INSTRUCTOR:
Lurdes Y.T. Inoue, PhD
Professor
Department of Biostatistics
University of Washington

CONTACT INFORMATION:
Office Hours: Wednesdays 2:30-3:30pm or by appointment
Office: HSB F-666
Phone: (206)616-6398
E-mail: via canvas course webpage

TEACHING ASSISTANT:
David Whitney
Office Hours:
  • Thursdays 11:00am-12:00pm in HSB H-657
  • Fridays 11:00am-12:00pm in HSB F-646
E-mail: davidw19@uw.edu (or via canvas webpage)

CLASS MEETING TIMES: Lectures: Mon/Wed 1:00-2:20pm

CLASS LOCATION: Health Sciences Building, T531
DISCUSSION AND ANNOUNCEMENT BOARDS: On the canvas pages you will find links to the discussion and announcement boards. Any student in the class may post to the discussion board. Your instructors will monitor the board and answer questions. The announcement board is to be used by the instructors only. We will post general announcements and you are expected to check the announcement page at least once a week.

COURSE DESCRIPTION: After taking this course, the student should have a solid understanding of linear regression theory, including the unified regression development of the analysis of variance, analysis of covariance and linear regression. The student should be able to apply this theory to future study of more complex procedures which have a basis in linear regression, such as generalized linear models, mixed models and models for correlated data.

COURSE LEARNING OBJECTIVES: Upon completion of the course, students should be able to

- Recognize a linear model and identify its key components.
- Give a geometric interpretation of a linear model.
- Represent a linear model in matrix notation.
- Describe the distributional results for linear models and their implications for statistical inference.
- State and prove the Gauss-Markov Theorem.
- Apply linear models of less than full rank and identify estimable parameters.
- Test hypotheses associated with the coefficients in linear models.

PRE-REQUISITES: A course on linear algebra; STAT512/513; STAT421 or STAT423 or BIOST514/515.

HOMEWORK: Homework will (typically) be handed out on Monday and due on the following Monday by 1pm. Late homework will not be accepted. We encourage students to work together or in small groups on the homework problems. A good strategy is for everyone in the group to work on the problems individually and then get together to discuss the more difficult ones. However, the final version you hand in should reflect your own work. That is, support and assistance with developing answers is encouraged; copying answers is not (copied assignments will not receive credit and you may be referred to the Dean’s office for academic misconduct).

GRADING will be based on:

- (20%) Midterm 1
- (25%) Midterm 2
- (35%) Final exam
- (20%) Homework Assignments - lowest score dropped

Makeup exams will be given only with documented reasons. Acceptable reasons include illness (supported by physician’s note), and a work assignment out of town (supported by an employer’s letter).

TEXTBOOKS:
Optional Text:

  - Available via UW library, online

Recommended Books:

- + Additional articles: Full references will be provided during lectures (You should be able to download most of them at www.jstor.org).

Reserves: Recommended textbooks, and possible additional materials are available at the Health Sciences Library on reserve or in a “Library use only” section.

ACADEMIC CONDUCT: Students at the University of Washington (UW) are expected to maintain the highest standards of academic conduct, professional honesty, and personal integrity. The UW School of Public Health (SPH) is committed to upholding standards of academic integrity consistent with the academic and professional communities of which it is a part. Plagiarism, cheating, and other misconduct are serious violations of the University of Washington Student Conduct Code (http://www.washington.edu/cssc/student-conduct-overview/student-code-of-conduct/) (WAC 478-120). We expect you to know and follow the university's policies on cheating and plagiarism, and the SPH Academic Integrity Policy (http://sph.washington.edu/students/academicintegrity/). Any suspected cases of academic misconduct will be handled according to University of Washington regulations. For more information, see the University of Washington Community Standards and Student Conduct (http://www.washington.edu/cssc/) website.

