BCIT®

A POLYTECHNIC INSTITUTION

School of Manufacturing, Electronics, & Industrial Processes
Program: Computer-Aided Engineering

AICO 4048
SolidWorks

Start Date:	September 16, 2006				**End Date:**	October 27, 2006			
Start Time:	8:30am				**End Time:**	3:30pm			
Total Hours: 36	**Total Weeks:** 6				**Term/Level:**		**Course Credits:** 3		
Hours/Week: 6	**Lecture:** 2	**Lab:** 4			**Shop:**		**Seminar:**	**Other:**	

Prerequisites		**AICO 4048 is a Prerequisite for:**	
Course No.	**Course Name**	**Course No.**	**Course Name**
MCAD experience and familiarity with MS Windows.		AICO 4148	SolidWorks2

Course Description (required)

Covers part modeling, detailing and assembly design. SolidWorks is a feature based parametric solid modeller used for mechanical design and manufacturing. This course covers the basic functions needed to use SolidWorks to create parts, assemblies and production drawings.

Detailed Course Description

This course will focus on providing a strong foundation in SolidWorks 2006, a feature-based parametric design automation software package. Students will learn how to create solid models using basic geometric modeling techniques and progress to some of the more advanced features of the software. Modeling projects include a wide variety of items such as machined parts, plastics and off the shelf components. The associative nature between solid models, drawings and assemblies will be discussed and utilized. Assembly techniques including bottom-up and top-down construction are explored in lectures and tutorials. The creation of 2D detail drawings and working assembly drawings using 3D-model geometry will be covered, including highlights such as automatic bills of material generation.

Evaluation

Assignments/Quizzes	30%	Comments: The exams will be both written (25%) and
Midterm Test	30%	practical (75%). BCIT policy is that students must attend
Final Exam	40%	90% of classes and labs to complete the course.
TOTAL	100%	Students are reminded that cheating, copying and/or
		plagiarism will not be tolerated. Both parties will receive
		a zero on the exam or assignment. Repeat offenders
		may be dropped from the course and/or the department.

Course Learning Outcomes/Competencies

Upon successful completion, the student will be able to:

1. Describe the advantages of parametric design.

2. Use the sketch tools provided to construct fully defined sketch geometry.

3. Execute modeling commands (sketch based and applied) to create 3D solids.

4. Combine models into working assemblies.

5. Manipulate assemblies to aid in the design and documentation process.

6. Detail parts and assemblies in 2D drawing form.

7. Understand data management for SolidWorks files.

Verification

I verify that the content of this course outline is current.

Ben A. Berkmortel   September 15, 2006
_____   _____
Authoring Instructor   Date

I verify that this course outline has been reviewed.

                                                                         September 15, 2006
_____   _____
Program Head/Chief Instructor   Date

I verify that this course outline complies with BCIT policy.

                                                                         September 15, 2006
_____   _____
Dean/Associate Dean   Date

Note: Should changes be required to the content of this course outline, students will be given reasonable notice.

Instructor:

Ben Berkmortel   Office Location: Office Phone:
                               Office Hrs.:   E-mail Address: bberkmortel@my.bcit.ca

Learning Resources

Required:
- Text: *SolidWorks Essentials*, Ben Berkmortel (course notes) 2006 (available at BCIT bookstore)
- Equipment: USB Flash Memory stick
  OR 100 MB Zip disk
  OR a blank CD (if you have access to a CD writer out of class)

Recommended:
- *SolidWorks for Designers*, Sham Tickoo, **CADCIM Technologies**, 2005
- *SolidWorks for Dummies,* Greg Janowkowski, **For Dummies**, August 2005

Information for Students

Assignments: Late assignments, lab reports or projects will be devalued 10% per instruction day late. Assignments, lab reports or projects must be done on an individual basis unless otherwise specified by the instructor.

Makeup Tests, Exams or Quizzes: There will be **no** makeup tests, exams or quizzes. If you miss a test, exam or quiz, you will receive zero marks. Exceptions may be made for **documented** medical reasons or extenuating circumstances. In such a case, it is the responsibility of the student to inform the instructor **immediately**.

Ethics: BCIT assumes that all students attending the Institute will follow a high standard of ethics. Incidents of cheating or plagiarism may, therefore, result in a grade of zero for the assignment, quiz, test, exam, or project for all parties involved and/or expulsion from the course.

Attendance: The attendance policy as outlined in the current BCIT Calendar will be enforced. Attendance will be taken at the beginning of each session. Students not present at that time will be recorded as absent.

Illness: A doctor's note is required for any illness causing you to miss assignments, quizzes, tests, projects, or exam. At the discretion of the instructor, you may complete the work missed or have the work prorated.

Attempts: Students must successfully complete a course within a maximum of three attempts at the course. Students with two attempts in a single course will be allowed to repeat the course only upon special written permission from the Associate Dean. Students who have not successfully completed a course within three attempts will not be eligible to graduate from the appropriate program.

Course Outline Changes: The material or schedule specified in this course outline may be changed by the instructor. If changes are required, they will be announced in class.

Advancement: Students who fail three or more courses in a term cannot advance to the next term and may be asked to discontinue from the program.

Tutorial information

Student files should always be saved to floppy disk at the end of class each evening or Saturday.
*** DO NOT LEAVE YOUR WORK ON THE COMPUTER HARD DRIVES.

Assignment Details

There will be three assignments to be completed during tutorial time and submitted for marking (see schedule) at the beginning of the next class. Should a student be absent for the in-class assignment, alternate arrangements must be made on an individual basis. A late penalty will be applied (20 % of total possible mark) for assignments not handed in on time.

Only electronic files will be submitted for marking assignments.

Schedule

Class/ Number	Outcome/Material Covered	Tutorial Activities
Sept 16/1	Introduction to Parametric Modeling and SolidWorks, "Starting Points"	Unit 1
Sept 16/2	Sketching Skills. Extrude and Extrude Cut Features	Unit 2, Unit 3
Sept 23/3	Extrude and Extrude Cut Features End definitions. Revolve features. Patterns	Unit 3, Unit 4 Unit 10
Sept 23/4	Assembly Models	Unit 11, *Assignment 1*
Sept 30/5	Assembly Exploded Lines and Views, Revolve and Shell Features	Unit 4, Unit 5
Sept 30/6	Configurations, Midterm Test	Unit 13
Oct 7th	*Thanksgiving Long weekend*	*No classes*
Oct. 14/7	Creating Drawings and Drawing Views	Unit 14
Oct. 14/8	Adding Dimensions and Annotations, Assembly Drawings	Unit 14, *Assignment 2*
Oct. 21/9	Sweep Features and Applied Sweep Features	Unit 6
Oct. 21/10	Loft Features and Equations	Unit 8, Unit 9, *Assignment 3*
Oct. 28/11	Top Down Assemblies, File Management and Review	Unit 12, Unit 15
Oct. 28/12	Final Exam	Exam in class

*   ASSIGNMENT 1 is due at the beginning of class # 5 (preferably before to allow time for marking before midterm test)
**   ASSIGNMENT 2 is due at the beginning of class # 9.
**   ASSIGNMENT 3 is due at the beginning of class # 11