Investigation of Students’ Exposure to Engineering Practice

2013 Final Year Project Proposals in the School of Electrical, Electronic and Computer Engineering the School of and Mechanical and Chemical Engineering, The University of Western Australia.

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Engineering educators design initiatives to expose students to engineering practice, as required for accreditation of engineering programs. Potential benefits noted in literature on industry engagement include improved student motivation and learning outcomes due clear relevance of learning and practical demonstration of concepts, improved motivation and learning outcomes due to better understanding of potential future roles, development of professional competencies required for engineering practice, and development of understanding of engineering processes. These final year projects will complement a project undertaken by Dr Male for the Australian Council of Engineering Deans to enhance industry engagement in engineering programs. Three projects are offered. In each, a student will explore conceptual understanding and capability developed by students engaged in one of three engineering curriculum initiatives designed to expose students to engineering practice. The student will identify the benefits to undergraduate engineering students of the specific initiative and identify strengths, weaknesses and recommendations for improvements. The student will review relevant literature, develop a research plan, and collect and analyse data. In developing the research plan the student will identify relevant sources of data including stakeholders and course materials, and methods of collecting data including interviews, surveys, and/or observations. The student will employ qualitative and/or quantitative analysis appropriate to the research design.
The Three Projects

Project 1. Investigation of Students’ Exposure to Engineering Practice through Authentic Projects

In this project the student will explore conceptual understanding and capability developed by students through exposure to industry practice in one engineering unit in the student’s school.

Supervisors: Dr Male and a supervisor in the student’s school

Project 2. Investigation of Students’ Exposure to Engineering Practice through CEED Projects

In this project the student will explore conceptual understanding and capability developed by engineering students engaged in the Co-operative Education for Enterprise Development (CEED) projects.

Supervisors: Dr Male and Associate Professor Leggoe, CEED Director

Project 3. Investigation of Students’ Exposure to Engineering Practice through the Professional Practicum

In this project the student will explore conceptual understanding and capability developed by engineering students engaged in the professional practicum.

Supervisors: Dr Male and an academic in the student’s school: Dr Boussaid in Electrical, Electronic and Computer Engineering or Winthrop Professor James Trevelyan in Mechanical and Chemical Engineering