

**STA 2171 Statistics for Biology**  
**Sections 01– Fall 2017**

**Class:** MW 6:45 PM-8:00 PM OSB 0108

**Recitation:** F 3:35 PM-4:25 PM OSB 0108

**Instructor:** Tingting Hu

**Grader:** Jing Zeng

**Office:** OSB 201A

**Office Hour:** 4:25-5:25PM Friday (or by appointment)

**Email:** t.hu@stat.fsu.edu

**Credit Hours:** 4

**Course Materials**

**Textbook (Recommend):** Samuels, Myra L., and Jeffrey A. Witmer, *Statistics for the Life Sciences*, 5<sup>th</sup> Edition, 2016, ISBN-10: 0-321-98958-9, ISBN-13: 978-0-321-98958-1

**Class Notes:** We will be using fill-in-the-blank class notes for lectures. You can find the notes on university learning management system (LMS). Please print off the appropriate notes to get the most out of class lecture.

**Calculator:** A basic scientific calculator is necessary. If you buy one with statistical operations, TI-83/TI-84 is recommend (not required); a more basic calculator is also permissible. You may not use cellphone as calculator or share calculator in exams.

**University learning management system (LMS):** Grades, announcements and other important information will be post on the University learning management system (LMS) (go to <http://campus.fsu.edu> and login). You are responsible for assignments and announcements post on this website, as well as those sent through your FSU email. **Check your FSU mail everyday.**

**Course Description:**

**Prerequisite:** MAC 2311 Calculus I and Biology major status, or departmental approval.

**Credit Hours:** 4

**Special Note:** No credit is given for STA 2171 if a "C-" or better has been previously earned in STA 3032 or QMB 3200.

This course provides an introduction to statistics emphasizing applications in Biology. Topics include descriptive statistics, elementary probability, the binomial and normal distributions, confidence intervals and hypothesis tests for means and proportions, correlation and regression, contingency tables and goodness-of-fit tests, analysis of variance and non-parametric tests.

The purpose of this course is to prepare students for further study and job preparation in the field of Biological Sciences including Medicine, Dentistry, other healthcare professions, Veterinary Medicine, Zoology and Botany. It will emphasize understanding of data and interpretation of statistical analyses. It will require students to think of data, and report the results of their analyses, in context.

**Course Objective:** By the end of the course, students will demonstrate the ability to: (1) Analyze and address problems drawn from real world scenarios by applying appropriate mathematical, statistical, logical, and/or computational models or principles. (2) Interpret and evaluate data and information as presented in a variety of modes (such as tables, graphs, and charts), using appropriate technology. They will also be able to clearly communicate a summary of their findings

to peers. *The above two competencies will be assessed in the L.S. Quantitative Assessment for STA 2171, which includes a written summary of results.*

(3) Use descriptive statistics and graphical methods to summarize data accurately. (4) Use inferential statistics to make valid judgments based on the data available. (5) Select the appropriate statistical tools to analyze a particular problem. (6) Describe the goals of various statistical methodologies conceptually. (7) Develop a healthy skepticism toward statistical studies and their results based on a sensible consideration of the techniques employed.

**Grading Policy:** Grade Composition:

12 quizzes: 100 points

Exam 1: 100 points

Exam 2: 100 points

Exam 3: 140 points

Final-Exam: 160 points

Total: 600 points

**Quizzes:** 12 quizzes will be offered each Friday unless the day is a holiday or around an exam. The quizzes are individual work; closed book and closed notes. Necessary formulas will be provided on the quizzes. Note that **no make-up will be offered for quizzes**; two lowest scores will be dropped.

**Exams:** There will be four unit exams, three mid-term exams (100pts each), and a final exam (150pts). No score for exams will be dropped. These exams are not cumulative, except in the sense that materials are cumulative. The exams will be closed book and closed notes. One 8.5\*11 **handwritten** formula sheet (no photo copies or computer-generated output; both sides usable) and a calculator are permitted on each exam. Communication and discussion is not permitted. Cellphones and other wireless devices cannot be used as a calculator.

