

MAEER's

MIT | Arts, Commerce
& Science College

(Affiliated to Savitribai Phule Pune University)



Policy & Procedure

**Program Attainment
Evaluation Policy**

(To be implemented from (2016-17))

Program Attainment Designing Committee

Year of formation: 2015-16

Committee Members:

| Sr. No. | Name | Designation | Designation |
|---------|------------------------|-------------------------------------------|--------------|
| 1 | Dr. B. B. Waphare | Principal | Chairman |
| 2 | Dr. Sangita Birjdar | Assistant Professor Statistics Department | Co-ordinator |
| 3 | Mr. Amol Mane | HOD BBA & BBA-IB | Member |
| 4 | Mrs. Mansi Atitkar | HOD BA & BCOM | Member |
| 5 | Mrs. Akshada Kulkarni | HOD BCA | Member |
| 6 | Mrs. Rashmi Lad | HOD Comp. Sci. | Member |
| 7 | Mrs. Vijayalaxmi M. K. | HOD Mathematics | Member |
| 8 | Mr. Sunil Mahajan | HOD Electronics | Member |
| 9 | Mr. Shriram Kargaonkar | HOD Statistics | Member |
| 10 | Mr. B. B. Pawar | IQAC Co-ordinator | Member |
| 11 | Dr. Padmavati Undale | Assistant Professor, BA & BCOM Dept. | Member |

Objectives of the committee:

To design the mechanism that:

- evaluates Course Outcomes, Program Outcomes and Program Specific Outcomes of each student.
- generates the course attainment.
- Obtains the program attainment of every batch.

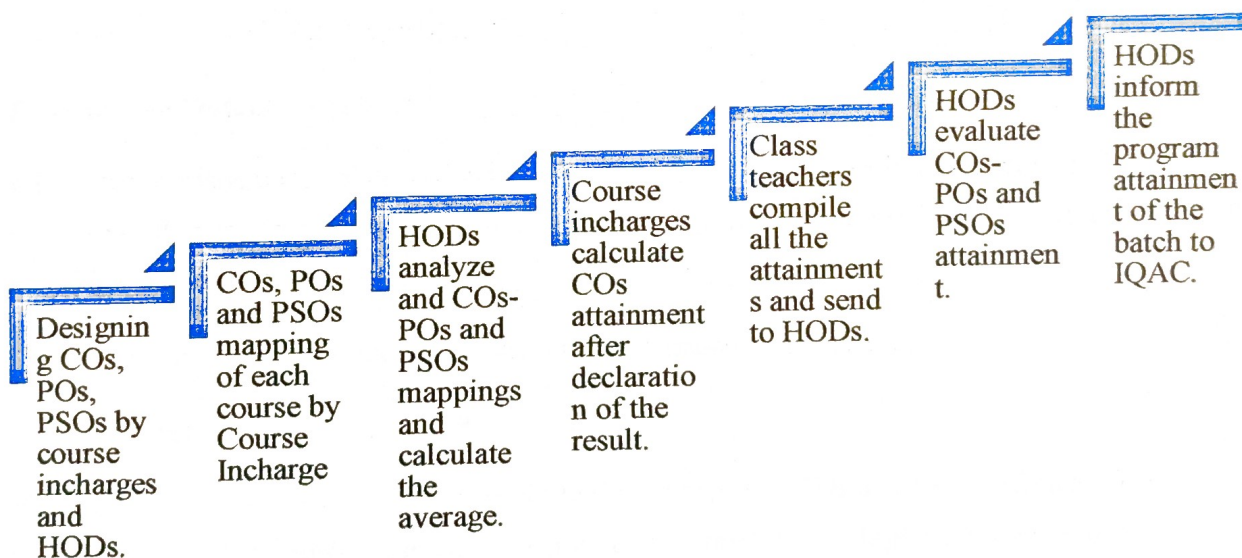


Program Attainment Evaluation Policy

A. Objective: This policy has been designed to ensure the evaluation of attainment of Course Outcomes(COs), Program Outcomes(POs), Program Specific Outcomes(PSOs).

