).</i>	15 <i>(out of 20 students who attempted CO4, 15 students have obtained marks above the threshold target of 06 marks).</i>	10 <i>(out of 10 students who attempted CO5, all 10 have obtained marks above the threshold target of 06 marks).</i>

Procedure for computation of CO attainment

- The various assessment tools should be in alignment with the Cos for different courses.
- All the assessments are mapped to action verb.
- Question paper should be set to assess all CO.
- Faculty should plan to enhance the attainment targets based on previous attainments.

Measurement of CO attainment

- The CO is a measured through the students' performance using various assessment tools.
- The first step is to set the question paper mapping the CO with appropriate PO.
- Distribute the weightage to each question based on the relevance of the CO for the course.



- After the examination, collect the marks obtained by the students in the course for each CO.
- Refer the threshold target set for the CO (Annexure 3)
- Use the below formula for computation of CO attainment

$$\% \text{ CO attainment} = \frac{\text{Number of students scored marks equal and above threshold}}{\text{Total number of students attempted the question}} \times 100$$

Example –

(A) For CO1, Max marks allotted is 20. Total number of students is 30.

- 18 students out of a total of 30 attempted CO1.
- **Note that the Threshold marks is 12 marks (60% of 20 =12)**
- Of the 18 students who attempted questions under CO1, 10 students obtained marks equal or above the threshold of 12 marks.

• Then

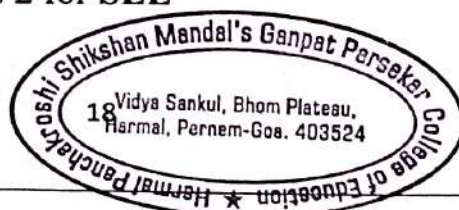
$$\% \text{ CO attainment} = \frac{\text{Number of students scored marks equal and above threshold}}{\text{Total number of students attempted the question}} \times 100$$

$$\% \text{ CO attainment} = \frac{10}{18} \times 100 = 55.5\%$$

- Ie 55.5% of students score more than 60% marks out of the maximum relevant marks.

The % attainment is converted to levels of attainments as given below –

- Attainment level 1 = 40% of students score more than 60% marks out of the maximum relevant marks.
- Attainment level 2 = 50% of students score more than 60% marks out of the maximum relevant marks
- Attainment level 3 = 60% of students score more than 60% marks out of the maximum relevant marks
-
- So % CO attainment = $\frac{10}{18} \times 100 = 55.5\%$ is attainment level 2
- So CO 1 attainment level is 2 for SEE



ATTAINMENT FOR SEE ONLY

CO number	Attainment Level
CO1	2
CO2	
CO3	
CO4	
CO5	

II- OVER ALL ATTAINMENT (SEE + ISA 1+ISA2) to be implemented from even sem Ay 2024-25.

Sample CO attainment (ISA, WRITTEN) –

% of students scoring above the threshold target

Example for written test ISA I-

- As the scope of the assessment is narrow. All questions can be from a single CO or varied.
- Max marks allotted are 15.
- The threshold target would be 60% of the max. marks allotted i.e. 10 marks.
- If out of a total of 30 students in the class, 22 students got 10 and above
- Then

$$\% \text{ CO attainment} = \frac{\text{Number of students scored marks equal and above threshold}}{\text{Total number of students attempted the questions}} \times 100$$

- So % CO attainment = $\frac{22}{30} \times 100$
- = 73.3%

Example for ISA II Assignment (other than written test)-



- Faculty are advised to give assignments from those CO which are difficult to be mapped with PO for SEE such as **create and other higher order.**
- **Faculty should choose any one appropriate CO.**
- Max marks allotted is 15
- The threshold target could be 80% of the max marks allotted i.e 12
- If out of a total of 30 students in the class, 25 students got above the threshold target of 12, then
- **% CO attainment =**
$$\frac{\text{Number of students scored marks equal and above threshold}}{\text{Total number of students attempted the questions}} \times 100$$

- So **% CO attainment =** $\frac{25}{30} \times 100 = 83.3\%$,

Setting weightage for CO assessment-

So for CO1,

if SEE is 53.3%,

ISA I also has CO1 with % attainment as 73.3%

ISA II has CO1 based with % attainment as 83.3%

Then by using the below rubric –

70% weightage is given to CO attainment based on SEE.

20% weightage is given to CO attainment based on ISA I(test)

10% weightage is given to CO attainment based on ISA II (Assignment/ quiz/ etc)

The calculation would be $2 \times 73.3\% + 1 \times 83.3\% + 7 \times 53.3\%$

$$1.466 + 0.83 + 3.731$$

$$6.027$$

i.e 60.27% i.e 60.27% students attainment a score equal or more than 60% marks out of the maximum relevant marks.

Following the rubric –



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- Attainment level 1 = 40% of students score more than 60% marks out of the maximum relevant marks.
- Attainment level 2 = 50% of students score more than 60% marks out of the maximum relevant marks
- Attainment level 3 = 60% of students score more than 60% marks out of the maximum relevant marks

60.27% is attainment level 3 for CO1 (TOTAL)

OVERALL ATTAINMENT (ISA AND SEE) -

CO number	Attainment Level
CO1	3
CO2	
CO3	
CO4	
CO5	



CONSOLIDATED MAPPING PROGRAM WISE

Program BA B.Ed

No. of Courses =

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
NUMBER OF COURSES MAPPING THE PO								

CONSOLIDATED MAPPING PROGRAM WISE

Program BSc B.Ed

No. of Courses =

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
NUMBER OF COURSES MAPPING THE PO								

