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| **CAMOSUN COLLEGE** | ***School of Arts & Science***<br>***MATHEMATICS DEPARTMENT***<br><br>**MATH 116-01**<br>**Elementary Statistics**<br>**2011 Winter** |

## COURSE OUTLINE

The Approved Course Description is available on the web @ http://camosun.ca/learn/calendar/current/web/math.html

This course is mainly for students in criminal justice, dental hygiene, social sciences and general arts. Topics include descriptive statistics, probability and probability models, one- and two-sample inferences for population means and proportions, simple linear correlation and regression, categorical data analyses, and applications using SPSS.

### 1. Instructor Information

| (a) | Instructor: | Susan Chen |
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| (b) | Office: | E260 |
| (c) | Phone: | 250-370-3497 |
| (d) | Email: | chen@camosun.bc.ca |
| (e) | Webpage: | http://sites.google.com/site/susanstats/ |
| (f) | Desire2Learn page | http://online.camosun.ca/ |
| (g) | Office Hours: | 10:30 – 11:30 AM     Monday – Friday |

### 2. Intended Learning Outcomes

The prerequisite is a C or higher in Principles of Math 11, or Applications of Math 11, or MATH 072, or assessment. Upon completion of this course the student will be able to:

1. Identify problems in our society for which statistical analyses are suitable.
2. Compute and interpret descriptive statistics.
3. Solve basic probability problems. Distinguish between continuous and discrete probability distributions. Perform calculations involving various probability distributions including Binomial and Normal distributions.
4. Estimate the population mean and population proportion, and determine sample size.
5. Estimate the difference between two means, or two proportions.
6. Test hypotheses about a mean, a proportion, a difference of two means, or a difference of two proportions.
7. Perform basic correlation and simple linear regression analysis.
8. Perform basic categorical data analysis.
9. Perform basic statistical data analysis with the aid of a computer software package.

### 3.     Required Materials

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| **(a)** | **Texts** | **Textbook**<br>   De Veaux, Velleman and Bock, Intro Stats, Second or Third Edition,<br>   Pearson Addison Wesley, 2009<br>**Lab Manual**<br>   Math 116 Lab Manual, Camosun College Print Shop |
| **(b)** | **Other** | A Sharp EL-531 Scientific Calculator. *No other calculators are allowed for tests and the final examination.* |

### 4. Course Content

| Topics | Chapters |
| --- | --- |
| Exploring and Understanding Data | 1- 6 |
| Exploring Relationships Between Variables | 7- 10 |
| Gathering Data | 12 - 13 |
| Randomness and Probability | 14 - 17 |
| From the Data at Hand to the World at Large | |
| (Inference about proportions) | 18 - 21 |
| Learning about the World | |
| (Inference about means) | 23 - 25 |
| Inference When Variables are Related | 26 |

**Desire2Learn (D2L):** This class has the assistance of D2L, an online course management system. Every student registered for this class has access to D2L.

> **Login Site**: **http://online.camosun.ca.**
> **Username**: **firstname.lastnamedate-of-birth, e.g., john.smith07.**
> **Password**: **MMDDYY** of your birthdate      *if this is the first time for you to use D2L.*
> *If you have used D2L at Camosun College before, then your password is the same as the last time you had used.*

**For example**, **John Smith** (born on March 7, 1991) has username **john.smith07** and password **030791**.

All course related materials, such as slides, practice tests and their answers, tests answers, marks, and announcements will be available on D2L. It is your responsibility to check it regularly.

**SPSS Labs:** This course includes seven 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 ready before your first lab.* The required lab manual is available in the bookstore at Lansdowne Campus and on D2L. A lab assignment is assigned for each lab session, except for the Lab Intro session. Lab assignments are due on the **Thursday** following the lab session. The labs will be held in the computer lab E115 on the following days: **January 14, January 21, February 4, February 18, March 18,** and **April 1**. *Please note that SPSS can be accessed in all GP labs and the Learning Commons.*

**Attendance:** *Attendance is required.* Showing up to classes is the easiest and most important thing you can do to help you succeed the course. **Keeping up is an essential part 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 do not hesitate to come speak to me. *Only Students with good attendance will be eligible for the "100% final" option (see Item 5, Score 2).*

**Math Lab:** Math lab **E224** is staffed with instructional assistants available for **free** help. It is a great idea to do your homework there and get help whenever needed.

**Homework:** "*I hear, I forget. I do, I understand.*" There are two sets of homework assignments for this course. Set #1 consists of 7 Assignment Worksheets. They will be submitted for credit. Set #2 is a list of exercise problems from the textbook. Answers for these problems are given in the textbook. Solutions are available in the student solutions manual. *In order to get a full understanding of the course materials (therefore a good grade), it is necessary to complete both sets of homework. It is essential to do homework after every class and to keep up consistently. Cramming does not work for this course, unfortunately.*

*It will be very helpful if you can schedule at least 30 minutes each day for completing the homework.* 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.

**Practice Tests:** There will be a practice test session on the day before each test. Students are encouraged to ask questions and to work together with peers during these sessions. Solutions for these practice tests will be posted on Desire2Learn after each session. *You will benefit most from these practice tests if you come to these sessions with the notes reviewed, all homework problems completed, and a formula sheet made.*

## 5. Basis of Student Assessment (Weighting)

Score 1

| Assignments/Labs | 20% |
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| Tests | 40% |
| Lab Final | 10% |
| Cumulative Final Exam (3 hours) | 30% |

Score 2

| Lab Final | 10% |
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| Cumulative Final Exam (3 hours) | 90% |

To earn an A+ in the course, you must obtain at least 90% on both Score 1 and Score 2. For all other grades, your course grade will be the higher of Score 1 and Score 2 if all homework and lab assignments have been completed in a satisfactory manner and your attendance has been excellent; otherwise, your course grade will be Score 1. *Note that in order to pass this course (D or higher), you must obtain a final examination score of 30% or higher.*

Please refer to the **Pace Schedule** for tentative *test dates* and lab/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 sent to the instructor before the test time. <u>NO</u> late homework or lab assignments will be accepted for credit. Final examinations will be scheduled by the college and they will take place during April 18-21 & 26-29. You must be available to write the final examination at the scheduled time.**

## 6. Awards
Among other Mathematics awards, we now have a Statistics Award ($500). You can find out more information about the awards on this page: http://camosun.ca/learn/programs/math/scholarships.html.

## 7. Grading System

Percentage grades will be converted to letter grades as follows:

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|---|---|---|---|---|---|---|---|
| A+ | [90, 100] | B+ | [77, 80) | C+ | [65, 70) | F | [0, 50) |
| A | [85, 90) | B | [73, 77) | C | [60, 65) | | |
| A- | [80, 85) | B- | [70, 73) | D | [50, 60) | | |

## 8. Recommended Materials or Services to Assist Students to Succeed Throughout the Course

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.
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.