



Course	Introductory Statistics for Life Sciences
Class number	Stat 2332.002, Fall 2020
Professor	Sy Han (Steven) Chiou
Schedule	Tuesday, Thursday, 11:30 am-12:45 pm

Professor's Contact Information

Email address	schiou@utdallas.edu (I don't read eLearning mails)
Office hours	Tuesday, Thursday, 2:00 pm - 3:00 pm or by appointment. Virtual office hours will be held using Microsoft Teams; email for instructions.

Course Modality and Expectations

Instructional mode	Remote/virtual
Course platform	Microsoft Teams; a link will be announced 10 minutes before lecture starts.
Course website	All course related materials, including lecture notes, will be posted on eLearning.
Expectations	Students should attend the lectures, take notes, and complete all assignments at the designated time. Students are not allowed to collaborate with classmates or people outside of this class (including on-line forum) on assignments.
Asynchronous learning guidelines	STAT 2332 has been designed to accommodate both asynchronous and synchronous students with 24 hours window assignments. Students who plan to participate via asynchronous access will need to notify me as soon as the choice is made. See the <i>Student Guidelines for the Asynchronous Option</i> at https://www.utdallas.edu/fall-2020/asynchronous-access-for-fall-2020/ .

COVID-19 Guidelines and Resources

Class participation	Class participation is mandatory and will be measured using the in-lecture activities. <i>Regular class participation is expected regardless of course modality. Students who fail to participate in class regularly are inviting scholastic difficulty. A portion of the grade for this course is directly tied to your participation in this class. It also includes engaging in group or other activities during class that solicit your feedback on homework assignments, readings, or materials covered in the lectures (and/or labs). Class participation is documented by faculty. Successful participation is defined as consistently adhering to University requirements, as presented in this syllabus.</i>
Class recordings	All lectures will be recorded and be made available on eLearning. <i>Any recordings will be available to all students registered for this class as they are intended to supplement the classroom experience. Students are expected to follow appropriate University policies and maintain the security of passwords used to access recorded lectures. Unless the Office of Student AccessAbility has approved the student to record the instruction, students are expressly prohibited from recording any part of this course. Recordings may not be published, reproduced, or shared with those not in the class, or uploaded to other online environments except to implement an approved Office of Student AccessAbility accommodation.</i>
Class materials	All class materials will be made available to all students registered for the class. <i>These materials may be downloaded during the course, however, these materials are for registered students' use only. Classroom materials may not be reproduced or shared with those not in class, or uploaded to other online environments except to implement an approved Office of Student AccessAbility accommodation.</i>
Honorlock	This course will use Honorlock; an online exam proctoring tool. To take an exam, you must have a web camera with microphone, a laptop or desktop computer (no tablets/phones), Chrome browser, a reliable Internet connection and your photo ID. You will be prompted to install the Honorlock Chrome Extension (which you can remove after you finish the test). You will then access the exam within your eLearning course and go through the authentication process. The web camera will monitor you throughout your test. Please see the Testing Guidelines and Support Information for additional information.

Failure to comply with these University requirements is a violation of the Student Code of Conduct.

General Course Information

Prerequisite	MATH 1325 or MATH 2312 or equivalent. May not be used to satisfy degree requirements for mathematics, engineering, or computer science majors.															
Course Description	This course provides an introduction to statistical methods used in biological and medical research and covers elementary probability theory, basic concepts of statistical inference, sampling theory, regression and correlation methods. The course will motivate statistical methods through data application and visualization instead of theory. The course does not have any pre-requisites in statistics, but students who have taken an Advanced Placement course in statistics or calculus will likely find the course easier. The course will be useful for students planning to attend medical school or to do graduate work in the life sciences.															
Learning outcomes	<p>As a result of completing this course, students should have a working knowledge of basic statistical methods used in life sciences and a readiness to conduct statistical discussions. Some of the primary goals are to:</p> <ol style="list-style-type: none">1. Understand some basics of experimental designs.2. Have familiarity with the most basic probability models.3. Recognize which statistical method (confidence interval or hypothesis testing) is appropriate for a given typical problem.4. Apply statistical procedures to data and interpret the results.5. Critically read statistical work in published literature.															
Required Textbook	<p>Freedman, D., Pisani, R., and Purves, R. <i>Statistics</i>, 4th edition, ISBN-13: 978-0393929720 (The international edition is also acceptable).</p> <p>Although students are encouraged to read the recommended textbook, lecture notes will provide sufficient material for the course.</p>															
Other requirements	<p>Students will need reliable Internet access to participate in all course activities.</p> <p>All computing for the course will be done using a scientific calculator (e.g., TI83/84), statistical language R, or statistical tables.</p> <ul style="list-style-type: none">• Official TI emulator (90 days free trial) https://education.ti.com/en/software/details/en/FFEA90EE7F9B4C24A6EC427622C77D09/sda-ti-smartview-ti-84-plus• Online R compiler https://rdr.io/snippets/															
Course grade	<p>The course letter grade will be based on graded quizzes and exams.</p> <p>Assessments 15% There will be one to two assessment questionnaires per week. Each assessment will consist of one to four multiple-choice questions. The assessment grade will be accumulated throughout the semester. The cutoff point to receive the full 15% is 50 questions (out of 70+ questions).</p> <p>Quizzes 25% There will be eight 30 minutes closed book quizzes; each quiz will consist of 10 multiple-choice questions. The lowest quiz grade will be dropped.</p> <p>Exams 60% There will be four closed-book 75 minutes exams; each exam will consist of 25 multiple-choice questions. Exams are not cumulative. The lowest grade of Exams 1–3 will be dropped.</p> <p>All assignments will be posted on eLearning and will remain open for 24 hours.</p>															
Letter grades	<p>The final grades are not curved and the letter grade will be determined with the standard boundaries:</p> <table><tr><td>A+: 97 – 100</td><td>A: 93 – 96.99</td><td>A–: 90 – 92.99</td></tr><tr><td>B+: 87 – 89.99</td><td>B: 83 – 86.99</td><td>B–: 80 – 82.99</td></tr><tr><td>C+: 77 – 79.99</td><td>C: 73 – 76.99</td><td>C–: 70 – 72.99</td></tr><tr><td>D+: 67 – 69.99</td><td>D: 63 – 66.99</td><td>D–: 60 – 62.99</td></tr><tr><td>F: 0 – 59.99.</td><td></td><td></td></tr></table>	A+: 97 – 100	A: 93 – 96.99	A–: 90 – 92.99	B+: 87 – 89.99	B: 83 – 86.99	B–: 80 – 82.99	C+: 77 – 79.99	C: 73 – 76.99	C–: 70 – 72.99	D+: 67 – 69.99	D: 63 – 66.99	D–: 60 – 62.99	F: 0 – 59.99.		
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Tentative Course Schedule (subject to change)

