

Department of Mathematics and Statistics
Memorial University of Newfoundland

STAT 2560-001
Further Statistics for Science Students
Winter 2009

Prerequisite: ST 2550, ST 2500 (with M1000 or M1081) or ST 2510

Lectures: Slot 17 (Tuesdays and Thursdays: 9.00 - 10.15), Room C-4011

Instructor: Asokan M Variyath, Office - HH3042, Ph: 737-6104, Email: variyath@mun.ca

Office Hours: Tuesdays and Thursdays: 11.00-12.00.

Textbook: Probability and Statistics for Engineering and Sciences (7th edition) by J L Devore, ISBN: 0-495-38217-5.

Course Content and Learning Process:

This course is a continuation of the course STAT 2510. More advanced statistical techniques will be introduced. The purpose of this course is to provide students with general knowledge of basic statistical methods and capability to make proper interpretation of statistical analysis. Important topics covers in this course are,

- Tests of Hypothesis Based on Single Sample - Review (Chapter 8)
- Inference Based on Two Samples (Chapter 9)
- The Analysis of Variance (Chapter 10)
- Multifactor Anova (Chapter 11)
- Simple Linear Regression and Correlation (Chapter 12)
- Nonlinear and Multiple Regression (Chapter 13)
- Goodness-of-Fit Tests and Categorical Data (Chapter 14)
- Distribution-Free Procedures (Chapter 15)

Sections to be omitted: 9.5, 11.3, 11.4, 13.1, 13.2, 13.3, 13.5, 14.2, 15.3 and 15.4

You are encouraged to read the textbook to get better understanding of the topics covered in the class and also practice the problems given at the end of each sections in the text books. Selected problems will be discussed in the Lab sessions. Material used in the class (slides) will be posted at the course web page

http://www.math.mun.ca/~variyath/Stat2560_W09.shtml

to enable you to download, if needed. Also I will try to give a supplementary course material (not guaranteed)

In order to achieve a good understanding of the topics covered, we need to develop a different strategy for learning. As you know, merely knowing the techniques will be not help much. So I will try to give you most important statistical techniques with real case examples. To believe that these techniques work well in practice, you must critically analyze/solve the assignment questions given to you during this course.. These are aimed for statistical thinking before choosing a technique. You can also get help from Lab session.. I will evaluate your performance as per the grading policy given in this outline and I believe that you are capable of doing well in this course. I am looking forward to getting to know each of you and working together to accomplish the objectives of this course. To get most out of this course, please attend the class regularly, ask questions you have in class (it will benefit others too), use my office hours and make appointments with me.

Lab Sessions: Thursdays 2.00 - 3.30, CS-1009

The labs are designed to allow you to become acquainted with problems related to the topics covered in the class, with the help of a lab instructor. A Masters / PhD student will be your lab instructor. Statistical computer package **R** will be used in the lab. You will be given an introductory session on this package to enable you to understand quickly. Quizzes will also be written in the lab. Lab session will be begin on Jan 15. You may contact **Statistics Help Center** for further help.

Grading:

$$\text{Best of } \left[\begin{array}{l} \textit{Assignments}(4) - 16\% \\ \textit{Quizzes}(2) - 14\% \\ \textit{Midterm Examination} - 20\% \\ \textit{Final Examination} - 50\% \end{array} \right], \left[\begin{array}{l} \textit{Assignments}(4) - 20\% \\ \textit{Quizzes}(2) - 20\% \\ \textit{Midterm Examination} - 15\% \\ \textit{Final Examination} - 45\% \end{array} \right]$$

Important Dates:

Assignment 1 due date: 29 Jan 2009

Assignment 2 due date: 12 Feb 2009

Assignment 3 due date: 12 March 2009

Assignment 4 due date: 7 April 2009

Quiz 1: 5 Feb 2009 (in Lab)

Quiz 2: 19 Mar 2009 (in Lab)

Midterm Exam: 19 Feb 2009