UNIVERSITY OF CALGARY

FACULTY OF SCIENCE – MATHEMATICS & STATISTICS - MS 476

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COURSE OUTLINE

WINTER 2011

1. **Course ID and number, Course Title**: STATISTICS 217 - *Statistical Methods II*
   Lecture/Time: L01/MWF 9:00-9:50/ ST 143
   Instructor/Office/Phone/Email: Dr. Ayse Deniz Sezer/ MS 532 / 220-5092/adsezer@ucalgary.ca
   Office Hours: R 10:00-12:00
   Course Website or Blackboard course name: W2011STAT217L01: STAT 217 L01 - (Winter 2011) - Introduction To Statistics II

2. **Prerequisites**: STAT 213
   (see Section 3.5C of Faculty of Science www.ucalgary.ca/pubs/calendar/current/sc-3-5.html
   and Course Descriptions: www.ucalgary.ca/pubs/calendar/current/course-desc-main.html)

3. **Grading:** The University policy on grading and related matters is described in sections F.1 and F.2 of the online University Calendar. In determining the overall grade in the course, the following weights will be used:

Quizzes	[4]	30%	
Group Assignment	[1]	10%	
Midterm Test	[1]	15%	(March 4, 2011)
Final Exam		45%	(To be scheduled by the Registrar)

   The various components above will be assigned a percentage score and will be combined with the indicated weights to produce an overall percentage in the course. The conversion table between course percentage and letter grade will be provided at least one week before the withdrawal deadline.

   A passing grade in the Final Examination is essential for an overall grade of C- or better.

4. **Missed Components of Term Work.** The regulations of the Faculty of Science pertaining to this matter are found in the Faculty of Science area of the Calendar in section 3.6: **www.ucalgary.ca/pubs/calendar/current/sc-3-6.html.** It is the student's responsibility to be familiar with these regulations. See also www.ucalgary.ca/pubs/calendar/current/e-3.html.

5. **Textbook**: Introduction to the Practice of Statistics, 6th edition, by David S. Moore, George P. McCabe, Bruce A. Craig. Publisher : W.H. Freeman and Company New York.

6. **Examination Policy**: Calculators are allowed for midterm and final exam. All exams will be closed book. No formula sheets will be provided for quizzes bu students will have access to Minitab. One double sided 8.5 by 11 formula sheet is allowed for the midterm and the final exam. Students should also read the Calendar, Section G, on Examinations: **www.ucalgary.ca/pubs/calendar/current/g.html**

7. **OTHER IMPORTANT INFORMATION FOR STUDENTS:**

(a) ACADEMIC MISCONDUCT (cheating, plagiarism, or any other form) is a very serious offence that will be dealt with rigorously in all cases. A single offence may lead to disciplinary probation or suspension or expulsion. The Faculty of Science follows a zero tolerance policy regarding dishonesty. Please read the sections of the University Calendar under K. Student Misconduct (http://www.ucalgary.ca/pubs/calendar/current/k.html) to inform yourself of definitions, processes and penalties

(b) ASSEMBLY POINTS in case of emergency during class time. Be sure to FAMILIARIZE YOURSELF with the information at http://www.ucalgary.ca/emergencyplan/assemblypoints.

(c) ACADEMIC ACCOMMODATION POLICY. Students with documentable disabilities are referred to the following links:
Calendar entry on students with disabilities: **http://www.ucalgary.ca/pubs/calendar/current/b-1.html**
Disability Resource Centre: **http://www.ucalgary.ca/drc/**

(d) SAFEWALK: Campus Security will escort individuals day or night (**http://www.ucalgary.ca/security/safewalk/**). Call **220-5333** for assistance. Use any campus phone, emergency phone or the yellow phones located at most parking lot pay booths.

(e) FREEDOM OF INFORMATION AND PRIVACY: This course is conducted in accordance with the Freedom of Information and Protection of Privacy Act (FOIPP). As one consequence**, students should identify themselves on all written work by placing their name on the front page and their ID number on each subsequent page**. For more information see also **http://www.ucalgary.ca/secretariat/privacy.**

(f) STUDENT UNION INFORMATION: VP Academic **Phone**: 220-3911 **Email**: suvpaca@ucagary.ca.
SU Faculty Rep. **Phone:** 220-3913 **Email:** sciencerep@su.ucalgary.ca **Website www.su.ucalgary.ca/home/contact.html**.
Student Ombudsman: **http://www.su.ucalgary.ca/services/student-services/student-rights.html**

(g) INTERNET and ELECTRONIC COMMUNICATION DEVICE Information. You can assume that in all classes that you attend, **your cell phone should be turned off**. Also, communication with other individuals, via laptop computers, Blackberries or other devices connectable to the Internet is not allowed in class time unless specifically permitted by the instructor. If you violate this policy you may be asked to leave the classroom. Repeated abuse may result in a charge of misconduct.

8. COURSE DESCRIPTION: This course aims to introduce students to a wide range of methods used in the modern practice of statistical analysis. Students will learn how to make statistical inference on the mean of a population, the difference of the means of various populations, and the relationship between a response variable and a set of explanatory variables. The methods to be covered include: One sample t-test, two sample t-test, Two-way tables, Simple linear regression, Multiple regression, One way ANOVA, and Two-way ANOVA. Students will learn how to use these methods, be able to set up and perform hypothesis tests and provide inference on a variable or a population's characteristics. This course also aims to cultivate critical thinking on the subject by carefully discussing the assumptions behind these models, t heir limitations and common misuses and the importance of model verification by visually exploring the data.

