UNIVERSITY OF CALGARY

FACULTY OF SCIENCE

Mathematics and Statistics - MS 476
Ph: (403) 220-5203

COURSE INFORMATION SHEET

FALL 2009

1. **Course**: STATISTICS 213 -- Introduction to Statistics I
   Lecture/Time: Lecture 06 10:30 to 11:45 Mondays and Wednesdays
   Instructor: Dr. G. Chen
   Office/Phone/Email: MS524 403 220 3961 gchen@math.ucalgary.ca

2. **Prerequisites**: **Pure Mathematics 30 or Mathematics II (offered by Continuing Education)**
   NOTE: The Faculty of Science policy on pre- and co-requisite checking is outlined in the current University Calendar (see www.ucalgary.ca/pubs/calendar) *Faculty of Science, section 5C*. **It is the students' responsibility to ensure that they have the pre- and co-requisites for the course, and if they do not they will be withdrawn from the course without notice.**

3. **Fee policy:** After the last day to drop/add courses, there will be no refund of tuition fees if a student withdraws from a course, courses or the session.

4. **Academic Accommodations**: It is the student's responsibility to request academic accommodations. A student with a documented disability who may require academic accommodation must register with the Disability Resource Centre to be eligible for formal academic accommodation. DRC registered students are required to discuss their needs with the instructor no later than fourteen (14) days after the start of this course.

5. **The University policy on grading and related matters** is described in the current University Calendar, *Academic Standings*. In determining the overall grade in the course, the following weights will be used:

Quizzes	[5 quizzes, count the best 4]	40 %
Midterm Test	[1]	15 %
Final Exam		45 %

   A passing grade on the final examination is essential to passing the course as a whole. There will be a final examination scheduled by the Registrar's Office. **The use of aids such as *open book*, *laptop computer*, etc. Are not** permitted.

6. **Missed Components of Term Work.** The regulations of the Faculty of Science pertaining to this matter are outlined in the current University Calendar, *Faculty of Science, section 6A*. It is the student's responsibility to be familiar with these regulations.

7. **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 current University Calendar. See: http://www.ucalgary.ca/honesty/

8. **Dates and times of class exercises held outside of class hours (evening tests, Saturday laboratory examinations, weekend field trips, etc.):**

   *****THERE WILL BE NO OUT-OF-CLASS-TIME ACTIVITY.*****

REGULARLY SCHEDULED CLASSES HAVE PRECEDENCE OVER ANY OUT-OF-CLASS-TIME ACTIVITY. **If you have a conflict with this out of class time activity, please inform your instructor at least one week in advance of the activity so that other arrangements may be made for you.**

9. The **required textbook** for this course is:
   Statistics, 11th Edition
   By
   McClave and Sincich
   Pearson, 2009.

10. There are
    five quizzes of 30 minutes each to be written in lab times,
    a 50-minute midterm test to be written on **Wednesday, October 21 during the lecture time**,
    a two-hour final examination to be scheduled by the Registrar's Office.

    The quizzes, the midterm test and the final examination are ***all closed-book*****.**

11. ***A calculator*** is the only aid you can bring to write the quizzes. ***A calculator*** **and** ***a two-sided 8.5" by 11'' sheet of formula information*** are the only aids you can bring to write the midterm test and the final examination. Lab computers and necessary statistical tables will be provided if needed.

12. **You are responsible for the materials presented in class according to the curriculum that may not be covered by the textbook.**

13. Beside lectures and labs, a **continuous tutorial** has been scheduled on each weekday in room **MS 571** to give you more help. The times are: **M 11-14:00, T 12-16:00, W 11-15:00, R 12-15:00, F 12-14:00**.

14. Students have to use **UCIT account** to be able to use computers in MS515, MS521 and MS571. Such accounts can be applied from the university web at www.ucalgary.ca/it, 2nd floor of the library or the 7th floor of MS building.

15. **Important dates for Fall 2009:** *(For quizzes the time given below is the* ***first day*** *of the week in which you have a lab)*

September 8	Tuesday	Lectures Begin
September 14	Monday	Labs Begin
September 21		**Quiz #1**
October 5		**Quiz #2**
October 12	Monday	Thanksgiving Day, no lecture
October 21	**Wednesday**	**Midterm Test**, Room ICT 121
November 2		**Quiz #3**
November 11-15	Wednesday through Sunday	Reading Days, no lectures
November 16		**Quiz #4**
November 30		**Quiz #5**
December 8	Tuesday	Last Day of Lectures
December 11-21		Final Exam Period

16. **Make sure that you go to the right lab to write your quizzes. There is absolutely no switching between labs, and the TA's are not responsible for any missing/wrong marks due to your switch.**

17. **Good luck!**

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FACULTY OF SCIENCE
Department of Mathematics and Statistics

STATISTICS 213
"STATISTICAL METHODS I"

Calendar Description: H(3-2)
Collection and presentation of data, introduction to probability, including Bayes' law, expectations and distributions. Properties of the normal curve. Introduction to estimation and hypothesis testing.
Prerequisite: Mathematics 30 or Pure Mathematics 30 or Math II (Continuing Education).

Syllabus

Topics	**Number of hours**
EXPLORATORY DATA ANALYSIS Chapter 2 Populations and sampling, simple random sample. Measures of location and spread: mean, median, mode, variance and standard deviation, quartiles. Grouped data, frequency histograms, shape, symmetry and skewness. The empirical rule. Graphical methods: Stem-and-leaf plots, Box-and-whisker plots.	5
REGRESSION AND CORRELATION Chapter 2 (Section 2.9) Scatter diagrams, linear regression and correlation. Regression predictions - descriptive methods.	2
INTRODUCTION TO PROBABILITY Chapter 3 Sample spaces and random events, Venn diagrams. Permutations and combinations. Definitions of probability. Basic probability laws.	4
CONDITIONAL PROBABILITY Chapter 3 Conditional probability, probability trees, formula for total probability and Bayes' Theorem. Independence of random events.	3
RANDOM VARIABLES Chapter 4 Random variables and their distributions. Joint probability distributions and independence.	3
DISCRETE DISTRIBUTIONS Chapter 4 Uniform, binomial, hypergeometric, and Poisson distributions.	3
EXPECTATIONS AND VARIANCES Chapter 4 Expectations, variances and covariances of random variables and their linear combinations. Application to discrete random variables.	6
CONTINUOUS RANDOM VARIABLES Chapter 5 Concept of continuous random variable and its distribution. Uniform and Normal distributions and their properties. Central Limit Theorem. Approximation of the binomial by the Normal distribution. Optional: exponential distribution.	5
SAMPLING DISTRIBUTIONS Chapter 6 Distribution of the sample mean from a Normal population. Central Limit Theorem and large sample mean distribution. Distribution of the sample proportion.	2
ESTIMATION AND HYPOTHESIS TESTING Chapters 7 & 8 Introduction to confidence intervals and hypothesis testing using simple examples involving means and proportions.	3
TOTAL HOURS	36

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