

Fall 2024 Course Syllabus
STAT 381 Applied Statistical Methods I
3 Credit Hours
College of Liberal Arts and Sciences, UIC

1 Instructor & Course Details

Course Coordinator / Instructor: Dr. Jennifer Pajda-De La O

Office: SEO 305

Email: jpajda2 AT uic.edu Your email will be answered within 24-48 hours.

In Person Student Drop-in Hours, SEO 305: Wednesday / Friday 12:30 pm – 1:30 pm

Online Student Drop-in Hours, via Zoom: Tuesday 10:00 am – 11:00 am

- See Blackboard for Zoom Links.
- You can ask questions on Piazza.
- I will also answer questions via email, or during lectures.
- In the event that courses are moved online due to Covid campus precautions, all office hours will be held via Zoom during the scheduled times. The link will be posted on Blackboard.

Instructor: Dr. Duha Hamed

Office: SEO 715

Email: dhamed AT uic.edu

In Person Drop-in Hours,

Monday 1:00 pm – 2:00 pm in SEO 715

Friday 1:30 pm – 2:30 pm at the MSLC

Online Student Drop-in Hours, via Zoom: Tuesday 12:00 pm – 1:00 pm

- See Blackboard for Zoom Links.
- You can ask questions on Piazza.
- I will also answer questions via email, or during lectures.
- In the event that courses are moved online due to Covid campus precautions, all office hours will be held via Zoom during the scheduled times. The link will be posted on Blackboard.

Blackboard Course Site

Students are expected to log into the course site regularly to learn about any developments related to the course. For all technical questions about Blackboard, email the Learning Technology Solutions team at LTS@uic.edu.

It is expected that all students understand how to use Blackboard and any other apps linked inside it (including MyOpenMath and Gradescope). If you have questions, please come to us within the first three weeks of the course so we can explain how to use and access materials.

For additional assistance, please refer to UIC's Student Tech Support & Resources Website.

Course Modality and Schedule

Course Method of Instruction: Meeting In Person, On Campus

Before every lecture, it is recommended that you print out or save a copy of the Blank Lecture Notes for that day (see Blackboard Weekly Content). This enables you to learn actively. You may take notes on the content sheets, then work with your notes, organize your notes, and work through problems.

In the event that courses are moved online due to Covid campus precautions, lectures will be given on Zoom during the scheduled lecture time. The link will be posted on Blackboard.

Lectures (16-week course):

MWF 8:00 – 8:50 am, LCF 004; CRN 13605 (Jennifer Pajda-De La O)

MWF 12:00 – 12:50 pm, LCD 005; CRN 42903 (Duha Hamed)

Due Dates / Times: All times listed in the syllabus, on Blackboard, and on Gradescope are **CENTRAL TIME**. MyOpenMath WILL convert due dates / times to your local time zone.

Academic Deadlines Current academic calendar and the list of deadlines can be found at <https://catalog.uic.edu/ucat/academic-calendar>

Disclaimer

This syllabus is intended to give the student guidance on what may be covered during the semester and will be followed as closely as possible. However, as the course coordinator, I reserve the right to modify, supplement, and make changes as course needs arise. I will communicate such changes in advance through in-class announcements and in writing via Blackboard Announcements.

2 Course Information

2.1 UIC Course Description and Prerequisite Statement

Graphical and tabular representation of data; Introduction to probability, random variables, sampling distributions, estimation, confidence intervals, and tests of hypotheses. Includes R applications.

Prerequisite: Grade of C or better in MATH 181.

Course materials and assignments can be complex and challenging, but they are crucial to your intellectual and personal growth and development. There are times you may need extra help. Students who attend class consistently, complete all assignments, thoughtfully engage with feedback on work, develop good study strategies, visit the tutoring center, and contact faculty when struggling can develop a thorough understanding of the course material and ultimately succeed in the course.

2.2 Course Goals and Learning Objectives

2.2.1 Goals

Perform probability calculations and statistical analyses.

2.2.2 Course Objectives

At the end of this course, you should be able to:

- Recognize the differences between permutations and combinations.
- Calculate probabilities using the complement rule, addition rule, conditional probability, the multiplication rule, tree diagrams, the Law of Total Probability, and Bayes' Rule.
- Understand the difference between mutually exclusive / disjoint events, and independent events.
- Define a random variable.
- Distinguish between discrete and continuous random variables.
- Calculate probabilities using PMFs, PDFs, and CDFs.
- Calculate expected values, variances, covariances, and correlations.
- Learn about the use and application of various distributions. Specific distributions include:
 1. Hypergeometric Distribution;
 2. Bernoulli Distribution;
 3. Binomial Distribution;
 4. Geometric Distribution;
 5. Negative Binomial Distribution;
 6. Poisson Distribution;
 7. Continuous Uniform Distribution;
 8. Exponential (Gamma) Distribution;
 9. Normal Distribution;
 10. Chi-Square Distribution;
 11. (Students') t Distribution.
- Understand how the Normal Distribution can approximate the Binomial Distribution (with a continuity correction).

- Distinguish between a parameter and a statistic.
- Calculate statistics (mean / median / mode / variance / standard deviation / range / IQR / etc) from data.
- Identify the metrics used for the center and the spread of data, and how to calculate them.
- Graph data using scatterplots, histograms, and boxplots.
- Define a sampling distribution.
- Understand the Central Limit Theorem, when to apply it, and how to use it.
- Develop and interpret confidence intervals.
- Perform hypothesis tests and interpret results.
- Use R software to perform probability calculations, create graphs, perform random sampling, create confidence intervals, and perform hypothesis tests.

