University of CINCINNATI

Spring Semester 2026 Syllabus for: Introduction to Statistics (STAT 1031)

Class Meeting Time and Place:

Instructor:
Email:
Office Location:
Office Hours:

Course Overview, Description, Purpose

This is a one-semester comprehensive introduction to statistics suitable for students in biology, nursing, allied health, and applied science. Our course of study includes the use of data, frequency distributions, graphical and numerical summaries, design of statistical studies, and probability as a basis for statistical inference and prediction. The concepts and practice of statistical inference include confidence intervals, one and two sample t-tests, chi-square tests, regression and analysis of variance, with attention to selecting the procedure(s) appropriate for the question and data structure. Using the results are also an integral part of this course.

Course Learning Outcomes

At the completion of the course, the successful student will be able to

- use appropriate numerical, graphical and/or tabular summaries of data to describe the distribution of a variable or the relationship between two variables, or to organize information pertaining to a research question;
- distinguish between observational and experimental studies and evaluate the design of published research studies;
- convert a research question into a statistical hypothesis, describe the logic of the test, and compute a test statistic or use the p-value as a measure of statistical significance to draw the correct conclusion;
- read accounts of a clinical trial or experimental or case study and describe the results and their implications (statistical versus practical/clinical significance);
- use a calculator or computer as a tool for statistical analysis.

In this course students will develop the following transferable skills that will translate to many different career settings:

- **Critical Thinking**: Analyze complex issues and formulate insightful conclusions.
- **Quantitative Reasoning**: Apply quantitative reasoning skills and accurately interpret findings.
- **Teamwork and Collaboration**: Work collaboratively to achieve improved results in team projects.

Course Format

All class meetings are in the classroom (face-to-face). Exams will be completed during class time. Group lab assignments will be completed during class. Homework assignments are to be done outside of class. Knowledge Checks will be completed almost every class meeting. Due dates for graded assessments will be posted in Canvas and are posted at the end of this syllabus.

In the event that the instructor is unable to attend class, the instructor may have class meetings asynchronously online instead of in the classroom. The instructor will send a Canvas announcement with a video as soon as possible if this is the case.

(BoK) areas, Baccalaureate Competencies

Knowledge of high school algebra is a prerequisite for this course. A Math Placement Test score of 420 or above is highly recommended.

This course fulfills the Quantitative Reasoning (QR) Breadth of Knowledge (BoK) area and the Critical Thinking, Effective Communication, Knowledge Integration, and Information Literacy Baccalaureate Competency areas of the UC General Education Program.

Course Materials

- **Textbook**: The Practice of Statistics in the Life Science (4th ed.) by Baldi and Moore. A digital copy of the text and accompanying course materials (e.g. Achieve and CrunchIt) are **provided upon registering for this course**. An optional loose-leaf copy of the text is also available for purchase: ISBN: 9781319240042
- A **calculator** capable of taking the square root of a value is recommended. You must have your own calculator to use during exams. There is no sharing of calculators during exams.
- **Guided Notes** corresponding to each chapter will be provided electronically on Canvas and on paper in class.
- It is recommended that a **laptop or tablet** be brought to class on Mondays and Wednesdays to complete in-class assignments.

Learning Needs and Accessibility

Supplemental Review Sessions (SRS): All STAT 1031 students are invited to sign up for optional 1-credit hour, pass/fail, online review course listed on Catalyst as MATH1096 (Section 001 corresponds with STAT 1031). SRS begins during the second week of the semester and students are required to attend 9 total sessions to pass. SRS meets once per week for 1 hour and 20 minutes. During the review sessions, students will review essential prerequisite material, work on problems, present solutions, and discuss and correct solutions under the guidance of upperclassmen through the Learning Commons. Students must be registered for MATH 1096 to participate and can enroll once the deadline to add classes on Catalyst has passed, if seats are available. Detailed information can be found here.