B. Description: Program Attainment Evaluation Policy has been designed to frame a mechanism to assess the outcomes attainment of the courses, programs and specific programs run by the college. The college runs B.A., B. Com., B.B.A, B.B.A.-IB, B.B.A.-CA, B.Sc. (Regular), B.Sc.-C.S., M.Sc.-C.S. Programs. The attainment evaluation helps to get an idea about the success of teaching-learning process. It gives an overview of the strong areas as well as the areas that require improvement. It helps to achieve progress in the attainment level by planning and implementing suitable strategies. With this view Program Attainment Designing Committee has designed this policy.

C. Implementation procedure:



1. Designing Course Outcomes(COs), Program Outcomes(POs) and Program Specific Outcome(PSOs):

a. Introduction:

Course Outcomes (COs):

COs are statements that describe what students should be able to do at the end of successful completion of a course. Every Course leads to some Course Outcomes. CO statements are defined by considering the course content covered in each module of a course. The number of COs for each course differs from 1 to 8. These COs are numbered as CO1, CO2.... . Blooms Taxonomy has been followed while designing COs. COs are miniatures of POs and PSOs. All COs jointly contribute to achieve the Programme Outcomes (POs) and Programme Specific Outcomes(PSOs). **Programme Outcomes (POs):**

POs are what knowledge, skills and attitudes a graduate should have at the time of graduation. POs are statements that describe what the students graduating from any of the educational Programmes should be able to do. The number of POs for each programme differs from 1 to 8. These are numbered as PO1, PO2....

Programme Outcomes (POs):

PSOs are statements that describe what the graduates of a specific educational Programme should be able to do. The number of POs and PSOs for each programme differs from 1 to 8. These are numbered as PSO1, PSO2.... .

COs, POs and PSOs demonstrate the vision and mission of the college.

b. Designing CO, PO and PSO:

Blooms Taxonomy has been followed while designing COs, POs and PSOs. Bloom's Taxonomy was created in 1956 under the leadership of educational psychologist Dr Benjamin Bloom. It describes six level of learning Knowledge, Comprehension, Application, Analysis, Synthesis, and Evaluation. The revised Blooms Taxonomy was published by Dr. Lorin Anderson, a former student of Bloom and his colleagues in 1999. It has also six levels but it takes into account a broader range of factors that have an impact on teaching and learning. These levels are remembering, understanding, applying, analysis, evaluation, creating. The content of each course is analysed according to these levels while designing course outcomes. The action verbs listed in Blooms Taxonomy are preferably used in COs, POs and PSOs drafting.



Step 1: Programme Outcomes and Programme Specific Outcomes are designed by Head of the department(HOD) and course in-charges of respective programme.

Step 2: Course Outcomes are designed by Course in-charge of the respective courses offered in the programme and HOD.

Step 3: The designed COs, POs, PSOs are presented to Program Attainment Designing Committee.

Step 4: The committee finalizes the draft of COs, POs, PSO.

II. COs, POs and PSOs mapping of each course:

- Course in-charges prepare COs- POs and PSOs mapping for each course using following correlation:
 - 1: Slight Co-relation
 - 2: Moderate Co-relation
 - 3: Substantial Co-relation
 - 0: No co-relation.
- The average of each course's co-relation is calculated.
- After this, COs- POs and PSOs mappings are sent to the head of the respective department.

Average of COs- POs and PSOs mapping of all courses in a program:

- The heads of departments (HODs) analyze COs- POs and PSOs mappings and calculate the average of all the courses of the programs. This is seen as the attainment of COs-POs and PSOs.

III. COs Attainment: COs attainment is calculated after the result declaration of each semester/annual examination. Final marks obtained in each CO are considered as the base for calculation.

- Target for attainment in each CO is $\geq 40\%$ marks in that course as the passing criteria of SPPU for a course is $\geq 40\%$.
- Course in-charges prepare COs attainment sheets for each course using following correlation:

- 1: Target attained



➤ 0: Target is not attained

- After this, course in-charges send COs attainment to the respective class teachers.
- Class teachers compile all the attainments and send it to the head of respective department for further process.
- HODs calculate the average of all COs attainment of each student for the respective programs.

