



THE OHIO STATE UNIVERSITY

STATISTICS: 1450 INTRODUCTION TO THE PRACTICE OF STATISTICS AUTUMN 2016

Course overview

Instructor & Office Hours

Shanshan Tu tu.162@osu.edu Office Information & Hours _____

Teaching Assistant (to be completed by student)

Contact Information for other Students and/or Instructors

Coordinator of all STAT 1450 Offerings

Dr. Jonathan Baker baker.375@osu.edu (614) 688-4546

Meeting Days/Times

Lecture: TR 8:00 – 8:55a.m. CM 0200 **Recitation:** _____ at _____

Course description

Algebra-based introduction to data analysis, experimental design, sampling, probability, inference, and linear regression. Emphasis on applications, statistical reasoning, and data analysis using statistical software. This 3-credit hour course expects all students to have completed a baccalaureate-level mathematics course.

Your Support System

1450 Coordinator Dr. Baker, keeps all STAT 1450 students abreast of updates and important developments with the course.

Lecturers Provide the overarching view of clusters of concepts.

Teaching Assistants Use weekly recitations to reinforce & extend content covered in lecture. Students are expected to be active participants in these sessions that generally occur Fridays at 8a, 9:10a, or 11:30a.

Tutors Offer assistance on a walk-in basis in Cockins (CH) 132.
The Math/Stat Learning Center (MSLC) is open
M- R 9:10a – 6:15p & Fridays 9:10a – 1:40p.

Primary Course Goal:

- To develop skills in drawing conclusions & critically evaluating results based on data.

Course Objectives:

- To introduce you to correct data collection methods through random sampling, experimental design & surveys
- To enable you to use statistical tools for presentation and descriptions of data
- To enable you to understand basic probability rules and sampling distributions as the foundation of inference
- To enable you to analyze data through linear regression, confidence intervals, and hypothesis tests
- To enable you to evaluate statistical procedures in the context of assumptions, biases, and extrapolation.

Course learning outcomes

By the end of this course, students should successfully be able to:

- Understand basic concepts of statistics and probability.
- Comprehend methods needed to analyze and critically evaluate statistical arguments.
- Recognize the importance of statistical ideas.

Dr. Baker's vision for your completion of STAT 1450

- You will become proficient in collecting, organizing, analyzing, and interpreting data
- You will become competent in the use of data analysis software.
- You will interpret findings and improve in your ability to justify your results.
- Your metacognition and desire to reflect upon what you have learned will be heightened.
- You will respond to a problem by: considering any relevant assumptions, analyzing, and effectively communicating your results.
- You will gain a greater appreciation for statistics (and the mathematics that underpins our work)
- You will complete the Data Analysis GE requirement.

Personal Vision Statement & Commitment

Personal <u>Vision Statement</u> for STAT 1450:	Personal <u>Commitment</u> to STAT 1450:
By successfully completing STAT 1450 I will: <ul style="list-style-type: none"> • • • 	To successfully complete STAT 1450, I must: <ul style="list-style-type: none"> • • •

Course Materials

Required course materials

This course requires electronic access to the accompanying web-based materials via *LaunchPad*. The ebook, quizzes, and homework assignments are all located within this resource.

It is recommended that you purchase both a text and *LaunchPad*. You may purchase the LaunchPad Activation code with the accompanying loose-leaf textbook from Barnes & Nobles <http://ohiostate.bncollege.com/webapp/wcs/stores/servlet/BNCBHomePage?storeId=33552&catalogId=10001&langId=-1>. Learners who pursue this option tend to prefer: using a physical textbook for supplemental annotation, relying on resources that can function independent of Internet functionality. The cost is \$127 for a used text; \$169.35 for a new one.

If you just are **only interested in electronic access to course materials**,

- a) Access <http://www.macmillanhighered.com/launchpad/bps7e/3736381>
- b) Select, "I want to purchase student access."

LaunchPad access is valid for one year and costs \$100+.

The *LaunchPad* course management system that stores your homeworks and quizzes is ready for student registration. Follow these steps to get started. If you need additional guidance, consult the student [Quick Start](#) guide, especially the [system requirements](#) which list recommended browsers.

