



# Math 116 – Elementary Statistics

## Course Outline – Sept-Dec 2009, Section 3

**Instructor:** Angus Argyle

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1. **Classes:** M,W,Th,F 11:30AM – 12:20PM, Young Building, Room 219  
**Office Hours:** Mondays & Fridays 10:30 – 11:20 am; Tuesdays – Thursdays 1:30 – 2:30 pm, and by appointment.

### 2. Course Content and Intended Learning Outcomes

This course will cover most of the material in the first 26 chapters of the textbook *Intro Stats*, excluding Chapters 11 and 22. The topics will include exploring and understanding data, exploring relationships between variables, gathering data, randomness and probability, inference about proportions, inference about means and Inference when variables are related.

Upon completion of this course students will be able to:

- a. Identify problems in our society for which statistical analyses are suitable.
- b. Compute and interpret descriptive statistics.
- c. Solve basic probability problems. Distinguish between continuous and discrete probability distributions. Perform calculations involving various probability distributions including Binomial and Normal distributions.
- d. Estimate the population mean and population proportion, and determine sample size.
- e. Estimate the difference between two means, or two proportions.
- f. Test hypotheses about a mean, a proportion, a difference of two means, or a difference of two proportions.
- g. Perform basic correlation and simple linear regression analysis.
- h. Perform basic categorical data analysis.
- i. Perform basic statistical data analysis with the aid of a computer software package.

### 3. Required Materials

**Textbook:** De Veaux, Velleman and Bock, *INTRO STATS*, 2<sup>nd</sup> or 3<sup>rd</sup> Edition, Addison Wesley, 2009

**Lab Manual:** Calver, Chen, and Salloum, *MATH 116 LAB MANUAL*, Camosun College Print Shop (Free on the course webpage)

**Calculator:** Sharp EL – 531 (only calculator allowed for tests and examinations).

4. **Computer Labs:** Tuesdays 11:30AM - 12:20PM, Ewing Building, Room 115

This course includes six computer lab sessions designed to familiarize students with the use of a computer as a tool for statistical analysis. The statistics software we use is called Statistics Program for Social Scientists (SPSS), which is bundled with new textbooks. *You must have a lab manual before your first lab.* The lab manual is available in the Camosun Bookstore and on the course webpage.

## 5. Evaluation:

**A lab assignment is assigned for each lab session**, except for the Lab Intro session. Lab assignments are due at the beginning of class on the Thursday 9 days after the lab session. **A take-home Lab Final Examination** will be given in several weeks before the end of the semester and will be **due in the final class**. The labs will be held in the computer lab Ewing 115 on the following days:

Lab Intro	Lab1	Lab2	Lab3	Lab4	Lab5
Sept 8	Sept 15	Sept 29	Oct 13	Nov 10	Dec 1

**Homework assignments:** There are two sets of homework problems for this course, Minimum and Extra. The “Minimum” set is to be submitted for credit. The “Extra” set is for you to practise on your own, and there are solutions in the Student Solution Manual (and short answers at the back of the textbook). In order to get a full understanding of the course materials, you need to do some or all of the “Extra” problems in each chapter. Due dates for the homework sets are Oct. 2, Oct. 30, and Nov. 30.

**Tests and Final Exam:** There are three tests in this course tentatively schedule for Oct. 7, Nov. 4, and December 3. There is also a final exam that covers all the material in the course.

## 6. Successful Learning

Showing up to class is arguably the easiest and most important thing you can do to help you succeed in the course. **Keeping up and practicing are essential parts of any statistics course because the material builds on itself.** If you feel yourself falling behind at any point during the term, then please do not hesitate to come speak to me. **Cramming does not work for this course.**

Partial notes for the lectures will be posted on the course webpage in advance of the lectures on the corresponding topics. It is recommended that you have these notes with you during the lectures so that you can fill in the missing portions of the notes.

**Resources:** There are two math help centers in the **Ewing Building, Rooms 224 and 342**, staffed by instructional assistants available for free for students who would like help or would like to work with other students. The hours of operation are posted on the door of each room.

The course webpage contains this course outline, the lab manual, assigned & suggested homework problems and a set of practice tests that you may find useful. Plus, there is a link (<http://www.learner.org/resources/>) to a series of videos; one video for almost every topic in the course. To play a video, you do the following: click on Against All Odds: Inside Statistics, scroll down to find the video title that you would like to view and then click on the VOD icon. You will need sound. You will be asked to sign up with your email account (any email account).

## 7. Basis of Student Assessment (Weighting)

*Score 1*

3 Homework Assignments	10%
5 Lab Assignments	10%
3 Tests (50 minutes each)	30%
Take home Lab Final	10%
Cumulative Final Exam (3 hrs)	40%

*Score 2*

Take home Lab Final	10%
Cumulative Final Exam (3 hrs)	90%

Your final grade will be the higher of Score 1 and Score 2 if all homework and lab assignments have been completed and 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 score of at least 40% on the final exam.

Please refer to the **Pace Schedule** shown below for tentative *test dates* and *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 promptly sent to the instructor. 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.**

## 8. Grading System

Percentage grades will be converted to letter grades and *grade point* values as follows:

A+: $90 \leq \% \leq 100$	9	B+: $77 \leq \% < 80$	6	C+: $65 \leq \% < 70$	3	F: $0 \leq \% < 50$	0
A: $85 \leq \% < 90$	8	B: $73 \leq \% < 77$	5	C: $60 \leq \% < 65$	2		
A-: $80 \leq \% < 85$	7	B-: $70 \leq \% < 73$	4	D: $50 \leq \% < 60$	1		

## 9. Prerequisites:

The prerequisite is a C or higher in Principles of Math 11, or Applications of Math 11, or MATH 072, or assessment. If you feel that you might not have the necessary backgrounds please see me in the first week of classes and we will talk about your situation.

## 10. 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.

**The Course Description in the Camosun Calendar is available on the web at <http://camosun.ca/learn/calendar/current/web/math.html>**

## 11. Pacing Schedule

<u>Week</u>	<u>Chapter</u>
1	1, 2, 3
2	4, 5
3	6, 7; Lab 1 assignment due.
4	8, 9; Homework #1 due.
5	Review Chapters 1 – 9; Test 1; Chapter 10; Lab 2 due.
6	12, 13
7	14, 15; Lab 3 due.
8	16, 17; Homework #2 due.
9	Review Chapters 10 – 17; Test 2; Chapter 18
10	19, 20
11	21; Lab 4 due.
12	23, 24, 25
13	Homework #3 due; Review Chapters 18 – 25; Test 3
14	26 and Final Exam Review; Lab 5 due; Lab Final due.