



A POLYTECHNIC INSTITUTION

School of Manufacturing, Electronics & Industrial Processes

Program: Robotics & Automation and
Plastics Engineering Technology

**MECH1104
Computer Aided Design**

Start Date:	05/09/06	End Date:	15/12/06					
Total Hours:	60	Total Weeks:	15	Term/Level:	1	Course Credits:	4	
Hours/Week:	4	Lecture:	2	Lab:	2	Shop:	Seminar:	Other:

Prerequisites

Course No.	Course Name
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MECH1104 is a Prerequisite for:

Course No.	Course Name
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MECH 2204	Technical Graphics for Plastics
ROBT 3416	Computer Integrated Manufacturing

Course Description

Covers techniques for producing and reading mechanical drawings using industry standards and the development of drawing skills using computer aided techniques. Topics include orthographic projection, auxiliary views, dimensioning and the hierarchy of drawings. Introduces the computer hardware and operating systems necessary in a computer aided design environment.

Evaluation

Labs and Assignments	30%
Midterm Exam(s)	30%
Final Exam	40%
TOTAL	100%

Comments:

- Copied assignments receive a mark of 0 for all parties.
- Students are expected to independently submit their assignments by the established due dates.
- Assignments that are received late will have penalties applied.
- Assignments must adhere to specific format and standards.

Course Learning Outcomes/Competencies

Upon successful completion, the student will be able to:

- Understand the engineering design process.
- Describe purposes and uses of engineering models and drawings.
- Understand the use of sketching in the process of graphically communicating design ideas.
- Construct pictorial and orthographic sketches.
- Use correct sketching techniques to create basic geometric shapes.
- Understand the meaning of drawing integrity.
- Understand the use of line types in an orthographic drawing.
- Apply CSA standards to all engineering sketches and drawings.
- Develop acceptable lettering skills for use in labeling a sketch.
- Create 2D orthographic drawings using CAD software.
- Create 3D part models using CAD software.
- Develop proficient techniques using CAD software's drawing, editing, and view control capabilities.
- Construct section and auxiliary views using CAD techniques.
- Apply dimensions to an engineering drawing using CSA standards.

Verification

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

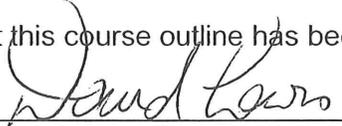


Authoring Instructor

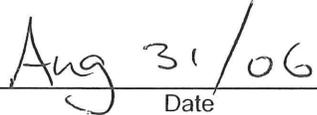


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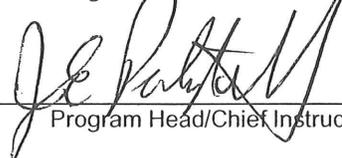
I verify that this course outline has been reviewed.



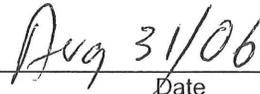
Program Head/Chief Instructor



Date



Program Head/Chief Instructor



Date

I verify that this course outline complies with BCIT policy.



Dean/Associate Dean



Date

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

Instructor(s)

Bernadette Currie	Office Location: SW9 205 Office Hrs.: As posted	Office Phone: 604-432-8638 E-mail Address: bcurrie@my.bcit.ca
Darryl Mack	Office Location: SW3 2639 Office Hrs.: As posted	Office Phone: 604-432-8928 E-mail Address: dmack@my.bcit.ca

Learning Resources

Required:

SolidWorks Essentials, Ben Berkmortel, 2006
*not required until after the mid term exam.

USB Memory device, 128Mb or larger
Additional course handouts as provided.

Information for Students

Note: Please refer to BCIT policy number 5002, Student Regulations Policy, for additional information. Policies are available at <http://www.bcit.ca/about/administration/policies.shtml>.

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.

Assignments: Assignments, lab reports or projects must be done on an individual basis unless otherwise specified by the instructor. Late assignments, lab reports or projects will be devalued 10% of total mark per day late to a maximum of 3 days late, including weekends. Assignments not submitted after 3 days will receive a mark of "0".

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** by sending an email using mybcit within one day of your return to your regular schedule.

Attendance: The attendance policy as outlined in BCIT Policy 5002 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: If you miss an evaluation such as a quiz, exam, or project, or you miss 3 or more consecutive days of class, you must provide the department with a BCIT Student Medical Certificate (available at <http://www.bcit.ca/admission/downloads.shtml>). You may be asked to complete the work that you missed or the course evaluation may be adjusted to reflect the missed component(s).

Attempts: Students must successfully complete a course within a maximum of three attempts. Students with two attempts in a single course must get written permission from the Associate Dean to attempt the course for the third time. Students who have not successfully completed a course within three attempts will not be eligible to graduate from the program.

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.

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.

Assignment Details

Completed assignments must be neat and well organized. An assignment that is copied from another assignment will result in both assignments receiving zero marks. B.C.I.T. policy is that students cannot miss more than 10% of the lab time and still receive credit for the course.

Schedule

Week of/ Number	Outcome/Material Covered (tentative)	Assignment
1	Graphical Communication, Sketching Techniques, Visualization	
2	Orthographic Projection, Drawing Layout	
3	Line Types, Lettering, Circular Features	
4	Introduction to 2D CAD	
5	Drawing creation in 2D CAD	
6	Dimensioning and Tolerances	
	Midterm Exam	
7	Introduction to 3D Part Modelling, Sketches	
8	Extruded and Revolved Feature Creation	
9	Design Intent for Part Models, Equations	
10	Patterns. Sweeps and Lofts	
11	Creating CAD Drawing Views, Annotations	
12	Auxiliary Views	
13	Section Views	
14	Course Review Practical /Written Final Exam	