

**APS1040H: Quality Control for Engineering Management  
Summer 2017**

**Course Description:** This course introduces quality control techniques applicable in various engineering settings. These techniques are widely used in monitoring and improving the quality of both products and services. Topics include process quality inferences, statistical process control, Shewhart control charts, system capability analysis, and charts for detecting small shifts (CUSUM and EWMA). An on-line simulation model will be used to represent and generate data sets, for analysis with Minitab and Excel.

**Exclusion:** **MIE364 or equivalent**

**Lecturer:** Daniel Frances (frances@mie.utoronto.ca)

**Textbook** Introduction to Statistical Quality Control by D.C. Montgomery, Wiley, 7th Edition.

**Course Duration and Format:** The course can be accessed over the Internet, to allow wider participation by students. Video lectures are posted daily July 4<sup>th</sup>-7<sup>th</sup> and 10<sup>th</sup>-14<sup>th</sup>. Students are expected to do problems between video postings, and to participate in the daily 4-5 pm EST tutorial session in person. Remote students will be able to participate in the daily tutorials through the internet in real time. Students submit a daily assignment online, and write an in-person final exam 9-12 Tuesday July 18<sup>th</sup>.

**Required Software to Complete Assignments:** Minitab, and MS Excel.

**Daily Tutorials:** 4-5 pm in RS211 (Online access for remote students)

<b><u>Marking:</u></b>	Daily Assignments (Submitted online)	40%
	Partnering (Requires Webinar attendance)	10%
	In-person Final Exam 9-12 July 18	50%

<u>Day</u>	<u>Date</u>	<u>Topic</u>	<u>Ref*</u>
1	04-Jul	Statistics and Probability	3
2	05-Jul	Statistical Inference	4
3	06-Jul	Intro to Quality Control and Control Charts for Variables	5-6
4	07-Jul	Control Charts for Variables	6
	08-Jul		
	09-Jul		
5	10-Jul	Control Charts for Attributes	7
6	11-Jul	Control Charts for Attributes	7
7	12-Jul	Control Charts for Attributes and Process Capability	7-8
8	13-Jul	Process Capability and Charts for Detecting Small Changes	8-9
9	14-Jul	Charts for Detecting Small Changes (CUSUM and EWMA)	9
	18-Jul	Final Exam	

\* Chapter references shown are from the Textbook