Course Information

STAT 3340 / MATH 3340, Fall 2011

• Lecture
  Lectures are  MWF 9:30AM–10:30AM  in Chemistry 223

• Instructor
  Name: Mike Dowd
  Office: Chase 116
  Email: Michael.Dowd@Dal.Ca
  Office hours: Monday, Wednesday, 230PM-330PM

• Marking Scheme
  Assignments  30%
  Midterm  20%
  Final Exam  50%

• Assignments
  There will be assignments (at a weekly to biweekly interval) worth 30% of your mark. Late assignments will have their mark reduced by 25% per day. Assignments before the midterm will focus on problems arising from the topics covered in your class. The assignments after the midterm will comprise a guided project wherein you analyse a data set of your choice, and apply the techniques covered in the class.

• Exams
  The midterm (1.5 hours) will be in the evening of Wednesday Oct 26 from 600-730PM, Location TBA. The final exam (3 hours) will be scheduled by the Registrar. There will be no class on the following Friday (Oct 28th).
- **Conversion to Letter Grades**
  (The Faculty of Science grading scheme is used)

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<thead>
<tr>
<th>Total grade</th>
<th>Letter grade</th>
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<tbody>
<tr>
<td>90-100</td>
<td>A+</td>
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<tr>
<td>85-89.9</td>
<td>A</td>
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<tr>
<td>80-84.9</td>
<td>A-</td>
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<td>75-79.9</td>
<td>B+</td>
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<td>70-74.9</td>
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<tr>
<td>65-69.9</td>
<td>B-</td>
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<td>62-64.9</td>
<td>C+</td>
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<td>55-57.9</td>
<td>C-</td>
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<tr>
<td>50-54.9</td>
<td>D</td>
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<td>&lt;50</td>
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</tbody>
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- **Textbook**

  This is a required text and will be followed closely.

  *Introduction to Linear Regression Analysis*
  by Montgomery, Peck and Vining

  It is available in Dal Bookstore. The current edition is the 4th one, however the third edition is also suitable.

- **Course Website**

  There is a website for the course
  [www.mathstat.dal.ca/~mdowd/stat3340/stat3340.html](http://www.mathstat.dal.ca/~mdowd/stat3340/stat3340.html)
  where all announcements, selected class notes, assignments, and computer code will be posted. This site will be used for all course management.

  An OWL site will also be available, but used only for the purpose of disseminating the assignment and exam marks.

- **Statistical Computing using R**

  The R statistical package will be used, and will be required for the assignments. R is available for download
  [http://www.r-project.org/](http://www.r-project.org/)
  This is free software that is state-of-the-art for statistical computing. It is available for all platforms. Follow the instructions on the site for downloading. We will be using this software throughout the course. I will provide examples and sample code to get started. Online tutorials for getting started are available, and I will suggest some of these.
• **Pre-requisite**

The formal prerequisites are:

1. STAT 2080 - Statistical methods for data analysis and inference
2. MATH 2030 - Linear algebra
3. MATH 1010 (Calculus) or STAT 2060 (Introduction to Prob and Stats)

The skills required are:

- Basic concepts from introductory statistics (probability, random variables, expectations and inference)
- A solid working knowledge of matrix algebra. A basic knowledge of calculus.

• **Topic Outline**

- Simple linear regression: basic concepts and theoretical development
- Multiple linear regression and its matrix formulation: theory and key results
- Assessing model adequacy and transformations
- Regression diagnostics: influential points and multicollinearity
- Special types of regression: polynomial and indicator variable regression
- Model building and variable selection
- Special topics (generalized linear models, nonlinear regression)

• **Statement of Accommodation**

Students may request accommodation as a result of barriers related to disability, religious obligation, or any characteristic under the Nova Scotia Human Rights Act. Students who require academic accommodation for either classroom participation or the writing of tests, quizzes and exams should make their request to the Office of Student Accessibility & Accommodation (OSAA) prior to or at the outset of each academic term (with the exception of X/Y courses). Please see [www.studentaccessibility.dal.ca](http://www.studentaccessibility.dal.ca) for more information and to obtain Form A - Request for Accommodation.

A note taker may be required to assist a classmate. There is an honourarium of $75/course/term. If you are interested, please contact OSAA at 494-2836 for more information.

Please note that your classroom may contain specialized accessible furniture and equipment. It is important that these items remain in the classroom so that students who require their usage will be able to participate in the class.

• **Statement on Intellectual Honesty**

Please see the section in the undergraduate calendar on Intellectual Honesty: [http://ug.cal.dal.ca/UREG.htm#12](http://ug.cal.dal.ca/UREG.htm#12).