



Office of the Principal

**RANGAPARA COLLEGE, RANGAPARA**

ৰঙাপৰা মহাবিদ্যালয়, ৰঙাপৰা

(Affiliated to Gauhati University, UGC Recognised under 2(f) & 12 (B))

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## 2.6.1 ATTAINMENT OF PROGRAMME OUTCOMES AND COURSE OUTCOMES



  
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## CALCULATION FOR COURSE OUTCOME AND PROGRAM OUTCOME ATTAINMENT

Step1. Definite course outcomes (COs) are established for each course, which are mapped with program outcomes (POs) and program specific outcomes (PSOs).

| CO-PO Mapping |      |     |      |      |     |      |      |
|---------------|------|-----|------|------|-----|------|------|
| CO            | PO1  | PO2 | PO3  | PO4  | PO5 | PSO1 | PSO2 |
| CO1           | 3    | 3   | 3    | 1    | 3   | 2    | 2    |
| CO2           | 2    | 3   | 3    | 2    | 2   | 3    | 2    |
| CO3           | 3    | 3   | 3    | 3    | 3   | 2    | 3    |
| CO4           | 3    | 3   | 2    | 3    | 2   | 2    | 2    |
| Average       | 2.75 | 3   | 2.75 | 2.25 | 2.5 | 2.25 | 2.25 |

CO-PO mapping is done based on the following conditions:

- (a) CO is highly correlated with the PO, mapping attainment for that CO = 3
- (b) CO is moderately correlated with the PO, mapping attainment for that CO = 2
- (c) CO is slightly correlated with the PO, mapping attainment for that CO = 1

$$\text{Average} = \frac{(\sum_1^4 \text{CO})}{4}$$

  
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**Step 2.** Certain well-defined internal assessment tools (unit tests, quizzes, assignments, sessional exams, field work and project work) and external assessment tools (semester exams) aid in attaining individual COs. Attainment for internal evaluations are done on a scale of 3.

For example, for CO attainment for a certain program using unit tests as the assessment tool, two tests “Test 1 and Test 2” are conducted. Test 1 is comprised of CO1 and CO2, and Test 2 is comprised of CO3 and CO4. In Test 1, questions (Q. No) 1,2 and 3 are for CO1 and Q. No 4 and 5 are for CO2. Similarly, in Test 2, Q. No 1, and 2 are for CO3 and Q. No 3, 4 and 5 are for CO4.

|       |      |         | Tool       | Test 1 |        | Test 2 |       |
|-------|------|---------|------------|--------|--------|--------|-------|
|       |      |         | CO         | 1      | 2      | 3      | 4     |
|       |      |         | Q.No       | 1,2,3  | 4,5    | 1,2    | 3,4,5 |
|       |      |         | QP link    | Link   | Link   | Link   | Link  |
|       |      |         | Max. Marks | 10     | 10     | 10     | 10    |
| Sl No | Name | Roll No | Marks      | Marks2 | Marks3 | Marks4 |       |
| 1     | A    | 2       | 10         | 8      | 6      | 8      |       |
| 2     | B    | 8       | 8          | 10     | 8      | 10     |       |
| 3     | C    | 9       | 8          | 8      | 8      | 8      |       |
| 4     | D    | 10      | 8          | 6      | 6      | 8      |       |
| 5     | E    | 12      | 2          | 8      | 8      | 6      |       |
| 6     | F    | 13      | 6          | 8      | 4      | 8      |       |
| 7     | G    | 14      | 7          | 10     | 6      | 6      |       |
| 8     | H    | 15      | 4          | 10     | 8      | 8      |       |

**Calculations:** Attempts: number of students attempting the test

**Score  $\geq$  50%:** number of students who scored  $\geq$  50% of the maximum marks (The threshold limit of 50% is set by the college.)

$$\text{Attainment\%} = \frac{\text{Score above 50\%}}{\text{Attempts}}$$

$$\text{Attainment on 3 scale} = \text{Attainment\%} \times \left(\frac{3}{100}\right)$$

|                       | CO1  | CO2 | CO3   | CO4 |
|-----------------------|------|-----|-------|-----|
| Attempts              | 8    | 8   | 8     | 8   |
| Score $\geq$ 50%      | 6    | 8   | 7     | 8   |
| Attainment%           | 75   | 100 | 87.5  | 100 |
| Attainment on 3 scale | 2.25 | 3   | 2.625 | 3   |

CO attainments on 3 scale can be calculated similarly for other internal assessment tools.