2.2.3 Units and Course Topics

- Unit 1: Probability
 - Chapter 2: Probability (Sec 2.1-2.7)
- Unit 2: Discrete Random Variables
 - Chapter 3: Random Variables and Probability Distributions (Sec 3.1-3.4)
 - Chapter 4: Mathematical Expectation (Sec 4.1-4.3)
 - Chapter 5: Some Discrete Probability Distributions (Sec 5.1-5.5)
- Unit 3: Continuous Random Variables
 - Chapter 3: Random Variables and Probability Distributions (Sec 3.1-3.4)
 - Chapter 4: Mathematical Expectation (Sec 4.1-4.3)
 - Chapter 6: Some Continuous Probability Distributions (Sec 6.1-6.7)
- Unit 4: Sampling Distributions and Data Analysis
 - Chapter 8: Fundamental Sampling Distributions and Data Descriptions (Sec 8.1-8.6)
 - Chapter 1: Introduction to Statistics and Data Analysis (Sec 1.1-1.6)
- Unit 5: Confidence Intervals
 - Chapter 9: One- and Two-Sample Estimation Problems (Sec 9.1-9.5; Sec 9.8-9.12)
- Unit 6: Hypothesis Testing
 - Chapter 10: One- and Two-Sample Tests of Hypotheses (Sec 10.1-10.5; Sec 10.8-10.10)

3 Required and Recommended Course Materials

3.1 Textbook (Recommended, but not required)

Walpole et al., *Probability and Statistics for Engineers & Scientists*, Pearson, **9th** edition; ISBN-13 978-0-321-62911-1

3.2 Calculator / Computer / Technology Requirements

Students will need regular access to a personal computer that runs on a broadband Internet connection.

You will need at least a four-function calculator for this class, but any type / brand of calculator except for the TI-Nspire is acceptable.

3.3 MyOpenMath (required and free)

Online homework and Unit Exams will take place here. This is integrated with Blackboard. To access, click on the link within Blackboard.

3.4 Gradescope

Written Homework and R Projects will be submitted here. This is integrated with Blackboard. To access, click on the link within Blackboard.

3.4.1 Gradescope Homework Uploads:

- To access Gradescope, click on the link within Blackboard.
- You may use your phone to scan in assignments.
- For assignments that do not require code submission, you may only submit 1 PDF file or a series of pictures (linked to the correct problem). ***Problems not correctly linked will not be graded.***
- For assignments that allow code submission, you may submit multiple files. You do not need to link to the correct problem.
- You can overwrite an uploaded file if you submitted the incorrect one. At the bottom right corner, click on “Resubmit” and you can change the file(s) that you uploaded.

3.5 R Software (required and free to download or access via the Virtual Computer Lab)

- Download R software from CRAN, <https://cran.r-project.org/> OR <https://www.r-project.org/>
- Download R Studio from <https://posit.co/download/rstudio-desktop/>
- Note: Does NOT work on Chromebooks
- UIC provides R software in their Virtual Computer Lab. You may access R using this resource by following the below instructions. These instructions are to connect to

UIC's Virtual Computer Lab using your web browser. This applies to Mozilla Firefox, Google Chrome, Internet Explorer, and Microsoft Edge (and Edge Chromium). For screenshots of the below instructions, go to

<https://help.uillinois.edu/TDClient/37/uic/KB/ArticleDet?ID=1410>.

1. Navigate to the windows virtual desktop website: <http://desktop.uic.edu>.
 2. Enter your UIC email address then click Next.
 3. Enter your password, then click Sign In.
 4. Select the desktop you would like to access.
 5. Select options as desired, then click allow.
 6. Enter your NetID and password when prompted and click Submit.
 7. When you are finished, log off.
- If you need to connect to UIC's Virtual Computer Lab using a mobile device follow the instructions here:
<https://help.uillinois.edu/TDClient/37/uic/KB/ArticleDet?ID=1122>.

3.6 Respect for Copyright

Please protect the copyright integrity of all course materials and content. Please do not upload course materials not created by you onto third-party websites or share content with anyone not enrolled in our course. This includes not posting screenshots of the material. This includes not posting questions that we have written on assignments that you have typed out yourself.

3.7 Privacy Notification and Policy for Video Recording

Lecture Capture will be used in case a student is unable to attend class. Recordings will appear on Blackboard approximately 3-6 hours after lecture ends.

In the event that we need to move in-person classes online:

We will be recording the class sessions, or portions of the class, for students who are unable to attend synchronously. The recording feature for others is disabled so that no one else will be able to record this session through Zoom, Webex, or Echo360. Recording by other means is not permitted. The recorded class sessions will be posted on our Blackboard class website unless otherwise notified.

If you have privacy concerns and do not wish to appear in the recording, turn OFF your video and notify me in writing (via email) prior to the next class session. If you prefer to use a pseudonym instead of your name, please let me know what name you will be using, so that I can identify you during the class session. If you would like to ask a question, you may do so privately through the chat feature by addressing your question to me or your TA only (and not to "everyone"), or you may contact me or your TA by another private method, which we will agree upon in advance of class. If you have questions or concerns about this video recording policy, please contact me before the end of the first week of class.

4 Course Policies & Classroom Expectations

4.1 Grading Policy and Point Breakdown of Core Assignments and Assessments

Grading:

MyOpenMath Homework: 20%	Unit Exams: 20%
Written Homework #1–5: 16%	Final Project: 10%
Written Homework #6: 4%	Final Exam: 15%
R Projects: 15%	

Grades will be assigned according to the following rule:

$$A \geq 90\% > B \geq 80\% > C \geq 70\% > D \geq 60\% > F.$$

We reserve the right to make adjustments to the overall grading policy.

Cheating:

- If caught cheating on ANY assignment / assessment, you will receive a 0% for the particular assignment / assessment, and you will be reported to the Dean of Students.
- Repeat offenders will receive 0's for the assignments. If caught cheating two times, students will also have their overall letter grade for the semester dropped by one. If caught cheating three or more times, students will also have their overall letter grade for the semester dropped by two. Students will be reported to the Dean of Students.
- You will NOT receive an email from the instructor in advance regarding this. All communication regarding any suspected cheating will be through the Dean of Students.

Note the following actions are not permitted.

- Utilizing third-party websites including, but not limited to Chegg, Course Hero, ChatGPT, etc are not acceptable.
- You may not ask for solutions for any assignments / exams / projects related to this course. You may not view solutions for any assignments / exams / projects related to this course.
- If we find that you have either asked for solutions, viewed solutions, or used Generative AI, we will consider this cheating.
- Use of other outside sources for projects and homework should be properly cited. Outside sources should not be used on exams.