	Coverage	Key topics
Week 1 (8/18)	Chapters 1 – 2	Controlled experiments & observational studies.
Week 2 (8/25)	Chapters 3 – 5	Plots, average, median, standard deviation, and percentiles.
Week 3 (9/1)	Chapters 5 – 9	Normal approximation, correlation, outliers, and association.
Week 4 (9/8)	Chapters 10 – 12	Regression lines and residuals.
Week 5 (9/15)	Chapters 13 – 14	Probability, counting outcomes, conditional probability.
Week 6 (9/22)	Chapters 13 – 15	Independence, addition/multiplication rule, permutation, and combinations.
Week 7 (9/29)	Chapters 15	Common probability distributions.
Week 8 (10/6)	Chapters 16 – 17	Law of averages, expected value, and standard error.
Week 9 (10/13)	Chapters 18	Central limit theorem.
Week 10 (10/20)	Chapters 19 – 20	Sample surveys, chance errors in sampling.
Week 11 (10/27)	Chapters 21 – 23	Estimation and confidence interval for population mean/percentage.
Week 12 (11/3)	Chapters 26 – 27	Hypothesis testing, significance level, p -values, z -test, and t -test.
Week 13 (11/10)	Chapter 27	Matched data test.
Week 14 (11/17)	Chapter 28	Chi-square distribution, Chi-square test for goodness of fit.
Week 15 (11/24)	Review	No class on 11/26 (Thanksgiving).
Week 16 (12/1)	Final	No class on 12/1 (reading day).

Red marks the exam weeks and blue marks the quiz weeks. Exams and quizzes will be given on Thursdays of the week and will be available on eLearning for 24 hours.

More Policies

Incomplete grades	As per university policy, incomplete grades are granted only in the case of work unavoidably missed (and excused) and not already covered by the professor's policy on missed work or activities, and only if at least 70% of the course work has been completed. An incomplete grade must be resolved within eight weeks from the first day of the subsequent long semester. If the required work to complete the course and to remove the incomplete grade is not submitted by the specified deadline, the incomplete grade becomes changed automatically to F.
Academic integrity	The faculty expects from students a high level of responsibility and academic honesty. Scholastic dishonesty includes, but is not limited to, cheating, plagiarism, collusion, and falsifying of records. Violators face disciplinary proceedings.
Withdrawal	Deadlines for withdrawal from courses are published in each semester's course catalog. A faculty member cannot drop or withdraw a student. It is the student's responsibility to handle withdrawal procedures from any class to avoid receiving a grade of "F".
Student conduct and discipline	The University of Texas System and The University of Texas at Dallas have rules and regulations for the orderly and efficient conduct of university business. See the UTD publication, A to Z Guide, issued to each registered student.
Disability services	Disability Services seeks to provide students with disabilities educational opportunities equivalent to those of their non-disabled peers. The Office of Disability Services is located in room 1.610 in the Student Union, and its hours are Monday-Thursday 8:30 a.m. to 6:30 p.m. and Friday 8:30 a.m. to 5:00 p.m. Essentially, the law requires colleges and universities to make reasonable adjustments necessary to eliminate discrimination on the basis of disability. For example, it may be necessary to remove classroom prohibitions against tape recorders or animals (in the case of dog guides) for students who are blind. Occasionally, an assignment requirement may be modified (for example, a research paper versus an oral presentation for a student who is hearing impaired). Classes including students with mobility impairments may have to be rescheduled in accessible facilities. The college or university may need to provide special services such as registration, note-taking, or mobility assistance. The student should notify the professor of the need for such accommodations. Disability Services provides students with letters to present to faculty members.