

## Vargo Teaching Chair Project Description

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2020 Vargo Teaching Chair

### Project Description

The University of Alberta's Faculty of Engineering is arguably one of the best engineering schools in Canada. Its faculty members are exceptional instructors and its programs offer a breadth of experiences.

In recent years, the faculty has been at the forefront of engineering education in Canada, instituting changes to improve the quality of teaching, developing new outcomes-based learning approaches and providing new opportunities for our undergraduate students to develop competencies that fall in the Canadian Engineering Accreditation Board's 12 graduate attributes (GAs) to better prepare them for employment and make them better citizens. However, this shift is not universally accepted by the professoriate. The first aim of this project is to develop resources on the merit and means by which to shift to outcomes-based learning.

The most difficult transition for students is between high school and first year university. Engineering programs (unrealistically) expect new students to have a level of abilities attributed to them through the sequence of courses needed to enter engineering, both in terms of knowledge and skills, that are linked to the 12 GAs. The secondary aims of this Vargo proposal, in order to help the transition, are to (1) map the level of high school graduating competencies to the 12 GAs and assess them versus first program expectations; (2) inform a new engineering transition program, B2E, what are key gaps that may need to be addressed specifically in the area of lifelong learning and professional skills.

The first aim was accomplished through a partnership with the faculty of education and the development of the SPARK-ENGG program. The secondary aims are on-going.