Policy for Missed or Late Work: We will not accept any late Written Homework or Exams unless a student has a letter of accommodation from the DRC or other supporting documentation is provided. *Completed but not submitted work will not be accepted.*

Online homework through MyOpenMath may be worked on until 1 week after the original due date of the assignment, unless the original due date is during the last week of the semester, in which case assignments may only be worked on until December 9 (the first day of finals week). To obtain an extension, you must use a Late Pass. More details may be found in Section 5.3.3.

R Projects and the Final Project may be submitted up to 5 days late, with a penalty of 5 percentage points per day late.

Regrades: Regrade requests for written homework and R Projects may be submitted through Gradescope. You may submit a regrade request in Gradescope through December 9, 2024 at 11:59 pm. Contact the instructor or course coordinator for regrade requests regarding online homework or unit exams through December 9, 2024 at 11:59 pm. After this time, no regrade requests will be accepted.

Submitting Documentation for Absences or Classroom Accommodation: We require documentation for excused absences or requests for classroom accommodation due to an illness or an emergency situation. A student may redact personal information that they are not comfortable sharing with university staff. For example, a student may redact information like a diagnosis, medication, address, etc.

4.2 Attendance Policy

Attendance is highly encouraged but not required. We have seen improvements in student performances in courses with attendance policies. Therefore, the **ONLY** extra credit opportunity this semester will be based on lecture attendance. Attendance will be counted starting the third week of classes. Only the statuses of “Present” and “Excused” will be counted as attending class.

If you attend

- at least 85% of in-person lecture sessions (32–37 out of 37 sessions), you will receive 5 extra credit points on the final exam;
- between 75% and 85% of in-person lecture sessions (28–31 out of 37 sessions), you will receive 3 extra credit points on the final exam;
- between 50% and 75% of in-person lecture sessions (19–27 out of 37 sessions), you will receive 1 extra credit point on the final exam.

Attendance below 50% will give you 0 extra credit points. Excused absences (with documentation) will count towards attending class.

Please email me if you face an unexpected situation that may impede your attendance or timely completion of assignments.

4.2.1 Acadly Registration

To access attendance, you must

1. Sign up for Acadly - you should have received an email that enrolled you in the course. If you cannot find this email, try searching your inbox for the phrase “You have been added as a student”, which is a part of the invitation email’s subject.
2. Download the Acadly app through Google Play or the App Store.
3. Log-in to Acadly and click on the course set up by your professor.
4. For In-Person attendance, you should access Acadly through your phone / your tablet (Android or iOS) by using the Acadly app (NOT the website).
5. Make sure that you give Acadly permission to access your device’s location, storage, contacts, microphone and camera.
6. In the event that we need to move in-person classes online, you may also access Acadly through the Google Chrome web browser. Attendance will be taken via activities within Acadly, such as a poll during class. You must answer the in-class activity to be counted as present.

Troubleshooting:

- Troubleshooting: Android Users iOS Users
- If you do not have a smartphone or encounter difficulties in being marked present, make sure to see your instructor after every class so they can manually mark you as present. Students who do not do this after class will automatically be marked as absent.

4.3 Other Course Policies: Course Conduct and Academic Honesty

We are committed to creating a learning environment where diverse perspectives are recognized and valued as a source of strength. We request that all students work with us to create a class culture based on open communication, mutual respect, and inclusion. As a class we will approach all discussions with respect and civility. Disagreements and debates in academic discourse are expected and welcome, but personal attacks are never OK, and will not be tolerated. We strive to ensure an open and welcoming classroom for all students. If we ever miss the mark, please don’t hesitate to come and talk to us. We are all learning together.

Academic Integrity Policy

As an academic community, UIC is committed to providing an environment in which research, learning, and scholarship can flourish and in which all endeavors are guided by academic and professional integrity. All members of the campus community – students, staff, faculty, and administrators – share the responsibility of insuring that these standards are upheld so that such an environment exists. You are expected to adhere to the Community Standards of academic integrity, accountability, and respect. Instances of academic misconduct by students will be handled pursuant to the Student Disciplinary Policy. You are capable of meeting expectations for this course. If you are concerned about how well you are doing in this course, please come speak with your instructor instead of considering academic misconduct.

Alternatives to Academic Dishonesty

- Seek out help – meet with your TA or Professor, ask if there is special tutoring or other arrangements available.
- Drop the course – can you take it next semester when you might feel more prepared and less pressured?
- See a counselor at Student Psychological Services, and/or your school, college or department advisor – UIC has many resources for students who are feeling the stresses of academic and personal pressures, see resources below.

Remember, **getting caught cheating affects more than just your GPA**. How will you explain to your parents, family and friends that you have been suspended or dismissed? How will it affect your financial aid award and/or scholarship money? How will it affect your future career plans?

You have worked very hard to get here, so don't cheat! You don't need to. If you would like more information, please see the Dean of Students' Office in 3030 Student Services Building (SSB), 1200 W. Harrison Street, call at (312) 996-4857, or visit their website at <https://dos.uic.edu/>.

Grievance Procedures

UIC is committed to the most fundamental principles of academic freedom, equality of opportunity, and human dignity involving students and employees. Freedom from discrimination is a foundation for all decision making at UIC. You as students are encouraged to study the University's "Nondiscrimination Statement". You are also urged to read the document "Public Formal Grievance Procedures". Information on these policies and procedures is available on the University web pages of the Office of Access and Equity: <https://oae.uic.edu/>. If you choose to submit an academic grievance, you may find the paperwork here: <https://dos.uic.edu/student-assistance/academic-concerns/academic-grievances/>.

4.4 Other Course Policies: Additional Course Communications

4.4.1 News & Announcements

Any announcements will be posted on Blackboard and is where you may find course- and program-related announcements made by the instructor or teaching assistants. All members of the course will receive an email of each message posted.

4.4.2 Email Expectations

Students are responsible for all information instructors send to your UIC email and Blackboard accounts. Faculty messages should be regularly monitored and read in a timely fashion.

4.4.3 Course Communications using Piazza

This term we will be using Piazza for help from classmates. The system is highly catered to getting you help fast and efficiently from classmates, the TAs, the instructor, and the course coordinator. Rather than emailing questions to the teaching staff, I encourage you to post your questions on Piazza. If you have any problems or feedback for the developers, email team@piazza.com.