1. Access <http://www.macmillanhighered.com/launchpad/bps7e/3736381>
Introduction to the Practice of Statistics – TR
2. Bookmark the page to make it easy to return to.
3. Enroll in our course using one of the following options:
 - a. If you have an access code, select "I have a student access code," enter the code exactly as it appears on the card, and click Submit.
 - b. If you don't have an access code, either purchase a text package that includes one OR click "I want to purchase access" and follow the instructions.
 - c. If you need to start working but can't purchase right away, select "I want temporary access" and follow the instructions for a free 21 day trial.

If you have problems registering, purchasing, or logging in, please contact Customer Support. You can reach a representative 24 hours a day, 7 days a week via the [online form](#) or by chat. You can reach a representative by phone (800) 936-6899:

- Monday through Thursday 7:00 a.m. to 3:00 a.m., Friday 7:00 a.m. to 11:00 p.m.
- Saturday 11:30 a.m. to 8:00 p.m., Sunday 11:30 a.m. to 11:00 p.m.

To recap...

Your course URL: <http://www.macmillanhighered.com/launchpad/bps7e/3736381>

School: Ohio State University - Main

Course Title: The Basic Practice of Statistics 7e

Course Number: STAT 1450

Course Section: TR

Top Hat

We will use the *Top Hat* software to elicit student responses during lectures. Students will use their smart phones to text responses to questions posed. Please use the following information and the Student Quick Start Guide that is posted on Carmen to complete the registration process. Your username must be name# (e.g. obama3).

Top Hat course name: **STAT 1450 TR 8a (Autumn 2016)**

Direct Link: TBD 6-digit course code: TBD

Required supplemental materials

JMP is the statistical software for this course. JMP is free for you to download and will be used in both lecture and recitation. JMP is accessible through our Launchpad portal.

Alternatively, JMP could be installed via <https://osuitsm.service-now.com/selfservice/>

Highly recommended materials

Texas Instruments 84 (or higher) Graphing Calculator.

Grading and faculty response

Grades

Assignment or category	Percentage	Your Grade
Exam 1 (Mon., October 10 th , 6:30 p.m., <u>Hagerty (HH) 180</u>)	20%	
Exam 2 (Mon., November 14 th , 6:30 p.m., <u>Hagerty (HH) 180</u>)	20%	
Final Exam (Mon., December 12 th , <u>6:00 p.m.</u> , Evans Lab (EL) 1008)	25%	
Quizzes (11 total, 1.25% each, 1 is dropped)	12.5%	
Homework Assignments (11 total, 1.25% each, 1 is dropped)	12.5%	
Attendance & Participation (5% for Lecture, 5% for Recitation)	10%	
Total	100	

Homeworks are due by 11:59 p.m. on Fridays. Quizzes are due by 11:59 p.m. on Sundays. The exact due dates are included with the section calendar.

Make-up Exams (with appropriate documentation, see pg.7) will be offered:

Tuesday, October 11th 7a (Cockins 232) or 3p (McPherson Lab 2015)

Tuesday, November 15th 7a (Cockins 232) or 3p (McPherson Lab 2015)

The Final Exam is comprehensive.

Alternate offerings of the Final Exam will be

Friday, December 9th 10a – 11:45a (CH 218) & Tuesday, December 13th 7a – 8:45 (JR 304).

Late assignments

Late submissions will not be accepted.

Grading scale

93–100: A
90–92.9: A-
87–89.9: B+
83–86.9: B
80–82.9: B-
77–79.9: C+
73–76.9: C
70–72.9: C-
67–69.9: D+
60–66.9: D
Below 60: E

Instructor feedback and response time

Grading and feedback

Midterm examinations will be available within **2 recitations**.

E-mail

All course e-mail correspondence must be done through a valid OSU name.n account. Expect a 24-hour response time when communicating with TAs and lecturers. We are here to support you, but just not quite in a true “on-demand” sense.

Additional Policies, Resources, & Information

Student participation and responsibility

We expect you to be actively engaged in the learning process. You are responsible for your learning. Schedule a minimum of 6 hours to prepare for this course. This equates to 9 hours weekly when the 3 hours for lecture and recitation attendance are included. Successful students perform a variety of positive academic behaviors like: reviewing the Carmen page, downloading notes, being proactive in contacting a TA or classmate as necessary, etc... Please seek assistance in managing any non-academic responsibilities prior to any potential for under-performance.

