STAT 335: Statistical Quality Control and Industrial Statistics  
Fall 2011

Instructor: Dr. N.G.N. Prasad  
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Office Hours: Mon and Fri: 1500 to 1550  
Lecture Hours: M.W.F: 1400 to 1450 @ V102

Text:  
Additional Readings: Also, note that you can rent an electronic copy (See the link http://ca.wiley.com/WileyCDA/WileyTitle/productCd-EHEP000188.html)

2) Quality Control (8th Edition) by Dale Besterfield (Prentice Hall)

Course Description:  
Controlling and improving quality has become an important business strategy for many organizations, manufacturers, transportation companies, financial services organizations, health care providers, etc. Statistical Quality Control provides ways of collecting and effectively using data for studying causes of variation in quality either as between processes, procedures, materials, machines, etc., or over period of period of time. We will discuss the theory and the applications of the different statistical techniques used to monitor and control process and product variables.

Software: In class I will use R and SPSS. You do the lab exam either in R or in SPSS.

Course Content:

1. Statistical Methods and Probability Concepts (based on chapters 4 and 5 - text 1) – You are expected to review these on your own.  
2. Quality Improvement in Modern Business Environment  
3. Methods and Philosophy of Statistical Process Control  
4. Control Charts for Variables  
5. Control Charts for Attributes  
6. Process Capability Assessment  
7. Cumulative Sum and Exponential Weighted Moving Average Control Charts.  
8. Acceptance Sampling Plans

Web Site:  
- Course Website: For assignment problems and solutions visit http://www.stat.ualberta.ca/~prasad/
Homework Assignments:

There will be Four homework assignments in the course and these assignments will not be marked. There will be two mid-term exams and these mid-term exams will be based on these assignments. The homework assignment questions will be posted on the course website. You have to use statistical software to answer some questions. You can use any software you like.

Exams:

Midterm I– Friday, October 14, 2011
Midterm II– Monday November 14 2011
Lab Exam TBA
Final Exam: Check the final exam date announcements at http://www.registrar.ualberta.ca/.

Missed Exams:

There is no deferred term exam (midterm). If absence for a term examination is excused, the weight of the missed exam will be transferred to the final exam. Students missing the final exam must apply to write a deferred final exam. Please verify the date and time of the deferred from the Department of Mathematical and Statistical Sciences.

Assessment:

Mid Term I 20%
Mid Term II 25%
Lab Exam 15%
Final Exam 40%

Grades:

At the term end there will be a record of each student's raw grades for all assignments and exams. A term summary mark based on these raw grades is computed, and these marks are ordered. After deciding whether the class is average, above average, or below average, the percentage of the class that should fall into each of the nine grades is determined and the grades are assigned accordingly. These grades will be based on a combination of absolute achievement and relative performance in the class.

Academic Integrity and Honesty:

“The University of Alberta is committed to the highest standards of academic integrity and honesty. Students are expected to be familiar with these standards regarding academic honesty and to uphold the policies of the University in this respect. Students are particularly urged to familiarize themselves with the provisions of the Code of Student Behaviour (online at www.ualberta.ca/secretariat/appeals.htm) and avoid any behaviour which could potentially result in suspicions of cheating, plagiarism, misrepresentation of facts and/or participation in an offence. Academic dishonesty is a serious offence and can result in suspension or expulsion from the University” (GFC 29 SEP 2003).

CLASS EXPECTATIONS

1. Attendance in STAT335 is very important. Missing a class has consequences for completing
assignments and preparing for the midterm and final exams.

2. Bring your calculator to all lectures.

3. Be an active learner. Take part in class discussions, answer questions and also ask questions.

4. You have to do the computation part in class to get answers to the questions. Use your calculator and do the required computations in class.

5. When you send an e-mail, please include STAT335 in the subject. Any email sent after 5pm will be attended on the following working day.

7. I will only answer e-mails send to nprasad@ualberta.ca

8. E mails without sender information will not be answered.