Please direct the class questions that are not private to this board. You will get faster answers if you post your questions there. (Your question will be answered within 24 hours except during weekends.)

If you have a really private question, please send an email to your instructor or the course coordinator.

4.4.4 Online Course Communication Guidelines (Netiquette)

- Be mindful of different cultural and linguistic backgrounds, as well as different political ideologies and religious beliefs.
- Use good judgment when composing your written responses. Swearing and profanity should be avoided. Also consider that slang terms can be misunderstood or misinterpreted.
- Be careful using all capital letters when composing your written responses. This can be considered “shouting” on the Internet and is regarded as impolite or aggressive. It can also be stressful on the eye when trying to read your message.
- Be respectful of others’ views and opinions. Avoid “flaming” (publicly attacking or insulting) others.
- Be careful when using acronyms. If you use an acronym it is best to spell out its meaning first, then put the acronym in parentheses afterward, for example: Frequently Asked Questions (FAQs). After that you can use the acronym freely throughout your message.
- Use good grammar and spelling in written communications.
- In emails, always identify yourself and what class and section you are in. It is a good practice to put your course and section in the subject line. This helps your instructor identify course related emails.

4.5 Other Course Policies: Caregiver Responsibilities

We have great respect for students who are balancing their pursuit of education with the responsibilities of caring for children or other family members. If you run into challenges that require you to miss a class, or if your caregiving responsibilities are interfering with your ability to engage in remote learning, please contact your instructor. There may be some instances of flexibility we can offer to support your learning.

5 Course Schedule and Assessment Descriptions

5.1 Tentative Course Schedule

Week	Day	Covering Section
1 8/26/24	M 8/26	Section 2.1: Sample Space
	W 8/28	Section 2.2: Events
	F 8/30	Section 2.4: Probability of an Event Section 2.5: Additive Rules Section 2.3: Multiplication Rule; Permutations; Combinations
2 9/2/24	M 9/2	Labor Day: No Class
	W 9/4 & F 9/6	Section 2.6: Conditional Probability; Independence; Product Rule Section 2.7: Bayes' Rule
	Unit Exam	Wed 9/4: Practice Unit Exam Closes (doesn't count)
3 9/9/24	M 9/9	Section 3.1: Random Variable
	W 9/11	Section 3.2: Discrete Probability Distributions (1 Random Variable) Section 4.1–4.3: Expected Value / Variance / Linear Combinations (Discrete)
	F 9/13	Section 3.2: CDF (1 Random Variable)
	Written HW	Tues 9/10: Written Homework 1 Due
	Unit Exam	Wed 9/11: Unit Exam 1 Due
4 9/16/24	M 9/16	Section 3.4: Discrete Probability Distributions (2 RVs); Conditional Distributions
	W 9/18	Section 4.1–4.3: Expected Value, Variance, Linear Combinations / Correlation Coefficient (Discrete)
	F 9/20	Section 5.3: Hypergeometric Distribution
	Unit Exam	Mon 9/16: Unit Exam 2 Due
	R Project	Fri 9/20: R Project 1 Due
5 9/23/24	M 9/23	Section 5.2: Bernoulli and Binomial Distributions
	W 9/25	Section 5.4: Negative Binomial and Geometric Distributions
	F 9/27	Section 5.5: Poisson Distribution; Poisson Approximation to Binomial
	R Project	Fri 9/27: R Project 2 Due
6 9/30/24	M 9/30	Section 3.3: Continuous Probability Distributions (1 RV)
	W 10/2	Section 4.1–4.3: Expected Value, Variance, Linear Combinations (Continuous)
	W 10/2 & F 10/4	Section 6.1: Continuous Uniform Distribution
	F 10/4	Section 6.6: Exponential Distribution (and some Gamma)
	Written HW	Tues 10/1: Written Homework 2 Due
7 10/7/24	M 10/7 & W 10/9	Section 6.2–6.4: Normal Distribution
	F 10/11	Section 6.5: Normal Approximation to the Binomial
	Unit Exam	Mon 10/7: Unit Exam 3 Due
	R Project	Fri 10/11: R Project 3 Due

Week	Day	Covering Section
8 10/14/24	M 10/14 & W 10/16 F 10/18 & M 10/21 ----- Written HW	Section 8.1: Random Sampling (Population vs Sample) Section 8.2: Important Statistics (Mean; Median; Mode; Variance; Std Dev; Range; IQR) Chapter 1: Measures of Center / Spread; Histogram; Boxplot Section 8.3–8.4: Sampling Distribution of Means, Proportions, and the CLT; Case Study 8.2 ----- Tues 10/15: Written Homework 3 Due
9 10/21/24	F 10/18 & M 10/21 W 10/23 F 10/25 & M 10/28 ----- Unit Exam R Project	Section 8.3–8.4: Sampling Distribution of Means, Proportions, and the CLT; Case Study 8.2 Section 8.5 / 6.7: Sampling Distribution of S^2 and the Chi-Square Distribution Section 8.6: t Distribution ----- Mon 10/21: Unit Exam 4 Due Fri 10/25: R Project 4 Due
10 10/28/24	F 10/25 & M 10/28 M 10/28 M 10/28 & W 10/30 W 10/30 & F 11/1 ----- R Project	Section 8.6: t Distribution Section 9.2: Statistical Inference Section 9.3: Classical Methods of Estimation Section 9.4–9.5: CI for 1 Mean and Standard Errors ----- Fri 11/1: R Project 5 Due
11 11/4/24	M 11/4 W 11/6 F 11/8 ----- Written HW	Section 9.9: CI for Paired Observations Section 9.8: CI for Difference of Means Section 9.10: CI for 1 Proportion ----- Tues 11/5: Written Homework 4 Due
12 11/11/24	M 11/11 W 11/13 W 11/13 & F 11/15 F 11/15 & M 11/18 ----- Unit Exam	Section 9.11: CI for Difference of Proportions Section 10.1: HT Setup Hypotheses Section 10.2: HT Critical Regions Section 10.2: HT Potential Errors ----- Mon 11/11: Unit Exam 5 Due
13 11/18/24	F 11/15 & M 11/18 M 11/18 W 11/20 & F 11/22 F 11/22 ----- Written HW	Section 10.2: HT Potential Errors Section 10.3: HT P-value Method Section 10.4: HT for 1 Mean Section 10.5: HT for Paired Data ----- Tues 11/19: Written Homework 5 Due
14 11/25/24	M 11/25 W 11/27 F 11/29 ----- Unit Exam	Section 10.5: HT for Difference of Means Student Wellness Day: No Class Thanksgiving: No Class ----- Mon 11/25: Unit Exam 6 Due
15 12/2/24	M 12/2 W 12/4 F 12/6 ----- R Project Written HW	Section 10.8: HT for 1 Proportion Section 10.9: HT for Difference of Proportions Section 9.12: CI for σ^2 Section 10.10: HT for 1 Variance / Review Day for Final ----- Mon 12/2: Final Project Due Tues 12/3: Written Homework 6 Due
16 12/9/23	W 12/11	Final Exam Week In Person Final Exam Wednesday December 11 from 8–10 AM (tentative)