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**Step 3.** Attainment for final semester examination attainment is also done on a scale of 3.

|       |      |         | Tool            | Semester Examination |
|-------|------|---------|-----------------|----------------------|
|       |      |         | CO              | 1,2,3,4              |
|       |      |         | Q. Nos          | 1,2,3,4,5            |
|       |      |         | Max. Marks      | 80                   |
| Sl No | Name | Roll No | Column1         |                      |
| 1     | A    | 2       | 55              |                      |
| 2     | B    | 8       | 75              |                      |
| 3     | C    | 9       | 60              |                      |
| 4     | D    | 10      | 61              |                      |
| 5     | E    | 12      | 42              |                      |
| 6     | F    | 13      | 58              |                      |
| 7     | G    | 14      | 77              |                      |
| 8     | H    | 15      | 70              |                      |
|       |      |         | Attempts        | 8                    |
|       |      |         | Score above 60% | 7                    |
|       |      |         | Attainment%     | 87.5                 |

**Attainment scale:** The range for different attainments for semester examination is set by the academic council of the college.

| Level   | Attainment % for COs | Attainment |
|---------|----------------------|------------|
| Level 1 | Between 30% to 60%   | 1          |
| Level 2 | Between 60% to 80%   | 2          |
| Level 3 | Above 80%            | 3          |

  
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**Step 4.** The final attainment for each CO is calculated by taking 20% of internal assessment attainment and 80% of semester exam attainment.

**Calculations:**

- (i) Attainment of internal assessment =  $\frac{\sum \text{Attainment from all internal assessment tools}}{\text{No. of assessment tools}}$
- (ii) Overall attainment = [Attainment from Semester Exam (on 3 scale)  $\times$  0.8] +  
[Internal Assessment (on 3 scale)  $\times$  0.2]

For example, in the table below, three tools are used for attainment of internal assessment, wherein the average of unit tests, quiz and assignments, and sessional exam are considered for calculation.

| Attainment of Internal evaluation on 3 scale |       |                     |                |              |            |                        |                                  |  |   |
|--|-------|---------------------|----------------|--------------|------------|------------------------|----------------------------------|--|---|
| Course Outcome                               | Test  | Quiz and Assignment | Sessional Exam | Project Work | Field Work | No of assessment Tools | Internal Assessment (on 3 scale) | Attainment from Semester Exam (on 3 scale) | Attainment (Attainment formula: Semester Exam 80% + Internal 20%) |
| C01  | 2.25  | 2.8125              | 2.625          | 0            | 0          | 3                      | 2.5625                           | 3  | 2.9125  |
| C02  | 3     | 2.8125              | 3              | 0            | 0          | 3                      | 2.90625                          | 3  | 2.98125   |
| C03  | 2.625 | 2.625               | 2.625          | 0            | 0          | 3                      | 2.625                            | 3  | 2.925   |
| C04  | 3     | 2.625               | 3              | 0            | 0          | 3                      | 2.8125                           | 3  | 2.9625  |

**Step 5.** Finally, CO-PO attainment is calculated from the following formula

$$\text{CO-PO attainment} = \frac{(\text{Mapping attainment for CO-PO (in Step1)}) \times (\text{Overall Attainment (in Step 4)})}{3}$$

| CO-PO Attainment |        |         |         |        |        |             |             |
|------------------|--------|---------|---------|--------|--------|-------------|-------------|
| CO               | PO1    | PO2     | PO3     | PO4    | PO5    | PSO1        | PSO2        |
| C01              | 2.9125 | 2.9125  | 2.9125  | 0.9708 | 2.9125 | 1.941666667 | 1.941666667 |
| C02              | 1.9875 | 2.98125 | 2.98125 | 1.9875 | 1.9875 | 2.98125     | 1.9875      |
| C03              | 2.925  | 2.925   | 2.925   | 2.925  | 2.925  | 1.95        | 2.925       |
| C04              | 2.9625 | 2.9625  | 1.975   | 2.9625 | 1.975  | 1.975       | 1.975       |

  
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