

Western University
Department of Mechanical & Materials Engineering

MME 4473b - Computer Integrated Manufacturing (CIM)

COURSE OUTLINE – 2015-2016

CALENDAR DESCRIPTION:	This course explores the technologies and systems involved in CIM. Topics include: basics of computer systems; computing in manufacturing; CAD/CAM; CIM architectures; networks and data communications; databases and information management; open systems and standards; manufacturing planning and control; flexible manufacturing; concurrent engineering and collaboration technologies; Internet technologies.
COURSE INFORMATION:	Instructor: Dr. R.O. Buchal Room: SEB 2069C Email: rbuchal@uwo.ca Office hours : Monday and Wednesday 2pm-3pm Lectures: Wednesday 2:30pm-4:30pm, UCC 60 Friday 2:30am-3:30am, UCC 60 Tutorial: Tuesday 9:30am-12:30pm, SEB 1056
PREREQUISITES:	Computer Science 1026A/B, or ES 1036A/B. Unless you have either the requisites for this course or written special permission from your Dean to enroll in it, you will be removed from this course and it will be deleted from your record. This decision may not be appealed. You will receive no adjustment to your fees in the event that you are dropped from a course for failing to have the necessary prerequisites.
COREQUISITE:	Business 2299
ACCREDITATION UNITS:	Engineering Science = 75%, Engineering Design = 25%
TOPICS:	<ul style="list-style-type: none">• Basics of computer systems• Computing in manufacturing• CAD/CAM/CAE• Networks and data communication• Databases and information management• Open systems and standards• Product data exchange• Manufacturing planning and control• Flexible manufacturing• Concurrent engineering and collaboration technologies• Internet technologies
LEARNING OUTCOMES:	Upon successful completion of this course, students will be able to <ul style="list-style-type: none">• Understand and explain the role of information technology in design and manufacturing• Review, evaluate and apply key information technologies used in CIM, including data networking, databases, computer systems, collaboration systems, web-based systems, etc.• Assess the strengths and weaknesses of various CIM technologies and tools• Research a topic in CIM and explain it to others• Identify functional requirements of activities in engineering design and manufacturing, and evaluate available tools based on the requirements• Effectively utilize online collaboration tools and systems

CONTACT HOURS:	3 lecture hours, 1.5 tutorial hours, half course.
TEXT:	N/A
REFERENCES:	Lecture notes and other references will be available on OWL. Selected reference texts will be available in the library on reserve.
WEBSITE:	OWL
COMPUTING:	Use of e-mail and internet. Survey, evaluation and use of a range of CIM software will be required.
EVALUATION:	The final course mark will be determined as shown below. The due dates are tentative and may be revised.

Deliverable	Weight	Due Date
Draft learning module (individual)	Pass/fail	January 25
Peer review of draft learning module	10%	February 1
Learning module (individual)	30%	February 22
Peer review of learning module	10%	February 29
Preliminary technology evaluation (group)	Pass/fail	March 14
Peer review of preliminary technology evaluation	10%	March 21
Final technology evaluation (group)	30%	March 28
Peer evaluation of final technology evaluation	10%	April 4

ENGLISH:	In accordance with Senate and Faculty Policy, students may be penalized up to 10% of the marks on all assignments, tests and examinations for improper use of English. Additionally, poorly written work, with the exception of final examinations, may be returned without grading. If resubmission of the work is permitted, it may be graded with marks deducted for poor English and/or late submission.
ATTENDANCE:	Any student who, in the opinion of the instructor, is absent too frequently from class or laboratory periods in any course, will be reported to the Dean (after due warning has been given). On the recommendation of the Department concerned, and with the permission of the Dean, the student will be debarred from taking the regular examination in the course.
CHEATING:	University policy states that cheating, including plagiarism is a scholastic offense. The commission of a scholastic offence is attended by academic penalties which might include expulsion from the program. If you are caught cheating, there will be no second warning. (see Scholastic Offence Policy in the Western Academic Calendar)
NOTE:	Students who have failed an Engineering course (ie.<50%) must repeat all components of the course. No special permissions will be granted enabling a student to retain laboratory, assignment or test marks from previous years. Previously completed assignments and laboratories cannot be resubmitted for grading by the student in subsequent years. The above topics and outline are subject to change as needed.

