



Government College for Men (A), Kadapa

2.6.2 - Attainment of Programme Outcomes and Course Outcomes

Introduction:

- The Student completing graduation is expected to possess certain qualities, during and after the completion of his/her program and are referred to as Program Outcomes (POs)/Program Specific Outcomes (PSOs).
- The Government College for Men (A), Kadapa evaluates the outcome of the programmes offered by analysing the attainment after the publication of the semester exam results. The outcome of programmes and courses are assessed based on the internal and external evaluations. While internal evaluation outcome is analysed at the department level, the external evaluation results are assessed by the office of the controller of examinations.
- The assessment of outcome of the external evaluation is shared by COE to the respective departments and the IQAC for follow-up action, besides presenting them for the approval of the Staff Council, Academic Council and Governing Body for approval.
- Although the college regularly analyses the outcome of our graduates through the comprehensive result analysis, the college has incorporated the principles of Outcome-Based Education (OBE) in its complete sense from the Academic Year 2021-22.
- The evaluation of outcome has become more scientific after the introduction of the OBE, wherein the Course Outcomes (COs) are related to the Programme Outcomes (POs) and Programme Specific Outcomes (PSOs).
- To determine the Course Outcome Attainment, the college has utilised Direct and Indirect Methods.
- **Direct Method:** incorporates the calculation of Continuous Assessment Marks for 40 marks. Two Internal Examinations will be conducted for 20 marks and taken best of one as final Internal Marks. In addition to that Assignment carries -10 marks, Seminar carries- 5 marks, Extra Curricular activities carries- 5 marks. The End Semester Examinations will be conducted for 60 marks.
- **Indirect Method:** shows the students' feedback on the course attainment (academic aspects and demonstrable skill) by using Course Exit Survey and Programme Exit Survey.
- In general, by making the outcome of the course measurable, the college consistently attempts to make the teaching, learning and evaluation system relevant in the emerging times.
- In three years of UG programs, the method of achieving COs, POs, and PSOs begins with writing acceptable COs for each course of the program from the first year to the final year.
- The expert faculty members write the course outcomes using action verbs of learning levels suggested by Bloom's taxonomy. Then, a correlation is established between COs and PO's on a scale of 1 to 3, with one being the weak (low), two being moderate (medium), and three being significant (high).
- In this respect, a mapping matrix is prepared for each course in the program. A committee of senior faculty members regularly examines the course outcomes written and their mapping with POs before they are finalized.

The following tables show the COs and the CO-PO mapping matrix:

Relation of CO with POs and PSOs	Weightage Value
High	3
Moderate	2
Low	1

The level of CO achievement can be measured based on the internal and external examinations conducted by the institute.

Course Attainment levels:

The Course attainment is based on semester-end examinations conducted, and internal assessments conducted periodically during the semester. The CO attainment is defined at three levels as follows:

- 1.Level-1: 30% of students achieved more than the class average
- 2.Level-2: 40% of students achieved more than class average;
- 3.Level-3: 50% of students achieved more than the class average.

Attainment of PO:

In order to calculate the attainment of POs, a similar methodology is followed. The PO attainment is based on the average attainment level of corresponding courses (Direct Method) and feed-back survey (Indirect method);

Attainment of Program Outcomes, Program Specific Outcomes and Course Outcomes:

- The Program Outcomes (POs) and Program Specific Outcomes (PSOs) are accomplished through the CO attainment of all curriculum components.
- Course Outcomes (COs) are defined for each course based on the course content and learning objectives.
- COs are the statements of knowledge/ skills/ abilities that students are expected to know, understand and perform as a result from their learning experiences in each course
- Course Outcomes (CO1, CO2,...CO4) are mapped to POs (PO1, PO2, PO3,... PO10) and PSOs (PSO1, PSO2, PSO3).
- A set of performance evaluation criteria is used for quantitative assessment of CO.

Following are the different methods for Assessment, Evaluation and Measurement of POs/PSOs:

1. Direct Assessment method
2. Indirect Assessment method

Direct Assessment Method:

Direct Assessment is done based on the internal and External Evaluation which are explained below:

Continuous Assessment: COs are assessed through Internal Examinations, Assignment and Lab records. The COs are mapped against POs/PSOs.

COs-POs/PSOs Mapping with Weights:

The contributions/relations of COs are assessed and assigned to POs and PSOs in the form of weights.

COs-POs/PSOs Mapping with Weights

Relation of CO with POs and PSOs	Weightage Value
High	3
Moderate	2
Low	1

Semester-end Theory Examinations: The questions in semester-end examinations are tested pertaining to all COs, in varying Blooms Taxonomy Levels.

Laboratory Records: Both continuous and semester-end examinations are conducted to test the COs attainment.

Indirect Assessment Methods:

Indirect Method is conducted by Course Exit Survey and Programme Exit Survey.

Course Exit Survey:

At the end of every semester, Course Exit Survey is conducted to assess the percentage of attainment of each Course Outcome which is based on the feedbacks obtained from the students. After the completion of the assessment, the course teachers consolidate the attainment level and the course outcomes are obtained based on the yardsticks set for all the programmes. On following the myriad variables namely course content, practical and theoretical component of the course and assessment system, course outcomes are attained. These methods are adopted on using the OBE pattern for Course Outcome attainments.