5.2 Tentative MyOpenMath Online Homework Due Dates

HW #	Due Date		HW #	Due Date		HW #	Due Date
1	8/28		17	9/30		33	11/4
2	8/30		18	10/2		34	11/6
3	9/4		19	10/4		35	11/8
4	9/4		20	10/7		36	11/11
5	9/6		21	10/9		37	11/13
6	9/6		22	10/11		38	11/15
7	9/9		23	10/14		39	11/18
8	9/9		24	10/16		40	11/20
9	9/9		25	10/18		41	11/22
10	9/11		26	10/21		42	11/25
11	9/13		27	10/23		43	11/25
12	9/16		28	10/25		44	12/2
13	9/20		29	10/25		45	12/4
14	9/23		30	10/28		46	12/6
15	9/25		31	10/28		47	12/7
16	9/27		32	10/30		48	12/7

5.3 Core Assignment Description: Online Homework

5.3.1 Purpose of Online Homework

The online homework is designed to give you practice on computational problems. In general, it is due the next lecture day after we have finished talking about the material (Monday lecture material is due Wednesday at 11:59 pm, etc.) The due dates are set in this way to help you keep up with the material and not fall behind. In case something comes up, use a Late Pass to give yourself an extension. You may attempt problems as many times as you want to obtain 100% on every assignment. After 3 attempts, you will be able to re-start a problem, but with different numbers.

5.3.2 Details

- Access the online homework through the link on Blackboard for MyOpenMath.
- There are 48 online homework assignments.
- Homework is due at 11:59 pm. MyOpenMath lists due dates in the time zone set by your computer. For items highlighted in blue, check the specific due date / time on the assignment.
- The lowest 4 scores will be dropped.
- All MyOpenMath assignments will be weighted equally to each other.
- Selecting “Try another similar question” will enable you to retry a question as many times as needed to score 100%.
- If you complete a problem and are off by a few decimals, click on “Message the instructor” and send a message to the *course coordinator*.
- You may discuss homework problems with your fellow students and use Piazza, but you must write your answers up independently, and in your own words. **Asking for assistance, or viewing solutions through third-party websites (like Chegg or ChatGPT or other Generative AI) is not permitted**, and will be reported.
- See Late Pass Section 5.3.3 for information on homework extensions.

5.3.3 Late Passes

- You have 100 late passes for the semester, which will enable you to extend the deadline of homework by 24 hours. If you enter “review mode”, you may not use a late pass.
 - Example: Original Due date is August 28. You access the assignment on August 30. You will use 2 late passes.
- Extension Limitations: You can obtain an extension until a week after the original due date of the assignment, some exceptions being extensions that fall on a holiday or assignments due during the last week of the semester. You may only use a late pass until December 9 for any MOM assignment due during the last week of the course.
 - Example: Original Due date is September 13. You may use a late pass until September 20. After this date, a late pass may not be redeemed.
 - Example: Original Due date is December 6 (the last week of the course). You may use a late pass until December 9, the first day of finals week.

5.4 Core Assignment Description: Written Homework

5.4.1 Purpose of Written Homework

Written homework enables you to deepen the understanding of the course concepts instead of just worrying about the computations. There will occasionally be some computational problems to allow you to write your answer without the structure that MyOpenMath provides.

5.4.2 Details

- Homework will be assigned regularly and due by the due date. Problems will be posted on Blackboard.
- Homework will be submitted via Gradescope.
- Due on the due date by **11:59 PM**.
- All written homework assignments will be weighted equally to each other.
- Of Written Homework 1–5, the lowest 1 written homework score will be dropped. Written Homework 6 may not be dropped.
- **No late homework will be accepted** because solutions are posted the next day after it is due. **Copying solutions directly from the solution manual, from third-party websites, or instructor solutions will not be tolerated**, and will result in a zero for the homework assignment. Repeat offenders will be subject to a letter grade drop on your overall grade for the semester.
- You may discuss homework problems with your fellow students and use Piazza, but you must write your answers up independently, and in your own words. **Asking for assistance, or viewing solutions through third-party websites (like Chegg or similar) or using Generative AI (like ChatGPT or similar) is not permitted**, and will be reported.
- You may use outside websites (other than ones like Chegg, CourseHero, ChatGPT, etc) to help you answer questions. If you use outside sources, you need to cite them on your homework. Any citation style (APA, MLA, etc.) is acceptable.
- Regrades will be open for each assignment until December 9, 2024 at 11:59 pm.
- We highly recommend you upload your assignment before the due date in case of internet issues. If you have internet issues the night homework is due, we must have documentation of the internet outage or your homework will not be accepted. Solutions are released promptly the day after a homework is due.
- Work needs to be completed and submitted by the due date. Failure to do so will result in a 0% on the assignment. *Completed but not submitted work will not be accepted.* Homework will not be accepted via email, even if you email it at 12:01 AM.

5.5 Core Assignment Description: R Programming

5.5.1 Purpose of R Projects

Many statistical analyses can be done using software. We aim to introduce you to basic R coding and performing of analyses. R is a free, open-source software environment for statistical computing and graphics. If you go on to take Stat 382 or any data science courses, this will give you some exposure to software used in computations and analysis.