INSTRUCTIONS FOR STUDENTS UNABLE TO WRITE TESTS OR EXAMINATIONS OR SUBMIT ASSIGNMENTS AS SCHEDULED

IF, ON MEDICAL OR COMPASSIONATE GROUNDS, YOU ARE UNABLE TO WRITE TERM TESTS OR FINAL EXAMINATIONS OR COMPLETE COURSE WORK BY THE DUE DATE, YOU SHOULD FOLLOW THE INSTRUCTIONS LISTED BELOW. YOU SHOULD UNDERSTAND THAT ACADEMIC ACCOMMODATION WILL NOT BE GRANTED AUTOMATICALLY ON REQUEST. YOU MUST DEMONSTRATE TO YOUR DEPARTMENT (OR THE UNDERGRADUATE SERVICES OFFICE) THAT THERE ARE COMPELLING MEDICAL OR COMPASSIONATE GROUNDS THAT CAN BE DOCUMENTED BEFORE ACADEMIC ACCOMMODATION WILL BE CONSIDERED. DIFFERENT REGULATIONS APPLY TO TERM TESTS, FINAL EXAMINATIONS AND LATE ASSIGNMENTS. READ THE INSTRUCTIONS CAREFULLY. (SEE THE 2015 UWO ACADEMIC CALENDAR).

A. GENERAL REGULATIONS & PROCEDURES

1. All first year students will report to the Undergraduate Services Office, SEB 2097, for all instances.
2. If you are an upper year student and you are missing a test/assignment/lab or exam that is worth MORE THAN 10% of your final grade, you will report to the Undergraduate Services Office, SEB 2097. Otherwise, you will report to your department office to request accommodation.
3. Check the course outline to see if the instructor has a policy for missed tests, examinations, late assignments or attendance.
4. Documentation must be provided as soon as possible. If no one is available in your Department office or the Undergraduate Services Office, leave a message clearly stating your name & student number and reason for your call. The department telephone numbers are given at the end of these instructions.
5. If you decide to write a test or an examination you should be prepared to accept the mark you earn. Rewriting tests or examinations or having the value of a test or examination reweighted on a retroactive basis is not permitted.

B. TERM TESTS

1. If you are in first year and you are unable to write a term test, contact the Undergraduate Services Office, SEB 2097 PRIOR to the scheduled date of the test.
2. If you are an upper year student and you are unable to write a term test, inform your instructor PRIOR to the scheduled date of the test. If the instructor is not available, leave a message for him/her at the department office. If the test is worth MORE THAN 10% of your final grade you will report to the Undergraduate Services Office, SEB 2097 to request accommodation. Otherwise, you will report to your department office to request accommodation.
3. Be prepared to provide supporting documentation to the Department Chair and/or the Undergraduate Services Office (see next page for information on documentation).
4. Discuss with the instructor if and when the test can be rescheduled. **N.B.** The approval of the Chair or the Undergraduate Services Office is required when rescheduling term tests.

C. FINAL EXAMINATIONS

1. If you are unable to write a final examination, contact the Undergraduate Services Office PRIOR TO THE SCHEDULED EXAMINATION TIME to request permission to write a Special Final Examination. If no one is available in the Undergraduate Services Office, leave a message clearly stating your name & student number.
2. Be prepared to provide the Undergraduate Services Office with supporting documentation (see next page for information on documentation) the next day, or as soon as possible (in cases where students are hospitalized). The following circumstances are not considered grounds for missing a final examination or requesting special examinations: common cold, sleeping in, misreading timetable and travel arrangements.
3. In order to receive permission to write a special examination, you must obtain the approval of the Chair of the Department **and** the Associate Dean and in order to apply you must sign a "Recommendation for a Special Examination Form" available in the Undergraduate Services Office. The Undergraduate Services Office will then notify the course instructor(s) and reschedule the examination on your behalf.

N.B. It is the student's responsibility to check the date, time and location of the special examination.

D. LATE ASSIGNMENTS

1. Advise the instructor if you are having problems completing the assignment on time (**prior** to the due date of the assignment).
2. Be prepared to provide documentation if requested by the instructor (see reverse side for information on documentation).
3. If you are granted an extension, establish a due date. The approval of the Chair of your Department (or the Associate Dean if you are in first year) is not required if assignments will be completed prior to the last day of classes.
4.
 - i) Extensions beyond the end of classes must have the consent of the instructor, the department Chair and the Associate Dean. Documentation is mandatory.
 - ii) A Recommendation of Incomplete Form must be filled out indicating the work to be completed and the date by which it is due. This form must be signed by the student, the instructor, the department Chair and the Associate Dean.

