

## STAT 1350: Elementary Statistics

Spring, 2015

“Statistical thinking will one day be as necessary for efficient citizenship as the ability to read and write.”

--H.G. Wells

Instructors	Office Hours and Locations	Email
Dr. Michelle Everson, Course Coordinator	Monday and Wednesday, 4-5 p.m. (in 415 Cockins Hall)	<a href="mailto:everson.50@osu.edu">everson.50@osu.edu</a>
Michelle Duda	Tuesday and Thursday, 1:45-2:45 p.m. (in 229 Cockins Hall)	<a href="mailto:duda.35@osu.edu">duda.35@osu.edu</a>
Ali Miller	Wednesday, 11:40 a.m. -12:30 p.m. (in 229 Cockins Hall)	<a href="mailto:miller.7425@osu.edu">miller.7425@osu.edu</a>
Corey Smith	To be announced	<a href="mailto:smith.9785@osu.edu">smith.9785@osu.edu</a>
John Stettler	To be announced	<a href="mailto:stettler.9@osu.edu">stettler.9@osu.edu</a>
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**Course Goals:** This course satisfies the learning goals of the *GE Data Analysis requirement*, which are to develop an understanding of the basic ideas of statistical reasoning, to comprehend methods needed to analyze and critically evaluate statistical arguments, and recognize the importance of statistical ideas. The course seeks to encourage students to actively think about statistical issues arising in real problems and to understand the basic statistical techniques used to generate, summarize, and draw conclusions from data.

### Required Materials:

**Texts:** *Statistics Concepts and Controversies* 8<sup>th</sup> edition by David Moore and William Notz

- **Course Web Site:** Additional materials such as recitation activity handouts, homework assignments, other assignment descriptions, and course announcements will be available on Carmen. Students should get into the habit of checking Carmen on a regular basis (<https://carmen.osu.edu/>). Please visit the following site if you encounter difficulties with Carmen: <http://odee.osu.edu/resourcecenter/carmen>.

**Software:** Students in this course will use the JMP software. JMP can be used freely on the computers in the Thompson and 18<sup>th</sup> Avenue libraries. OSU students can also freely download this software, and we encourage you to do this since you will need to use the software outside of class time to complete a course project. It is important that you make sure you obtain access to JMP very early in the semester. We cannot help you if you wait until the day before an assignment is due in order to try to download JMP. See the **JMP Resources** section of Carmen for handouts that explain how you can access and install JMP for the PC and the Mac. If you have any difficulties with this, please contact 8-help at [8help@osu.edu](mailto:8help@osu.edu), or visit the Buckeye Bar in the Thompson Library.

**Calculator:** A simple calculator (with a square root key) will also be necessary for STAT 1350.

**IMPORTANT:** All add and section time changes are handled by our department staff. The instructor and TAs do not sign paperwork associated with course registration. Students should go to 408A Cockins Hall and speak with Jean Scott ([scott.961@osu.edu](mailto:scott.961@osu.edu)) about this as early as possible in the semester. The Department will begin to give students permission to add classes or do sections changes (provided that there are openings) on a first-come first-serve basis beginning at 7:00 am on **Tuesday, January, 20<sup>th</sup>** in 408A Cockins Hall. Cockins Hall opens by 6am. You may attend the class the first week of the semester provided that you do not take a seat from someone already scheduled into the course. We cannot add students to courses if you have a hold on your record or you do not meet the prerequisites. *It is extremely important that you attend the recitation you are officially scheduled for so that we can keep track of your work and progress in the course.*

### Grading

Your final grade in this course will depend on the following.

Assignment	Points	Percentage toward grade
Homework assignments (10 points each for 80 points ; lowest will be dropped)	70 points	17.5%
Lab activities (10 points each for 90 points; lowest will be dropped)	80 points	20%
Data from Everyday Life Project (three parts)	50 points	12.5%
Midterm Exam #1 ( <b>Monday, February 23, 2015, 5:20-6:15 p.m.</b> )	50 points	12.5%
Midterm Exam #2 ( <b>Monday, March 30, 2015, 5:20-6:15 p.m.</b> )	50 points	12.5%
Final Exam ( <b>Monday, May 4, 2015, 6-7:45 p.m.</b> )	100 points	25%
<b>Total</b>	<b>400 points</b>	<b>100%</b>

### More Details about Required Course Assignments:

**Homework:** Homework assignments are posted on the Carmen course site, in the **Homework** section. Each homework assignment consists of 10 true/false and multiple-choice questions. Each question is worth 1 point, and you will complete these assignments through Carmen by the appropriate deadline. Although the assignments are set up using the Quiz tool in Carmen, they are not quizzes. You can have as much time as you need to complete assignments before the deadline, but once you submit your work to be graded, you cannot change any of your answers. Once the deadline has passed, the assignment will be automatically graded and you will receive instant feedback. Homework assignments will always be due on **Sundays** by **11:55 p.m.** The lowest homework score will automatically be dropped from your grade.