9. TEXTBOOK, READING AND MATERIALS

Primary Textbook: Introduction to the Practice of Statistics, 6th edition, by David S. Moore, George P. McCabe, Bruce A. Craig. Publisher : W.H. Freeman and Company New York.

You are recommended to obtain a copy of this book. However, if you have a different ``introduction to statistics'' book, you can follow the relevant chapters from your book, as all these books are quite similar to each other in terms of their content.

Other recommended resources:

Introduction to Probability and Statistics, 2nd Canadian edition, by W. MendenHall, R. Beaver , B. Beaver, E. Ahmed, Publisher: Nelson."

Stats: Modeling the World, 3rd edition, by D. Bock, P. Velleman, R. De Veaux, Publisher: Addison Wesley.

Introduction to Statistics and Data Analysis, 3rd edition, by R. Peck, C. Olsen, J. Devore, Publisher: Duxbury

Introduction to the Practice of Statistics Study Guide with Solutions Manual, by Michael Fligner, Publisher :W. H. Freeman; 6th edition

Clickers:

Students are recommended to purchase CPS clicker devices. Clicker system is only going to be used to promote student participation, and provide feedback to the instructor regarding students' comprehension. The students' inputs are going to be received anonymously.

10. TENTATIVE SCHEDULE

	Monday	Tuesday	Wednesday	Thursday	Friday
January					
10-14	Introduction to the		Hypothesis testing		Hypothesis testing

	course				
17-21	Hypothesis testing		Hypothesis testing		7.1
24-28	7.1		7.2		7.2
February					
Jan 31-Feb 4	8.1		8.1		8.2
7-11	8.2		9.1		9.2
14-18	9.3		10.1		10.1
21-25	No class		No class		No class
March					
28-4	10.2		10.2		Midterm
7-11	11.1		11.1		11.2
14-18	11.2		12.1		12.1
21-25	12.2		12.2		13.1
38-April 1	13.1		13.2		13.2
April					
4-8	15.1		15.1		15.2
11-15	15.2		15.3		15.3

11. QUIZ SCHEDULE

	Monday	Tuesday	Wednesday	Thursday	Friday
January					
10-14					
17-21					
24-28	Quiz1	Quiz1			
February					
Jan 31-Feb 4					
7-11					
14-18	Quiz2	Quiz2			
21-25					
March					
28-4					Midterm
7-11					
14-18	Quiz-3	Quiz-3			
21-25					
38-April 1					
April					
4-8	Quiz-4	Quiz-4			
11-15					

12. LEARNING OBJECTIVES: There will be a detailed list of learning objectives available at the course website on blackboard. The course is structured based on the learning objectives, and the exams are designed to test how well the students have met the course objectives. Students are urged to follow the learning objectives as a guideline to prepare for the quizzes and the exams.

13. QUIZZES AND EXAMS: There will be four quizzes, each of duration 30 minutes, administered during the regularly scheduled labs of this lecture section. There will be a computer available to you in these labs and you will be allowed to use Minitab during the quizzes. The quizzes will have questions that will require the students to analyze a given set of data using Minitab, and answer specific questions regarding the results of the analysis. Some of these questions will be multiple -choice.

Midterm and Final exam: All exams will be a mix of questions with multiple choice, true/false type questions, and questions with written answers where students need to show the details of their work. Calculators are allowed for midterm and the final exam.

14. **LABS.** These are used for problem solving and quizzes. Students will get a chance to work with data sets and run statistical analyses using Minitab. **Lab Schedules:**

LAB 1 T 10:00-10:50 MS515	Ayse Deniz Sezer
LAB 2 T 10:00-10:50 MS521	Withanage Perera
LAB 3 M 14:00-14:50 MS515	Sheng Cai
LAB 4M 14:00-14:50 MS521	Withanage Perera

15. **GROUP ASSIGNMENT:** There will be a group assignment on which you will work in groups of 4 or 5. I will randomly assign the students to groups. I expect to post the assignment on March 16. It will be due the last day of class, April 17.

16. **CONTINUOUS TUTORIALS:** In addition to the instruction provided by their lecturer and lab instructor, there is a continuous tutorial available where students may obtain individual help with questions about the course material and exercise problems. Faculty members and graduate students will be available in the continuous tutorial room to answer questions in a one-to-one fashion. The location and hours of operation of the continuous tutorial will be announced by the lecturer and posted to the course website: http://math.ucalgary.ca/courses.

17. **E-MAIL POLICY:** Students may e-mail the instructor or the teaching assistants to ask questions regarding the course. Students are expected to use appropriate and clear language in their e-mail. Students should also refrain from last minute questions before exams or quizzes which require an immediate response from the instructor who may not be available at the time. In normal circumstances the instructor will respond to an e-mail within the next 24 hours (not applicable to weekends).

18. **CLASS PARTICIPATION.** Active learning strategies such as pair share or group work often will be used in classes to engage students and promote deeper learning. Students are expected to pay attention to the instructions and participate in the activities and the discussions.