



Math 218 – Introduction to Probability and Statistics 1
Fall 2007

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)	Webpage:	http://chen.disted.camosun.bc.ca
(f)	Desire2Learn page	http://online.camosun.ca/
(g)	Office Hours:	On my webpage, Math 218 Desire2Learn , and my office door.

2. Intended Learning Outcomes

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

- Compute and interpret descriptive statistics.
- Compute and interpret probability and conditional probability.
- 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.
- Perform calculations involving joint probability distributions of two discrete random variables, or random samples.
- Derive and compute maximum likelihood estimates.
- Compute and interpret interval estimate for the population mean, population proportion, and determine sample size.
- Compute and interpret interval estimate for a difference of two means.
- Test hypotheses about a mean, a proportion, and the difference of two means.

3. Required Materials

- Textbook
Devore, Jay L., “*Probability and Statistics for Engineering and the Sciences*”, Sixth edition, 2004
- Lab Manual
Chen, “*Math 218 Lab Manual*”, Camosun College Print Shop.
- 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 five labs are on the Friday of weeks 5, 6, 8, 10 and 12. 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. A lab assignment will be assigned for each lab session and they are due on the following Thursday.

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

Calculator policy: A Sharp EL-531 scientific calculator is required. (The model number on the packaging might be EL-531W.) 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: There are two sets of homework assignments for this course. Set #1 consists of ten Assignment Worksheets. Solutions for these assignments will be posted on Math 218 Desire2Learn page. Set #2 consists a list of exercise problems from the textbook. Answers for these problems are in the back of the textbook. In order to get a full understanding of the course materials you should do both sets of homework.

The key for getting a full understanding (and therefore a good grade) in a Statistics course, in particular this course, is to do homework after every class and to keep up consistently. Cramming does not work for this course, unfortunately.

Practice Tests: Four practice tests and their solutions will be posted on Math 218 Desire2Learn page.

5. Basis of Student Assessment (Weighting)

A tentative schedule for the tests along with their percentages as that of the final grade is given in the table below. Each test covers material learned between this test and the previous test. The final exam covers all materials. One double-sided formula sheet is permitted for each test. Two double-sided sheets of formulas are permitted for the final examination.

Test 1	Wednesday, week 5, Oct.3	12.5%
Test 2	Wednesday, week 8, Oct. 24	12.5%
Test 3	Wednesday, week 11, Nov. 14	12.5%
Test 4	Wednesday, week 14, Dec. 5	12.5%
Lab Assignments		10%
Final Exam	Time and Room TBA	40%

All tests must be written during the scheduled period. 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) was sent to the instructor before the test time. **NO** late lab assignments will be accepted for credit. Final examinations will be held during December 10 – 15, and December 17 – 18. Time and room will be arranged by the college. You must be available to write the final examination at the scheduled time.

6. Grading System

The grade scheme is as follows:

$$\text{Final Grade} = \text{Max} (\text{Score1}, \text{Score2})$$

Where, Score1 = 10%(lab) + 50% (tests) + 40%(final exam)

$$\text{Score 2} = \begin{cases} 100\%(\text{final exam}) & \text{if all lab assignments have been completed satisfactorily} \\ 0 & \text{otherwise} \end{cases}$$

%	Grade	Grade Point Value	Description
90 – 100	A+	9	Exceptional, outstanding or excellent performance. Student shows initiative and an insightful grasp of theory and technique.
85 – 89	A	8	
80 – 84	A-	7	
77 – 79	B+	6	Very good or good performance. Student shows a good overall grasp of theory and technique or an excellent grasp in some areas balanced by a satisfactory grasp in others.
73 – 76	B	5	
70 - 72	B-	4	
65 – 69	C+	3	Satisfactory performance. Student shows a satisfactory grasp of theory and technique. Students may experience some difficulty being successful in courses for which this course is a prerequisite.
60 - 64	C	2	
50 –59	D	1	Marginal performance. Student has a weak grasp of theory and technique, which is insufficient to take courses for which this course is a prerequisite.
0 - 49	F	0	Unsatisfactory performance. Student should either repeat the course or enroll in a course at a lower level.

Temporary Grades

Temporary grades are assigned for specific circumstances and will convert to a final grade according to the grading scheme being used in the course. See Grading Policy at camosun.ca or information on conversion to final grades, and for additional information on student record and transcript notations.

Temporary Grade	Description
I	<i>Incomplete:</i> A temporary grade assigned when the requirements of a course have not yet been completed due to hardship or extenuating circumstances, such as illness or death in the family.
IP	<i>In progress:</i> A temporary grade assigned for courses that are designed to have an anticipated enrollment that extends beyond one term. No more than two IP grades will be assigned for the same course.
CW	<i>Compulsory Withdrawal:</i> A temporary grade assigned by a Dean when an instructor, after documenting the prescriptive strategies applied and consulting with peers, deems that a student is unsafe to self or others and must be removed from the lab, practicum, worksite, or field placement.

Temporary grades are assigned for specific circumstances and will convert to a final grade according to the grading scheme being used in the course. See Grading Policy E-1.5 at Camosun.bc.ca for information on conversion to final grades, and for additional information on student record and transcript notations.

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

LEARNING SUPPORT AND SERVICES FOR STUDENTS

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.

STUDENT CONDUCT POLICY

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.