HON 125
Adventures in Data Analysis
Spring 2017

Professor: Ian K. McDonough
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Time: MW 8:30A-9:45A
Room: BEH 102
Office Hours: MW 10:00A-11:00A, and by appointment

Description: This is an introductory course in statistics focusing on data analysis. The goal of this course is to provide students with the ability to analyze relevant data using contemporary, computer-based technology (MS Excel) and apply the results to decision making concerning an underlying question or problem. This course will introduce students to statistical concepts and techniques that are extensively used in public and private-sector decision making. Understanding and using statistical methods is essential to success in a competitive and uncertain world.

Learning Outcomes: By the end of this course students will be able to:

1. Become comfortable working with raw data.
2. Demonstrate a thorough understanding of various statistical moments and other descriptive measures.
3. Construct confidence intervals to estimate population means and proportions.
4. Conduct hypothesis tests to weigh inferences concerning population means, proportions, and model estimates.
5. Construct and interpret the Classical Linear Regression Model and discuss inference based on the Ordinary Least Squares (OLS) estimator.
6. Become familiar conducting all of the above in Microsoft Excel using the Data Analysis Toolpak.

Prerequisite: Good standing in the Honors College.


Note: This course requires an eBook and an access code for the online homework system Connect Math. You can purchase this at the UNLV Bookstore (ISBN: 9781259198946).

Grading: Grades will be based on exams, problem sets, and pop quizzes:

- **Pop “attendance” quizzes** will count for 5% of the course grade. There will be a total of five (5) quizzes (each 10 minutes) and I will drop your lowest score. There will be no makeup quizzes, so any missed quizzes automatically receive a score of zero. If you show up late to a quiz, then you simply have less time to do it. There will be no time extensions for showing up late. Note, I will award you 33% of the points for simply showing up and signing your name on the quiz. The quizzes serve two roles: 1.) Lets you know what types of problems you can expect to see on the exams, 2.) Allows me to take random attendance to see who is actually showing up for class.

- **Problem sets** will count for 15% of the course grade and will be assigned regularly throughout the semester. The problem sets must be completed and turned in through Connect Math. If you want to do well in this class, then you MUST do problems sets.

- **Exams** will individually count for 20% of the course grade. There will be total of four (4) exams with the fourth exam being a comprehensive final. I will NOT drop any of the four exams and NO makeup exams will be given unless a student asks for it in advance and for compelling reasons (i.e., serious illness, personal tragedy, etc.).
The TENTATIVE dates for the four exams are shown below. Except for the final exam, which is scheduled by the University, all exams will take place during the regularly scheduled class time. All exams will take place in room BEH 102.

Tentative Exam Schedule and Important Dates:

<table>
<thead>
<tr>
<th>Exam</th>
<th>(20% of grade)</th>
<th>Date</th>
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</thead>
<tbody>
<tr>
<td>Exam I</td>
<td></td>
<td>Monday, February 13rd</td>
</tr>
<tr>
<td>Exam II</td>
<td></td>
<td>Wednesday, March 20th</td>
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<tr>
<td>Exam III</td>
<td></td>
<td>Wednesday, April 19th</td>
</tr>
<tr>
<td>Final Exam</td>
<td>(20% of grade)</td>
<td>Wednesday, May 10th, 8:00A-10:00A</td>
</tr>
<tr>
<td>Last Day to Drop Course</td>
<td></td>
<td>Friday, March 24th</td>
</tr>
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</table>

In determining final grades I will use the following scale:

<table>
<thead>
<tr>
<th>Grade</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>&gt;= 93</td>
</tr>
<tr>
<td>A-</td>
<td>&gt;= 90</td>
</tr>
<tr>
<td>B+</td>
<td>&gt;= 88</td>
</tr>
<tr>
<td>B</td>
<td>&gt;= 83</td>
</tr>
<tr>
<td>B-</td>
<td>&gt;= 80</td>
</tr>
<tr>
<td>C+</td>
<td>&gt;= 78</td>
</tr>
<tr>
<td>C</td>
<td>&gt;= 70</td>
</tr>
<tr>
<td>D+</td>
<td>&gt;= 68</td>
</tr>
<tr>
<td>D</td>
<td>&gt;= 60</td>
</tr>
<tr>
<td>D-</td>
<td>&gt;= 56</td>
</tr>
<tr>
<td>F</td>
<td>&lt; 56</td>
</tr>
</tbody>
</table>

Lecture notes and other relevant information will be posted on the course webpage via WebCampus. Please check it regularly. Finally, I do NOT allow students to do any additional work for extra credit. All students are advised to consult with me throughout the semester to avoid end of the semester “surprises.”

**Conduct:** All that I ask is that you be respectful of me and your fellow classmates. All cell phones should be put on silent and put away. Basic, non-graphing calculators can be used, if required, during exams. Cell phones are not to be used as calculators. All other electronic devices should also be put away unless they are explicitly being used for class purposes. If you do not want to pay attention in class, then do not come to class.

**Schedule:** January 16th, Martin Luther King Jr. Day; February 20th, President’s Day; April 10th – April 14th, Spring Break

**Relevant University Policies**

**Academic Misconduct:** Academic integrity is a legitimate concern for every member of the campus community; all share in upholding the fundamental values of honesty, trust, respect, fairness, responsibility and professionalism. By choosing to join the UNLV community, students accept the expectations of the Student Academic Misconduct Policy and are encouraged when faced with choices to always take the ethical path. Students enrolling in UNLV assume the obligation to conduct themselves in a manner compatible with UNLV’s function as an educational institution. An example of academic misconduct is plagiarism. Plagiarism is using the words or ideas of another, from the Internet or any source, without proper citation of the sources. See the Student Academic Misconduct Policy (approved December 9, 2005) located at: https://www.unlv.edu/studentconduct/student-conduct.