5.5.2 Details

- All R assignments will be weighted equally to each other.
- No R assignments will be dropped.
- You may submit assignments up to 5 days late. Each day late will drop your overall score by 5 percentage points. Submission date / time determined by Gradescope.
 - Example: If you score 87% and submitted 1 day late, your score drops to 82%.
 - Example: If you score 87% and submitted 2 days late, your score drops to 77%.
- Regrades will be open for each assignment until December 9, 2024 at 11:59 pm.
- Work needs to be completed and submitted by the late due date. Failure to do so will result in a 0% on the assignment. *Completed but not submitted work will not be accepted.* Only the last Gradescope submission made will be considered.
- Instructors / TAs will NOT run your code while grading to generate answers.

5.5.3 Project Resources

- You may discuss the projects with your peers, but you must write up your projects individually and in your own words. Submit a sheet listing who you discussed your project with (in case we find similar answers). These are NOT group projects.
- You may use outside websites (other than ones like Chegg, CourseHero, ChatGPT, etc) to help you answer questions. If you use outside sources, you need to cite them on your project. Any citation style (APA, MLA, etc.) is acceptable.
- Chegg, CourseHero, ChatGPT and other similar websites are unacceptable resources, either asking for solutions, or looking up solutions. StackExchange is acceptable, provided it is cited (if used).

5.5.4 Project Titles and Due Dates

- Project 1: Complete Swirl Modules 1, 2, 3, 4.
Due September 20, 2024 @ 11:59 pm on Gradescope.
- Project 2: Complete Swirl Modules 5, 6, 7, 15.
Due September 27, 2024 @ 11:59 pm on Gradescope.
- Project 3: Graphing a Binomial Distribution.
Due October 11, 2024 @ 11:59 pm on Gradescope.
- Project 4: Graphing the Normal Distribution Curve.
Due October 25, 2024 @ 11:59 pm on Gradescope.
- Project 5: Central Limit Theorem.
Due November 1, 2024 @ 11:59 pm on Gradescope.

5.6 Core Assessment Description: Unit Exams / Mini-Exams

5.6.1 Purpose of Unit Exams

We give tests for several reasons. One reason is to show how well students are understanding the material, whether there are some students who are not there yet, and whether we need to review certain concepts with the class. Another reason is to let you assess how well you are understanding the concepts and where you need to focus more of your efforts to learn the course material. If you are struggling on the tests, it means that you need to seek help from the instructor, one of the TAs, or your peers, so that we can help you learn the material.

Unit, or “Mini”, Exams generally cover a smaller portion of material. This is to ensure that you are understanding the material for each unit. It also gives you the opportunity to focus your studying on a smaller subset of the material required for the course.

5.6.2 Description

- There will be unit “mini” exams that must be completed by yourself (no collaboration - verbal or written).
- They will be given on MyOpenMath. Showing work for each problem (requiring any sort of computation, including addition / subtraction) is **required**, unless noted.
- There are 6 Unit Exams. The lowest 1 Unit Exam score will be dropped. See Section 5.6.6 regarding material covered on each Unit Exam.
- Unit Exams will be weighted equally to each other.
- You may **NOT** use a Late Pass for a Unit Exam. They must be completed by the due date / time.
- If you have a **valid** excuse for missing a Unit Exam let us know in advance. In case you are ill on the day of a unit exam, give a written evidence/explanation of your absence (e.g. doctor’s notes) upon returning to class.
- If you have an internet outage, you must notify the instructor as soon as you get internet access back. You need to provide documentation for the outage.

5.6.3 Timed Assessment

- Unit Exams will be timed.
- Time starts once you have opened the assessment. You will have 90 minutes to complete the assessment once opened.
- Assessments must be completed by the deadline.
 - Example: Assessment due at 11:59 pm. You are given 90 minutes. You start at 9 pm. You have until 10:30 pm to complete the assessment.
 - Example: Assessment due at 11:59 pm. You are given 90 minutes. You start at 11:00 pm. You have until 11:59 pm to complete the assessment. You do NOT have the full 90 minutes because you started late.
- Unit Exam 1 will be due on Wednesday September 11 at 11:59 PM. You may submit work until 12:30 AM (30 minutes after midnight) on Thursday 9/12.
- Unit Exams 2–6 will be due on a Monday at 11:59 PM. You may submit work until 12:30 AM (30 minutes after midnight) on Tuesday.

5.6.4 Showing Work

- Make sure you show your work for each problem, unless noted.
- You may submit your work either during the exam, or after you finish.
- Submit your work by the due date / time.
- Make sure to write down the problem number on your work as you are doing the assessment. If you submit your work after you submit the assessment, you will NOT have access to which question is associated with which problem.
- Do NOT change your work after you have submitted the assessment, even if you realize you have made a mistake. If your answer in MOM does not match your work, you will receive a 0 for that problem.
- When submitting work, you may type text, insert images, or upload images / pdf files. If you have a pdf, you may submit the same pdf file for every problem; please do not just upload for one problem. If you only upload it to one problem, you must make a note on the other problems where to find your pdf file, otherwise, we will think you did not submit work.
- We cannot read .NOTE files. We cannot read files linked to Google Drive. Please submit these files in some other format.

5.6.5 Academic Honesty Statement

- You must acknowledge and agree to abide by an academic honesty statement before you may take the Unit Exam.
- You will work by yourself on the Unit Exam. No collaboration of any sort is allowed.
- Acceptable resources during a Unit Exam:
 - Personal Notes / Note sheets
 - Homework solutions posted on Blackboard
 - MOM homework
 - Textbook
- Unacceptable resources during a Unit Exam (including, but not limited to):
 - Discussing with peers, family members, teaching assistants or similar, either written or verbal.
 - Chegg; Course Hero; ChatGPT; and other third-party websites (either asking for solutions or viewing solutions)
 - Groupme; Discord; StackExchange; Geeks for Geeks; etc.

