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| **Course Title: SED200 Design and Analysis Year and Semester:** Year 1, Semester 2 |
| **Course Description**  The content of the course draws upon a broad range of software and non-software disciplines to introduce the design process. By providing the context for design and decision-making, students learn to define and model problems, and apply the knowledge to case scenarios in order to gain an overall understanding of the big picture. Innovative thinking, sustainability in design, and ethics are considered in the  design solutions and alternatives. |
| **Prerequisite(s) or co-requisite(s)**  None |
| **Method of Instruction**   * Lecture |
| **Content Outline by Topic**   * Design Process * The business case * The environment and public welfare * Requirements collection * Testing and rework * Product support * Teamwork * The Gantt chart * The project plan * Risk assessment * Lessons learned |
| **Actual Contact Hours/Week**  3 hours a week for 14 weeks |
| **Methods and Frequency of Evaluation of Student Performance**  Assignments (minimum 4) 60%  Test(s) (minimum 1) 20%  Final Exam 20% |
| **Resources to be Purchased/Provided by Students**  None |
| **Textbook Requirement:**  Engineering Design (5th Edition)  by George Dieter and Linda C. Schmidt McGraw-Hill Education  ISBN-10: 0073398144  ISBN-13: 978-0073398143 |
| **Learning Outcomes**  *Upon successful completion of this course the student will be able to:*   1. Employ ethical practice in the design of software with the customer, the public welfare and the environment in mind. 2. Develop the ability to research new topics in order to pursue lifelong learning. |

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| 1. Construct a standard approach to engineering design to develop a solution to a given problem. 2. Formulate a set of requirements to address a business need. 3. Test solutions against core needs to satisfy customer expectations. 4. Demonstrate selected creative thinking methods to develop innovative solutions for engineering design problem. 5. Demonstrate teamwork skills toward the successful accomplishment of an   engineering design project. |
| **Faculty Qualifications to Teach this Course**  Masters or PhD (computer science, software engineering or computer/electrical engineering or the equivalent). |
| **Faculty Qualified to Teach/Supervise this Course**  Miguel Watler, PhD, PEng |
| **Percentage of Course Content Offered Online**  0% |
| **Classroom Requirements**  ☒Regular classroom   * Electronic classroom * Computer Lab   ☒Activity-based Learning centre |
| **Equipment Requirements**  College computers are configured to support this course. If you use your own computer, you will need:   * Current version of an operating system (Mac OS X, Windows, Linux), with Internet access |