STAT371: Introductory Applied Statistics for the Life Sciences

Fall 2017

Lecture:	005
Days:	Tuesday & Thursday
Time:	16:00pm – 17:15pm
Location:	Van Vleck B130

Instructor

Instructor:	Duzhe Wang
Email:	dwang282@wisc.edu
Office Hours:	15:30pm-16:30pm Friday
Office Hour Location:	1475 Medical Sciences Center (MSC) 1300 University Ave. (**I'll make an announcement when I change the location**)

Teaching Assistants

TA:	Yuchang Wu	Zhongjie Yu	Yuetian Luo
E-mail:	ywu423@wisc.edu	zyu98@wisc.edu	yluo86@wisc.edu
Office Hours:	11:30am-12:30pm Thursday	2-3pm Friday	2:30-3:30pm Wednesday
Office:	MSC1210	MSC B248	MSC B315

Note: There will be **no TA office hours in Week 1**. TA office hours will begin in Week 2.

Discussion section 351

TAs:	Yuchang Wu(Discussion TA) and Yuetian Luo(Support TA)
Time:	12:05pm-12:55pm, Wednesday
Location:	ENGR HALL 3345

Discussion section 352

TAs:	Zhongjie Yu(Discussion TA) and Yuetian Luo(Support TA)
Time:	13:20pm-14:10pm, Wednesday
Location:	EDUC SCI 212

Discussion section 353

TAs:	Zhongjie Yu(Discussion TA) and Yuetian Luo(Support TA)
Time:	12:05pm-12:55pm, Thursday
Location:	COMP SCI 1325

Note: Check the enrollment system for updates about the location. There may be some changes.

Goals

A student completing STAT371 can:

- Articulate the basics of probability and statistics.
- Make numeric and graphical summaries of simple data.
- Produce appropriate statistical analyses of simple data sets.
- Design simple experiments whose data will suit basic statistical analysis.
- Use R, a free statistical software package, for statistical computations and graphs.
- Study and learn additional statistical methods.

Texbook

There is **no required textbook** for this course. The recommended text is *An Introduction to Statistical Methods* by R. Lyman Ott and Michael Longnecker.

Website

- Course website: Lecture slides, summary notes, homework assignments, solutions and exam practice will be posted here.
- LearnUW. Discussion sheets will be posted here. It will also host the gradebook.
- Piazza: You are strongly encouraged to use this forum to ask questions and to interact with me, the TAs, and fellow students outside of class.

Communication

- Outside of lecture, I may make periodic announcements to the class via the university-supplied classlist. It is imperative that your @wisc.edu email address is working.
- Responding to e-mail can be time-consuming. **If you e-mail me a question that is answered on this syllabus, I may not respond or I may respond with only one word: "Syllabus."**
- **For questions about homework assignments, homework grading and homework hand-in policies, please first contact to your TA.**

General Class Policies

- Use of cell phones and laptops during classroom time is discouraged.
- While attendance does not count toward your final grade, students are **strongly** encouraged to attend all lectures and discussions.
- **In particular, do not ask the instructor or TAs for any notes you may have missed during lectures/discussions!**

Required Materials

- Stapler
- Scientific calculator
- Computer with internet access

Discussion Sections

- There are weekly in-person discussion sections led by the TAs. Discussion sections will be utilized to supplement and reinforce the lectures, mostly by working through practice exercises related to the material. Each discussion section will be based on a worksheet that will be posted to Learn@UW before the discussion. **The TA will not bring extra copies of the worksheet.** It is advised that you bring your own printed copy of the worksheet or a device with internet access to follow along.

- **There will be discussion sections held in Week 1.** The first discussion will be a tutorial of R programming.

Homework

There will be about 8 homework assignments and each homework has 15 points. I will make an announcement in lecture when a homework assignment is imminent.

In order to ensure that homework assignments are graded accurately and quickly, and returned to students promptly, **the following homework policies will be strictly enforced**:

- Turn in homeworks by 4pm of the Friday they are due, into your **Support TA's mailbox** in the lobby of the Medical Sciences Center.
- There will be **no credit for late homeworks.**
- **Write your name and discussion section number clearly on the front page**. Unidentifiable assignments can earn at most **half credit**, and scores can't be recorded until claimed by their owners.

- **Staple** your assignment together with real metal staples. Unstapled assignments (that is, those not held together with metal staples from a stapler) can earn at most **half credit**. Lost or untraceable pages will not be graded.
- For questions where R is used, report your results in the main body of the homework, and make sure to attach an appendix with all of your R code at the end of the assignment. Use clear, appropriate labels to indicate which section of code goes with which question.
- Homework grading will be based on correctness. To obtain full credit make sure to **(a)** show all your work and **(b)** justify all answers completely.
- The grader may deduct points for illegible writing.
- Graded homeworks will be returned to students during discussion section. **If you cannot pick up your homework during discussion, visit your TA's office hour to retrieve it. Please don't email to the instructor to ask for it**.