Programme Exit Survey:

Programme Exit Survey is an online survey conducted to assess the level of students' understanding on the attainment of Programme Outcomes/ Programme Specific Outcomes after the completion of 3 years for Under Graduate and 2 years for Post Graduate programmes.

Overall Attainment:

The overall attainment of a programme is determined based on the students' performance in the examinations, Course Exit Survey and Programme Exit Survey. The above mentioned surveys facilitates to understand and evaluate the attainment of outcomes.

At the end of each program, the PO/PSO attainment is calculated from the CO attainment of all courses for all semesters in a Program. In each Course, the level of CO attainment is compared with the predefined targets and gaps are identified. The gaps are identified from learner point of view at course level and programme level. To bridge the gaps and to imbibe qualities completely in a student an **Action Plan** is prepared and implemented to improve the performance of the student and to achieve the set target.

Methodology for Computation of CO PO/PSO Attainment

The following methodology is adopted for computation of CO-PO/PSO attainment:

Step 1: Defining of Programme Outcomes and Programme Specific Outcomes which the learner is able to acquire qualities and they are uniform for all Programmes offered by the institution.

Step 2: Specifying Outcomes for each Course based on the content.

Step 3: Fixing the Target as 60% i.e. 15 Marks for Continuous Internal Assessment or Direct Assessment (25 Marks).

CO_DA = Total Number of Students reached the target / Total number of students attended

Step 4: Fixing the Target as 60% i.e. 9 Marks for Indirect Assessment (15 Marks).

CO_IA = Total Number of Students reached the target / Total number of students attended

Step 5: Fixing the Target as 40% i.e. 24 Marks for Final Assessment (75 Marks).

CO_FA = Total Number of Students reached the target / Total number of students attended

Step 6: Mapping of COs with POs/PSOs by assigning weights.

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	2	3	3							3
CO2	3	1	3							2
CO3	3	2	3							3
CO4	1	2	2							3
Average	2.25	1.75	2.75							2.75

Average of COs = (Sum of COs Weights / Number of COs)

SEMESTER-WISE DIRECT ASSESSMENT/ATTAINMENTS

PO_DA of PO1 = Sum (Average of COs X CO_DA of all Courses in a Semester of program)/
Sum (Average of COs of all Papers in the Program of a Semester) Corresponding to PO1

PO_DA of PO2 = Sum (Average of COs X CO_DA of all Courses in a Semester of program)/
Sum (Average of COs of all Papers in the Program of a Semester) Corresponding to PO2

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PO_DA of PO10 = Sum (Average of COs X CO_DA of all Courses in a Semester of program)/
Sum (Average of COs of all Papers in the Program of a Semester) Corresponding to PO10

SEMESTER-WISE INDIRECT ASSESSMENT/ATTAINMENTS

PO_IA of PO1 = Sum (Average of COs X CO_DA of all Courses in a Semester of program)/
Sum (Average of COs of all Papers in the Program of a Semester) Corresponding to PO1

PO_IA of PO2 = Sum (Average of COs X CO_DA of all Courses in a Semester of program)/
Sum (Average of COs of all Papers in the Program of a Semester) Corresponding to PO2

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PO_IA of PO10 = Sum (Average of COs X CO_DA of all Courses in a Semester of program)/
Sum (Average of COs of all Papers in the Program of a Semester) Corresponding to PO10

SEMESTER-WISE FINAL ASSESSMENT/ATTAINMENT

PO_FA of PO1 = $\frac{\text{Sum (Average of COs X CO_DA of all Courses in a Semester of program)}}{\text{Sum (Average of COs of all Papers in the Program of a Semester) Corresponding to PO1}}$

PO_FA of PO2 = $\frac{\text{Sum (Average of COs X CO_DA of all Courses in a Semester of program)}}{\text{Sum (Average of COs of all Papers in the Program of a Semester) Corresponding to PO2}}$

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PO_FA of PO10 = $\frac{\text{Sum (Average of COs X CO_DA of all Courses in a Semester of program)}}{\text{Sum (Average of COs of all Papers in the Program of a Semester) Corresponding to PO10}}$

PROGRAMME-WISE DIRECT ASSESSMENT/ATTAIMENT

Programme-Wise DA = Average of Sem-Wise DA X 100

PROGRAMME-WISE INDIRECT ASSESSMENT/ATTAIMENT

Programme-Wise IA = Average of Sem-Wise IA X 100

PROGRAMME-WISE FINAL ASSESSMENT/ATTAIMENT

Programme-Wise FA = Average of Sem-Wise FA X 100

For Example: The PO Attainment for a Program Biotechnology.Zoology.Chemistry (Bio.Z.C) for the student batch of 2019-2022 attained as follows:

For the Student Batch 2019-22 (Bio.Z.C)

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
DA	82	81	80	82	81	82	83	80	81	81
IA	83	83	82	83	83	83	84	82	83	83
FA	96	96	96	96	96	96	96	96	96	96

DA: Direct Attainment

IA: Indirect Attainment

FA: Final Attainment