The MASS Center offers dedicated study tables for several courses across the university. By attending the study table for this course (see schedule here), students can guarantee that a tutor will be available to support them and their fellow students when they arrive. The MASS Center is located in 2133 French Hall-West.

Peer tutoring for this course is offered through the Learning Commons. Find more details here.

Students with any special learning needs related to their participation in this course should meet with the instructor as soon as possible to arrange reasonable provisions to ensure an equitable opportunity to meet all the requirements of this course. A copy of documentation from the Accessibility Resources Office must be provided to the instructor before certain accommodations (e.g. extended time for taking tests) will be allowed.

Grading Policies, Assessments/Activities

Your grade will be computed as follows:

Grade Component	**Weight**
Group Lab Assignments	14%
Knowledge Checks	12%
Achieve Homework Assignments	0 – 12%*
Exam 1	14 – 18%*
Exam 2	14 – 18%*
Exam 3	14 – 18%*
Comprehensive Final Exam	20%

The Grading Scale used to determine your overall course grade is as follows**:**

90 – 100% = A	80 – 86% = B	70 – 76% = C	0 – 69% = NP
	87 – 89% = B+	77 – 79% = C+	

The "NP" grade means "Not Proficient" and will be used for this course and all 1000-level mathematics and statistics courses. This grade was developed to aid students who have significant challenges related to preparedness and often need to take courses more than once to succeed. The NP grade will not factor into the GPA. Grades of NP will not result in earned credit, will not fulfill a prerequisite for a subsequent course, and will not count towards Satisfactory Academic Progress for financial purposes. Instructors will assign the "F" grade only in cases of academic misconduct. Students who earn the grade of D (60 – 66%) or D+ (67 – 69%) can request a change in their grade from NP to D for up to one year after the NP grade was assigned. It is important to consider that D grades affect GPA and may affect academic standing. Students who earned D grades should contact their academic advisors for help deciding whether to request this change.

Withdrawal Policy

In accordance with university grading policy, if a student chooses to withdraw from this course, they may submit the withdrawal electronically through the online registration system (catalyst.uc.edu) no later than Friday, April 10 at 11:59pm EST. The student will be assigned a grade W regardless of their grade at the time they withdraw.

In accordance with university grading policy, students who cease to academically attend at some point in the course or who never academically attend are considered to be "unofficially withdrawn students." These students will receive a UW or X grade. Both are calculated into the GPA like the F grade.

Group Lab Assignments

Throughout the semester, the class will complete exercises that include hands-on activities (experiments, computer simulations, etc.) and data analysis using technology such as applets and the computer software CrunchIt. These Lab Assignments will be **completed in class** with groups of two to four students. Late labs will not be accepted. If you know in advance that you will be absent during a lab, you may arrange with the instructor to take the lab early. You must contact your instructor at least one week in advance for approval and to schedule. Your lowest lab grade is dropped.

Knowledge Checks

Most class meetings a short knowledge check will be given in class. Students may work with classmates. These open-book, open-note knowledge checks assess your understanding of material presented during the class. They also serve as a record of attendance. There are no make-ups for knowledge checks. Your lowest four knowledge check grades are dropped.

Semester Exams

Three ***in-class*** exams will be given on Canvas. All exams will be closed-book. You may use a calculator and CrunchIt during the exams. Use of cell phones during the exam is prohibited—even for use as a calculator. **Exams will be completed during class time. There will be no make-up exams, no exceptions.** If you know in advance that you will be absent during an exam, you may arrange with the instructor to take the exam early. You must contact your instructor at least one week in advance for approval and to schedule. If you miss **one** exam, then your final exam score will be weighted to replace the missed exam score. If you miss a **second** exam for any reason, the score will be recorded as a zero and you will be encouraged to withdraw from the course.

