

STAT 200: ELEMENTARY STATISTICS (SECTION 105) SUMMER SESSION 2017

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Share Office Hours: Monday-Thursday 4:00-6:00 PM, 320 Thomas Bldg

Meeting Time:

M W F 2:20PM - 3:35PM , 217 Thomas Bldg - LECTURES

T R 2:20 PM - 3:35 PM, 004 Huck Life Sciences Bldg– COMPUTER LABS

REQUIRED MATERIALS:

Textbook: *Mind on Statistics*, 5th Edition, by Jessica Utts & Robert Heckard

- options include: 3-hole punch loose leaf (LL), hard cover, and electronic version. **No** JMP code needed. Instructor will only work from the 5th edition. No International Version. Student solution manual is **not** required.
- a few copies are available in the Physical and Mathematical Sciences (PAMS) & Pattee Library
- can also buy textbook directly from the publisher by using this website:
<https://www.cengagebrain.com/shop/ProductDisplay?langId=-1&storeId=10151&catalogId=10057&productId=669929>

(no open book quizzes)

Calculator: won't need with exams (so no course requirement)

COURSE FORMAT:

- **4 credit course in a three-credit time frame;**
- **Each week = 2.5 weeks of regular semester**

COURSE WEB SITE (CANVAS): <https://lmstools.ais.psu.edu/login/index.html>

COURSE DESCRIPTION:

Statistics is the art and science of using sample data to make generalizations about populations. Students who successfully complete this should be able to...

- critically consume statistically-based results reported in popular media, recognizing whether reported results reasonably follow from the study and analysis conducted.
- recognize questions for which the investigative process in statistics would be useful and should be able to answer questions using the investigative process.
- produce and interpret graphical displays and numerical summaries.
- recognize and explain the central role of variability in the field of statistics.

- recognize and explain the central role of randomness in designing studies and drawing conclusions.
- use statistical models to address a research question.
- conduct and interpret the results from hypothesis tests and confidence intervals.

COURSE POLICIES:

- You are strongly encouraged to **attend all classes** (lectures and labs). If you miss a class, please borrow the notes for the missed class from a fellow student and complete readings from the textbook.
- If you do not understand something, please ask as others are probably in a similar position to you.
- Please be courteous to your classmates and keep extra noise to a minimum by turning off cell phones and entering and leaving quietly if you are late or need to leave early.
- You must supply documentation of reasons for missing an exam.
- Discussion on homework and lab activities is encouraged but each student must turn in his/her own work.
- Assignments will not be accepted past the time they are due unless you make other arrangements with me BEFORE the due date.
- Students are responsible for all announcements and supplements given within any lecture.

ACADEMIC INTEGRITY:

Academic integrity includes a commitment to not engage in or tolerate acts of falsification, misrepresentation or deception. Such acts of dishonesty violate the fundamental ethical principles of the Penn State community and compromise the worth of work completed by others. This course will follow the Eberly College of Science policy at <http://science.psu.edu/current-students/Integrity/Policy.html>

DISABILITY ACCESS STATEMENT:

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 Student Disability Resources (SDR) at [814-863-1807](tel:814-863-1807) (V/TTY), at 116 Boucke. For further information regarding SDR, please visit the web site at <http://equity.psu.edu/student-disability-resources>. You must see the instructor in person about SRD accommodations after contacting the people at SDR.

Homework Quizzes & LAQ's have already been adjusted to accommodate those who need additional time.

STATEMENT OF NONDISCRIMINATION:

The Pennsylvania State University is committed to the policy that all persons shall have equal access to programs, facilities, admission, and employment without regard to personal characteristics not related to ability, performance, or qualifications as determined by University policy or by state or federal authorities. The Pennsylvania State University does not discriminate against any person because of age, ancestry, color, disability or handicap, national origin, race etc.

PENN STATE VALUES:

Below are the six values for which everyone in the Penn State community should adhere to when making choices and decisions:

- **Integrity:** We act with integrity and honesty in accordance with the highest academic, professional, and ethical standards.
- **Respect:** We respect and honor the dignity of each person, embrace civil discourse, and foster a diverse and inclusive community.
- **Responsibility:** We act responsibly, and we are accountable for our decisions, actions, and their consequences.
- **Discovery:** We seek and create new knowledge and understanding, and foster creativity and innovation, for the benefit of our communities, society, and the environment.
- **Excellence:** We strive for excellence in all our endeavors as individuals, an institution, and a leader in higher education.
- **Community:** We work together for the betterment of our University, the communities we serve, and the world.

COURSE ASSESSMENTS:

TABLE 1:

Requirement	Pts	Overall Pts	Overall Percent (%)
Exams: Exam 1: Thurs May 25	100	300	30%
Exam 2: Thurs June 8	100		
Exam 3: Thurs June 22	100		
Lab Activity Quizzes (LAQ)* - keep best 10 of 12	20	200	20%
In-Class Quizzes: Fri May 19	25	75	7.5%
Fri June 2	25		
Fri June 16	25		
Homework (HW) - keep best 8 of 9	15	120	12%
In-Class Problems – keep best 5 of 6	11	55	5.5%
Final: Mon June 26 (must take on this date) (90 minutes)	250	250	25%
Total		1000	100%

Exams: (3 exams will be given/no drops) – can’t take early no matter what the reason

