



CAMOSUN COLLEGE
School of Arts & Science
Department of Mathematics & Statistics

STAT-218-001
Probability and Statistics 1
Winter 2018

COURSE OUTLINE

The course description is available on the web @ <http://camosun.ca/learn/calendar/current/web/stat.html>

Please note: This outline will not be kept indefinitely. It is recommended students keep this outline for their records, especially to assist in transfer credit to post-secondary institutions.

1. Instructor Information

(a) Instructor	Susan Chen
(b) Office hours	MWThF 10:30 – 11:20 AM
(c) Location	E260
(d) Phone	250-370-3497
(e) E-mail	chen@camosun.bc.ca
(f) Website	online.camosun.ca

2. Intended Learning Outcomes

Upon completion of this course a student will be able to:

1. Compute and interpret descriptive statistics.
2. Compute and interpret probability and conditional probability.
3. 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.
4. Perform calculations involving joint probability distributions of two discrete random variables, or random samples.
5. Derive and compute maximum likelihood estimates.
6. Compute and interpret interval estimate for the population mean, population proportion, and determine sample size.
7. Compute and interpret interval estimate for a difference of two means.
8. Test hypotheses about a mean, a proportion, and the difference of two means.

3. Required Materials

(a) Texts

- 1) Open Source textbook 1: Intro to Probability and Statistics Using R by GJ Kerns. FREE PDF download at <http://www2.uaem.mx/r-mirror/web/packages/IPSUR/vignettes/IPSUR.pdf>. Hard copies are sold in Camosun Bookstore at Lansdowne.
- 2) Optional textbook: Probability and Statistics for Engineers and the Sciences by Devore, any edition 5th and up. The 9th edition is sold in the Camosun Bookstore at Lansdowne.
- 3) *STAT 218 R Lab Manual*, available on D2L.

(b) Other

A Sharp EL-531 Scientific Calculator, which is the only calculator allowed for tests and the final exam.

4. Course Content and Schedule

Lecture: Monday and Wednesday 8:30 – 10:20 AM, room Y201,
Labs 9:30 – 10:20 AM, Thursday in weeks 2, 4, 8, 10, 12, and 14, room E200
Dates for tests and assignments can be found in the Course Calendar.

Topics
An Introduction to Probability and Statistics
An Introduction to R
Data Description
Probability
Discrete Distributions
Continuous Distributions
Multivariate Distributions
Sampling Distributions
Estimation
Hypothesis Testing
Simple Linear Regression
One-Way Analysis of Variance

R Labs: This course includes R lab sessions designed to familiarize students with the use of a statistical software to perform data analysis and the procedure of reporting data analysis results. *You will need the lab manual for each lab.* The required lab manual is available on D2L. A lab assignment follows each lab session. Lab assignments are to be submitted to the D2L Dropbox one week from each lab session. Late labs will not be accepted.

Math Lab (Help Centre): Math lab **E224** is staffed with instructional assistants available for **free face-to-face** help (no, they don't answer emails or phone calls). Lab hours are posted on the lab door and can be viewed at <http://camosun.ca/services/help-centres/>

Calculator policy: A Sharp EL-531 scientific calculator is required. This is the *only* calculator that will be allowed for tests and the final examination. This calculator is available at the Lansdowne Bookstore, and some other stores.

Homework: “*I hear and I forget. I see and I remember. I do and I understand.*” The homework for this course will include 1) Problem sets on worksheets, 2) R lab assignments, and 3) Suggested exercises posted on D2L. *In order to get a full understanding of the course materials, which usually leads to a good grade, it is necessary to mindfully complete all three sets of homework. It is essential to review notes and do homework each week and to keep up consistently. **Cramming does not work for this course.***

Attendance

Attendance is necessary. Showing up to classes is the easiest and most important thing you can do to help you succeed the course. If you feel yourself falling behind at any point during the term, then please do not hesitate to come to speak to me.

Desire2Learn (D2L)

This class has the assistance of D2L, an online course management system. All course related materials, including lab manuals and data sets, worksheets and solutions, practice problem sets and solutions, tests solutions, grades, and announcements will be available on D2L. It is your responsibility to subscribe to the *notifications on D2L* or check it regularly.

5. Basis of Student Assessment (Weighting)

- (a) Lab assignments 10%
- (b) Quizzes 10%
- (c) Midterms 30%
- (d) Final Exam 50%

Please refer to the **Course Calendar** for tentative tests dates and lab assignments 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* the instructor is notified *before* the test. NO late assignments will be accepted. Final examinations will be scheduled by the College and they will take place during April 16 - 24. You must be available to write the final examination at the scheduled time. Vacations or scheduled flights are not considered as emergencies.

6. Grading System

- Standard Grading System (GPA)
- Competency Based Grading System

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

Please see STAT 218 D2L page.

8. College Supports, Services and Policies



Immediate, Urgent, or Emergency Support

If you or someone you know requires immediate, urgent, or emergency support (e.g. illness, injury, thoughts of suicide, sexual assault, etc.), **SEEK HELP**. Resource contacts @ <http://camosun.ca/about/mental-health/emergency.html> or <http://camosun.ca/services/sexual-violence/get-support.html#urgent>

College Services

Camosun offers a variety of health and academic support services, including counselling, dental, disability resource centre, help centre, learning skills, sexual violence support & education, library, and writing centre. For more information on each of these services, visit the **STUDENT SERVICES** link on the College website at <http://camosun.ca/>

College Policies

Camosun strives to provide clear, transparent, and easily accessible policies that exemplify the college's commitment to life-changing learning. It is the student's responsibility to become familiar with the content of College policies. Policies are available on the College website at <http://camosun.ca/about/policies/>. Education and academic policies include, but are not limited to, Academic Progress, Admission, Course Withdrawals, Standards for Awarding Credentials, Involuntary Health and Safety Leave of Absence, Prior Learning Assessment, Medical/Compassionate Withdrawal, Sexual Violence and Misconduct, Student Ancillary Fees, Student Appeals, Student Conduct, and Student Penalties and Fines.

A. GRADING SYSTEMS <http://camosun.ca/about/policies/index.html>

The following two grading systems are used at Camosun College:

1. Standard Grading System (GPA)

Percentage	Grade	Description	Grade Point Equivalency
90-100	A+		9
85-89	A		8
80-84	A-		7
77-79	B+		6
73-76	B		5
70-72	B-		4
65-69	C+		3
60-64	C		2
50-59	D		1
0-49	F	Minimum level has not been achieved.	0

2. Competency Based Grading System (Non GPA)

This grading system is based on satisfactory acquisition of defined skills or successful completion of the course learning outcomes

Grade	Description
COM	The student has met the goals, criteria, or competencies established for this course, practicum or field placement.
DST	The student has met and exceeded, above and beyond expectation, the goals, criteria, or competencies established for this course, practicum or field placement.
NC	The student has not met the goals, criteria or competencies established for this course, practicum or field placement.

B. 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 <http://camosun.ca/about/policies/index.html> 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 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.