5.6.6 Material Covered on Unit Exams

Unit Exam 1: Syllabus Review

Unit Exam 2: Probability and Counting (Chapter 2)

Unit Exam 3: Discrete Random Variables (Chapters 3–5)

Unit Exam 4: Continuous Random Variables (Chapters 3, 4, 6)

Unit Exam 5: Data Summaries / Visualization, the Central Limit Theorem, Sampling Distributions (Chapter 8, Chapter 1, Section 6.7)

Unit Exam 6: Confidence Intervals (Chapter 9)

5.6.7 Grading

- After completion of the Unit Exam, no scores will be shown. You can see your scores after we have finished reviewing the assessment.
- Assessments will be reviewed after the due date. At this time:
 - Questions without work will receive 0's.
 - Questions which received no credit but have work shown may receive partial credit.
- A rubric may be found on page 21.

5.6.8 MyOpenMath Unit Exam Grading Rubric

Each question, or part of a question, is worth 1 point, excluding short answer or file upload questions.

If work is not shown on any problem that requires some sort of computation: 0 points

If work is shown, but does not match what you typed into MOM: 0 points

- This means if you submit work that you have finished after you submit your assessment, you will receive 0 points for that problem.
- Items where you did not enter an answer in MOM but have it written on your work will receive 0 points because it is possible you finished the problem after you submitted the assessment. We have no way of verifying that you completed your work before you submit the exam because we allow work to be submitted after you complete the assessment.
- Exceptions will be made for decimal place errors in transcription, or transposed numbers.

If work is shown:

- 1 Point: Answer is correct. Applicable work is provided and work matches final answer.
- 0.75 Points: Answer is incorrect. Work Shown. Minor math error present. All other work is correct, given errors.
- 0.50 Points: Answer is incorrect. Work Shown. Several math errors / conceptual errors present. All other work is correct, given errors.
- 0.25 Points: Answer is incorrect. Work Shown. Many math errors / conceptual errors present, but some steps are correct, given errors.
- 0 Points: Answer is correct. Work is provided, but does NOT match the problem.
- 0 Points: Answer is incorrect. Work is provided; everything is incorrect.

5.7 Core Assignment Description: Final Project

5.7.1 Purpose of the Final Project

For the final project, you will be analyzing a real dataset. You will go through some of the steps required if you were to perform a statistical analysis on data. You will analyze your data using R.

5.7.2 Details

- The final project will be due on Monday, December 2, 2024 at 11:59 pm. It will be submitted through Gradescope.
- You may submit the project up to 5 days late. Each day late will drop your overall score by 5 percentage points. Submission date / time determined by Gradescope.
- All work must be shown and / or code provided for full credit.
- Work needs to be completed and submitted by the late due date. Failure to do so will result in a 0% on the assignment. *Completed but not submitted work will not be accepted.*
- Instructors / TAs will NOT run your code while grading to generate answers.

5.7.3 Individual Project

- Work on this project **INDIVIDUALLY**. You may receive assistance (but not solutions) from Teaching Assistants and the Instructors. You are allowed to reference Blackboard, MyOpenMath, Gradescope, your notes, the course textbook, R documentation, and previous projects / homework for assistance.
- You cannot work in teams. You cannot work side-by-side, you cannot submit someone else's work (partial or complete) as your own. The University's policy is available here: <https://dos.uic.edu/community-standards/>
- In particular, note that you are guilty of academic dishonesty if you extend or receive any kind of unauthorized assistance.
- Absolutely no transfer of program code or files between students is permitted (paper or electronic), and you may not solicit advice or solutions from family, friends, online forums, or websites including, but not limited to Chegg or ChatGPT.
- Other examples of academic dishonesty include emailing your program or files to another student, copying-pasting code from the internet, working in a group, and allowing a tutor, TA, or another individual to write an answer for you.
- Academic dishonesty is unacceptable, and penalties range from a letter grade drop to expulsion from the university. Cases are handled via the official student conduct process described at <https://dos.uic.edu/community-standards/>.

5.8 Core Assessment Description: Final Exam

5.8.1 Purpose of the Final Exam

In the final exam, we are interested in your learning and the way you approach a problem. The questions will be designed to test your understanding of the main concepts. Therefore, partial credit will be given when you have solved parts of the problem correctly. Showing your work allows us to assess whether you are on the right track. The final exam will primarily cover Chapter 10 plus some questions from Chapter 9. (Knowledge of previous chapters is assumed.) In any subsequent statistics course, you will need to know the material from Chapters 9 & 10 and how to apply it. Without this information, you will be at a disadvantage in any subsequent statistics course that you may take. Hypothesis testing is widely used, and you need to understand this material. Future classes are not likely to give exams online through MyOpenMath, which provides a nice structure about the steps involved to solve a problem. Therefore, we want to mimic what you would see in a followup course which would require you to write everything down by hand.

5.8.2 Details

- The final exam is a combined final exam. It is tentatively scheduled to take place on Wednesday December 11 from 8–10 AM during Finals Week. This is an ***IN-PERSON*** final.
- The final exam primarily covers Chapter 10 (Hypothesis Testing) plus some questions from Chapter 9.
- Calculators are allowed on exams, including those capable of symbolic algebra. However, most problems require you to “show each step”—and thus **NO** credit will be given unless you show all work by hand. TI-Nspire calculators are not allowed. Computers and smart phones are not allowed. If you forget your calculator, we still expect you to take the exam as scheduled.
- Students should bring and display their UIC ID cards during exams. (Academic dishonesty: Cheating on exams typically results in disciplinary procedures, up to expulsion from the university).

5.8.3 Missing the Final

- If you have a **valid** excuse for missing the final exam, let us know in advance.
- There will be **NO** make ups for the final exam. Exceptions will be made only for emergencies, e.g., hospitalization or conflicts in final exam scheduling. In case you are ill, provide a written evidence/explanation of your absence (e.g. doctor’s notes). Otherwise it counts as zero. No exam replacements / substitutions are permitted.
- If you schedule travel during the final exam date/time, you may not make up the final, unless the travel is due to a documented family emergency or approved university travel. Otherwise, you will receive 0% for the final exam.
- If you qualify for a make-up final exam, it will take place on Monday December 16. If you end up missing two MSCS final exams, expect to take both make-up finals on Monday December 16.

