

I 305: Research Methods for Informatics

Unique ID: 27410

Fall Semester 2024

Class Meets: Wednesday and Friday
9:30 AM - 11:00 AM
George I. Sanchez Building (SZB) 3.508

Instructor: Brian McInnis
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COURSE DESCRIPTION

Research involves the systematic study of phenomena in order to discover new knowledge about the world around us. The goal of this course is to introduce many of the truly fascinating and challenging aspects of conducting research involving socio-technical systems---the intersection of people, information, and technology. This course will be presented in two major parts:

1. **Introduction to research:** What is research and what are the gatekeeping procedures for evaluating each phase of research, from study planning to data collection, analysis, and reporting results.
2. **Practical and ethical considerations for Informatics Research:** Students will learn about the use of qualitative, quantitative, design, and system design methods by surveying existing research from Cultural Heritage Informatics, Health Informatics, Human-Centered Data Science, Social Informatics, and User Experience Design.

This course is held in-person and the assignments are designed to encourage students to apply course concepts to their own interests and to critically evaluate research in terms of process and ethics. By the end of the course, students will be familiar with standard procedures for evaluating research, from the ethical and societal review of study proposals to peer-review and study replication.

PRE-REQUISITES FOR THE COURSE

None.

LEARNING OUTCOMES

1. Connect Course Content to the Six Informatics Major Concentrations:
 - a. Gain familiarity with research topics across Cultural Heritage Informatics, Health Informatics, Human-Centered Data Science, Social Informatics, and User Experience Design.
2. Connect Course Content to the School of Information's Mission and Values:
 - a. Use the UT Austin iSchool's core values as a framework to analyze ethics & equity across each phase of the research process in an Informatics context.
3. Explore the "How and Why" behind Informatics Research:
 - a. Understand the role of research in Informatics contexts and how it can be designed for social impact.
 - b. Identify research problems and craft related research questions.

- c. Explore the differences across qualitative and quantitative methodologies and tools (and how to identify which methodology to apply in order to answer a research question).
 - d. Understand how each phase of the research process informs one another (ex: we choose methods to best answer our research questions, not because we like or know them).
 - e. Identify (ethics & equity) challenges in the Informatics research landscape; apply course concepts to analyze current events.
4. Apply Course Concepts in Practice:
- a. Explore research as scholarly entrepreneurship in which students can identify research problems, develop research questions, and design a study to explore topics connected to their interests.
 - b. Communicate the “so what?” around why student proposed research matters (impact).
 - c. Critically evaluate what it means to “do your own research” in the age of information.

COURSE REQUIREMENTS AND GRADING

Your success in this class and overall well-being are important to me. If there are aspects of this course that prevent you from learning or exclude you, please let me know as soon as possible. You can email me, talk to me after class, come to office hours, schedule a 1-1 meeting with me to discuss any issues, concerns, and ideas.

REQUIRED MATERIALS

There are no textbooks for this course. All readings are free and can be found on our course Canvas site (<https://utexas.instructure.com/>) under the “Assignments” tab. If you encounter any technical difficulties or barriers while doing work for this course, please let me know and I will work with you.

COMMUNICATION

The course Canvas site can be found at utexas.instructure.com. Please email me through Canvas. You are responsible for ensuring that the primary email address you have recorded with the university is the one you will check for course communications because that is the email address that Canvas uses.

TEACHING MODALITY INFORMATION

This course will be held in-person. This means that attendance in the classroom is expected. That being said, illness and emergencies happen. Please do not come to class sick, just let me know as soon as possible via email and I will work with you.

GETTING HELP WITH TECHNOLOGY

Students needing help with technology in this course should contact the [ITS Service Desk](#).

ASKING FOR HELP WITH COURSE MATERIAL

During the lecture questions about the material should be sent to the course Teaching Assistant via Canvas, so that we can address common questions before the end of class. Questions about the material that come up in between lectures should also be forwarded to the course Teaching Assistant and will be addressed during the recap at the beginning of the next class period.

WHAT WILL CLASS LOOK LIKE?

Each week will have a similar structure.

Wednesday: New concepts will be introduced.

- Recap of concepts from the prior week
- Agenda and objectives for the week
- Lecture
- Questions and class discussion

Friday: Concepts will be applied through class activities.

