

### Evaluation Steps for CO Attainment:

**Step 1: CO Direct Attainment = Formative Assessment (50%) + Summative Assessment (50%).**

- Course Outcomes around 3-6 in numbers are framed by the individual course teacher are tabulated.
- The Course Outcomes are mapped to the program outcomes with various levels (1-low, 2-moderate and 3-high) are tabulated.
- The Average CO correlation level of all the CO"s of individual course is calculated as

$$\text{Average} = \frac{y}{x}$$

Where x = no. of CO"s mapped,

y = sum of correlation level values of all CO"s in that column and tabulated.

**Step 2:**

The questions in the Internal Assessment Papers are mapped to appropriate CO"s of the course

**Step 3:**

The marks obtained by the students for all the questions in internal tests are tabulated in the spreadsheet and grouped based on the CO"s.

**Step 4:**

The total marks scored by the students for questions mapped to individual CO"s are calculated. Then the percentage of students scored more than 50% is calculated.

**Step 5:** The Internal Assessment Attainment is calculated as

**Level 1:** if 50% of students score > 50% of marks

**Level 2:** if 60% of students score > 50% of marks

**Level 3:** if 70% of students score > 50% of marks

**Step 6:** As bitwise marks are unknown to us in Summative Assessment conducted by University, hence the score by the students in each CO"s are assumed to be map to the all CO"s.

The Summative Assessment is calculated as

$$\text{Summative Assessment} = \frac{a}{b}$$

Where a= Number of Students reach the set target, b=No. of students

The target set for the university average is 50%

**Level 1:** if 50% of students score > 50% of marks

**Level 2:** if 60% of students score > 50% of marks

**Level 3:** if 70% of students score > 50% of marks

CO attainment will be same for all CO"s of the course

**Evaluation steps for direct assessment:**

The PO attainment of each course is calculated by using two tables

CO-PO Mapping Table (Program level mapping matrix)

CO-PO Attainment table (Program level Attainment matrix)

**a) CO-PO Mapping Table (Program level mapping matrix):**

- ✓ Each CO is mapped to some of the PO"s by course teacher with different correlation levels.
- ✓ Sum of all correlation levels between CO"s against each PO"s are tabulated.
- ✓ The average of all CO"s with each PO"s is calculated as

Average = (Sum of correlation levels) / (No. of CO mapped)

**b) CO-PO Attainment table (Program level Attainment matrix):**

- ✓ The mapped CO with PO using the attained individual COs is calculated as =  
[Attained CO grade \* Level of CO mapped with PO/PSO]/Maximum Attainment Level.
- ✓ Weighted Sum of all correlation levels between CO"s against each PO"s/PSOs are tabulated.