



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

STAT-219-001
Probability and Statistics 1
Winter 2020

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	M 3:30 – 4:00, TuTh 12:00 – 12:20 & 3:30 – 4:00, WF 1:00 – 1:20
(c) Location	E242
(d) Phone	250-370-3497
(e) E-mail	chen@camosun.bc.ca
(f) Website	http://online.camosun.ca

2. Intended Learning Outcomes

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

1. Perform analysis of paired data.
2. Make inferences concerning a difference between population proportions.
3. Make inferences concerning a population variance, or two population variances.
4. Make inferences concerning more than two population means (analysis of variance) with a single factor or with two factors.
5. Compute Type I error, Type II error, and the power of a hypothesis test.
6. Perform correlation and regression analyses, and make inferences about parameters and predictions.
7. Perform basic categorical data analysis.
8. Perform basic non-parametric data analysis.

3. Required Materials

- (a) Texts
 - 1) Optional textbook: Probability and Statistics for Engineers and the Sciences by Devore, any edition 7th and up. The 9th edition is available in Lansdowne Bookstore.
 - 2) *STAT 219 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

Lectures: MTuWTh 2:30 - 3:20 in E348

Labs: F 9:30 - 10:20 in E100 in weeks 2,4,6, 8,10,and 12

Dates for tests and assignments can be found in the Course Calendar.

<u>Topic</u>	<u>Sections</u>
Unit 1. Review: Confidence Intervals and Tests of Hypotheses	7.1-7.3, 8.1-8.5, 9.1-9.2
Unit 2. Confidence Intervals for the Variance	7.4 plus supplementary notes
Unit 3. Inference Based on Two Samples	9.3 – 9.5
Unit 4. The Analysis of Variance	10.1 - 10.3
Unit 5. Multifactor Analysis of Variance	11.1 - 11.2
Unit 6. Simple Linear Regression and Correlation	12.1 - 12.5
Unit 7. Analysis of Categorical Data	14.1 - 14.3
Unit 8. Distribution-Free Procedures	15.1 - 15.2, 15.4

R Labs: This course includes R lab sessions designed to familiarize students with the use of a computer as a tool for statistical analysis. *You will need to work through a lab tutorial in R in each lab.* A lab assignment will be assigned for each lab session. Understanding each lab is essential for succeeding the Lab Final Examination.

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, 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 and Assignments 20%
- (b) Midterms 30%
- (c) Lab Final 10%
- (d) Final Exam 40%

All tests must be written during the scheduled times. In the event that you missed a test due to a family emergency or illness, the weight of the test will be put on the final exam *provided* the instructor is notified *before* the test and all assignments are completed satisfactorily. NO late assignments or labs will be accepted. Final examinations will be scheduled by the College and they will take place during April 14-22. 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 219 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.