

Carleton University
School of Mathematics and Statistics
STAT 2509 - Computational Statistics (Statistical Modeling II)

- Term:** Winter 2016
- Instructor:** Agnes Benhin
- Office:** Room 5218 HP, Tel.: 520-2600 Ext. 8999
- E-mail:** abenhin@magma.ca
- Website:** www.math.carleton.ca/~abenhin
- Office Hours:** One hour after the each class or by appointment.
- Prerequisites:** (i) STAT 2507 and
(ii) Grade 12 Mathematics (Geometry and Discrete Mathematics)
or
an OAC in Algebra and Geometry, or MATH 0107; or equivalents; or permission of the School.
- If you are not sure about your prerequisites, please see me or the Undergraduate Advisor Mr. Ken Small in 4304 HP.
- Text:** (i) "Introduction to Probability & Statistics", 12th edition (or 3rd Canadian ed.), by William Mendenhall, Robert J. Beaver and Barbara Beaver.
(ii) "Learning SAS Version 8", by Ann Woodside.
- Lectures:** Mondays & Wednesdays, 8:35 - 9:55, Room 103 Steacie Building
- Lab:** Lab1 : Wednesday, 13:35-14:25, Room 4385 HP
Lab2 : Wednesday, 11:35-12:25, Room 4385 HP
Lab3 : Thursday, 16:35-17:25, Room 4385 HP
Lab4: Thursday, 8:35-9:25, Room 4385 HP
Lab5: Monday, 12:35-13:25, Room 4385 HP
Lab6: Friday, 13:35-14:25, Room 4385 HP
- Grades:** The course will be made up of 2 parts: Term Work (40%) and Final Examination (60%).
- Term Work:
- 2 tests..... 10% each
4 assignments.....5% each
- Tests will be held on February 10th and March 9th.
- Final Examination: Consists of a three-hour closed book examination of the whole course covered during the term.
- In the case of the Supplemental Final Examination, the final exam will be written in the Summer term of 2016 and it replaces only the final examination mark of the course grade.

Course Outline:

- Simple Linear Regression: Method of Least Squares, Inference, Analysis of Variance (ANOVA), Correlation, Test for Lack of Fit and Residual Analysis, Data Transformation.
- Multiple Linear Regression: Least Squares, Inference, ANOVA, Residual Analysis, Multicollinearity, Variable Selection Procedures.
- Experimental Design: Completely Randomized Design (CRD), Randomized Block Design (RBD), Multiple Comparisons, Non-parametric Tests.
- Categorical Data: Pearson's Chi-square Statistic; the Goodness-of Fit Test; the Chi-square Test of Independence and Homogeneity.

Calculators: You may use any non-programmable calculator for the tests and final exam.

Important Notes:

1. If your final exam mark is less than 40% you will receive an F, regardless of your term mark.
2. In case of being absent from the final exam, if your term work is not satisfactory (i.e. less than 50%), you will receive an FND.
3. If your final exam mark is higher than your overall mark, you will receive a grade based solely on your final exam mark.
4. You will receive 0 for each test you miss. If you miss both tests you will receive an F. Exception to this rule will be made only if you provide me with a proper documented reason (such as sickness verified by a physician).

Winter Break: **February 15th – February 19th** .

- Last day to withdraw from the course is **April 8th**.
- Students with a disability who require academic accommodations, please feel free to discuss it with me. Students must also contact the Paul Menton Centre to complete the required forms by **March 6th**.

The Paul Menton Centre for Students with Disabilities (PMC) provides services to students with Learning Disabilities (LD), psychiatric/mental health disabilities, Attention Deficit Hyperactivity Disorder (ADHD), Autism Spectrum Disorders (ASD), chronic medical conditions, and impairments in mobility, hearing, and vision. If you have a disability requiring academic accommodations in this course, please contact PMC at 613-520-6608 or pmc@carleton.ca for a formal evaluation. If you are already registered with the PMC, contact your PMC coordinator to send me your *Letter of Accommodation* at the beginning of the term, and no later than two weeks before the first in-class scheduled test or exam requiring accommodation.

Review of Final Exams: If you wish to review your exam please email the instructor to set up a convenient time to review the exam. If the instructor is unavailable, contact the associate director to set up an appointment to review your exam. Exams are only available for 3 weeks after the exam has been written. If you wish to review your exam after the three weeks, you must formally request to view your exam from the Registrar office. For more information of this process go to <http://www.carleton.ca/registrar/>

Academic Accommodations: Should you need special arrangements during the term in order to meet your academic obligations due to disability, pregnancy or religious obligations, please let me know in writing within the first two weeks of class. You may visit the Equity Services website to view the policies and to obtain more detailed information on academic accommodation at <http://carleton.ca/equity/accommodation>