ACCESS and ACCOMMODATIONS: Your experience in this class is important to us, and it is the policy and practice of the University of Washington to create inclusive and accessible learning environments consistent with federal and state law. If you experience barriers based on disability, please seek a meeting with DRS to discuss and address them. If you have already established accommodations with DRS, please communicate your approved accommodations to your instructor at your earliest convenience so we can discuss your needs in this course. Disability Resources for Students (DRS) offers resources and coordinates reasonable accommodations for students with disabilities. Reasonable accommodations are established through an interactive process between you, your instructor(s) and DRS. If you do not have a temporary or permanent disability that requires accommodations (this can include but not limited to; mental health, attention related, learning, vision, hearing, physical or health impacts), you are welcome to contact DRS at 206-543-8924 or
LEARNING ENVIRONMENT: To provide a supportive learning environment, I ask your commitment to showing respect to each other and to your instructors both inside and outside of class by avoiding behavior that might be offensive or distracting to others. Moreover, students with concerns about the instructor or teaching assistant (TA) should discuss these concerns with the course instructor and/or TA. If the student is not satisfied with the response, s/he may contact the Biostatistics Department Chair at heagerty@uw.edu. If concerns are not satisfactorily resolved, s/he may also contact the Graduate School at G1 Communications Building by phone at (206) 543-5139.

Course Summary:

<table>
<thead>
<tr>
<th>Date</th>
<th>Details</th>
<th>Due Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mon Apr 3, 2017</td>
<td>Homework 1 (<a href="https://canvas.uw.edu/courses/1137611/assignments/3600919">https://canvas.uw.edu/courses/1137611/assignments/3600919</a>)</td>
<td>1pm</td>
</tr>
<tr>
<td>Mon Apr 10, 2017</td>
<td>Homework 2 (<a href="https://canvas.uw.edu/courses/1137611/assignments/3600953">https://canvas.uw.edu/courses/1137611/assignments/3600953</a>)</td>
<td>1pm</td>
</tr>
<tr>
<td>Mon Apr 17, 2017</td>
<td>Homework 3 (<a href="https://canvas.uw.edu/courses/1137611/assignments/3600954">https://canvas.uw.edu/courses/1137611/assignments/3600954</a>)</td>
<td>1pm</td>
</tr>
<tr>
<td>Mon Apr 24, 2017</td>
<td>Midterm 1 (<a href="https://canvas.uw.edu/courses/1137611/assignments/3600947">https://canvas.uw.edu/courses/1137611/assignments/3600947</a>)</td>
<td>2:20pm</td>
</tr>
<tr>
<td>Mon May 1, 2017</td>
<td>Homework 4 (<a href="https://canvas.uw.edu/courses/1137611/assignments/3600956">https://canvas.uw.edu/courses/1137611/assignments/3600956</a>)</td>
<td>1pm</td>
</tr>
<tr>
<td>Mon May 8, 2017</td>
<td>Homework 5 (<a href="https://canvas.uw.edu/courses/1137611/assignments/3600958">https://canvas.uw.edu/courses/1137611/assignments/3600958</a>)</td>
<td>1pm</td>
</tr>
<tr>
<td>Mon May 15, 2017</td>
<td>Midterm 2 (<a href="https://canvas.uw.edu/courses/1137611/assignments/3600950">https://canvas.uw.edu/courses/1137611/assignments/3600950</a>)</td>
<td>2:20pm</td>
</tr>
<tr>
<td>Mon May 22, 2017</td>
<td>Homework 6 (<a href="https://canvas.uw.edu/courses/1137611/assignments/3600959">https://canvas.uw.edu/courses/1137611/assignments/3600959</a>)</td>
<td>1pm</td>
</tr>
<tr>
<td>Wed May 31, 2017</td>
<td>Homework 7 (<a href="https://canvas.uw.edu/courses/1137611/assignments/3600962">https://canvas.uw.edu/courses/1137611/assignments/3600962</a>)</td>
<td>1pm</td>
</tr>
<tr>
<td>Mon Jun 5, 2017</td>
<td>Final (<a href="https://canvas.uw.edu/courses/1137611/assignments/3600918">https://canvas.uw.edu/courses/1137611/assignments/3600918</a>)</td>
<td>11:59pm</td>
</tr>
</tbody>
</table>