IV. Evaluation of COs-POs and PSOs Attainment: HODs evaluate COs- POs and PSOs attainment.

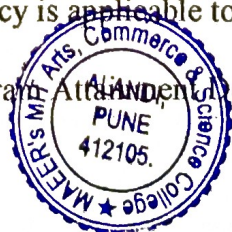
- 40% of COs- POs and PSOs average attainment is calculated.
- If student attainment is $\geq 40\%$ of COs- POs and PSOs average attainment then it is assigned otherwise 0.
- The average of the above calculation is converted into percentage. This is the program attainment of the batch.
- HODs inform the program attainment of the batch to IQAC.
- The previous batch attainment is compared with current batch attainment to plan teaching-learning strategies for further progress.

Recording of data: HODs maintain the following data.

- Students' batch-wise enrolment data.
- Course syllabus.
- COs, POs and PSOs.
- Mapping of COs-POs and PSOs with correlation factor.
- Final marks entry.
- Mapping of COs attainment.
- Mapping of student's attainment.
- Mapping of student's attainment with COs- POs and PSOs attainment.
- Program attainment

D. Applicability: This policy is applicable to all the programs run by the college.

E. Policy Authority: Program Attainment Designing Committee



F. Standard Operating Process: Program Attainment Designing Committee has designed Standard Operating Process (SOP) as follows:

| Sr. No. | Activities | Responsibility | Target Days/Dates |
|---------|-------------------------------------------------------------------------------------------|----------------------------------------------|--------------------------------------------------------------------------------------------|
| 1 | Designing of COs | Course In-charges | before the beginning of academic year. (1Month) |
| 2 | Designing of POs, PSOs | Course In-charges and head of the department | before the beginning of academic year. (1Month) |
| 3 | Mapping of COs with POs and PSOs | Course In-charges | before the beginning of academic year. (1Month) |
| 4 | Average calculation of mapping of COs with POs and PSOs | Head of the department | before the beginning of academic year. (1Month) |
| 5 | Calculation of COs Attainment | Course In-charges | After the declaration of the result. (15days) |
| 6 | Compilation of COs Attainment | Class Teacher | After receiving calculation of COs Attainment (5 Days) |
| 7 | Calculation the average of all COs attainment of each student for the respective programs | Head of the department | After receiving compiled calculation of COs attainment by the class teachers. (15 Days) |
| 8 | Final Approval | IQAC | After receiving compiled attainment calculation by HOD. (5 Days) |

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Program Attainment Designing Committee

Amendment-1

Savitribai Phule Pune University, Pune (SPPU) introduced CBCS pattern for all Undergraduate and Postgraduate Programs in 2019, the Program Attainment Designing committee in its meeting on July 18, 2019 decided to revise its policy as per the instructions received from IQAC. The revised policy will be implemented with effect from the academic year 2019-20.

Step wise procedure for preparing CO-PO/PSO attainment:

Step 1: Design CO, PO and PSO by using Bloom's Taxonomy, graduate attributes given by UGC and Vision and Mission of the college.

Step 2: For each Course prepare CO-PO, CO-PSO mapping. Assign the level according to the correlation between a particular CO-PO, CO-PSO as given below:

3: Substantial (High) correlation

2: Moderate (Medium) correlation

1: Slight (low) correlation

- : No correlation

Step 3: Calculate the average of CO-PO/PSO for each course.

Step 4: Each course Incharge has to prepare CO-PO/PSO attainment sheet for Formative and Summative assessment by following the steps below:

- Enter the scores of students obtained in Formative (FA) and Summative assessment (SA). For formative assessment the course incharge can consider the scores of Class Test, Internal Exam, Assignment, Any activity like Seminar, Presentation, Research paper review, Book review etc. For Summative assessment, scores obtained by the students in University exams are to be considered.
- Find the total number of passed students who scored more than equal to 40% in FA and SA.
- Attainment % is calculated as the number of students who scored more than equal to 50% marks out of the passed students.
- Find the average percentage attainment for Formative assessment.
- Find the level of the course attainment as:

| Assessment Method | Attainment Level | |
|-------------------|------------------|-----------------------------------------------------|
| SA | Level-1 | 70% of students scoring more than 50% marks CO wise |
| | Level-2 | 80% of students scoring more than 50% marks CO wise |
| | Level-3 | 90% of students scoring more than 50% marks CO wise |
| Assessment Method | Attainment Level | |
| FA | Level-1 | 50% of students scoring more than 50% marks CO wise |
| | Level-2 | 60% of students scoring more than 50% marks CO wise |
| | Level-3 | 70% of students scoring more than 50% marks CO wise |

- Find the final attainment level of the course as average of the levels of SA and FA.

