

Winter 2009 -2010
INDU 372: Quality Control and Reliability
(3 credits)

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Course Timings:

<i>Class Type</i>	<i>Days</i>	<i>Timings</i>	<i>Room</i>	<i>Location</i>
Lecture	Wednesday, Friday	8:45-10:00 am	FG-347	SGW
Tut TA	Friday	11:45am-12:35 pm	H-817	SGW
Tut TB	Wednesday	13:15-14:05 pm	H-817	SGW
Tut TC	Monday	14:45-15:35 pm	H-817	SGW

Office Hours: Thursdays, 11:00 am - 1:00 pm

Prerequisite: ENGR 371

Textbook: Introduction to statistical quality control by Douglas C. Montgomery, 6th edition, Wiley Publications, 2008

Course Description: This course covers modern statistical methods for quality control and reliability improvement. The contents include principles of quality design and control, modeling process quality, statistical process control, inferences about process quality, control charts, design of experiments, acceptance sampling, reliability modeling and practical applications of quality planning. The lectures are organized as follows:

<i>Week</i>	<i>Topics</i>	<i>Textbook Chapter</i>
1	Introduction to Quality Control, DMAIC Process	Chapter 1, Chapter 2
2	Modeling process quality, Data distributions	Chapter 3
3	Statistical inferences about process quality	Chapter 4
4	Statistical process control, seven tools of quality	Chapter 5
Feb 3, 6:00 pm, Homework 1 submission deadline, Last date for selection of project topics		
5	Control charts for variables	Chapter 6
6	Control charts for attributes	Chapter 7
7	Process capability analysis	Chapter 8
Feb. 17, 8.45-10:00 am, Midterm Exam (Chapter 1-7)		
8	CUSUM and EWMA control charts	Chapter 9
9	Design of experiments	Chapter 13
10	Lot by lot acceptance sampling for attributes	Chapter 15
March 10, 6:00 pm, Homework 2 submission deadline		
11	Principles of reliability	Handouts

12	Failure rate data and models	Handouts
April 7, 8:45-10:00, Project Presentations with Report Submission		
Final Exam (Textbook Chapters 1-9, 13,15, Handouts), TBA		

Course website: INDU 372 on Moodle, Accessible through myconcordia portal

Grade Composition

Homework (2)	10%
Project	15%
Midterm Exam	25%
Final Exam	50%

Note:

1. There is no direct mapping between numerical percentage grades and final letter grades for the course.
2. The projects are to be done individually. Project reports should be submitted at the time of presentations.
3. There are two homework assignments. Assignments are to be done individually and submitted both in paper form and online via the electronic assignment submission system (<https://fis.encs.concordia.ca/eas/>) before the due dates. Late submissions will be penalized.
4. **The students should be present on the dates of project presentations, midterm and final exam.** Alternate date requests will not be entertained other than in health related emergency cases.

Student expectations

Students are expected to attend every class. Some material may only be covered in class and not made available on the course website. You are expected to read the assigned material and actively participate in class discussions. You are expected to be respectful of other people's opinions and to express your views in a calm and reasonable way. Disruptive behaviour will not be tolerated. The Code of Rights and Responsibilities is available at: <http://rights.concordia.ca>

If you cannot attend class for any reason, unforeseen or not, you are required to come and talk or write to me as soon as possible.

Academic code of conduct

Any form of cheating, plagiarism, personation, falsification of a document as well as any other form of dishonest behaviour related to the obtention of academic gain or the avoidance of evaluative exercises committed by a student is an academic offence under the Academic Code of Conduct and **may lead to severe penalties up to and including suspension and expulsion.** For example, you are not permitted to:

- Copy from anywhere without indicating where it came from
- Let another student copy your work and then submit it as his/her own
- Hand in the same assignment in more than one class
- Have unauthorized material or devices in an exam. Note that you do not have to be caught using them – just having them is an offence
- Copy from someone's else exam

- Communicate with another student during an exam
- Add or remove pages from an examination booklet or take the booklet out of an exam room
- Acquire exam or assignment answers or questions
- Write an exam for someone else or have someone write an exam for you
- Submit false documents such as medical notes or student records
- Falsify data or research results

You are subject to the Academic Code of Conduct. Take the time to learn more at <http://provost.concordia.ca/academicintegrity/>

Student Services

To know about the student services offered at Concordia University, visit the following links:

- **Concordia Counselling and Development** offers career services, psychological services, student learning services, etc.
<http://cdev.concordia.ca>
- **The Concordia Library Citation and Cycle Guides:**
<http://library.concordia.ca/help/howto/citations.html>
- **Advocacy and Support Services:**
<http://supportservices.concordia.ca>
- **Student Transition Centre:**
<http://stc.concordia.ca>
- **New Student Program:**
<http://newstudent.concordia.ca>
- **Office for Students with Disabilities:**
<http://supportservices.concordia.ca/disabilities/>
- **The Academic Integrity Website:**
<http://provost.concordia.ca/academicintegrity/>

Disclaimer

In the event of extraordinary circumstances beyond the University's control, the content and/or evaluation scheme in this course is subject to change.