



MALINENI LAKSHMAIAH WOMEN'S ENGINEERING COLLEGE, GUNTUR
 Approved by AICTE, New Delhi & Affiliated to JNTUK, Kakinada
 (An ISO9001:2008 Certified Institution)
 Pulladigunta (Vil), Vatticherukuru (Md), Prathipadu Road, Guntur – 522 017 A.P.

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

3.3.1 Attainment of Program Outcomes and Program Specific Outcomes

Program Outcomes and Program Specific Outcomes of the Program are attained by using two methods:

- Direct Assessment
- Indirect Assessment

A. Course Assessment Tools and Weightages For Direct Assessment

The assessment methods and tools for PO and PSO attainments for direct assessment are tabulated below Table 1:

Table.1: Course Assessment Tools and Weightage for Direct Assessment

Course	Assessment Tool		Weightage	Total
Theory Courses	CIE	Descriptive Exam	25%	100%
		Quiz (Q1)		
		Assignment (A1)		
		Descriptive Exam		
		Quiz (Q2)		
		Assignment (A2)		
	SEE	75%		
Laboratory Courses	CIE	25%	100%	
	SEE	75%		
Technical Seminar	CIE	100%	100%	
Project Work	CIE	30%	100%	
	SEE	70%		

Indirect Assessment:

The following Surveys/Feedbacks are conducted during the course of study of program in each semester or end of the program. Evaluated data in terms of attainment percentages of the students is collected from the Course/Program coordinator.

Table 2 Summary of Surveys Conducted:

S.No	Survey	Frequency of Assessment is done
1	Program Exit Survey	Once at the end of Program
2	Employer Feedback	Once at the end of Program
3	Extra Curricular/Co-curricular Activities	Once at the end of Program

Table 3 shows the assessment tools and weightages used to evaluate the overall attainment of program outcomes from all the courses through direct and indirect assessment tools.

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Table.3 Tools and Weightages for Overall Attainment

Courses	Assessment Methods	Assessment Tools	Weightage	Total
For all Courses (Theory, Practical, Technical seminar, Mini project and Project work Courses)	Direct Assessment (DA)	Continuous Internal Evaluation(CIE)	80%	100%
		Semester End Exam (SEE)		
	Indirect Assessment (IDA)	Course End Survey (CES)	20%	

Procedure to compute attainment of program outcomes (POs) and Program Specific Outcomes (PSOs)

Step1: Compute Course Outcomes (COs) of each course are obtained through CIE and SEE.

Step2: COs are processed through Course Articulation Matrix (CO-PO Mappings) to get corresponding PO/PSO attainment of the courses.

Step3: With the help of course articulation matrix, the attainment level of the program outcome for that particular course can be computed as per method described below.

$$PO_k = \frac{\sum_{i=1}^n (C_i * W_i)}{\sum_{i=1}^n W_i}$$

PO_k = Attainment of k^{th} Program Outcome

n = number of Course Outcomes

C_i = Attainment of i^{th} Course Outcome

W_i = Weight of i^{th} Course Outcome (Mapping level 1,2,3)

Example:

For 1st Program Outcome PO1,

n = Number of Course Outcomes = 5

$$PO_1 = \frac{(C_1 * W_1) + (C_2 * W_2) + (C_3 * W_3) + (C_4 * W_4) + (C_5 * W_5)}{(W_1 + W_2 + W_3 + W_4 + W_5)}$$

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A similar procedure is followed for computing all other program outcomes from PO2 to PO12 and PSOs.

Once all the attainment levels of the program outcomes are computed for each of the courses, the average attainment levels of the program outcomes are computed from the program articulation matrix .

By integrating both the direct and indirect attainment levels with a sum of direct (80%) and indirect (20%), attainment levels of POs are being compared with the target levels.

An analysis is done on the attainment of POs and necessary action will be suggested for non-attainment of program outcomes.

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