Overview

Statistics is the art and science of decision making in the presence of uncertainty. The purpose of Statistics 100 is to help you improve your ability to assess statistical information in both everyday life and other University courses. Toward this end, the course has been designed with lectures, labs, homework, and three examinations (two midterm Exams and one cumulative Final Exam).

Topics covered include methods for collecting and summarizing data, analyzing the relationship between variables, and using basic probability concepts to draw conclusions about populations based on data. The course is less technical and more conceptual than STAT 200. Statistical concepts and interpretations will dominate over techniques and calculations (though it is necessary to be able to work with fractions and square roots).

Instructor
Name: Prof. Aleksandra Slavković
Office: 421A Thomas Bldg. (come through 419); Office hours: Thr 2pm-3:30pm, and by appt.
E-mail: Please use the Communicate tab within ANGEL to contact me by e-mail.
Daytime and Weekday Phone: 814-863-4918

NOTE: I will endeavor to respond to emails within 24 hours on weekdays (not weekends). Your e-mails should come from ANGEL and not from an outside email account so I know the message comes from a State 100 student. I will respond from my Penn State account (abs12@psu.edu) – which may not be always through ANGEL.

TA: Bomin Kim (bzk147@psu.edu), Office hours: TBD via SHARED OFFICE HOURS.

Course Objectives

After successfully completing STAT 100 you will have developed an understanding of:

• How to design a study or experiment;
• How the type of conclusions we draw from data are related to how they were collected;
• How to create and interpret summaries and graphs that show the salient features of data;
• Basic concepts of probability – the language of uncertainty;
• How to spot statistical issues in the news and their affect on the veracity of claims made; and
• How to interpret statistical inferences made by Confidence Intervals & Significance Tests.
Textbook

Be sure to purchase the correct (fourth) edition to the required textbook:

  ISBN 9781285050881

We will cover chapters 1 to 15, 17, 19 to 24, and 26.

You are welcome to read through the World Campus STAT 100 material as well if you like but the above book is still required: https://onlinecourses.science.psu.edu/stat100/

We will use MINITAB software package for some of the labs. All computer labs on campus have MINITAB and there is remote online access for PSU users at: https://onlinecourses.science.psu.edu/statprogram/webapps

**Grading:** There will be a total of 1000 points awarded. The eleven graded homework assignments will be worth 30% of the final grade (best ten out of eleven for 3% or 30 points each) the two midterm exams will be worth 30% of the final grade (15% or 150 points each) and one final exam will be worth 25% (250 points). The final 15% of the grade (150 points) will be based on participation in weekly course activities (best ten out of eleven labs for 1% or 10 points each, the remaining 5% on the in-class participation and activities, including in-class quizzes).

**NOTE:** Assignments are not accepted late without prior approval from the instructor, except in cases of a documented emergency. Written documentation of an illness, emergency, etc. from a health care provider or other suitable person is required to obtain full credit. Those without such documentation may consult with the instructor about the possibility of turning in assignments late for reduced credit (typically 10% for every day late). Students should contact the instructor as soon as they are having a problem that may lead to a delay.

**If you miss an exam because of a documented emergency your final exam will count as 400 instead of 250 points!**

**Grading Scale:** The tentative final letter grading will follow the standard University guidelines and is as follows:

<table>
<thead>
<tr>
<th>F</th>
<th>D</th>
<th>C</th>
<th>C+</th>
<th>B-</th>
<th>B</th>
<th>B+</th>
<th>A-</th>
<th>A</th>
</tr>
</thead>
<tbody>
<tr>
<td>0%</td>
<td>60%</td>
<td>70%</td>
<td>77%</td>
<td>80%</td>
<td>83%</td>
<td>87%</td>
<td>90%</td>
<td>93%</td>
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It is possible that the grade distribution will be lowered slightly depending on the results of the exams. All grades will be available in the ANGEL grade book.
Course Schedule

- Course begins: Monday, January 11, 2016
- Course ends: Friday, April 29, 2016
- Cumulative Final—May 2 - 6, 2016

Formal instruction will end on the last day of class. Provided that you have an active Penn State Access Account USERID and password, you will continue to be able to access the course materials for one year from the day the course began.

Course Outline:
The following is a general outline of the course. Specific weekly homework assignments will be available on ANGEL a week before they are due. Each topic is supplemented with notes, practice exercises, and other resources to help you learn the material. NEVER HESISTATE TO ASK A QUESTION – that is crucial for success in this class.