6 Accommodations

Disability Accommodation Procedures

- UIC is committed to full inclusion and participation of people with disabilities in all aspects of university life. If you face or anticipate disability-related barriers while at UIC, please connect with the Disability Resource Center (DRC) at <http://drc.uic.edu>, via email at drc@uic.edu, or call (312) 413-2183 to create a plan for reasonable accommodations.
- In order to receive accommodations, you will need to disclose the disability to the DRC, complete an interactive registration process with the DRC, and provide their course instructor with a Letter of Accommodation (LOA). Upon receipt of an LOA, course instructors will gladly work with you and the DRC to implement approved accommodations.
- If you need to book a room with DRC to take an exam, you must submit the online form to DRC no later than a week and a half before the scheduled date of the exam.
- The Disability Resource Center (DRC)'s guide to accommodations may be found here: <http://drc.uic.edu/guide-to-accommodations>.

Religious Accommodations

- Following campus policy, if you wish to observe religious holidays, you must notify the faculty member by the **tenth day of the semester** of the date(s) when they will be absent unless the religious holiday is observed on or before the tenth day of the semester. In such cases, the student shall notify the faculty member at least five days in advance of the date when they will be absent.
- Please submit this form by email with the subject heading: **“YOUR NAME: Requesting Religious Accommodation.”**
- The faculty member shall make every reasonable effort to honor the request, not penalize the student for missing the class, and if an examination or project is due during the absence, give the student an exam or assignment equivalent to the one completed by those students in attendance.
- If the student feels aggrieved, they may request remedy through the campus grievance procedure.
- UIC religious holiday calendar: <http://oae.uic.edu/religious-calendar>

Student Athlete Accommodations

- During the first week of class, you should provide the instructor with your missed class letter.
- It is the students' responsibility to attend all of their classes. If an athlete knows beforehand that they will be absent on a certain day (i.e. due to a contest), notify the instructor in advance. It is the student-athlete's responsibility to arrange to complete any missed work.

7 Classroom Environment

Inclusive Community

UIC values diversity and inclusion. Regardless of age, disability, ethnicity, race, gender, gender identity, sexual orientation, socioeconomic status, geographic background, religion, political ideology, language, or culture, we expect all members of this class to contribute to a respectful, welcoming, and inclusive environment for every other member of our class. If aspects of this course result in barriers to your inclusion, engagement, accurate assessment, or achievement, please notify me as soon as possible.

Name and Pronoun Use

If your name does not match the name on my class roster, please let me know as soon as possible. Prof. Pajda-De La O's pronouns are she/her, and Prof. Hamed's pronouns are she/her. We welcome your pronouns if you would like to share them with us. For more information about pronouns, see this page: <https://www.mypronouns.org/what-and-why>.

Community Agreement / Classroom Conduct Policy

- Be present by turning off cell phones and removing yourself from other distractions.
- Be respectful of the learning space and community. For example, no side conversations or unnecessary disruptions.
- Use preferred names and gender pronouns.
- Assume goodwill in all interactions, even in disagreement.
- Facilitate dialogue and value the free and safe exchange of ideas.
- Try not to make assumptions, have an open mind, seek to understand, and not judge.
- Approach discussion, challenges, and different perspectives as an opportunity to “think out loud,” learn something new, and understand the concepts or experiences that guide other people’s thinking.
- Debate the concepts, not the person.
- Be gracious and open to change when your ideas, arguments, or positions do not work or are proven wrong.
- Be willing to work together and share helpful study strategies.
- Be mindful of one another’s privacy, and do not invite outsiders into our classroom.

8 Resources: Academic Success, Wellness, and Safety

We all need the help and the support of our UIC community. Please visit my drop-in hours for course consultation and other academic or research topics. For additional assistance, please contact your assigned college advisor and visit the support services available to all UIC students.

Academic Success

- UIC Tutoring Resources
- UIC Library and UIC Library Research Guides.
- Offices supporting the UIC Undergraduate Experience and Academic Programs.
- Student Guide for Information Technology
- First-at-LAS Academic Success Program, focusing on LAS first-generation students.
- The Math and Science Learning Center (MSLC)
The Math and Science Learning Center, located in the Science and Engineering South Building (SES) at 845 W. Taylor St. 3rd Floor, Room 247, is a meeting place for students in Math, Biological Sciences, Chemistry, Earth and Environmental Sciences, and Physics. At the MSLC, students can meet with graduate teaching assistants for tutoring in 100-level courses, arrange informal group study sessions with other students, or meet up with friends to attend one of the workshops, seminars, or other activities sponsored by the SLC during the semester. Visit the website, call 312-355-4900 or email at mslc@uic.edu.
- Academic Center for Excellence
The Academic Center for Excellence can help if you feel you need more individualized instruction in reading and/or writing, study skills, time management, etc. Phone: (312) 413-0031.

Academic Success: School-Life Conflict

Many students face obstacles to their education because of work or family obligations or unforeseen personal difficulties. If you are experiencing challenges throughout the term that are impacting your ability to succeed in this course, or in your undergraduate career more broadly, please reach out to your instructor immediately so that we can work together to form a plan for your academic success. Please do not wait until the semester is almost over. It is extremely difficult to catch up at the end of the semester.

Wellness

- **Counseling Services:** You may seek free and confidential services from the Counseling Center at <https://counseling.uic.edu/>. The Counseling Center is located in the Student Services Building; you may contact them at (312) 996-3490. In addition to offering counseling services, the Counseling Center also operates the 24/7 Crisis Hotline. They offer support and referrals to callers, as well as telephone crisis interventions; please call (312) 996-3490.
- Access U&I Care Program for assistance with personal hardships.

- **Campus Advocacy Network:** Under Title IX, you have the right to an education free from any form of gender-based violence or discrimination. Crimes of sexual assault, domestic violence, sexual harassment, and stalking are against the law and can be prevented. To make a report, email TitleIX@uic.edu or call (312) 996-8670. For more information or confidential victim services and advocacy, visit UIC's Campus Advocacy Network at <https://can.uic.edu/> or call (312) 413-1025.

Safety

- UIC Safe App – PLEASE DOWNLOAD FOR YOUR SAFETY
- UIC Safety Tips and Resources
- Night Ride
- Emergency Communications: By dialing 5-5555 from a campus phone, you can summon the Police or Fire for any on-campus emergency. You may also set up the complete number, (312) 355-5555, on speed dial on your cell phone.