E. SHORT ABSENCES

If you miss a class due to a minor illness or other problems, check your course outlines for information regarding attendance requirements and make sure you are not missing a test or assignment. Cover any readings and arrange to borrow notes from a classmate.

F. EXTENDED ABSENCES

If you are absent more than one week or if you get too far behind to catch up, you should consider reducing your workload by dropping one or more courses. (Note drop deadlines listed below). You may want to seek advice from the academic counsellor in your Department or Ms. Karen Murray in the Undergraduate Services Office, if you are in first year.

G. DOCUMENTATION

If you consulted an off-campus doctor or Student Health Services regarding your illness or personal problem, **you must provide the doctor with a Student Medical Certificate** to complete at the time of your visit and then bring it to the Department (or the Undergraduate Services Office). **This note must contain the following information: severity of illness, effect on academic studies and duration of absence. Regular doctors notes will not be accepted; only the Student Medical Certificate will be accepted.**

In Case of Serious Illness of a Family Member: Provide a Student Medical Certificate to your family member's physician to complete and bring it to the Department (or the Undergraduate Services Office if you are in first year).

In Case of a Death: Obtain a copy of the death certificate or the notice provided by the funeral director's office. You must include your relationship to the deceased and bring it to the Department (or the Undergraduate Services Office if you are in first year).

For Other Extenuating Circumstances: If you are not sure what documentation to provide, ask the Departmental Office (or the Undergraduate Services Office if you are in first year) for direction.

Note: Forged notes and certificates will be dealt with severely. To submit a forged document is a scholastic offence (see below).

H. ACADEMIC CONCERNS

1. You need to know if your instructors have a policy on late penalties, missed tests, etc. This information may be included on the course outlines. If not, ask your instructor(s).
2. **You should also be aware of attendance requirements in some courses. You can be debarred from writing the final examination if your attendance is not satisfactory.**
3. If you are in academic difficulty, check out the minimum requirements for progression in the calendar. If in doubt, see your academic counsellor.

Calendar References: Check these regulations in your 2015 Western Academic Calendar available at www.westerncalendar.uwo.ca.

Absences Due to Illness: <http://www.westerncalendar.uwo.ca/2015/pg117.html>
Academic Accommodations for Students with Disabilities: <http://www.westerncalendar.uwo.ca/2015/pg118.html>
Academic Accommodations for Religious or Holy Days: <http://www.westerncalendar.uwo.ca/2015/pg118.html>
Course Withdrawals: <http://www.westerncalendar.uwo.ca/2015/pg157.html>
Examinations: <http://www.westerncalendar.uwo.ca/2015/pg129.html>
Scheduling of Term Assignments: <http://www.westerncalendar.uwo.ca/2015/pg97.html>
Scholastic Offences: <http://www.westerncalendar.uwo.ca/2015/pg113.html>
Student Medical Certificate: http://www.uwo.ca/univsec/pdf/academic_policies/appeals/medicalform.pdf
Engineering Academic Regulations: <http://www.westerncalendar.uwo.ca/2015/pg1442.html>

Note: These instructions apply to all students registered in the Faculty of Engineering regardless of whether the courses are offered by the Faculty of Engineering or other faculties in the University.

Drop Deadlines:

First term half course (i.e. "A" or "F"):	November 5, 2015
Full courses and full-year half courses (i.e. "E", "Y" or no suffix):	November 30, 2015
Second term half or second term full course (i.e. "B" or "G"):	March 7, 2016

Contact Information:

Undergraduate Services Office:	SEB 2097	Telephone: (519) 661-2130	Fax: (519) 661-3757
Dept. of Chemical and Biochemical Engineering & Green Process Engineering:	TEB 477	Telephone: (519) 661-2131	Fax: (519) 661-3498
Dept. of Civil and Environmental Engineering:	SEB 3005	Telephone: (519) 661-2139	Fax: (519) 661-3779
Dept. of Electrical and Computer Engineering, Software Engineering & Mechatronics Engineering:	TEB 279	Telephone: (519) 661-3758	Fax: (519) 850-2436
Dept. of Mechanical and Materials Engineering:	SEB 3002	Telephone: (519) 661-4122	Fax: (519) 661-3020