**Lab activities:** During recitation sessions, you will participate in activities to supplement and extend the lecture material. These activities will be handed out in recitation and will later be posted on Carmen (in the **Lab Activities** section). They will include opportunities for you to work with your peers and take an active role in the learning process. You will complete and submit lab activities during recitation. The lowest lab activity score will be dropped from your grade.

**Data from Everyday Life Project:** During Weeks 2 through 5, you will keep track of data about your personal life. You will select two quantitative variables of your choice that you can measure on a daily basis and that you believe might be related in some way to each other. You will use this data to prepare two short, typed reports that will involve graphing the data using JMP, describing the data using appropriate summary statistics computed in JMP, and attempting to better understand relationships between your variables. You will submit your project in three parts, and this is all detailed more thoroughly in the **Data from Everyday Life Project** handout on Carmen. Note that the first part of your project involves collecting the data, and you will need to share your data with your recitation leader during Week 6 of the semester (the week of February 16<sup>th</sup>).

**Exams:** This course has two common midterms and a cumulative common final. It is important that you make preparations to be available during the exam times listed above. Students who have an unavoidable conflict should e-mail the course coordinator ([everson.50@osu.edu](mailto:everson.50@osu.edu)) at least one week prior to each exam to make appropriate arrangements for taking an alternate or make-up exam. All exams are closed book. For the midterm exams, students may use one 8.5 x 11 page of notes (front and back). For the final exam, students may use two 8.5 x 11 pages of notes (front and back). You should also bring a calculator and a photo ID to the exams. Devices such as cell phones with calculator *and* communication capabilities are not allowed. Devices such as iPods are also prohibited at the exam.

### **Late and Missed Work**

**Late Work:** *Absolutely no late work will be accepted.* You should allow sufficient time to complete homework assignments and the course project so that you can get help if you need it. You should also plan to be in recitation every week so you can complete lab activities. Computer failures, lost files and other technical difficulties are not valid excuses for submitting an assignment late. It is for this reason that we do allow you to drop one homework assignment and one lab activity from your grade.

**Missed Work:** Students who are unable to attend an exam for a legitimate unavoidable reason may take a make-up exam only if the student provides suitable documentation of the absence and takes the make-up in a timely manner. Students who miss a lab activity or homework assignment for a legitimate reason should use their dropped score for the first absence. Make-up work for subsequent legitimate absences must be discussed with the course coordinator ([everson.50@osu.edu](mailto:everson.50@osu.edu)).

### **Extra Credit**

Each TA will give out a total of 10 extra credit points in recitation (different TAs will allocate these points in different ways). Unless otherwise specified by your instructor, you should not plan on receiving any other extra credit opportunities.

### **Disputes about Grades**

With the exception of the Final Exam, if you feel that an assignment has been graded incorrectly or unfairly, you must speak with your TA or the course coordinator within one week of getting your grade on that assignment. We will not re-grade assignments at the end of the semester if you are not satisfied at that time with your final course grade.

## Addressing Issues of Differing Abilities

Any student who feels he or she may need an accommodation based on the impact of a disability should contact the instructor privately to discuss specific needs. Students with documented disabilities must also contact the Student Life Disability Services office in 150 Pomerene Hall (phone: 292-3307) to coordinate reasonable accommodations for the course. Forms from this office must be given to your instructor as early in the semester as possible to be filled out and returned to you. For more information, please visit <http://ada.osu.edu/resources/Links.htm>.

### Grading Scale

Final grades in the course will be determined based on the following scale, and based on the percentage of total points (including extra credit) that you earn during the semester.

Grade	A	A-	B+	B	B-	C+	C	C-	D+	D	E
Min %	93%	90%	87%	83%	80%	77%	73%	70%	67%	60%	≤59%

### Course Outline

The following is a general outline of the course, and it is subject to change at the discretion of your lecturer. Any changes will be announced in lecture and on Carmen. Ideally, you should attempt to complete readings before the start of a new week so you can bring questions to class. Some topics will be supplemented with course handouts.