For example,

CO Attainment Sheet for Regular Semester

| Semester (Regular) (Academic Year) | | Course Name : | | | | |
|------------------------------------------------|---------|-------------------------------------------------------------|--------------------------|--------------------------|--------------------|----------------|
| Program Name and code: | | Course Code | | | | |
| Sr. No | Roll No | Name of the Student | Summative Assesment (SA) | Formative Assesment (FA) | | |
| | | | University Exam (UE) | Class Test (CT) | Internal Exam (IE) | Assignment (A) |
| | | | Maximum Marks | | | |
| | | | 50 | 20 | 15 | 20 |
| 1 | | | 20 | 12 | 8 | 10 |
| 2 | | | 44 | 18 | 12 | 20 |
| 3 | | | 24 | 17 | 10 | 15 |
| 4 | | | 12 | 10 | | 10 |
| 5 | | | 32 | 20 | 15 | 20 |
| 6 | | | 12 | 8 | 10 | |
| 10 | | | 8 | 10 | 6 | |
| 13 | | | 10 | 10 | 10 | 10 |
| 14 | | | 37 | 12 | | 15 |
| 15 | | | 38 | 14 | 12 | 15 |
| Total Pass | | (>=40% in "UE" and "CT" and/or "IE" and/or "A" and/or "OA") | 10 | 15 | 13 | 13 |
| Total Attained | | (>=50% in "SA" and "FA") | 6 | 14 | 12 | 13 |
| Attainment in semester | | Attainment % | 60 | 93.33333333 | 92.30769231 | 100 |
| | | | SA | FA(CT, IE, A, OA) | | |
| Average | | | 60 | 94.74358974 | | |
| Attainment level | | | 2 | 3 | | |
| Final Level of attainment of the course | | | 2.3 | | | |

Note: Extract the students who scored less than 40% in SA and FA and maintain the above attainment sheet for backlog students separately.

Step 5: Extract the weighted average calculated in CO-PO and CO-PSO mapping matrix for the course.

Step 6: Find the attainment level of POs and PSOs as

$$\text{Level of PO attainment} = \frac{\text{Weighted average of PO} * \text{Final attainment Level of course}}{3}$$


$$\text{Level of PSO attainment} = \frac{\text{Weighted average of PSO} * \text{Final attainment Level of course}}{3}$$

Step 7: Find the average level of CO-PO and CO-PSO attainment of the course

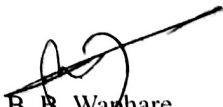
For Example,

| CO | POs | | | | | PSOs | | |
|-------------------------------------------------------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|----------|
| | PO1 | PO2 | PO3 | PO4 | PO5 | PSO1 | PSO2 | PSO3 |
| CO1 | 1 | 3 | 1 | 3 | 3 | 3 | 2 | - |
| CO2 | 2 | 1 | 3 | 2 | 2 | 2 | 2 | - |
| CO3 | 2 | 2 | 2 | 2 | 3 | 1 | 2 | - |
| CO4 | 1 | 1 | 1 | - | 1 | 3 | 1 | - |
| CO5 | 3 | - | - | 3 | 1 | 1 | 2 | - |
| CO6 | 2 | - | 2 | 2 | - | 2 | 3 | - |
| Average | 1.83 | 1.75 | 1.80 | 2.40 | 2.00 | 2.00 | 2.00 | - |
| 1 : Slight (Low) 2: Moderate (medium) 3: Substantial (high) - : None | | | | | | | | |
| Course | POs | | | | | PSOs | | |
| | PO1 | PO2 | PO3 | PO4 | PO5 | PSO1 | PSO2 | PSO3 |
| Weighted Average | 1.83 | 1.75 | 1.8 | 2.4 | 2 | 2 | 2 | - |
| Attainment Level | 1.41 | 1.34 | 1.38 | 1.84 | 1.53 | 1.53 | 1.53 | - |
| Average Level of CO-PO, CO-PSO attainment | 1.50 | | | | | 1.53 | | |

Step8: Attainment sheet of each course will be submitted to IQAC and IQAC will suggest the corrective measures.


