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Review Article

An Assessment of the Educational Goals and Program Results for Civil Engineering Programs

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Abstract

This study will use surveys of parents, alumni, and employers to assess the achievement of Programme Educational Objectives (PEOs), while surveys of graduating students, industrial training employers, alumni, and industry employers will assess the achievement of Programme Outcomes (POs). The scores utilized for the reviews are on a size of 1 to 5. The surveys generally revealed that the majority of ratings for PEOs and POs ranged from 3 to 5. This demonstrates that the program's PEOs have been met.

Keywords: programme education objectives, Programme outcomes, Indirect assessment, Undergraduate programme, Civil engineering programme

INTRODUCTION

The office endeavours to give quality schooling and gets ready understudies for different fields in the development business, trade and the scholarly world. By implementing outcome-based education, the extensive and innovative course materials and teaching methods aim to broaden learning opportunities and cultivate a curious mind (Abushandi E, 2021). Students are taught to become professionals with a variety of skills who have the mental, intellectual, and emotional fortitude to succeed. The Civil & Structural Engineering Department strives to constantly pursue its commitment to provide high-quality engineering education by evaluating the Program Educational Objectives (PEOs) and Program Outcomes (POs) of both programs. The requirements of the stakeholders—students, parents, alumni, employers, and nations—are met by the curriculum, delivery, and assessment enhancements. As a result, this paper is prepared to evaluate the accomplishments of PEOs and POs for both programs (Wise SL, 2010). In order to make it feasible and the performance indicator measurable, the number of PEOs currently in place has been reduced to four. Thinking about remarks from Designing License Committee (EAC) board visit in the PEOs for the program have been checked on and united in into four Program Instructive Goals. PEOs for the Civil & Structural and Civil

& Environmental Engineering Programs each have their own distinct specialization areas that set them apart (Baker N, 2019). Incorporating improved performance indicators ensures that the PEO's accomplishments can be measured within three to five years of graduation. For the current PEOs, the most recent statements, detailed descriptions, and performance indicators are provided below. This distinguishes UKM's program from that of other universities and is a one-of-a-kind aspect of the program. One might think of it as a unique niche. Within three to five years of graduation, the performance indicator is to have at least 5% of graduates working in specialized fields. One more pointer for an effective specialist is accomplishing 5% of the alumni having senior positions (Koehn EE, 2001). According to 5% of graduates who will become project leaders in their respective organizations, PEO1 also recognizes the need to produce leaders. This is in line with the UKM's vision, which is to be the leading university that pioneers innovations in creating a dynamic, knowledgeable, and ethical society.

MATERIAL AND METHODS

Educational Goals of the Program

Both programs have emphasized long-term goals for all students that must be accomplished within three to five years

of graduation in order to meet the needs and requirements of stakeholders. In January, the most recent discussion on reviewing the development of PEOs took place. In order to make it feasible and the performance indicator measurable, the number of PEOs currently in place has been reduced to four (Alkharusi H, 2008). The Program Educational Objectives (PEOs) for the program have been reviewed and consolidated into four Program Educational Objectives in response to comments from the Engineering Accreditation Council (EAC) panel visit. PEOs for the Civil & Structural and Civil & Environmental Engineering Programs each have their own distinct specialization areas that set them apart. In order to make the PEO's achievements measurable prior to graduation, improved performance indicators have been incorporated. The PEO2 performance indicator calls for 5% of graduates to be registered as professional engineers after six years, 10% to be registered as professional engineers after ten years, 10% to be registered as specialist consultants, and 30% to be registered as members of international organizations (Meyer A, 2000).

Programme Outcomes: In addition to providing a solid foundation in mathematics and the engineering sciences, the EAC Manual stipulates that any engineering program's curriculum must include related course sequences. Non-technical courses like Management, Ethics, Computing, Business Studies, Communication Skills, and Co-Curriculum are also required to ensure that graduates are better-rounded, as the university requires. In July 2009, twelve POs were combined into ten (Johnson HA, 1992). The new POs are being established to reflect the PEO's modifications and the domain's psychomotor and affective levels.

Parents' Survey: In February 2010, a survey was sent out to parents to find out what they thought of PEO. About half of parents expected their children to work as civil engineers, and almost 40% said they wanted them to continue their education. This corresponds to the. From the first year to the last, Bahasa Malaysia students' communication abilities improved. However, English communication skills have not changed and must be improved (Haberman M, 1982). The majority of parents concur that their children exhibited good leadership qualities, which are referred to. About 60% to 70% of parents are in agreement that their children are aware of the referred-to current issues In January 2010; the Civil & Structural Engineering Department's 2009 graduates participated in a survey about their perceptions of PEO achievement. The survey's outcome is presented. On a scale from 1 to 5, a score of 1 indicates very little competence and a score of 5 indicates very much competence. The majority of ratings received in the survey, which ranged from 3 to 5, indicate that the students' overall performance is satisfactory. This demonstrates that the program's specified PEOs are typically met.

Survey of Graduate Exit for Students: Items related to job selection and self-evaluation of abilities on a number of the PO's stated attributes were included in the survey

(Rompelman O, 2002). The surveys not only asked for numerical ratings, but also open-ended responses to a question about how to improve the department's teaching and learning process. The survey results for August 2009 graduates of the Civil & Structural Engineering Department are presented. For both programs, the scores range from 1 to 5, with 1 denoting very low competency and 5 denoting very high competency. The majority of ratings, which ranged from 3 to 5, indicate that the students' overall performance is good. This demonstrates that the program's objectives are generally met (Oke I, 2020).

CONCLUSIONS

In general, the surveys' results for PEOs indicated that the majority of ratings. This demonstrates that the program's specified PEOs are typically met. In a similar vein, the survey results for PEOs revealed nearly identical ratings between 3 and 5, indicating that the majority of POs are generally met. There are still some teaching and learning strategies that can be incorporated into both programs to improve the quality of the teaching and learning environment and, as a result, PEOs and POs' achievement.

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