# Course Syllabus: IS 448 Usability & Measuring UX

Semester: Spring 2025
Section 002: Tuesday and Thursday 10:00 - 11:20 AM at TIER LECT 2

Instructor: Keita Ohshiro
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Office Hours: Tuesday and Thursday, 11:45 AM - 12:45 PM, and by appointment
Office: Guttenberg Information Technology Center (GITC) 3902

TA: TBA
Grader: TBA

## General Information

### Course Description

This course introduces students to the field of Quantitative User Experience (UX) and Usability Research. It covers foundational concepts such as statistics, survey design and execution, data analysis, data visualization, and results communication. Students will not only learn theoretical concepts through lectures but also apply this knowledge by conducting surveys. Through this combination of theory and practice, students will gain experience in measuring usability and UX.

Prerequisites: Statistics GUR (MATH 105, MATH 120, MATH 225, MATH 244, MATH 279, MATH 305, MATH 333, IE 331, ECE 321 or MNET 315).

### Course Objectives

By the end of this course, students will be able to:

- Explain key concepts related to statistics and measuring usability and UX
- Demonstrate key analytical skills (data cleaning, data analysis, data visualization) using Excel
- Design and execute quantitative usability studies with a focus on surveys
- Apply statistical methods to measure, evaluate, and interpret usability and UX
- Communicate the results effectively

### Textbooks

Textbooks are not required. Readings will be posted on Canvas. If you want to learn more about the topics covered in the class, I recommend the following two books.

- Measuring the User Experience: Collecting, Analyzing, and Presenting UX Metrics (Interactive Technologies) 3rd Edition
- Quantifying the User Experience: Practical Statistics for User Research 2nd Edition

## Tools

Please bring your laptop to class.

# Grading

## Grading Policy

The class will be graded on a 100-point scale. (Also, see Grading Legend)

| A<br>Superior | B+<br>Excellent | B<br>Very Good | C+<br>Good | C<br>Acceptable | D<br>Minimum | F<br>Inadequate |
|---|---|---|---|---|---|---|
| > 90 | 85 - 90 | 80 - 85 | 75 - 80 | 70 - 75 | 60 - 70 | < 60 |

## Grading Categories

- 25% Individual assignments and lab work
- 15% Midterm milestone
  - 7.5% presentation and documentation
  - 7.5% individual contribution
- 30% Final project
  - 15% presentation and documentation
  - 15% individual contribution
- 30% Final Exam

Please note that there may be slight modifications to the grading policy depending on issues that arise during the semester. I can add or reduce points based on various situations. For instance, exceptional participation and contributions in class may result in additional points, while poor participation and lack of thoughtful contributions may lead to point deductions. Additionally, I may make slight adjustments to the grading scale or apply a curve as needed to ensure fairness in the overall grading process.

## Attendance Policy

Students are expected to attend every class on time.

- **If you miss 6 class sessions, you will automatically be deducted a letter grade.**
- **If you miss 10 class sessions, you will automatically fail the course.**
- **Students who arrive after the attendance call/quiz or leave before the class officially ends will be marked as late. Accumulating 3 late attendance will count as 1 absence.**

Please contact the Office of the Dean of Students (DOS) to verify your absence. For more details, please see the Student Absence Verification section below.

Even when you don't have a valid (DOS verifiable) reason and cannot attend class, **I strongly encourage you to notify me in advance** (not after the class). I will try to consider your situation, though I cannot guarantee to what extent.

## Student Absence Verification

**Students should contact the Office of the Dean of Students (DOS) to verify their absence** when missing class due to bereavement, medical concerns, military activity, legal obligations, or university-sponsored events. Once the absence has been verified, the DOS will communicate to your professor(s) on your behalf. Please note that our office only verifies documentation and it is at the discretion of your professor(s) or their department's policy to provide any accommodation. It is the student's responsibility to follow up with the professor(s). Students who select an option (bereavement, medical concerns, etc.) that does not match the presenting concern and supporting documentation will be rejected. For more information, please see https://www.njit.edu/dos/student-absence-verification.

## Late Assignment Submissions

**If an assignment is submitted late, one-fourth of the total points will be deducted per day**. For example, if an assignment is due by 6:00 pm and you submit it after 6:00 pm but before 6:00 pm the following day, 25% of the total points will be deducted (50% on the second day, 75% on the third day, and 100% after that). I strongly encourage you to submit your assignments on time, even if you feel they are not yet ready or perfect.

And, **I still strongly encourage you to submit the assignments, no matter how late they are**. I cannot promise, but there may be a remedy. I will try to consider your effort, though I cannot guarantee to what extent.

