

## Learning Outcomes Alignment across Engineering Core Courses

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**Abstract :** In this paper, a team of faculty members of the Petroleum Institute in Abu Dhabi, UAE representing six different courses across General Engineering (ENGR), Communication (COMM), and Design (STPS) worked together to establish a clear developmental progression of learning outcomes and performance indicators for targeted knowledge, areas of competency, and skills for the first three semesters of the Bachelor of Sciences in Engineering curriculum. The sequences of courses studied in this project were ENGR/COMM, COMM/STPS, and ENGR/STPS. For each course's nine areas of knowledge, competency, and skills, the research team reviewed the existing learning outcomes and related performance indicators with a focus on identifying linkages across disciplines as well as within the courses of a discipline. The team reviewed existing performance indicators for developmental progression from semester to semester for same discipline related courses (vertical alignment) and for different discipline courses within the same semester (horizontal alignment). The results of this work have led to recommendations for modifications of the initial indicators when incoherence was identified, and/or for new indicators based on best practices (identified through literature searches) when gaps were identified. It also led to recommendations for modifications of the level of emphasis within each course to ensure developmental progression. The exercise has led to a revised Sequence Performance Indicator Mapping for the knowledge, skills, and competencies across the six core courses.

**Keywords :** curriculum alignment, horizontal and vertical progression, performance indicators, skill level

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