**Homework:** Homework will be assigned but will not be collected or graded. I strongly suggest to finish them; quizzes and exam problem will closely resemble the homework. Solutions for certain problems in homework are given in the textbook. 1-2 problems will be worked out at the beginning of each recitation.

**Aside:**

Extra Points (1-3 pts) will be given for pop activities I assign in class. The maximum extra points is 25 points for each person. This part is just small bonus and does not hurt your overall course score if you miss the pop activities. No make-up will be offered.

**Sign-in:**

Make sure you sign in at every quiz and every exam. If you are present for an activity but fail to sign in your attendance, you may get a zero grade.

**Make-up Policy:**

~**For lectures** not involving quiz, activity, test or exam, you are not required but encouraged to self study the course material if you miss the class. The materials are accessible in university learning management system (LMS).

~**For quizzes, NO MAKE-UP.** At the end of the semester, 2 lowest scores will be dropped. If you are absent more than twice, please provide **official documentation for ALL THE ABSENCES** at the end of semester (**April 20-April 28**), your absent quiz score will be substituted with your average quiz score.

~For exams 1-3, make-ups will not be given unless the student: i) **notifies the instructor before or within 2 working days of the exam, ii). Provides official documentation and iii). completes the make-up within two weeks of the exam or assessment.**

~For final exam, **NO MAKE-UP.** Mark the time and date on your calendar.

~ **I will allow absolutely no make-ups, no extra credit assignments, and generally, no opportunities for grade improvement, after the last day of class, Dec 8, so please do your best during the term.**

**Overall Course Grade:** Final grade for this course will be calculated as follows:

Overall Course Grade = sum of 10 highest Quiz scores + Common Assessment Score + sum of three Mid-Exam scores + Final Exam score, rounded UP to the next higher whole number.

| Letter             | Grade   | Letter | Grade   | Letter | Grade   | Letter | Grade   | Letter | Grade |
|--------------------|---------|--------|---------|--------|---------|--------|---------|--------|-------|
| FSU does not award | A+      | B+     | 520-539 | C+     | 460-479 | D+     | 400-419 | F      | ≤ 359 |
| A                  | ≥ 560   | B      | 490-519 | C      | 430-459 | D      | 370-399 |        |       |
| A-                 | 540-559 | B-     | 480-489 | C-     | 420-429 | D-     | 360-369 |        |       |

### Grades Missing or Incorrect

~ Check your University learning management system (LMS), and contact the instructor via email, in the case of a missing or problematic grade, **within two weeks** after every activity, every quiz and every exam to make sure your latest grade has been posted correctly, do this even if you already know your grade.

~ I cannot promise to be able to resolve a missing or incorrect grade issue if it is reported more than two weeks after the grades are post.

~ If a grade is not posted, **alert me immediately via email**, it is important that you alert me via email so that there will be a record of the fact that you reported the matter

### Receiving a grade of "Incomplete"

A request for a grade of "Incomplete" will

~ NOT be granted if you have completed all of the coursework.

~ be granted only if both of the following conditions are satisfied:

- (1) you have completed all of the quizzes and activities, and
- (2) your overall average excluding the final exam is a passing grade.

### STUDENTS SWITCHING SECTIONS

When you switch sections, your grades are permanently deleted from your old University learning management system (LMS) section website. Always inform us before you switch so that we may keep a copy of your previously earned grades.

### STUDENTS COMPLETING AN INCOMPLETE OR AUDITING

If you are auditing this course or attending it to complete an "Incomplete" earned in a previous term, make yourself known to me so that I may let you have access to our current University learning management system (LMS) websites. If you are completing an "Incomplete", let me know who your former instructor was so that I may inform them of your grade at the end of the term.

