STAT 535: Analysis of Experimental Data

Fall 2017

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Office: Nguyen Engineering Building Room 1721  
Telephone: 703-993-9116

Office Hours: Tuesday 2:30-4:00, Wednesday 9:00 – 10:00, Thursday 1:00-2:30
or by appointment

Catalog description: Statistical methods for analysis of experimental data from educational research and the social, natural, and life sciences. Topics include sample surveys, contingency tables, linear and multiple regression, analysis of variance, nonparametric tests, and multivariate methods. Various statistical packages will be used.

Notes: Students may not receive credit for both STAT 435 and STAT 535. Cannot be used to satisfy requirements for MS in Statistical Science. Certificate program students granted credit for only one of STAT 535 or STAT 554. Offered by Statistics. May not be repeated for credit.

Recommended Prerequisite: STAT 250, STAT 344 or equivalent.

Course Materials:

Required Textbooks:

Practicing Statistics: Guided Investigations for the Second Course
Shonda Kuiper, Grinnell College
Jeff Sklar, California Polytechnic State University, San Luis Obispo

Online Resources: The blackboard course website will be used extensively throughout the semester. Link: http://mymason.gmu.edu

Calculator: A basic scientific calculator is required, though a graphing calculator with built-in statistical functions may be used. Your cell phone cannot be used as a calculator during quizzes and exams.

Computer Programs: You will be required to use JMP, a statistical software program throughout the semester. JMP is available as a free download. Information on how to download this program will be posted and discussed during the first week of class. Please feel free to bring a laptop to class.

Communication: The Blackboard site for this course will be used to provide you with information relevant to the course. So, please check the Blackboard course site regularly for updates! Such information includes announcements, lecture notes, homework assignments and solutions, reading assignments, data sets, date of exams, and any changes to posted office hours.

Study Approach: You are to skim the lecture slides and text sections before class to familiarize yourself with the material and its organization. The lecture notes will be posted on Blackboard. Next, you are to study carefully the lecture slides and textbook sections after the lecture to increase understanding.

Participation: Attendance is required and will be taken each class.
Help: Remember to ask for help! You can come by during my scheduled office hours or make an appointment to see me. I also can answer some question via email.

Honor Code

I take the GMU Honor Code very seriously and will enforce it. Please see the following website for more information. http://academicintegrity.gmu.edu/honorcode/. The Honor Code will be enforced for all computer assignments and exams. All work on the computer assignments and exams MUST be completed independently and not with other students in the class or other outside help. You may work on the homework assignments with others.

Course Assignments

Homework/Activities: Homework will be assigned regularly – we learn by doing. In addition to homework, there will be in-class group activities. Homework assignments may be submitted electronically via Blackboard dropbox. Late assignments, with 10% penalty, will be accepted only until 5 p.m. on the day after the assignment is due. No extra-credit assignments will be given. All work submitted must be your own.

Exams: There will be two in-class exams and a third exam during the final exam period. All exams will be closed book and notes but you may bring one double sided 8.5” by 11” formula sheet and any required tables to use during the exam. Your personally-created study guide/formula sheet is intended to eliminate the need to memorize formulas. If an exam is scheduled on a religious holiday that you observe, see your instructor to make alternative arrangements. If you have a disability that requires academic accommodation, contact the Office of Disability Services (993-2474) for authorization.

Computer Assignments: Each of the two in-class exams and the third exam will consist of a separate assessment involving analyzing computer output. Due dates for the assignments will be posted on Blackboard and these assignments will be submitted electronically in Blackboard.

Grading Scheme: Homework/Class Activities 10%
Computer Assignment #1 10%
Computer Assignment #2 10%
Computer Assignment #3 10%
Exam 1 20%
Exam 2 20%
Exam 3 20%

Inclement Weather Policy
In case of closing due to inclement weather, we will follow the specific policy set forth by the Provost’s office, if there is one. In case the make-up process is left up to the instructors, we will schedule make-up session(s) on an ad hoc basis. This could be in the form of a face-to-face meeting, an on-line session, or a meeting through Blackboard Collaborate. The students will be responsible for the material covered in the make-up sessions.