- **Exams:** will include 30 multiple choice questions (60 minutes) take at **Testing Center (104 Pollock)** on scheduled date & time (sign up in advance) – **take outside class**
- **Testing Center open 9 AM – 3 PM**
- some exam questions could come from homework’s along with extra problems listed from the textbook
- provided a piece of scratch paper at exam (bring your own pencil/pen) – some helpful information is embedded – **nothing else allowed** such as a calculator, cellphone, notes, Bluetooth watch, etc.
- must follow the Testing Center policies – failure to do so will result in a “0” for the first offence - evidence can come from witnesses, security cameras and computer records

Final Exam:

- **selectively** comprehensive (40 questions) / (larger portion from common test bank)
- **must take** on June 26 (no matter what is the reason)
- must follow same rules and procedures as found with exams

MAKE-UP POLICY:

- **Note:** make-ups **will not** be granted to students who are not regularly participating in the class. This includes make-ups for any exam and the final.
- For make-ups that are approved:
 - work must be completed **within a reasonable amount of time** as determined by the instructor
 - under the same conditions/restrictions that was used by other class members

Lab Activity Quizzes & Homework Quizzes Make-Ups:

- no make-ups under **most** circumstances because the course is loaded with drops
- **MOST IMPORTANT: with LAQ's:** everyone must use **one drop (no exceptions)** when sick, have surgery, attend funerals, at court, family issues and events, personal problems, missed the bus, bad weather, transportation/car issues, alarm on cell phone not working, work-related issues, etc.
- It is not necessary to email the instructor about missing class with regard to this miss. Canvas will find the drops near the end of the semester.
- class will be held unless the university shut downs
- extended illness/problems will be dealt with on an individual basis
- quizzes will be available for practice after all students have submitted

Exams Make-ups:

- **only** allowed if you have a University-related excuse or a religious conflict, you must talk to the instructor in person and provide documentation with appropriate letterhead and signatures, **prior** to the exam for arrangements. – not given early
- Illnesses will be dealt with on an individual basis. Must contact the instructor by the exam day about any unexpected illnesses, etc. All exams will be available for review after all students have submitted

GRADES:

Reported in the Canvas GradeBook

Final Grades: based on 1000 points

- most importantly, grades are **earned** based on academic performance
- point ranges for final grades are found in **Table 2.**
- grade boundaries must be set so that student performances can be fairly evaluated
- do not expect the grades to be curved (also cannot negotiate your grade or missed assignments at the end of or after the semester is over).
- will **not** be rounded. For example, a point total of 929.99 will be an A- grade, while a point total of 699.99 will be a D grade.
- some class extra credit options are available during the semester
- no individual extra credit allowed either during or after the semester is over

TABLE 2: POINT BOUNDARIES FOR FINAL GRADES

Final Grade	Minimum Points Needed*
A	930 points
A-	900 points
B+	870 points
B	830 points
B-	800 points
C+	770 points
C	700 points
D	600 points
F	0 points

TEXTBOOK COVERAGE:**TABLE 3: CHAPTERS COVERED & CORRESPONDING TOPICS***

Chapters	Topics
Chapter 1 (all sections)	Overview of Statistics, Population, Sample, & and certain Statistical Principles
Chapter 2 (all sections)	Descriptive Methods: (one quantitative) & (one categorical) variable
Chapter 3: (all sections)	Descriptive Methods: Regression & Correlation (get s from Chapter 14)
Chapter 4: Sections 4.1 – 4.4	Chi-square Procedure: 2X2 tables (relative risk, increased risk, odds)
Chapter 5: Sections 5.1-5.3	Margin of error, polls, confidence interval, simple random sample
Chapter 6: Sections 6.1-6.3	Design of “Randomized Experiments” &” Observational Studies”
Chapter 8: Sections 8.1- 8.7	Random variables, Binomial distribution, & Normal distribution
Chapter 9: Sections 9.1- 9.4, 9.6, 9.9-9.10	Sampling Distributions, Central Limit Theorem
Chapter 10: (all sections)	Confidence Intervals: Population Proportion(s)
Chapter 11: Sections 11.1 – 11.5	Confidence Intervals: Population Mean(s)
Chapter 12: Sections (all sections)	Hypothesis Tests: Population Proportion(s)
Chapter 13: Sections 13.1 – 13.6	Hypotheses Tests: Population Mean(s)
Chapter 14: Sections 14.3 (Time permit)	Hypothesis tests: Population Correlation & Population Slope tests
Chapter 15: Sections 15.1 & 15.2 (Time permit)	Chi-square Tests: larger than 2X2 tables

*Not all chapters will be covered in the order found in the textbook.

SOME HELPFUL TIPS:

- The course requires both the acquisition of basic knowledge and conceptual understanding in order to successfully solve challenging problems. Unfortunately, memorization only allows for the acquisition of basic knowledge at best.
- Many students don’t learn all of the material that we’ll see in this course the first time they are exposed to it. So you can expect to do need several rounds of studying, trying, and evaluation to master such material. Practice helps to build confidence.
- Many students do not understand how to properly take notes in class. Sitting in class constantly looking at/using your cellphone is detrimental to learning.
<https://dus.psu.edu/academicsuccess/studyskills.html>
- For enduring (deep) learning the three key components are: productive struggle, explicit connections, and deliberate practice

- Studies have shown that multitasking is very detrimental to learning. When using this practice to complete a task, it often takes longer and leads to making mistakes.
- I see my job like that of a coach – I do my best to help, but the student plays a very large role in his or her success. Ultimately learning is the student’s responsibility.
- The four top reasons why students do poorly in this class:
 1. don’t come to or pay attention during class
 2. don’t seek help when having problems
 3. don’t complete the HW, and
 4. become too dependent on services such as Lion Tutors/Nittany Notes, etc.

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