Exams:

- There will be 2 in-class midterm examinations and a final exam. The dates of the exams are:

Exam	Date
Midterm 1	(Tentatively) 10/12/2017, in class
Midterm 2	(Tentatively) 11/16/2017, in class
FINAL EXAM	12/16/2017, 7:45-9:45am, Location TBA

- **I will not re-schedule in-class exams for any reason other than recognized emergency situations. The final exam will not be rescheduled under any circumstances.** Plan your semester accordingly!
- Exams will be closed book. Students will be allowed to use a scientific calculator without internet access. They will be allowed one (1) 8.5" $\times$ 11" sheet of notes for Midterm 1, two (2) 8.5" $\times$ 11" sheets for Midterm 2, and three (3) 8.5" $\times$ 11" sheets of notes for the Final Exam. Cell phones and any other internet-ready device must be turned off and out of sight at all times during the exam. Students found using an internet-ready device during an exam will receive a **zero.**

Grades

- Grades will be calculated according to the following weights:

Items	Points
Homework	120
Midterm 1	80
Midterm 2	80
Final Exam	120
Total	400

- Letter grades will be assigned based on your final calculated percentage. At a minimum, your grade will be no lower than:

A	90 - 100
AB	85 - 89
B	80 - 84
BC	75 - 79
C	70 - 74
D	60 - 69

Computing

We will be using R for analyses that require computing. R is a free, open-source, and extremely flexible statistical computing package, and is available for download online at: www.cran.r-project.org. R Studio, an organizational interface for R, may also prove useful. It is available for download online at www.rstudio.com. No prior experience with scientific or statistical computing will be assumed. Discussion during the first week of class will be a tutorial covering how to download and install R and R Studio, along with some basic commands.

Additional Accommodations

The University of Wisconsin-Madison supports the right of all enrolled students to a full and equal educational opportunity. The Americans with Disabilities Act (ADA), Wisconsin State Statute (36.12), and UW-Madison policy (Faculty Document 1071) require that students with disabilities be reasonably accommodated in instruction and campus life. Reasonable accommodations for students with disabilities is a shared faculty and student responsibility. **Students are expected in inform the instructor of their need for accommodations by the end of the second week of the semester, or as soon as possible after a disability has been incurred or recognized**. The instructor will either work directly with each student, or in coordination with the McBurney Center, to identify and provide reasonable instructional accommodations. Disability information, including instructional accommodations as part of a student's educational record, is confidential and protected under Federal law, in particular the Family Educational Rights and Privacy Act (FERPA).

Tutorial Center

The Statistics Department offers free tutoring for our intro level classes. Stop by for tips on homework, further explanation of class material, guidance with computer assignments, or other intro stat class questions. Tutoring is located in room 1274 of the Medical Sciences Center. The center is open from 9-4pm Monday-Friday.

Tentative Schedule

Week	Date	Day	Lectures
Week 1	9/5	T	No lecture
	9/7	R	L1: Introduction
Week2	9/12	T	L2: Descriptive Stats
	9/14	R	L3: Descriptive Stats+Prob
Week3	9/19	T	L4: Prob+ RVs and Dists
	9/21	R	L5: RVs and Dists
Week4	9/26	T	L6: RVs and Dists
	9/28	R	L7: Estimation
Week5	10/3	T	L8: Estimation
	10/5	R	L9: Estimation
Week6	10/10	T	L10: Review
	10/12	R	**EXAM 1, in class**
Week7	10/17	T	L11: Estimation
	10/19	R	L12: Estimatioin
Week8	10/24	T	L13: Estimation
	10/26	R	L14: Hypothesis Testing
Week9	10/31	T	L15: One-sample tests
	11/2	R	L16: One-sample tests
Week10	11/7	T	L17: One-sample tests
	11/9	R	L18: One-sample tests
Week11	11/14	T	L19: Review
	11/16	R	**EXAM 2, in class**
Week12	11/21	T	L20: Two-sample independent tests
	11/23	R	**Thanksgiving, no class**
Week13	11/28	T	L21: Two-sample independent tests
	11/30	R	L22: Two-sample paired tests+ANOVA
Week14	12/5	T	L23: ANOVA
	12/7	R	L24: ANOVA
Week15	12/12	T	L25: Review
	12/16	S	**FINAL EXAM, 7:45-9:45am**