<table>
<thead>
<tr>
<th>Topic</th>
<th>Text Chapters</th>
<th>Tentative Schedule</th>
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<tbody>
<tr>
<td>Lesson 1: Getting Started</td>
<td>n/a</td>
<td>Week 1: Jan 11 - 15</td>
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<tr>
<td>Lesson 2: Statistics/Measurement</td>
<td>1 and 3</td>
<td>Weeks 1 &amp; 2: Jan 13 – Jan 22</td>
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<tr>
<td><strong>Martin Luther King Day - No Classes</strong></td>
<td></td>
<td>Mon, Jan 18</td>
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<tr>
<td>Lesson 3: Sampling/Experiments/Studies</td>
<td>4 and 5</td>
<td>Week 3: Jan 25 – Jan 29</td>
</tr>
<tr>
<td>Lesson 4: Big Picture/Summaries</td>
<td>2, 6 and 7</td>
<td>Week 4: Feb 1 – Feb 5</td>
</tr>
<tr>
<td>Lesson 5: Normal Curve/Graphics</td>
<td>8 and 9</td>
<td>Week 5 &amp; 6: Feb 8 – Feb 12, Feb 15-Feb 19</td>
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<td><strong>Exam 1 (on Lessons 1-5) 150 points</strong></td>
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<td>Week 6: Feb 19</td>
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<td>Lesson 6: Correlation/Regression</td>
<td>10 and 11</td>
<td>Week 7: Feb 22 – Feb 26</td>
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<td>Lesson 7: Categorical Relationships</td>
<td>12 and 13</td>
<td>Week 8: Feb 29 – Mar 4</td>
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<td><strong>Spring Break - No Classes</strong></td>
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<td>Week 9: Mar 7 – Mar 11</td>
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<td>Lesson 8: Probability/Simulation</td>
<td>14 and 15</td>
<td>Week 10: Mar 14 – Mar 18</td>
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<td>Lesson 9: Sample variation</td>
<td>17 and 19</td>
<td>Week 11: Mar 21 - Mar 25</td>
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<td><strong>Exam 2 (on Lessons 6-9) 150 points</strong></td>
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<td>Week 12: Mar 28 – Apr 1</td>
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<td>Lesson 10: Confidence Intervals</td>
<td>20 and 21</td>
<td>Apr 1</td>
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<td>Lesson 11: Hypothesis Testing</td>
<td>22 and 23</td>
<td>Week 14 &amp; 15: Apr 11 – Apr 15, Apr 18 - 22</td>
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<td>Lesson 12: The News/Caveats/Ethics</td>
<td>24 and 26</td>
<td>Week 16: Apr 25 – Apr 29</td>
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<td><strong>Final Exam (cumulative) 250 points</strong></td>
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<td>Week 17: May 2 - 6</td>
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**Code of Mutual Respect and Admiration**

The Eberly College of Science Code of Mutual Respect and Cooperation embodies the values that we hope our faculty, staff, and students possess and will endorse to make The Eberly College of Science a place where every individual feels respected and valued, as well as challenged and rewarded.

**Disabilities:**

Penn State welcomes students with disabilities into the University's educational programs. If you have a disability-related need for reasonable academic adjustments in this course, contact the Office for Disability Services (ODS) at 814-863-1807 (V/TTY). For further information regarding ODS, please visit the Office for Disability Services Web site at [http://equity.psu.edu/ods/](http://equity.psu.edu/ods/).

In order to receive consideration for course accommodations, you must contact ODS and provide documentation (see the documentation guidelines at [http://equity.psu.edu/ods/guidelines/documentation-guidelines](http://equity.psu.edu/ods/guidelines/documentation-guidelines)). If the documentation supports the need for academic adjustments, ODS will provide a letter identifying appropriate academic adjustments. Please share this letter and discuss the adjustments with your instructor as early in the course as possible. You must contact ODS and request academic adjustment letters at the beginning of each semester.

**Academic Integrity**

**Collaboration:** You are expected to complete all assignments on your own. You are strongly advised to consult the Penn State Academic Integrity Policy at: [http://www.science.psu.edu/academic/Integrity/index.html](http://www.science.psu.edu/academic/Integrity/index.html)

Academic dishonesty can lead to a failing grade or referral to the **Office of Judicial Affairs**

Academic dishonesty includes, but is not limited to:

- cheating
- plagiarism
- fabrication of information or citations
- facilitating acts of academic dishonesty by others
- unauthorized prior possession of examinations
- submitting the work of another person or work previously used without informing the instructor and securing written approval
- tampering with the academic work of other students
Student Responsibilities and Conduct

1. Students are responsible for online course content, taking notes, obtaining other materials provided by the instructor, taking tests (if applicable), and completing assignments as scheduled by the instructor. As a general rule, students should plan on logging into the course at least three times per week and spending at least three hours per course credit per week on the course, e.g., since this course is three credits, the student should plan on spending at least 9-12 hours per week on the course, just as they would in a residence course.

2. Students are responsible for keeping track of changes in the course syllabus made by the instructor throughout the semester.

3. Students are responsible for monitoring their grades.

4. Students must contact their instructor (and teammates when working on any collaborative learning assignments) as soon as possible if they anticipate missing long periods of online time due to events such as chronic illnesses, death in the family, business travel, or other appropriate events. The instructor will determine the minimal log on time and participation required in order to meet course responsibilities. In the event of other unforeseen conflicts, the instructor and student will arrive at a solution together.
   a. Requests for taking exams or submitting assignments after the due dates require documentation of events such as illness, family emergency, or a business-sanctioned activity.
   b. Conflicts with dates on which examinations or assignments are scheduled must be discussed with the instructor or TA prior to the date of the examination or assignment.