2.6.2: Attainment of POs and COs are evaluated

The attainment of POs and COs is evaluated by deploying direct and indirect assessment tools. Following are the indicative tools used for calculating the attainment.

Direct Assessment Tools and Methods for CO attainment:

1. Question papers for theory and Laboratory course examinations

2. Rubrics for all the viva-voce examinations

Indirect Assessment Tools and Methods:

1. Program exit survey for POs

Attainment of COs based on target performance level (TPL) of the courses

As discussed in earlier section the attainment of POs is normally measured with the help of CO attainment of the representative courses. Further, based on the level of contribution of each representative course for the PO attainment, the weightage is given judiciously at three levels i.e. from 3 to 1 (Strong to week). Accordingly, the TPL for each PO is arrived based on the last three to four years performance.

CO attainment:

Above referred assessment tools are deployed to calculate COs. For the attainment of COs related to theory and lab courses the direct assessment tool based on the marks secured in the continuous and semester end assessment are considered. Further, for all the assessments done wherein viva-voice is a part of process, the CO attainment is done through rubrics. For the all the courses, at the end of the semester, course end survey is done for all the students' in-line with the COs. By giving appropriate weightage for the COs attainment from direct and indirect tools, overall CO attainment is calculated. Appropriate rubrics are developed and are in place to measure the outcomes of all the viva-voce examinations viz, Laboratory courses, Term paper, Mini project, Main project and internships.

PO attainment:

The PO attainment is measured by the direct and indirect assessment tools with a weightage of 70% and 30% respectively. For the PO attainment, based on the level of contribution of the each course, a mapping matrix is developed. Based on the CO-PO mapping and weighted average contribution of each CO, overall PO attainment is calculated. As discussed earlier the indirect assessment tool is deployed through the program exit survey for 10%.

PRINCIPAL

PRINCIPAL
Sri Venkateswara College of Engineering&Technology
ETCHERLA, Srikakulam-532410 (A.P)

PROGRAM OUTCOMES (POs)

1. **Engineering knowledge**: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
2. **Problem analysis**: Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.
3. **Design/development of solutions**: Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.
4. **Conduct investigations of complex problems**: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.
5. **Modern tool usage**: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.
6. **The engineer and society**: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.
7. **Environment and sustainability**: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.
8. **Ethics**: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
9. **Individual and team work**: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
10. **Communication**: Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.
11. **Project management and finance**: Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.
12. **Life-long learning**: Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.