**Copyright:** The University requires all members of the University Community to be familiar with and to follow copyright and fair use requirements. You are individually and solely responsible for violations of copyright and fair use laws. The university will neither protect nor defend you nor assume any responsibility for employee or student violations of fair use laws. Violations of copyright laws could subject you to federal and state civil penalties and criminal liability, as well as disciplinary action under University policies. Additional information can be found at: http://www.unlv.edu/provost/copyright.

**Disability Resource Center (DRC):** The UNLV Disability Resource Center (SSC-A 143, http://drc.unlv.edu/, 702-895-0866) provides resources for students with disabilities. If you feel that you have a disability, please make an appointment with a Disabilities Specialist at the DRC to discuss what options may be available to you. If you are registered with the UNLV Disability Resource Center, bring your Academic Accommodation Plan from the DRC to the
instructor during office hours so that you may work together to develop strategies for implementing the accommodations to meet both your needs and the requirements of the course. Any information you provide is private and will be treated as such. To maintain the confidentiality of your request, please do not approach the instructor in front of others to discuss your accommodation needs.

**Religious Holidays Policy:** Any student missing class quizzes, examinations, or any other class or lab work because of observance of religious holidays shall be given an opportunity during that semester to make up missed work. The make-up will apply to the religious holiday absence only. It shall be the responsibility of the student to notify the instructor **within** the first 14 calendar days of the course for fall and spring courses (excepting modular courses), or **within** the first 7 calendar days of the course for summer and modular courses, of his or her intention to participate in religious holidays which do not fall on state holidays or periods of class recess. For additional information, please visit: [http://catalog.unlv.edu/content.php?catoid=6&navoid=531](http://catalog.unlv.edu/content.php?catoid=6&navoid=531).

**Transparency in Learning and Teaching:** The University encourages application of the transparency method of constructing assignments for student success. Please see these two links for further information:

- [https://www.unlv.edu/provost/teachingandlearning](https://www.unlv.edu/provost/teachingandlearning)
- [https://www.unlv.edu/provost/transparency](https://www.unlv.edu/provost/transparency)

**Incomplete Grades:** The grade of I—Incomplete—can be granted when a student has satisfactorily completed three-fourths of course work for that semester/session but for reason(s) beyond the student’s control, and acceptable to the instructor, cannot complete the last part of the course, and the instructor believes that the student can finish the course without repeating it. The incomplete work must be made up before the end of the following regular semester for undergraduate courses. Graduate students receiving “I” grades in 500-, 600-, or 700-level courses have up to one calendar year to complete the work, at the discretion of the instructor. If course requirements are not completed within the time indicated, a grade of F will be recorded and the GPA will be adjusted accordingly. Students who are fulfilling an Incomplete do not register for the course but make individual arrangements with the instructor who assigned the “I” grade.

**Library Resources:** Students may consult with a librarian on research needs. For this class, the subject librarian is [https://www.library.unlv.edu/contact/librarians_by_subject](https://www.library.unlv.edu/contact/librarians_by_subject). UNLV Libraries provides resources to support students’ access to information. Discovery, access, and use of information are vital skills for academic work and for successful post-college life. Access library resources and ask questions at [https://www.library.unlv.edu/](https://www.library.unlv.edu/).

**Tutoring and Coaching:** The Academic Success Center (ASC) provides tutoring, academic success coaching and other academic assistance for all UNLV undergraduate students. For information regarding tutoring subjects, tutoring times, and other ASC programs and services, visit [http://www.unlv.edu/asc](http://www.unlv.edu/asc) or call 702-895-3177. The ASC building is located across from the Student Services Complex (SSC). Academic success coaching is located on the second floor of the SSC (ASC Coaching Spot). Drop-in tutoring is located on the second floor of the Lied Library and College of Engineering TEB second floor.

**UNLV Writing Center:** One-on-one or small group assistance with writing is available free of charge to UNLV students at the Writing Center, located in CDC-3-301. Although walk-in consultations are sometimes available, students with appointments will receive priority assistance. Appointments may be made in person or by calling 702-895-3908. The student’s Rebel ID Card, a copy of the assignment (if possible), and two copies of any writing to be reviewed are requested for the consultation. More information can be found at: [http://writingcenter.unlv.edu/](http://writingcenter.unlv.edu/).

**Rebelmail:** By policy, faculty and staff should e-mail students’ Rebelmail accounts only. Rebelmail is UNLV’s official e-mail system for students. It is one of the primary ways students receive official university communication such as information about deadlines, major campus events, and announcements. All UNLV students receive a Rebelmail account after they have been admitted to the university. Students’ e-mail prefixes are listed on class rosters. The suffix is always @unlv.nevada.edu. Emailing within WebCampus is acceptable.

**Final Examinations:** The University requires that final exams given at the end of a course occur at the time and on the day specified in the final exam schedule. See the schedule at: [http://www.unlv.edu/Registrar/calendars](http://www.unlv.edu/Registrar/calendars).
Topics:

1. Descriptive Statistics
   a. Chapter 1
   b. Chapter 2
   c. Chapter 3

2. Probability and Counting
   a. Chapter 4

   ** Exam I **

3. Probability Distributions
   a. Chapter 5
   b. Chapter 6

   ** Exam II **

4. Estimation and Confidence Intervals
   a. Chapter 7

5. Hypothesis Testing
   a. Chapter 8

   ** Exam III **

6. Inference About Means and Proportions with Two Populations
   a. Chapter 9

7. Simple Regression
   a. Chapter 10

   ** Final Exam **