

Procedure for Attaining COs, PSOs & POs

1] Every departmental committee will finalize course outcomes for each course after discussing with all teachers of the department and BOS members.

2] Procedure for attainment of COs:

2.1 : Course outcomes will be attained by **Direct and Indirect methods**.

- Direct method (Attainment): The following criteria will be followed in the direct attainment of COs.

I) Internal tests will be conducted based on COs.

II) Class performance activities like assignments, tutorials, quiz, any other activities related to COs will be conducted.

III) Marks of End semester theory examination will be considered.

-Indirect method (Attainment):-

I) In this method, the feedback from students taken on the preformed questionnaires will be considered.

2.2 : A common format of programmed excel sheet will be used for finding the average attainment of COs.

2.3 : The following levels-table will be used for three target levels: low, medium and high attainment for direct and indirect methods.

Level	Average percentage
Low(1)	41-50 %
Medium(2)	51-60 %
High(3)	61% above

2.4 : Target level for attainment of COs will be decided on the average marks of that course in the previous year.

2.5: Attainment level calculation for each CO = 80 % of direct level +20 % of indirect level of that CO.

2.6: Attainment level of all course outcomes of a course will be displayed in table format.

CO Attainment- (I) Direct method → Internal assessment [A] & External assessment [B] → % of students secure more than average marks in [A] → % of students secure more than average marks in [B] = $(A+B)/2$ → Direct average percentage. → Direct level value. [A¹]

CO Attainment- (II) Indirect method:

Indirect percentage of students more than average grading → Indirect level value [B¹]

Final Attainment value

CO attainment for ith course (C_i) = 80% of A¹ + 20% of B¹

3] CO-PO mapping

- Each course outcome will be mapped in alignment to one or more POs.

4] Procedure for attainment of POs / PSOs

4.1] Program outcomes will be attained through direct and indirect methods.

- **Direct Attainment: -**

All the courses which are mapped to particular PO will be considered. Then direct attainment value will be calculated based on the following formula.

Direct PO attainment: -

(Sum of average attainment level of course outcomes mapped to PO) / (total no of courses).

• **Indirect Attainment: -**

In this method, the feedback of students taken on the pre designed questionnaires will be considered.

4.2] Final PO attainment for j^{th} PO

$$PO_j = \frac{\sum_{i=1}^m APO_{ij} \times C_i}{\sum_{i=1}^m APO_{ij}}, j = 1, 2, \dots, k,$$

Where m – number of courses

k – number of POs

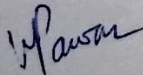
C_i - Course attainment for i^{th} course.

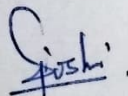
APO_{ij} - Average PO level for j^{th} PO corresponding to i^{th} course.

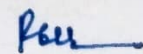
Level	PO attainment range
Poor	$0.5 \leq \text{PO attainment value} < 1$
Average	$1 \leq \text{PO attainment value} < 1.5$
Good	$1.5 \leq \text{PO attainment value} < 2$
Very Good	$2 \leq \text{PO attainment value} < 2.5$
Excellent	$2.5 \leq \text{PO attainment value} < 3$

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

4.5] Same procedure will be used for obtaining the attainment of PSOs.


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