- Recap from the last class
- Short lecture
- Team activities

- Questions and class discussion

CLASS ATTENDANCE AND PARTICIPATION

Being present is critical to achieving our goals for this course, which is why attendance and participation are graded components of this course. Please plan to attend both class sessions each week. How is the Attendance and Participation grade calculated (100 points)?

- Attendance: 72 points (3 points for each of the 24 class days between 9/11 and 12/9)
 - Wednesday attendance will be taken with a notecard question
 - Friday attendance will be taken by your participation in the team activity
- Participation: 28 points
 - I understand not everyone feels comfortable participating verbally in class. These participation points can be earned in class, as well as via the Discussion Forum on Canvas.

Points will not be deducted for excused absences. Illness and emergencies happen. Please do not come to class sick, let me know as soon as possible via email and I will work with you.

ASSIGNMENTS

Grades will be based on a total 700 possible points that you will earn through attendance, participation, and completion of several team based and individual assignments. Full descriptions of each assignment will be available on the course Canvas website. Unless specified otherwise, assignments must be submitted via Canvas.

Assignments	Points Possible	Due at 5pm CT
1. Introductory survey and slide for teamwork	50 points	9/16
2. Team work: Teams will be a maximum of five people and randomly assigned by the instructor for each assignment. The deliverable will be a set of slides that will be graded as pass/fail (25-points) as well as a peer-review survey completed by each member of the team before the assignment deadline (25-points).	Total 200 points	
○ Use the UT Library services to identify a recent study published in 2023-24 that interests your team, and then fill out a set of slides describing the study (e.g., technology, participants, concepts, research questions).	50 points	9/23
○ Describe how a theoretical concept was operationalized into a set of procedures, measures, and limitations for a specific study.	50 points	10/7
○ Imagine the 2-3 research questions that a study team might pursue next, given their reported findings. Use the UT Library Services to identify 2-3 recent studies related to your follow up research questions.	50 points	10/28
○ Communicating results and implications: What are examples of well communicated results? What results are less clear, if not confusing? What (if any) discussion points feel less connected to the study findings?	50 points	11/11
3. Study proposal (completed individually): How would you extend a study to explore new questions? In doing so, what are the possible ethical, legal, and social implications (ELISs) to consider? The study proposal must be turned in as a PDF file, written in Arial at a 10-point font setting with 1-inch margins on all sides, and following the UT Austin institutional review board (IRB) template structure. The IRB proposal template will be posted on Canvas.	100 points	11/22

Assignments	Points Possible	Due at 5pm CT
4. Peer Review: How might your fellow classmate improve their study proposal? Each review will be completed via a Qualtrics survey.	50 points for each (100 points total)	12/9
5. Resubmission of study proposal: The resubmission will include the updated study proposal (50-points), as well as a change log document (50-points), and a response to the peer-reviewers (50-points). All three documents will be submitted as PDF files.	150 points	12/16
6. Attendance and Participation	100 points	12/12

+/- GRADING POLICY

+/- grades will be used for the final class grade.

GRADE BREAKS

Grade	Cutoff
A	94%
A-	90%
B+	87%
B	84%
B-	80%
C+	77%
C	74%
C-	70%
D+	67%
D	64%
D-	60%
F	<60%

COURSE OUTLINE

All lecture slides, assignments, readings, and rubrics as well as other essential information will be on the Canvas website at utexas.instructure.com. Check Canvas regularly. Changes to the schedule may be made at my discretion if circumstances require. I will announce any such changes in class and will also communicate them via a Canvas announcement. It is your responsibility to note these changes when announced, and I will do my best to ensure that you are notified of changes as soon as possible.

Week	Monday	Class Topic	Assignments Due
1.	8/26	Intro: What is research?	8/29: Last day to add a class without permission
2.	9/2	Our discipline: What distinguishes Informatics research from other academic disciplines?	
3.	9/9	Human-subject protections, Peer-review, and searching for literature: What are the institutional practices for evaluating research?	9/11: Last day to drop a class without permission Assignment Due 9/16 (Monday, 5:00 PM CT): Introductory survey and slide for team work
4.	9/16	Study purpose, research questions, and hypotheses: How might we analyze the scope of a study?	