**HELP OUTSIDE OF CLASS**

- (1) instructor— stop by during my office hour, or email to [t.hu@stat.fsu.edu](mailto:t.hu@stat.fsu.edu) to make an appointment.
- (2) classmates — talk to your classmates outside of class and see if they can help you.
- (3) free tutoring services at ACE — see <http://ace.fsu.edu/tutoring> or contact [tutor@fsu.edu](mailto:tutor@fsu.edu) for more information. Some of my prior students reflect this service is good.

**Attendance, Absence and Drop/Withdrawal**

~First-day attendance is mandatory by university regulations. Thereafter attendance is not required except that you may get a zero for being absent in a quiz, assessment or an exam.

~If you miss class, I expect you to keep up-to-date with the lectures and activities. The lecture notes with blanks will be provided on University learning management system (LMS)--STA 2171 Spring17 Main Website—Course Library, but the marked notes will not. If you need class note, please get them by getting in touch with classmate.

~ For absence in a quiz, test, or exam, please see the Make-up Policies.

**University Attendance Policy**

Excused absences include documented illness, deaths in the family and other documented crises, call to active military duty or jury duty, religious holy days, and official University activities. These absences will be accommodated in a way that does not arbitrarily penalize students who have a valid excuse. Consideration will also be given to students whose dependent children experience serious illness.

**Classroom Policy**

~No food or drink is allowed in the classroom.

~Turn off all audible alarms (cell phones, pagers, watches, etc.). Using cell phones in class shows a lack of respect and gives suspicions of cheating.

~Please come on time to class. Opening and closing the door in the middle of class is distracting to both the students and the teacher.

~Please do not talk or distract others during lecture.

~Please show respect for everyone in the classroom. I promise to give you the same measure of respect that I expect from you.

~During quizzes and exams, I will ask you to move to another seat if I suspect you, or persons around you, are cheating. This will be a subjective judgment on my part. When you are asked to do so, please move quietly to avoid disturbing others.

**Free Tutoring from FSU**

For tutoring and writing help in any course at Florida State University, visit the Academic Center for Excellence (ACE) Tutoring Services comprehensive list of tutoring options see <http://ace.fsu.edu/tutoring> or contact [tutor@fsu.edu](mailto:tutor@fsu.edu) for more information. High-quality tutoring is available by appointment and on a walk-in basis. These services are offered by tutors trained to encourage the highest level of individual academic success while upholding personal academic integrity.

**LIBERAL STUDIES FOR THE 21st CENTURY: Quantitative and Logical Claims**

The Liberal Studies for the 21st Century Program at Florida State University builds an educational foundation that will enable FSU graduates to thrive both intellectually and materially and to support themselves, their families, and their communities through a broad and critical engagement with the world in which they live and work. Liberal Studies offers a transformative experience; this course has

been approved as meeting the Liberal Studies requirements and thus is designed to help you become a critical analyzer of quantitative and logical claims.

In order to fulfill the State of Florida's College mathematics and computation requirement the student must earn a C- or better in the course.

### **Academic Honor Policy**

The Florida State University Academic Honor Policy outlines the University's expectations for the integrity of students academic work, the procedures for resolving alleged violations of those expectations, and the rights and responsibilities of students and faculty members throughout the process. Students are responsible for reading the Academic Honor Policy and for living up to their pledge to . . . be honest and truthful and . . . [to] strive for personal and institutional integrity at Florida State University. (Florida State University Academic Honor Policy, found at <http://dof.fsu.edu/honorpolicy.htm>.)

### **Americans With Disabilities Act**

Students with disabilities needing academic accommodation should:

- (1) register with and provide documentation to the Student Disability Resource Center; and
- (2) bring a letter to the instructor indicating the need for accommodation and what type.

Please note that instructors are not allowed to provide classroom accommodation to a student until appropriate verification from the Student Disability Resource Center has been provided.

This syllabus and other class materials are available in alternative format upon request.