Electronic devices

As a courtesy to fellow classmates, all cellular phones and other electronic devices must be silenced during lectures and recitations. Your engagement with the class will require an attentiveness for note-taking. If necessary, TAs and lecturers can request that students place these devices out of plain view if their usage is deemed irrelevant to instruction.

Academic integrity policy

It is the responsibility of the Committee on Academic Misconduct to investigate or establish procedures for the investigation of all reported cases of student academic misconduct. The term “academic misconduct” includes all forms of student academic misconduct wherever

committed; illustrated by, but not limited to, cases of plagiarism and dishonest practices in connection with examinations. Instructors shall report all instances of alleged academic misconduct to the committee (Faculty Rule 3335-5-487). For additional information, see the Code of Student Conduct <http://studentlife.osu.edu/csc/>.

The Ohio State University's *Code of Student Conduct* (Section 3335-23-04) defines academic misconduct as: "Any activity that tends to compromise the academic integrity of the University, or subvert the educational process." Examples of academic misconduct include (but are not limited to) plagiarism, collusion (unauthorized collaboration), copying the work of another student, and possession of unauthorized materials during an examination. Ignorance of the University's *Code of Student Conduct* is never considered an "excuse" for academic misconduct, so I recommend that you review the *Code of Student Conduct* and, specifically, the sections dealing with academic misconduct. <http://studentlife.osu.edu/csc/>.

If I suspect that a student has committed academic misconduct in this course, I am obligated by University Rules to report my suspicions to the Committee on Academic Misconduct. If COAM determines that you have violated the University's *Code of Student Conduct* (i.e., committed academic misconduct), the sanctions for the misconduct could include a failing grade in this course and suspension or dismissal from the University. In short, if you are considering doing something that might be unethical, then resist and refrain from pursuing it. This will help you in college and well-beyond.

If you have any questions about the above policy or what constitutes academic misconduct in this course, please contact me. Other sources of information on academic misconduct (integrity) to which you can refer include:

- The Committee on Academic Misconduct web pages ([COAM Home](#))
- *Ten Suggestions for Preserving Academic Integrity* ([Ten Suggestions](#))
- *Eight Cardinal Rules of Academic Integrity* (www.northwestern.edu/uacc/8cards.htm)

Make-Up Mid-term Examinations

The established exam dates and times are a priority for both students and university officials. Valid and documented absences during exam dates require final pre-approval from Dr. Baker. In requesting a make-up exam you must communicate with both your TA and Dr. Baker. Your performance on the final exam items most associated with the missed exam will count as the missed exam grade with up to an additional 10% point deduction. If you miss an exam because of an emergency, contact Dr. Baker immediately to request a makeup exam. You'll need to provide evidence of need for rescheduling this exam. These exams will be offered at 7a & 3p.

Grade Appeals

Your TAs are highly capable and follow established rubrics in evaluating your work. Only in the rarest of cases will an exam grade need to be appealed. In these situations:

- a) (within 1 week of receipt of your assessment) Inform your TA of the issue in writing
- b) Attach a statement of the issue at-hand to your work and submit to Dr. Baker

Course Registration and Completion

Students will be able to work with department staff on any ADD and SECTION changes. Students can begin communicating with Jean Scott (Cockins Hall 408A), Tuesday, August 30th.

Date	Event
Friday, August 26 th	The last day to add the course without instructor permission.
Friday, September 2 nd	The last day to register and avoid additional fees. <i>*Please note that students who are dropped for non-payment are not guaranteed re-enrollment.*</i>
Friday, September 16 th	The last day to drop without a 'W' appearing on your record.
Friday, October 28 th	The last day to drop the course without petitioning.

FYI, Incompletes will only be awarded when 70% of the coursework has been completed.

Accommodations for accessibility

Students with disabilities that have been certified by the Office for Disability Services will be appropriately accommodated and should inform the instructor of their needs as soon as possible. The Office for Disability Services is located in **098 Baker Hall, 113 W. 12th Ave.**; telephone 292-3307, TDD 292-0901; email ods@osu.edu; <http://www.ods.osu.edu/>

Requesting accommodations

If you would like to request academic accommodations based on the impact of a disability qualified under the Americans with Disabilities Act and Section 504 of the Rehabilitation Act of 1973, please contact the Office for Disability Services at [614-292-3307](tel:614-292-3307) or ods@osu.edu to register for services and/or to coordinate any accommodations you might need in your courses at The Ohio State University. Go to <http://ods.osu.edu> for more information.

