



Curriculum Review – Public Report

Department of Civil Engineering

Schulich School of Engineering

<http://schulich.ucalgary.ca/>

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1. Context:

The Civil Engineering program aims to provide undergraduates with a challenging, up-to-date education that exposes students to all the diverse sub-disciplines of Civil Engineering that will be the base for a life-long career. This requires core competencies in analysis, synthesis and communication to address societal problems in Sustainable Communities, Sustainable Infrastructure, Energy & the Environment, and Risk & Safety in Civil Engineering. The first two years of the program concentrate on fundamental science and mathematics, along with key foundation material in static and dynamic analysis, fluid and solid mechanics, and engineering computation. The discipline of Civil Engineering is introduced in the second year. The third and fourth years build on the foundation to cover technical graduate attributes in key areas of application, including Environmental Engineering, Geotechnical Engineering, Material Engineering, Project Management, Structural Engineering, Transportation Engineering, and Water Resources Engineering. Minors in Structural and Transportation are offered as well as specializations in Energy and Environment, and Biomedical. The program aims to develop well-rounded graduating students with a knowledge of all key components of Civil Engineering who can tackle complex problems and excel in a wide variety of engineering disciplines. Civil engineers must integrate resources and knowledge to solve complex technological problems for the betterment of society. The Civil Engineering program has been developed to provide a solid grounding in technical knowledge as well as the ability to work in interdisciplinary groups to design and operate sustainable systems and infrastructure for society.

3. Guiding questions:

In consultation with departmental representatives and the Civil Engineering Industry Advisory Council, the following questions were identified to guide the curriculum review;

1. How are we connecting theory to practice?
2. Where are the gaps and redundancies?
3. What is the right balance of discipline-specific courses and interdisciplinary courses?
4. How might we plan a non-traditional learning experience for students?
5. Do we have the right core (required) courses in the program?

8. Action Plan:

Recommendations – Program Level			
Recommendation	Action Item	Timeline for Implementation	Lead Responsibility
Increase “open-ended” engineering design experience	Incorporate design specific projects in the second-year course ENCI 337	1 year	Associate Head Undergraduate, Course Instructor
	Examine how best to incorporate open-ended design in the third-year with introduction of a third-year design course	2 years	Undergraduate Curriculum Committee
Increase industry involvement	Develop a more formal industry speaker series for civil engineering	1 year	Department Head, Instructor
	Examine how to incorporate industry inspired open-ended design projects in second and third years	2 years	Undergraduate Curriculum Committee
Solve identified gaps in core-courses	Implement strategies to address identified gaps through new courses and adjustment to current courses.	2 years	Associate Head Undergraduate, Instructors
Reduce impact of pre-reqs on time to graduation	Formulate clearer guidelines and time frame for use of supplemental exams	1 year	Associate Head Undergraduate, Instructors
Ensure the above recommendations are being implemented as per the recommended timeline.	Meet at the beginning of each semester and review the progress. If necessary, invite relevant leads for each action item indicated above. Organize annual industry meetings for further feedback.	3 years	Department Head, Associate Head Undergraduate