For more information about services available to FSU students with disabilities, contact the:

Student Disability Resource Center

874 Traditions Way

108 Student Services Building

Florida State University

Tallahassee, FL 32306-4167

(850) 644-9566 (voice)

(850) 644-8504 (TDD)

[sdrc@admin.fsu.edu](mailto:sdrc@admin.fsu.edu)

<http://www.disabilitycenter.fsu.edu/>

### **First Week To-Do**

#### **~For students who cannot get access to our course website**

First make sure that you are in section 01 of STA2171. If you are in this section, and cannot get access to our main course website, please contact the University learning management system (LMS) staff at 644-8004 to see if they can help.

#### **~About religious holy days**

**Please submit a list of your religious holy days during this semester (August 28 – Dec 8) by the end of Week 2 (Sep 8), or email to [t.hu@stat.fsu.edu](mailto:t.hu@stat.fsu.edu).**

"students shall, upon notifying their instructor within the first two weeks of the semester, be excused from class to observe a religious work-restricted holy day of their faith", according to FSU General Bulletin Undergraduate Edition <http://registrar.fsu.edu/bulletin/undergrad/info/integrity.htm>

**~Number-Assign**

Each student will be given a number (by Sep 8). This number will be used in activity organization and exam/test/assignment grade-entering.

**~Partner-Assign**

Some pair-work in class may be involved. I hope you all will be familiar to each other by then and could find a partner to work with you. You will be asked to submit a list of your team (2 people at most) to me by the end of week 2.

**~Pick-up a Fake Name you like**

Some in-class practice involve peer-grade. It is okay to write your real name on the paper if you do not mind. But feel free to pick up a fake name you like and submit it to me around Week 6. Be aware not to pick the same fake name as others.

**Syllabus Change Policy:** Except for changes that substantially affect implementation of the evaluation (grading) statement, this syllabus is a guide for the course and is subject to change with advance notice.

**Tentative Schedule: Fall 2017**

|                   | Monday  | Wednesday                   | Friday   |
|-------------------|---|-----------------------------|--|
| Week 1            | 8/28 Syllabus, 2.1-2.2.3                      | 8/30 2.2.4-2.6.2            | 9/1 quiz 1   |
| Week 2            | 9/4 no class                                  | 9/6 2.6.3-2.8, 2.9, 3.1-3.3 | 9/8 quiz 2   |
| Week 3            | 9/11 3.4-3.5                                  | 9/13 3.6                    | 9/15 quiz 3  |
| Week 4            | 9/18 Exam 1                                   | 9/20                        | 9/22   |
| Week 5            | 9/25 4.1-4.3                                  | 9/27 4.4                    | 9/29 quiz 4  |
| Week 6            | 10/2 5.1-5.2                                  | 10/4 6.2-6.3                | 10/6 quiz 5  |
| Week 7            | 10/9 9.2, quiz 6                              | 10/11 Exam 2                | <b>10/13 Last day to drop a course without receiving a grade</b> |
| Week 8            | 10/16 6.6-6.7                                 | 10/18 6.7                   | 10/20 quiz 7   |
| Week 9            | 10/23 7.2-7.3                                 | 10/25 7.5, 7.10             | 10/27 quiz 8   |
| Week 10           | 10/30 8.2, 8.4                                | 11/1 8.5                    | 11/3 quiz 9  |
| Week 11           | 11/6 Exam 3                                   | 11/8 9.4, 10.2              | 11/10 no class   |
| Week 12           | 11/13 10.3, 10.7, quiz 10                     | 11/15 11.1, 11.2            | 11/17 no class   |
| Week 13           | 11/20 11.4, quiz 11                           | 11/22 no class              | 11/24 no class   |
| Week 14           | 11/27 12.1-12.2                               | 11/29 12.4-12.5             | 12/1 quiz 12   |
| Week 15           | 12/4  | 12/6                        | 12/8   |
| <b>Final Exam</b> | <b>8:00 – 10:00 p.m. Dec 13 (Wed) OSB 108</b> |                             |  |

**Note that schedules and dates for quizzes/assessment/exams are subject to change.**