Math 216 – Applied Statistics
Course Outline – January-April 2010, Section 3

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1. **Classes:** Mondays & Wednesdays 6:00pm - 7:50pm, Young Building, Room 227
    Office Hours: Mondays – Thursdays 1:30 – 2:20 pm,
    Mondays & Wednesdays 5:30 – 5:50 pm, and by appointment.

2. Intended Learning Outcomes
Upon completion of this course students will be able to:

   a. Compute and interpret descriptive statistics.
   b. Perform calculations that apply the basic properties and concepts of probability.
   c. Make statistical inferences for one population and two populations.
   d. Make statistical inferences for more than two populations (ANOVA).
   e. Apply the technique of linear regression in circumstances where appropriate and assess the usefulness of a linear model in these situations using the concept of correlation.
   f. Apply basic methods to analyze categorical data.
   g. Use the statistical software MINITAB to perform basic data analysis.

3. Required Materials

a. Introduction to the Practice of Statistics (5th or 6th ed.), Moore, et al. Freeman, 2006 or 2009.
b. Math 216 Lab Manual, Calver, Chen and Salloum. (*Electronic copy on the course webpage*)
c. Sharp EL – 531 Calculator (only calculator allowed for tests and examinations)

4. Course Content /Information

Looking at Data - Distributions	1.1 – 1.3
Looking at Data – Relationships	2.1 – 2.5
Producing Data	3.1 – 3.4
Probability – The Study of Randomness	4.1 – 4.5
Sampling Distributions	5.1 – 5.2 and Poisson handout
Introduction to Inference	6.1 – 6.3
Inference for Distributions	7.1 – 7.2
Inference for Proportions	8.1 – 8.2
Analysis of Two-Way Tables	9.1 – 9.4
Inference for Regression	10.1
Analysis of Variance	12.1

Computer Labs: This course includes six computer lab sessions held on some **Wednesday nights** throughout the term (**January 6, 13 & 27, February 10 & 24, March 17**) in **Ewing 115 from 8:00pm to 8:50pm**. The labs are designed to familiarize you with the use of a computer as a tool for statistical analysis. The computer software we use is Minitab 14. Each lab session includes a **lab assignment** to be handed in at the start of class on the Wednesday 7 days after the corresponding lab session. A **take-home lab final** will be made available several weeks before the end of the term and will be due on the final day of class.

Tests: Three 50-minute tests will be held during the semester. A practice test (with solutions) will be made available on the course webpage prior to each test. **There will be no rewrites for missed tests. 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.** 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.

Final examinations will be scheduled by the college and they will take place during April 12-20. You must be available to write the final examination at the scheduled time.

Attendance and Practice: *Attendance is required.* Showing up to class is arguably the easiest and most important thing you can do to help your college experience. **For this course in particular, keeping up and doing practice exercises is essential 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. **Cramming does not work for this course**.

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).

This course will cover most of the material in the first 12 chapters of the textbook. The specific sections from the textbook are listed in the Pacing Schedule. A list of suggested exercises is attached to this course outline. **Assigned exercises will be announced in class and posted on the course page --- the assigned exercises are to be submitted for grading.** Working through these exercises is perhaps the best way to ensure that you understand the material. **Late assignments will <u>not</u> be accepted because the solutions are posted on the course page shortly after the due date.**

5. Basis of Student Assessment (Weighting)

Score 1

Assignments / Labs	20%
Tests (50 min each)	30%
Lab Final	10%
Cumulative Final Exam (3 hrs)	40%

Score 2

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

*Your final grade will be the higher of Score 1 and Score2 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.*

6. 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: $50 \leq \% < 60$

7. Prerequisites:
The prerequisite is MATH 109 or Principles of Math 12. 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.

8. 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.

9. 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

10. Rough Pacing Schedule

Week	Sections (from 6th edition)	Sections (from 5th edition)
1	1.1, 1.2	1.1, 1.2
2	1.3, 2.1, 2.2	1.3, 2.1, 2.2
3	2.3, 2.4, 2.5	2.3, 2.4, 9.1
4	2.6, 3.1, 3.2	2.5, 3.1, 3.2
5	3.3, 3.4, 4.1, 4.2, 4.5	3.3, 3.4, 4.1, 4.2, 4.5
6	4.3, 4.4, 5.1	4.3, 4.4, 5.1
7	Poisson and 5.2	Poisson and 5.2
8	6.1, 6.2	6.1, 6.2
9	6.3, 6.4, 7.1	6.3, 6.4, 7.1
10	7.2, 8.1	7.2, 8.1
11	8.2, 9.1	8.2, 9.2
12	9.2, 9.3	9.3, 9.4
13	10.1	10.1
14	12.1	12.1