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Program Attainment Designing Committee

Amendment-2

From the academic year 2016-17 the Program Attainment Designing Committee prepared the Program Attainment Evaluation policy document under the guidance of IQAC with the objective, to ensure the evaluation of attainment of COs, POs and PSOs. As per the instructions received from the IQAC, the committee decided in the meeting on December 1, 2021 to make some changes in the calculation part of the attainment procedure to enhance the quality of CO-PO/PSO attainment . The said amendment will be applicable from the batch 2018-19.

Step wise procedure for preparing CO-PO/PSO attainment:

Step 1: Design CO, PO and PSO by using Bloom's Taxonomy, graduate attributes given by UGC and Vision and Mission of the college.

Step 2: For each Course prepare CO-PO, CO-PSO mapping. Assign the level according to the correlation between a particular CO-PO, CO-PSO as given below:

3: Substantial (High) correlation

2: Moderate (Medium) correlation

1: Slight (low) correlation

- : No correlation

For example,

| Course Name: | | | | | | | | | | | | | |
|--------------|-----|-----|-----|-----|-----|-----|-----|-----|------|------|-------|---------------------------------|------|
| COs | POs | | | | | | | | PSOs | | | A V E R A G E | |
| | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | ... | ... | PSO1 | PSO2 | | | |
| CO1 | 3 | 2 | | 2 | | | | | 2 | 2 | | | |
| CO2 | 2 | | 3 | 2 | | | | | 3 | 1 | | | |
| CO3 | | 3 | 2 | 3 | | | | | | 3 | | | |
| CO4 | 1 | 1 | 2 | | | | | | 2 | | | | |
| CO5 | 2 | 3 | | 1 | | | | | 1 | 3 | | | |
| CO6 | | 1 | 3 | 1 | | | | | 2 | | | | |
| Average | 2 | 2 | 2.5 | 1.8 | | | | | 2 | 2.25 | | | 2.09 |

Step 3: Calculate the average of CO-PO/PSO for each course.

Step 4: Each course Incharge has to prepare CO attainment sheet after the declaration of University result by following the steps below:

- Assign 1 if the student score $\geq 40\%$ marks and 0 otherwise
- Prepare the compiled sheet of a batch after completing the program.
- Find the average % of CO as

$$= \frac{\Sigma \text{ scores of all students for particular course}}{\text{Total Number of students}} \times 100$$

- As per the average % of CO assign the level of CO attainment as
3 if average % of CO of course ≥ 70 ,
2 if average % of CO of course is ≥ 60 and < 70
1 if average % of CO of course < 60 .

Step 5 : Prepare a course wise chart of average CO-PO/PSO obtained in step 2 and find its average.

Step 6: Find PO/PSO attainment level of the course as

$$= \frac{\text{Level of CO attainment} * \text{Avg of CO-PO/PSO Mapping}}{3}$$

Step 7: To find the CO-PO/PSO attainment Level of a course, the benchmark is given by IQAC

For Professional Programs - CO-PO/PSO attainment level will be achieved if PO/PSO attainment level of the course obtained in **Step 6** is greater equal 70% of average of average CO-PO/PSO obtained in **Step 5**


For Non-Professional Programs- CO-PO/PSO attainment level will be achieved if PO/PSO attainment level of the course obtained in **Step 6** is greater equal 80% of average of average CO-PO/PSO obtained in **Step 5**


Assign 1 if target CO-PO/PSO attainment level is achieved and 0 otherwise

Step 8: Find Average % of CO-PO/PSO attainment Level as

$$= \Sigma CO - PO/PSO \text{ attainment level of all courses} * 100$$

Step 9: Attainment sheet of each program will be submitted to IQAC and IQAC will suggest the corrective measures and will decide the benchmark for the next batch.


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