

A Case Study in Incorporating Significant Design Content into a Third-Year Industrial Engineering Course “Design and Analysis of Production Systems”  
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In recent years the CEAB has been communicating to Engineering Faculties in Canada that “Engineering Design” is a key attribute that graduates should have when they finish their undergraduate degree. It has also been suggested that producing engineers with significant design skills is important for the Canadian economy as a whole and, in Dalhousie University’s context, Nova Scotia. Unfortunately “Design” is a difficult skill to teach or transfer; a recent article in Maclean’s suggests many engineering graduates around the country are leaving the university with an uneasy feeling that all they have been taught to do is “plug and chug.” How do we respond to this need? This paper offers a case study of how a third-year Industrial Engineering course shifted from a mainly book-and-formula based course to an offering which incorporated significant open-ended design content (25%) intended to both satisfy CEAB requirements and address the need for students to exercise their creative, hands-on problem-solving skills. Student project outcomes as well as anecdotal and SRI data suggest the shift to a design-focused course was a success.