OSU accessibility resources

Further information and links regarding accessibility at OSU can be found here: <http://ada.osu.edu/resources/Links.htm>

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>.

Autumn 2016 STAT 1450 TR 8a Calendar *Major Monday Assessments*

Date & Time	Location	Assessment (Grade)
Monday, October 10 th 6:30p – 7:25p	Hagerty (HH) 180	1 st Midterm ()
Monday, November 14 th 6:30p – 7:25p	Hagerty (HH) 180	2 nd Midterm ()
Monday, December 12 th 6:00p – 7:45p	Evans Lab (EL) 1008	Final Exam ()

<i>Tuesdays</i>	<i>Thursdays</i>
August 23 Chp.1 Picturing Distributions with Graphs	August 25 Chp.2 Describing Distributions with Numbers (thru 2.4)
August 30 Chp. 2 Describing Distributions with Numbers	September 1 <u>HW 1 Due F 9/2</u> <u>Qz.1 Due Su 9/4</u> Chp. 3 The Normal Distributions (thru 3.4)
September 6 Chp. 3 The Normal Distributions	September 8 <u>HW 2 Due F 9/9</u> <u>Qz.2 Due Su 9/11</u> Chp. 4 Scatterplots & Correlation
September 13 Chp. 5 Regression (thru 5.2)	September 15 <u>HW 3 Due F 9/16</u> <u>Qz.3 Due Su 9/18</u> Chp. 5 Regression
September 20 Chp. 6 Two-Way Tables	September 22 <u>HW 4 Due F 9/23</u> <u>Qz.4 Due Su 9/25</u> Chp. 8 Producing Data: Sampling
September 27 Chp. 9 Producing Data: Experiments	September 29 <u>HW 5 Due F 9/30</u> <u>Qz.5 Due Su 10/2</u> Chp. 12 Introducing Probability
October 4 Chp. 13 General Rules of Probability	October 6 Exam 1 Review <i>Covering Chapters 1-6, 8, & 9</i> Chp.13 General Rules of Probability
October 11 Chp.15 Sampling Distributions	October 13 <u>HW 6 Due M 10/17</u> <u>Qz.6 Due M 10/17</u> No Lecture – Fall Break
October 18 Chp.16 Confidence Intervals: The Basics (thru 16.2)	October 20 <u>HW 7 Due F 10/21</u> <u>Qz.7 Due Su 10/23</u> Chp. 16: Confidence Intervals: The Basics Chp. 17: Tests of Significance: The Basics (thru 17.2)
October 25 Chp.17: Tests of Significance: The Basics Chp.18: Inference in Practice	October 27 <u>HW 8 Due F 10/28</u> <u>Qz.8 Due Su 10/30</u> Chp.20 Inference about a Population Mean (thru 20.4)
November 1 Chp.20 Inference about a Population Mean	November 3 <u>HW 9 Due F 11/4</u> <u>Qz.9 Due Su 11/6</u> Chp. 21 Two Sample Problems (thru 21.3)
November 8 Chp.21 Two Sample Problems	November 10 Exam 2 Review <i>Covering Chapters 12,15,13,16-20</i> Chp.22 Inference about a Pop. Proportion (thru 22.3)
November 15 Chp.22 Inference about a Pop. Proportion	November 17 <u>HW 10 Due F 11/18</u> <u>Qz.10 Due Su 11/20</u> Chp. 23 Comparing Two Proportions (thru 23.3)
November 22 Chp. 23 Comparing Two Proportions	November 24 <u>(No Assignments Due this weekend).</u> No Lecture – Thanksgiving Day
November 29 Chp. 25 Two Categorical Variables (thru 25.3)	December 1 <u>HW 11 Due F 12/2</u> <u>Qz.11 Due Su 12/4</u> Chp. 25 Two Categorical Variables
December 6 Review for a manageable cumulative final exam.	December 8 (Final Exam Monday, December 12th) No Lecture – Reading Day