Comprehensive Final Exam

There is a common comprehensive final exam for all sections on this campus. It is closed-book. You may use a calculator and CrunchIt during the exam. This exam will be given in class on Canvas during final exam week during the day and time posted by the registrar. If a student's final exam grade is higher than a semester exam grade, then the final exam grade percentage will replace the lowest semester exam grade. This can only be done for one semester exam. If a student also misses a semester exam, the final exam percentage may only count for the missed exam grade.

*Homework Assignments

The amount of practice outside of class to perform well on exams varies among students depending on several factors including understanding and levels of previous mathematics and statistics courses, number sense, and attitudes/mindset about mathematics and statistics. Doing homework problems is one type of practice. Homework assignments from Achieve, which comes with the e-text, will be assigned for each chapter and are to be accessed through Canvas. For students whose homework grade over the chapters covered by an exam is higher than the exam grade, then the average homework percentage will count for 4% of the overall grade and the exam will count as 14% of the overall grade (instead of 18%). This cannot be used for the final exam. For each homework

assignment, students have three attempts for each homework question, and the highest score is counted towards the grade for that homework assignment. Missed homework assignments will be recorded as a zero. In general, there are no make-ups on these assignments, but you may contact your instructor to request an extension once during the semester.

Use of Artificial Intelligence

Students are prohibited from using artificial intelligence on all graded assessments. If a student is found to be using artificial intelligence on a graded assessment, it will be considered an act of academic misconduct, and the instructor will follow procedures accordingly. The minimum penalty is a grade of 0 on the graded assessment.

Classroom Procedures/Policies

Communication

This course is managed by the UC Canvas course management system (http://canopy.uc.edu). All students are required to maintain a valid email address in their Canvas profile. The best ways to communicate with your instructor is in person or via email or Teams. The instructor will communicate with the class electronically using the email distribution list provided in the Canvas course.

Academic Integrity

The University Rules, including the Student Code of Conduct, and other documented policies of the department, college, and university related to academic integrity, will be enforced. Any violation of these regulations, including acts of plagiarism or cheating, will be dealt with on an individual basis according to the severity of the misconduct. Please see the Student Code of Conduct for more information. Students in the College of Arts and Science should also be aware of the college's Two-Strikes Academic Integrity Policy.

Student Religious Accommodations for Courses Policy

Please note that the course policies regarding student accommodations described so far are less restrictive and more inclusive than the following policy required by the state of Ohio legislature:

Ohio law and the University's Student Religious Accommodations for Courses Policy 1.3.7 permits a student, upon request, to be absent for reasons of faith or religious or spiritual belief system or participate in organized activities conducted under the auspices of a religious denomination, church, or other religious or spiritual organization and/or to receive alternative accommodations with regard to examinations and other course requirements due to an absence permitted for the above-described reasons. Not later than fourteen days after the first day of instruction in the course, a student should provide the instructor with written notice of the specific dates for which the student requests alternative accommodations. For additional information about this policy, please contact the Executive Director of the Office of Equal Opportunity and Access at (513) 556-5503 or oeohelp@UCMAIL.UC.EDU.

Student Resources

A plethora of student resources are available. Two resources of note are:

Counseling Services, Clifton Campus

Students have access to counseling and mental health care through the University Health Services (UHS), which can provide both psychotherapy and psychiatric services. In addition, Counseling and Psychological Services (CAPS) can provide professional counseling upon request; students may receive five free counseling sessions through CAPS without insurance. Students are encouraged to seek assistance for anxiety, depression, trauma/assault, adjustment to college life, interpersonal/relational difficulty, sexuality, family conflict, grief and loss, disordered eating and body image, alcohol and substance abuse, anger management, identity development and issues related to diversity, concerns associated with sexual orientation and spirituality concerns, as well as any other issue of concerns.

