Instructor: Scott Gales  scottgales@gmail.com

Teaching Assistant: Justin Chin  justinchin@cmail.carleton.ca

Office Hours: by appointment

Course Time and Location: Lecture/Lab: Monday 18:05-20:55  Canal Building 3101

Course Description
Examination of complex product geometry utilizing 3D computer modelling. Topics include surface and solids construction, surface verification tools, and rendering tools and techniques. Workflow, robust design, reverse design techniques and 3D printing will be explored through exercises.

Learning Outcomes
The objective of this course is to allow the student to achieve a higher competency in industrial design product development and planning, using 3D CAD software and rendering as an interactive medium that allows a design to be developed in an accurate and editable way. At the end of the course, the student will be able to create complex surface geometry, choose the right tools to achieve the intended form, illustrate design concepts through renderings and communicate manufacturing details using technical drawing principles.

Course Completion Requirements
Course materials for this class will be delivered to students through lecture and lab sessions. Students are expected to attend all sessions and complete certain exercises in lab sessions. There will be one major project which will test the student’s ability to make a model of a part of an electronic product.

Course Projects/Assignments
- Project review – Oct 16th
- Rapid prototype part files submitted to model lab for printing by Nov 22nd
- Rapid prototype part for major project – hand in on Nov 27th
- Final presentation of major project and written report - Dec 4th

Course Evaluation Information
In lab exercises: 30% (10 labs, 3% each)
Quizzes: 20% (2 quizzes, 10% each)
Project review: 5% (project progress review)
Project: 45% (printed part and final report)
Required Materials
- Students must have a laptop computer suitable to running SolidWorks. The current version of Solidworks (as supplied by the School of Industrial Design), must be installed and running on their computer before the first scheduled class and is available from the school’s computer technician.
- Students will also require the regular use of measuring calipers during the course.

Review Attendance
Attendance at scheduled SID reviews is mandatory. These are equivalent to exams in IDES courses when indicated in the course outline. Failure to attend will result in a grade of F. If you are not able to attend a review, you are required to call the General Office (613-520-5672) and/or send an email to id@carleton.ca to leave a message in advance. A comprehensive medical certificate or other documentation to substantiate the absence must be submitted as soon as possible after the review. The documentation must state the date of illness onset, the expected date of recovery, and the extent to which the student is incapacitated. The student is also required to set up a meeting with the instructor as soon as he or she is well enough to discuss and schedule an alternative date.

Any student in the review should submit materials for presentation and present as scheduled. In addition, a student who does not remain for the complete review session, who does not present as scheduled, or who arrives late for the review, without approval from the instructor, will receive a 10% grade reduction for that review.

Late Submission of Deliverables

Course Deliverables for reviews and other due dates
All deliverables submitted late will accrue a 10% per day deduction from the determined grade, to a maximum of 3 days, from the original deadline time and date. Failure to submit within 3 days, without approval from the instructor, will result in a grade of F.

Participation and Professionalism
- Active participation and professional conduct are particularly important in studio courses and will be evaluated. At the same time, when the student’s work is reviewed at the end of the course, an evaluation will be made based on one or more of the following: in class discussion; consultations with instructors; and work ethic. However, none of these evaluations will be used to raise an overall failing grade, to a passing one, based on the quality of the work.

Student Access to Exam Papers/Reports
Examinations/Reports are for evaluation purposes only and will not be returned to the student.

Academic Accommodation (Equity Services)
You may need special arrangements to meet your academic obligations during the term. For an accommodation request the processes are as follows:

Pregnancy obligation: write to me with any requests for academic accommodation during the first two weeks of class, or as soon as possible after the need for accommodation is known to exist. For more details visit: http://carleton.ca/equity/wp-content/uploads/Student-Guide-to-Academic-Accommodation.pdf

Religious obligation: write to me with any requests for academic accommodation during the first two weeks of class, or as soon as possible after the need for accommodation is known to exist. For

**Academic Accommodations for Students with Disabilities:** The Paul Menton Centre for Students with Disabilities (PMC) provides services to students with Learning Disabilities (LD), psychiatric/mental health disabilities, Attention Deficit Hyperactivity Disorder (ADHD), Autism Spectrum Disorders (ASD), chronic medical conditions, and impairments in mobility, hearing, and vision. If you have a disability requiring academic accommodations in this course, please contact PMC at 613-520-6608 or pmc@carleton.ca for a formal evaluation. If you are already registered with the PMC, contact your PMC coordinator to send me your *Letter of Accommodation* at the beginning of the term, and no later than two weeks before the first in-class scheduled test or exam requiring accommodation (*if applicable*). **Requests made within two weeks will be reviewed on a case-by-case basis.** After requesting accommodation from PMC, meet with me to ensure accommodation arrangements are made. Please consult the PMC website (www.carleton.ca/pmc) for the deadline to request accommodations for the formally-scheduled exam (*if applicable*).

- **Instructional Offenses / Plagiarism**
  The regulations of the university require that we bring to your attention regulations on *Instructional Offenses*, descriptions of which can be found in the current *Academic Integrity Policy* available on the Student Affairs website. The policy governs the academic behavior of students. At the same time it seems that students do not always understand the meaning of plagiarism and how to avoid it. In industrial design, ideas and concepts come from a multitude of sources to be modified and utilized in the design and development process. The student should reference sources appropriately.

- **Student Responsibility**
  The student is responsible for knowing the content of this course outline, the schedule of classes, assignments, and examinations; and material covered during any absence from scheduled classes.

- **Changes to the Course Outline**
  The course outline may be subject to change in the event of extenuating circumstances.