Week	Monday	Class Topic	Assignments Due
5.	9/23	Operationalizing: How are theoretical concepts translated into study procedures and measures?	Assignment Due 9/23 (Monday, 5:00 PM CT): Use the UT Library services to identify a study published in 2023-24 that interests your team.
6.	9/30	Caring for people: What steps can researchers take to demonstrate respect for participants (and other stakeholders)?	
7.	10/7	Information systems in research: How have researchers incorporated technology into study procedures?	Assignment Due 10/7 (Monday, 5:00 PM CT): Describe how a specific concept was operationalized into a set of procedures, measures, and limitations for a study.
8.	10/14	Investigating online social platforms: How have researchers approached online communities and social platforms as sites for research?	
9.	10/21	Investigating not-yet-possible technology: How have researchers studied the possible ethical, legal, and social implications (ELSI) associated with design futures?	
10.	10/28	Data collection and analysis: What steps do researchers take to choose and evaluate analysis methods?	Assignment Due 10/28 (Monday, 5:00 PM CT): Imagine the 2-3 research questions that a study team might pursue next, given their findings. Use the UT Library Services to identify recent literature related to your follow up questions.
11.	11/4	Interpreting results (and not overreaching): What steps can researchers take to identify study limitations?	
12.	11/11	Research ethics: What steps can researchers take to identify possible ELSIs associated with a study?	Due 11/11 (Monday, 5:00 PM CT): What are examples of well communicated results? What results are less clear, if not confusing?
13.	11/18	Returning results: How might researchers communicate study findings back to participants and the public at large?	Due 11/22 (Friday, 5:00 PM CT) Study proposal: What steps are necessary to extend a study to explore new questions?
14.	11/25	Fall break / Thanksgiving; no classes held.	
15.	12/2	What does Informatics research look like outside of academia?	
16.	12/9	No formal class this week	Due 12/9 (Monday, 5:00 PM CT): Peer Review: How might your fellow classmate improve their plan to extend a study?
Study Days 12/10 & 12/11		Remember to take time to sleep, exercise, eat well, and spend time with friends.	
Final Exams 12/12 – 12/16		Assignment Due 12/16: Resubmit study proposal, provide a change log, and update your response to the peer review feedback.	

COMMUNITY AND BELONGING

It is my intent that students from all backgrounds and perspectives be well served by this course, that students' learning needs be addressed, and that the lived experiences and perspectives students bring to this class can be comfortably expressed and viewed as a resource to all students. To do so, many of the course activities and assignments will involve small teams that will rotate throughout the semester, so that students are able to meet and gain experience working with each other. Each team assignment will include a peer-review survey, which should be used to provide me with feedback about the team dynamics.

NAMES AND PRONOUNS

Class rosters are provided to the instructor with the student's legal name, unless they have added a "chosen name" with the registrar's office via the following link: https://utdirect.utexas.edu/apps/ais/chosen_name/

I will gladly honor your request to address you by a name that is different from what appears on the official roster, and by the pronouns you use (she/he/they/ze, etc.). Please advise me of any changes early in the semester so that I may make appropriate updates to my records. For instructions on how to add your pronouns to Canvas, visit the following link: <https://utexas.instructure.com/courses/633028/pages/profile-pronouns>.

UNIVERSITY POLICIES AND RESOURCES

For a list of important university policies and helpful resources that you may need as you engage with and navigate your courses and the university, see the [University Policies and Resources Students Canvas](#) page. The page includes the language of the University Honor Code, Title IX legal requirements for Texas employees, and information about how to receive support through the office of Disability & Access.

SHARING OF COURSE MATERIALS IS PROHIBITED

No materials used in this class, including, but not limited to, lecture hand-outs, videos, assessments (quizzes, exams, papers, projects, homework assignments), in-class materials, review sheets, and additional problem sets, may be shared online or with anyone outside of the class without my explicit written permission. Unauthorized sharing of materials may facilitate cheating. The University is aware of the sites used for sharing materials, and any materials found online that are associated with you, or any suspected unauthorized sharing of materials, will be reported to [Student Conduct and Academic Integrity](#) in the Office of the Dean of Students. These reports can result in initiation of the student conduct process and include charge(s) for academic misconduct, potentially resulting in sanctions, including a grade impact.

CONFIDENTIALITY OF CLASS RECORDINGS

Class recordings are reserved only for students in this class for educational purposes and are protected under FERPA. The recordings should not be shared outside the class in any form. Violation of this restriction by a student could lead to Student Misconduct proceedings.

