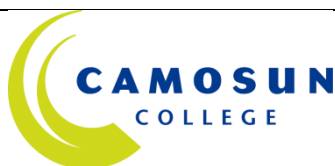


MATH 218 – 01 (Probability and Statistics 1) Course Outline



SCHOOL OF ARTS AND SCIENCE
MATHEMATICS DEPARTMENT
FALL 2008

The approved course description is available on the web at:

<http://camosun.ca/learn/calendar/current/web/math.html#MATH218>

It is recommended that you keep this outline for your records as it will not be stored indefinitely.

1. Instructor Information

Instructor:	Geoffrey Salloum
Office Hours:	See my website and office door. Feel free to make an appointment with me for other times as well.
Location:	Ewing 266
Phone:	250.370.3504 (not a good way to contact me)
Email:	salloumg@camosun.bc.ca (If I do not respond within 24 hours, then try gsalloum@gmail.com)
Website:	http://gsalloum.googlepages.com

2. Intended Learning Outcomes

Upon completion of this 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, and 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 estimates for the population mean and population proportion, and determine sample size.
- Compute and interpret an interval estimate for a difference of two means.
- Test hypotheses about a mean, a proportion, and a difference of two means.

3. Required Materials

- Text:
Devore, Jay L., "*Probability and Statistics for Engineering and the Sciences*," Seventh edition, 2008 (6th ed. is fine)
- Lab Manual:
Chen, "*Math 218 Lab Manual*," Camosun College Print Shop.
This manual is also available on my website.
- Calculator:
Sharp EL-531 Scientific.
This is the **only** calculator that may be used on examinations.

4. Course Content /Information

Homework: This course will cover selected sections of the first nine chapters of the text above. A more detailed list of topics is given below. As well as listing suggested problems from the text for each section we complete, homework exercises (not to be submitted for grading) will be available on my website as the term progresses and it is important that you attempt both the suggested problems and the homework exercises. Much of the material in this course builds upon itself and keeping up by completing these exercises is essential.

Topics	Sections in text
Introduction and Descriptive Statistics	1.1, 1.2, 1.3, 1.4
Probability	2.1, 2.2, 2.3, 2.4, 2.5
Discrete Random Variables and Probability Distributions	3.1, 3.2, 3.3, 3.4, 3.5*, 3.6
Continuous Random Variables and Probability Distributions	4.1, 4.2, 4.3, 4.4, 4.6
Joint Probability Distributions and Random Samples	5.1, 5.2, 5.3, 5.4, 5.5
Point Estimation	6.1, 6.2
Statistical Intervals Based on a Single Sample	7.1, 7.2, 7.3
Tests of Hypotheses Based on a Single Sample	8.1, 8.2, 8.3, 8.4, 8.5
Inferences Based on Two Samples	9.1, 9.2, 9.3*, 9.4*

Sections denoted with an asterisk will only be completed if time permits

Computer Labs: This course includes five computer lab sessions designed to familiarize you with the use of a statistical software package (Minitab) as a tool for statistical analysis. The labs will be held on October 1, October 8, October 22, November 5, and November 19. Each lab will include a lab assignment, which is due eight days following your lab session.

Tests: Four tests, each worth 10% of your final grade, are tentatively scheduled for September 26, October 24, November 17, and December 2. A practice test (with solutions) will be made available on my website prior to each test. One 8.5"x11" double-sided formula sheet is permitted for each test. **There will be no rewrites for missed tests.** If a test is missed for **any** reason, then the 10% of your final grade allocated to that test will be added onto your final exam provided that you do well on the missed material on the final exam. While the tests will only cover material learned since the previous test, the final exam will be cumulative. Please be sure not to schedule anything for December until you know your exam schedule. It is possible to have an exam up to and including December 16, 2008.

5. Basis of Student Assessment (Weighting)

Final Grade = Max (Score1, Score2), where

Score1 = 10% (labs) + 40% (tests) + 50% (final exam), and

Score2 = $\begin{cases} 100\% \text{ (final exam)} & \text{if all labs have been completed satisfactorily} \\ 0 & \text{otherwise} \end{cases}$

6. Grading System and Other Information

Standard Grading System (GPA)

Percentage	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	Minimum level has not been achieved.

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 E-1.5 at camosun.ca for 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, due to design may require a further enrollment in the same course. No more than two IP grades will be assigned for the same course. (For these courses a final grade will be assigned to either the 3 rd course attempt or at the point of course completion.)
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.

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.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.