Date	Week	Topic	Readings	Assignments due*
1/12-1/18	1	Data/Samples	Chapters 1 and 2	
1/19-1/25	2	More on Sampling/Surveys	Chapters 3 and 4	Lab 1/Homework 1
1/26-2/1	3	Experiments/Measuring	Chapters 5, 6, and 8	Lab 2
2/2-2/8	4	Do numbers make sense?/Graphs	Chapters 9 and 10	Lab 3/Homework 2
2/9-2/15	5	Graphs/Summary Statistics	Chapters 11 and 12	Lab 4
2/16-2/22	6	Summary Statistics	Chapter 12/Review	Project Part 1/Homework 3
2/23-3/1	7	<b>Midterm 1</b> /Normal Distributions	Chapter 13	
3/2-3/8	8	Correlation/Regression	Chapters 14 and 15	Lab 5/Homework 4
3/9-2/15	9	Regression/Probability	Chapters 15 and 17	Lab 6/Homework 5/Project Part 2
<b>3/16-3/22</b>		<b>SPRING BREAK</b>		
3/23-3/29	10	More Probability	Chapter 18/Review	Homework 6
3/30-4/5	11	<b>Midterm 2</b> /Confidence Intervals	Chapter 21	Lab 7
4/6-4/12	12	More Confidence Intervals/Hypothesis Testing	Chapters 21 and 22	Lab 8/Homework 7/Project Part 3
4/13-4/19	13	More Hypothesis Testing	Chapters 22 and 23	Lab 9/Homework 8
4/20-4/26	14	Review	Review	
4/27	15	Last day of instruction is April 27		
5/4		<b>Final Exam</b>	Final	

\*Labs and project work will be submitted during recitation; homework assignments are always due Sunday at 11:55 p.m. and will be completed through Carmen.

### **Academic Misconduct**

Please help us to maintain an academic environment of mutual respect, fair treatment, and personal growth. Cheating, plagiarism and other forms of academic dishonesty will not be tolerated and will be dealt with procedurally in accordance with University Rule 3335-31-02 ([oaa.osu.edu/procedures](http://oaa.osu.edu/procedures)). Exams are to be completed individually. Although students are encouraged to work together on assignments and lab reports, each student **must** submit his or her own written work in his or her own words. Only students who are present may receive credit for in-class activities. Submitting an in-class activity for a student who is not present will be considered academic misconduct.

### **Creating a Respectful and Safe Class Environment**

We want STAT 1350 to be an environment where you can feel safe to express your thoughts and ideas about what you are learning about. You can expect fair, consistent, and respectful treatment from the entire Stat 1350 teaching team. We expect all students to treat fellow students, TAs, and lecturers, with respect in your behavior, attitude and communications, be they in-person discussions or email. The OSU Code of Student Conduct, is at <http://studentlife.osu.edu/csc/>

**E-mail Correspondence:** In order to protect your privacy, all course e-mail correspondence *must* be done through a valid OSU name.number or buckeyemail account. If you have not activated your OSU email account, you can activate your account at <https://acctmgt.service.ohio-state.edu>.

### **Other Student Resources**

Students can find information about academic services available at OSU on this website:

<http://artsandsciences.osu.edu/current-students/university-resources>, and about general student services on this website: <http://ssc.osu.edu>.

### **Tips for Success in the Course**

- This is NOT a math class. This is a critical thinking class. Our goal is to help you make wise and educated decisions at work and in life. We recognize that some of you might be nervous about the course, but we want you to know that we are here to help you. The TAs and some lecturers hold office hours in CH 132 in the Math/Stat Learning Center, starting the second week of classes and ending the day of the final exam. Specific hours will be listed under the **Tutor Room Hours** link on the course website. Please take advantage of opportunities to meet with the TAs and lecturers if you need extra help.
- Your peers can be an excellent source of information. We encourage you to collaborate with your peers on different assignments and help each other, but keep in mind that you must submit your own individual work.
- We strongly encourage you to avoid working on assignments until the very last minute. We want to help you if you run into problems, and it can be challenging for us to help if you do not ask questions in a timely manner. Note a **General Questions** discussion forum has been set up on Carmen for you to post questions outside of class time if you need extra help.
- Do not assume the TAs will re-teach the material that is covered during lecture. The TAs assume you have attended lecture, and if you have to miss a lecture, it is up to you to get notes from a classmate.
- Part of your grade depends on being present during recitation sessions. Please do not skip recitation!

- Material will get more challenging as we go through the semester. Because of this, you may need to spend more time studying material that is covered later in the semester versus material covered earlier in the semester.