University of Guelph, School of Engineering

Proceedings of the ENGG 3100: Design III Projects, 2009

Editors: Medhat Moussa, William David Lubitz

Preface

The ENGG 3100 proceedings are a collection of papers written by undergraduate students enrolled in the ENGG 3100 Design III course offered by the School of Engineering, University of Guelph during the Winter 2009 term. The Design III course is the third in a four course design sequence that all students studying Engineering at Guelph must take regardless of their Engineering specialty. 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 3-4 students on one of several pre-selected open-ended 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, design reviews, 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 defending their work in two design reviews with their peers.

In addition to a comprehensive report, students are also required to write a short paper that described their design at the end of the course. The papers were reviewed and feedback was given to students to help them prepare a second final paper. These final short papers 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 Institute 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, Kevin Nugent and Antony Savich for their diligent work. Finally, we thank the students of ENGG 3100 whose innovative work is documented here.

Editors

Prof. Medhat Moussa
Prof. William David Lubitz

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