Title IX Office

Title IX is a federal civil rights law that prohibits discrimination on the basis of your actual or perceived sex, gender, gender identity, gender expression, or sexual orientation. Title IX also covers sexual violence, dating or domestic violence, and stalking. If you disclose a Title IX issue to your instructor, the instructor is required forward that information to the Title IX Office. They will follow up with you about how the University can take steps to address the impact on you and the community and make you aware of your rights and resources. Their priority is to make sure you are safe and successful here. You are not required to talk with the Title IX Office. If you would like to make a report of sex or gender-based discrimination, harassment or violence, or if you would like to know more about your rights and resources on campus, you can consult the website.

Tentative Course Calendar

The instructor reserves the right to update this syllabus as class needs arise. Be assured that the instructor will communicate to you any changes to the schedule, syllabus or policies quickly and efficiently in class and via Canvas. The tentative schedule follows.

Week	Topics/Chapters	Important Dates
Week 1 1/12 – 1/18	Introduction to Statistics Summarizing Univariate Data (Chapters 1 & 2)	Achieve Homework: Chapters 1 & 2 due **Wed**, 1/21
Week 2 1/19 – 1/25	Observational & Experimental Studies (Chapters 6 & 7) Introduction to Probability (Chapter 9)	*Mon, 1/19: MLK Day – No Classes* Lab 1 – during class Fri, 1/23 Achieve Homework: Chapters 6 & 7 due Mon, 1/26
Week 3 1/26 – 2/1	Probability Using Two-Way Tables and Independence (Chapter 10) The Normal Distribution (Chapter 11)	Lab 2 – during class Fri, 1/30 Achieve Homework: Chapters 9 & 10 due Mon, 2/2
Week 4 2/2 – 2/8	Catch up and/or Exam 1 Review Exam 1: Chapters 1, 2, 6, 7, 9, 10, 11	Achieve Homework: Chapter 11 due **Thurs**, 2/5 Exam 1 – during class Fri, 2/6

Week 5 2/9 – 2/15	Sampling Distributions (Chapter 13)	Lab 3 – during class Fri, 2/13 Achieve Homework: Chapter 13 due Mon, 2/16
Week 6 2/16 – 2/22	Inference for One Sample Proportion (Chapter 19)	Achieve Homework: Chapter 19.1 & 19.2 due Mon, 2/23
Week 7 2/23 – 3/1	Inference for One Sample Mean (Chapters 15 & 17.1)	Lab 4 – during class Fri, 2/27 Achieve Homework: Chapter 15 & 17.1 due Mon, 3/2
Week 8 3/2 – 3/8	Catch up and/or Exam 2 Review Exam 2: Chapters 13, 19, 15, 17.1	Exam 2 – during class Fri, 3/6
Week 9 3/9 – 3/15	Inference for Two Means – Matched Pairs (Chapter 17.2)	Lab 5 – during class Fri, 3/13 Achieve Homework: Chapter 17.2 due Mon, 3/23
3/16 – 3/22	Spring Break	No Class
Week 10 3/23 – 3/29	Inference for Two Means – Two Independent Samples (Chapter 18) ANOVA (Chapter 24)	Achieve Homework: Chapter 18 due Mon, 3/30
Week 11 3/30 – 4/5	Chi-Square Test for Two-Way Tables (Chapter 22)	Lab 6 – during class Fri, 4/3 Achieve Homework: Chapter 24 & 22 due Mon, 4/6
Week 12 4/6 – 4/12	Catch up and/or Exam 3 Review Exam 3: Chapters 17.2, 18, 24, 22	Exam 3 – during class Fri, 4/10 *Fri, April 10: Last day to withdraw*
Week 13 4/13 – 4/19	Scatterplots and Correlation (Chapter 3) Regression (Chapter 4)	Achieve Homework: Chapters 3 & 4 due Mon, 4/20
Week 14 4/20 – 4/26	Inference for Regression (Chapter 23) Final Exam Review	Achieve Homework: Chapter 23 due **Thurs**, 4/23 Lab 7 – during class Fri, 4/24
Week 15 4/27 – 5/3	Final Exam Week Comprehensive Final Exam	Comprehensive Final Exam as scheduled by the registrar