Proceedings of the ENGG 3100: Design III Projects, 2007

Editors:
Prof. Medhat Moussa, PhD. P.Eng.
Prof. William David Lubitz, PhD.

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Foreword

The ENGG 3100 proceedings are a collection of papers written by undergraduate students enrolled in the ENGG3100 Design III course offered by the School of Engineering, University of Guelph during the Winter 2007 term. The Design III course is the third in a four courses design sequence that all students studying Engineering at Guelph must take regardless of their Engineering speciality. The course prepares students for open ended design projects by guiding them through the design process using an active learning approach. Each student works as part of a group of 4 students on one of several pre-selected design projects. These projects typically cover all of the Engineering fields offered by the School of Engineering. Students are engaged in the design process using lectures, weekly meetings with highly experienced teaching assistants and course instructors. Students also get feedback on their design after submitting two design reports for evaluation and making two presentations to the entire class.

In the Winter 2007 offering, we decided for the first time to require students to write a short paper that describes their design at the end of the course to be collected and published in an annual proceedings. The papers were reviewed and feedback was given to students to help them prepare a second copy. These copies are what is published in this proceedings. This proceeding is also part of the active learning approach to learning design skills. Writing a short paper to describe an engineering design is an important skill that has many benefits. Innovative designs are typically presented in technical conferences and/or industry trade shows where a short and well written description of the design is often required. In other cases, patents are filed to secure the intellectual property rights of inventors. In these cases, the inventor must provide a short document that examines the current state of the art and provides an introduction to the invention. Finally, students who are interested in graduate studies will be able to explore one of the most common forms of academic publishing. The format and style of these papers follows the guidelines for articles published by the Institue of Electronic and Electrical Engineering (IEEE).

This proceedings would not have been possible without the support of our teaching assistants who helped review the short papers and provide valuable feedback to students. We would like to thank Amanda Farquharson, Eyad Barakat, Anna Howes, and Cecille Freeman for their diligent work. We would also like to thank Prof. John Gruzliski who volunteered to review some of these papers to make it possible to return all the papers to students as soon as possible to help them prepare a revised paper.

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