## Academic Integrity

Academic Integrity is the cornerstone of higher education and is central to the ideals of this course and the university. Cheating is strictly prohibited and devalues the degree that you are working on. As a member of the NJIT community, it is your responsibility to protect your educational investment by knowing and following the academic code of integrity policy that is found at: NJIT Academic Integrity Code.

Please note that it is my professional obligation and responsibility to report any academic misconduct to the Dean of Students Office. Any student found in violation of the code by cheating, plagiarizing or using any online software inappropriately will result in disciplinary action. This may include a failing grade of F, and/or suspension or dismissal from the university. If you have any questions about the code of Academic Integrity, please contact the Dean of Students Office at dos@njit.edu.

### Use of Generative AI

Generative AI tools are permitted in this course for reference purposes only, and no citation is necessary when used for inspiration or guidance. However, you are expected to understand any AI-generated content before including it in your work. Simply copying and pasting AI outputs without comprehension is not acceptable. Additionally, in most assignments and labs, I require you to demonstrate not only the final results but also the process of how you arrive at them. For example, when using tools like Spreadsheet, you should show your use of formulas and functions rather than just providing the final output. If you have any questions or concerns about the appropriate use of AI technology in this course, please contact me before submitting any assignments.

## Course Schedule

(Subject to modification)

| Date | Topics |
|---|---|
| Class 1: 1/21 | Course Introduction |
| Class 2: 1/23 | Recap of UX and usability<br>Statistics review test (not graded) |
| 1/27 | Last Day to Add/Drop a Class |
| Class 3: 1/28<br>Class 4: 1/30 | Lecture<br>● Research question and hypothesis<br>● Metrics (SUS, NPS, and others)<br>Activity<br>● Keyboard usability and data input<br>Group<br>● Activity: form a group and decide on a topic<br>● Assignment: draft survey |
| Class 5: 2/4<br>Class 6: 2/6 | Lecture<br>● Document formatting<br>● Research ethics<br>● Survey design<br>Lab: Data cleansing and validation<br>Group<br>● Check survey progress |
| Class 7: 2/11<br>Class 8: 2/13 | Lecture:<br>● Data basics<br>● Descriptive statistics<br>● Basic visualization<br>Group<br>● Survey final check |

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|---|---|
| Class 9: 2/18<br>Class 10: 2/20 | Lecture<br>● SUS and NPS calculation<br>● Data visualization basics<br>Lab<br>● Basic functions<br>● Pivot table<br>● Basic visualization<br>○ Bar chart, line chart, scatter plot, histogram |
| Class 11: 2/25<br>Class 12: 2/27 | Group progress check |
| Class 13: 3/4<br>Class 14: 3/6 | Midterm milestone due<br>Midterm presentation and documentation |
| Class 15: 3/11<br>Class 16: 3/13 | Lecture<br>● Inferential statistics 1: Hypothesis test |
| 3/16-22 | Spring Recess - No classes |
| Class 17: 3/25<br>Class 18: 3/27 | Lecture<br>● Inferential statistics 2: T-tests<br>Lab<br>● Hypothesis test and t-tests using Excel |
| Class 19: 4/1 | Lecture<br>● Additional statistics: Central limit theorem, law of large numbers |
| 4/3 | Wellness Day - No Classes Scheduled |
| 4/7 | Last Day to Withdraw from Classes |
| Class 20: 4/8<br>Class 21: 4/10 | Lecture<br>● Things to consider when doing Usability/UX research<br>○ Sample size, Randomness, Representativeness, Reliability, and Validity |
| Class 22: 4/15 | Lecture<br>● Storytelling with data |
| Class 23: 4/17 | Special topic: TBD |
| Class 24: 4/22 | Special topic: TBD |
| Class 25: 4/24 | Course review |
| Class 26: 4/29 | (Buffer) |
| Class 27: 5/1 | (Buffer) |
| Class 28: 5/6 | Final project submission due<br>Final project presentation |

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|---|---|
| Final Exam Day (TBD) | Final exam |

# Others

## Center for Counseling and Psychological Services

C-CAPS provides free counseling for full-time students. For more information, see https://www.njit.edu/counseling/.

## Getting Technical Help

The IST Service Desk is the central hub for all information related to computing technologies at NJIT. This includes being the first point of contact for those with computing questions or problems.

## Accessibility

If you are in need of accommodations due to a disability, please contact Scott Janz, Associate Director of the Office of Accessibility Resources & Services (OARS), Fenster Hall Room 260 to discuss your specific needs. A Letter of Accommodation Eligibility from the OARS authorizing your accommodations will be required.