University Calendar: Details regarding the current Academic Calendar. See http://registrar.gmu.edu/calendars/index.html.

Students with Disabilities: Students with disabilities who seek accommodations in a course must be registered with the George Mason University Office of Disability Services (ODS) and inform their instructor, in writing, at the beginning of the semester. See http://ods.gmu.edu.

**Students are expected to follow courteous Internet etiquette at all times; see http://www.albion.com/netiquette/corerules.html for more information regarding these expectations.**

Student Services

University Libraries: University Libraries provides resources for distance students. [See http://library.gmu.edu/distance and http://infoguides.gmu.edu/distance_students].

Writing Center: The George Mason University Writing Center staff provides a variety of resources and services (e.g., tutoring, workshops, writing guides, handbooks) intended to support students as they work to construct and share knowledge through writing. [See http://writingcenter.gmu.edu]. You can now sign up for an Online Writing Lab (OWL) session just like you sign up for a face-to-face session in the Writing Center, which means YOU set the date and time of the appointment! Learn more about the Online Writing Lab (OWL).

Counseling and Psychological Services: The George Mason University Counseling and Psychological Services (CAPS) staff consists of professional counseling and clinical psychologists, social workers, and counselors who offer a wide range of services (e.g., individual and group counseling, workshops and outreach programs) to enhance students' personal experience and academic performance [See http://caps.gmu.edu].

Family Educational Rights and Privacy Act (FERPA): The Family Educational Rights and Privacy Act of 1974 (FERPA), also known as the "Buckley Amendment," is a federal law that gives protection to student educational records and provides students with certain rights. [See http://registrar.gmu.edu/privacy].
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<tr>
<th>Date</th>
<th>Textbook Chapter</th>
<th>Topic</th>
<th>Due by the start of class</th>
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<tbody>
<tr>
<td>29-Aug</td>
<td>1</td>
<td>Review &amp; Nonparametric Methods</td>
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<tr>
<td>5-Sep</td>
<td>1</td>
<td>Nonparametric Methods</td>
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<tr>
<td>12-Sep</td>
<td>6</td>
<td>Categorical Data Analysis</td>
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<tr>
<td>19-Sep</td>
<td>6</td>
<td>Categorical Data Analysis</td>
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<tr>
<td>26-Sep</td>
<td>2</td>
<td>Regression*</td>
<td>Computer Assignment #1 (9/26)</td>
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<td>3-Oct</td>
<td>Exam 1</td>
<td>Exam 1 (covers chapters 1 and 6 only)</td>
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<td>10-Oct</td>
<td>NO CLASS (Fall Break Schedule)</td>
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<tr>
<td>17-Oct</td>
<td>2 and 3</td>
<td>Multiple Regression</td>
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<td>24-Oct</td>
<td>3</td>
<td>Multiple Regression</td>
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<td>31-Oct</td>
<td>7</td>
<td>Logistic Regression</td>
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<td>7-Nov</td>
<td>Exam 2</td>
<td>Exam 2 (covers chapters 2, 3 and 7)</td>
<td>Computer Assignment #2 (11/7)</td>
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<td>14-Nov</td>
<td>4</td>
<td>Design and Analysis of Factorial Experiments</td>
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<td>21-Nov</td>
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<td>Design and Analysis of Factorial Experiments</td>
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<td>28-Nov</td>
<td>10</td>
<td>Principal Component Analysis</td>
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<td>5-Dec</td>
<td>10</td>
<td>Principal Component Analysis</td>
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<td>19-Dec</td>
<td>Final Exam</td>
<td>Exam 3 (covers chapters 4 and 10)</td>
<td>Computer Assignment #3 (due 12/9)</td>
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