



Math 116 – Elementary Statistics

Course Outline – Jan-Apr 2010, Section 2

Instructor: Angus Argyle

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1. **Classes:** Mondays & Thursdays 2:30 – 4:20 pm, Young Building, Room 227
Office Hours: Mondays thru Thursdays 1:30 – 2:20 pm,
Mondays & Wednesdays 5:30 – 5:50 pm, and by appointment.

2. Course Content and Intended Learning Outcomes

<u>Topic</u>	<u>Chapters</u>
Exploring and Understanding Data	1- 6
Exploring Relationships Between Variables	7- 10
Gathering Data	12 - 13
Randomness and Probability	14 - 17
Inference about Proportions	18 - 21
Inference about Averages	23 - 25
Inference When Variables are Related	26

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 the 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*, 2nd or 3rd Edition, Addison Wesley, 2009

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

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

4. Computer Labs: Wednesdays 2:30 - 3:20 pm, 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 an electronic version is 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 Tuesday 6 days after the lab session. **A take-home Lab Final Examination** will be handed out 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	Lab 1	Lab 2	Lab 3	Lab 4	Lab 5
January 6	January 13	January 27	February 10	March 10	March 24

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 will need to do some or all of the “Extra” problems in each chapter.

Ask questions before you get frustrated or behind. Please try to understand what you are doing when you work through each problem. Try to attempt each problem before you look at the solutions. Remember the objective of doing homework is to gain a better understanding of the course material.

Tests and Final Exam: There are three tests in this course. While the tests will only cover chapters learned since the previous test, the material is cumulative and the final exam will cover the entire course.

6. Successful Learning

Attendance: *Attendance is required.* Showing up to classes is the easiest and most important thing you can do to help you succeed in the course. **Keeping up and practicing at least 30 minutes each day are essential parts of any statistics course as much of the material builds on itself.** If you feel yourself falling behind at any point during the term, then please speak with me. **Only students with excellent attendance will be eligible for using the “Score 2” option for their final grade (see Item 7).**

Resources

Also, there are two **math help centers** on the Lansdowne campus staffed by instructional assistants available for free for students who would like help or would like to work with others. They are located in **Ewing 224** (for all math courses) and **342** (mainly for high school level math).

The **course webpage** contains this course outline, the lab manual, assigned & suggested homework problems. Practice tests & solutions will be posted prior to each test. 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: 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 be asked to sign up with your email account (any email account).

7. Basis of Student Assessment (Weighting)

Score 1		Score 2	
Homework Assignments	10%	Take home Lab Final	10%
5 Lab Assignments	10%	Cumulative Final Exam (3 hrs)	90%
3 Tests (50 minutes each)	30%		
Take home Lab Final	10%		
Cumulative Final Exam (3 hrs)	40%		

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, and your attendance has been excellent. Otherwise, your final grade will be Score 1. Note that in order to pass this course (D or higher), you must obtain a final examination score of 40% or higher.

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 from April 12 to 20. You must be available to write the final examination at the scheduled time.

8. Awards

Among other Mathematics awards, Camosun has a Statistics Award (\$500). You can find out more information about the awards on this page:
<http://camosun.ca/learn/programs/math/scholarships.html>

9. Grading System

Percentage grades will be converted to letter grades as follows:

A+: $90 \leq \% \leq 100$	B+: $77 \leq \% < 80$	C+: $65 \leq \% < 70$	F: $0 \leq \% < 50$
A: $85 \leq \% < 90$	B: $73 \leq \% < 77$	C: $60 \leq \% < 65$	
A-: $80 \leq \% < 85$	B-: $70 \leq \% < 73$	D: $50 \leq \% < 60$	

10. 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 background please see me in the first week of classes and we will talk about your situation.

11. Recommended Materials & Services to Assist Students to Succeed Throughout the Course

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.

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.