



Math 218 – Introduction to Probability and Statistics 1
Fall 2009

COURSE OUTLINE

The Approved Course Description is available on the web

at: <http://www.camosun.bc.ca/learn/calendar/math.html#MATH218>

Please note: This outline will not be kept indefinitely. It is recommended students keep this outline for your records.

1. Instructor Information

(a)	Instructor:	Susan Chen
(b)	Location:	E260
(c)	Phone:	370-3497
(d)	Email:	chen@camosun.bc.ca
(e)	Desire2Learn page	http://online.camosun.ca/
(f)	Webpage:	http://chen.disted.camosun.bc.ca
(g)	Office Hours:	1:30 – 2:30 pm Monday - Friday

2. Intended Learning Outcomes

At the end of the course students will be able to:

- a) Compute and interpret descriptive statistics.
- b) Compute and interpret probability and conditional probability.
- c) Compute probability, expectation and variance of a single discrete random variable, or a single continuous random variable. Perform calculations involving Binomial, Poisson, normal, or exponential probability distributions.
- d) Perform calculations involving joint probability distributions of two discrete random variables, or random samples.
- e) Derive and compute maximum likelihood estimates.
- f) Compute and interpret interval estimate for the population mean, population proportion, and determine sample size.
- g) Compute and interpret interval estimate for a difference of two means.
- h) Test hypotheses about a mean, a proportion, and the difference of two means.

3. Required Materials

- a) Textbook
Devore, Jay L., “Probability and Statistics for Engineering and the Sciences”, 7th edition, 2008
- b) Lab Manual
Chen, “Math 218 Lab Manual”, Camosun College Print Shop.
- c) A Sharp EL-531 Scientific Calculator.

4. Course Content and Other Course Information

<u>Topics</u>	<u>Sections</u>
1: Introduction and Descriptive Statistics	1.1 – 1.4
2: Probability	2.1 – 2.5
3: Discrete Random Variables and Probability Distributions	3.1 – 3.4, 3.6
4: Continuous Random Variables and Probability Distributions	4.1 – 4.4, 4.6
5: Joint Probability Distribution and Random Samples	Discrete parts of 5.1 – 5.2, 5.3 – 5.5
6: Point Estimation	6.1 – 6.2 (omit The Method of Moments)
7: Statistical Intervals: single sample	7.1 – 7.3
8: Tests of Hypotheses: single sample	8.1 – 8.2, 8.3 (omit β and sample size determination), 8.4, 8.5
9: Inferences Based on Two Samples	9.1(omit β and the choice of sample size), 9.2

Minitab Lab: This course includes five computer lab sessions designed to familiarize students with the use of a statistics software as a tool for statistical analysis. The statistics software we use is MINITAB. You must have a lab manual ready before your first lab. The required lab manual is available in the bookstore at Lansdowne Campus and on D2L. A lab assignment is assigned for each lab session, except for the Lab Intro session. Lab assignments are due by the Thursday following the lab session. The labs will be held in the computer lab E113 on the following days:

Lab Intro	Lab1	Lab2	Lab3	Lab4	Lab5
Sept 12	Oct 2	Oct 16	Nov 30	Nov 13	Nov 27

Math Labs: There are two Math Labs on the Lansdowne campus to assist students in all Math courses. They are located in E224 and E342. Lab hours are posted on the lab doors.

Calculator policy: A Sharp EL-531 scientific calculator is required. This is the *only* calculator that will be allowed for tests and examinations. This calculator is available at the Lansdowne Bookstore, and other stores such as Staples and Office Depot.

Homework: *"I hear, I forget. I do, I understand."* There are two sets of homework assignments for this course. Set #1 consists of ten Assignment Worksheets. They will be submitted for credit. Set #2 is a list of exercise problems from the textbook. Answers for these problems are given in the textbook, solutions are available in the student solution manual. *In order to get a full understanding of the course materials (therefore a good grade), it is necessary to complete both sets of homework. It is essential to do homework after every class and to keep up consistently. Cramming does not work for this course, unfortunately.*

Practice Tests: There will be a practice test session on the day before each test. Students are encouraged to ask questions and to work together with peers during these sessions. Solutions for these practice tests will be posted on Desire2Learn after each session. You will benefit most from these practice tests if you come to these sessions with the notes reviewed, all homework problems completed, and a formula sheet made.

5. Basis of Student Assessment (Weighting)

Score 1	
9 Assignments / 5 Labs / Group assignment	30%
4 Tests (50 min each)	30%
Cumulative Final Exam (3 hrs)	40%

Score 2	
Cumulative Final Exam (3 hrs)	100%

Your final grade will be the higher of Score 1 and Score 2 if all homework and lab assignments are submitted on time. Otherwise, your final grade will be Score 1. Note that in order to pass this course (D or higher), you must obtain a final examination score of 40% or higher.

Please refer to the **Pace Schedule** for tentative *test dates* and lab/homework *due dates*.

All tests must be written during the scheduled times. In the event that you missed a test due to family emergency or illness, the weight of the test will be put on the final exam if a note (email or paper) has been sent to the instructor before the test time. NO late assignments or lab assignments will be accepted for credit. Final examinations will be scheduled by the college and they will take place during December 14-19, & December 21. You must be available to write the final examination at the scheduled time.

6. Awards

Among other Mathematics awards, we now have a Statistics Award (\$500). You can find out more information about the awards on this page: <http://camosun.ca/learn/programs/math/scholarships.html>.

7. Grading System

Percentage grades will be converted to letter grades as follows:

A+	[90, 100]	B+	[77, 80)	C+	[65, 70)	F	[0, 50)
A	[85, 90)	B	[73, 77)	C	[60, 65)		
A-	[80, 85)	B-	[70, 73)	D	[50, 60)		

8. Recommended Materials or Services to Assist Students to Succeed Throughout the Course

There is a Student Conduct Policy **which includes plagiarism**. It is the student's responsibility to become familiar with the content of this policy. The policy is available in each School administration Office, at Student Services and on the College web site in the Policy Section. There are a variety of services available for students to assist them throughout their learning. This information is available in the College calendar, at Student Services or the College web site at camosun.bc.ca.