ARTIFICIAL INTELLIGENCE

The creation of artificial intelligence tools for widespread use is an exciting innovation. These tools have both appropriate and inappropriate uses in classwork. The use of artificial intelligence tools (such as ChatGPT) in this class shall be permitted on a limited basis. You will be informed as to the assignments for which AI may be utilized. You are also welcome to seek my prior-approval to use AI writing tools on any assignment. In either instance, AI writing tools should be used with caution and proper citation, as the use of AI should be properly attributed. Using AI writing tools without my permission or authorization, or failing to properly cite AI even where permitted, shall constitute a violation of UT Austin's Institutional Rules on academic integrity.

LATE WORK AND MAKING UP MISSED WORK

Please submit assignments on time. If you become ill or experience an emergency, please let me know as soon as possible. Once the due date for an assignment has passed, it is more difficult to accept / grade late assignments, but I definitely want to know if something is going on so that I can work with you to give you the best opportunity to succeed in the class.

ABSENCES

Absences happen. If you need to miss class, please follow these steps:

1. Prior to class, email me via Canvas to let me know. These are not emails that I respond to (unless you ask a question), but they are emails I save to review when I calculate attendance/participation grades for excused absences.
2. Review the slides for class (posted on Canvas).
3. Ask your team and other classmates to get a summary and notes on any lessons you miss.

If you find there are topics that we covered while you were gone that raise questions, please come by during office hours or schedule a meeting to discuss. Email specific questions you have in advance so that we can make the most of our time.

RELIGIOUS HOLY DAYS

By [UT Austin policy](#), you must notify me of your pending absence for a religious holy day as far in advance as possible of the date of observance. If you must miss a class, an examination, a work assignment, or a project in order to observe a religious holy day, you will be given an opportunity to complete the missed work within a reasonable time after the absence.

ACADEMIC INTEGRITY EXPECTATIONS

Students who violate University rules on academic misconduct are subject to the student conduct process. A student found responsible for academic misconduct may be assigned both a status sanction and a grade impact for the course. The grade impact could range from a zero on the assignment in question up to a failing grade in the course. A status sanction can include a written warning, probation, deferred suspension, or dismissal from the University. To learn more about academic integrity standards, tips for avoiding a potential academic misconduct violation, and the overall conduct process, please visit the Student Conduct and Academic Integrity website at: <http://deanofstudents.utexas.edu/conduct>.

COUNSELING AND MENTAL HEALTH CENTER (CMHC)

Students who are struggling for any reason and who believe that it might impact their performance in the course are urged to reach out to Bryce Moffett if they feel comfortable. This will allow her to provide any resources or accommodations that she can. If immediate mental health assistance is needed, call the Counseling and Mental Health Center (CMHC) at 512-471-3515 or you may also contact Bryce Moffett, LCSW (iSchool CARE counselor) at 512-232-4449. Bryce's office is located in FAC18S and she holds drop in Office Hours on Wednesday from 2-3pm. For urgent mental health concerns, please contact the CMHC 24/7 Crisis Line at 512-471-2255.

BASIC NEEDS SECURITY

Any student who faces challenges securing their food or housing and believes this may affect their performance in the course is urged to contact the Dean of Students for support. UT maintains the UT Outpost (<https://deanofstudents.utexas.edu/emergency/utoutpost.php>) which is a free on campus food pantry and career closet. Furthermore, please notify the professor if you are comfortable in doing so. This will enable them to provide any resources that they may possess.

SERVICES FOR STUDENTS WITH DISABILITIES

The university is committed to creating an accessible and inclusive learning environment consistent with university policy as well as federal and state laws. Please let me know if you experience any barriers to learning, so that I can work with you to ensure you have an equal opportunity to participate in this course. If you are a student with a disability, or think you may have a disability and need accommodations, please contact the Services for Students with Disabilities (SSD). Please refer to SSD's website for more information: <https://disability.utexas.edu/>. If you are already registered with SSD, please deliver your Accommodation Letter to me as soon as possible, so that we can discuss your approved accommodations.

CARRYING OF HANDGUNS ON CAMPUS

Students in this class should be aware of the following university policies related to Texas' Open Carry Law:

- Students in this class who hold a license to carry are asked to [review the university policy regarding campus carry](#).
- Individuals who hold a license to carry are eligible to carry a concealed handgun on campus, including in most outdoor areas, buildings and spaces that are accessible to the public, and in classrooms.
- It is the responsibility of concealed-carry license holders to carry their handguns on or about their person at all times while on campus. Open carry is NOT permitted, meaning that a license holder may not carry a partially or wholly visible handgun on campus premises or on any university driveway, street, sidewalk or walkway, parking lot, parking garage, or other parking area.