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**Office Hours:**  
TBD  
or by appointment

## **INFS 399 – SPECIAL TOPICS IN IS - UX & BIOMETRICS**

Spring 2025  
MWF 11:30 – 12:20  
Schreiber 302

### **Prerequisites:**

- Junior and senior students
- Information Systems & Analytics (IS&A) Major, IS&A Minor, or Business Honors
- minimum GPA of 3.5 and
- completed INFS 346 Database course (or instructor permission)

### **Course Description**

This experiential and research-focused course explores the newest developments in the field of user experience (UX) & biometrics (e.g., collecting and analyzing human behavior data through eye tracking, galvanic skin response, facial expression, voice, and brain activity) and introduces various methods used in cutting-edge research laboratories to study human insight in business contexts. Theoretical UX concepts and practical skills in biometric data collection and analysis will be explored using the latest academic research and hands-on work with biometric hardware, software, and data. Students will complete and present the original human subject research project (team-based and with IRB approval) using biometric trackers and biosensors (see [examples](#)). The research project will be documented in the format of a full academic article.

### **Course Overview**

This course includes lectures, homework assignments, quizzes, lab work, and research projects (write-ups and presentations).

### **Course Objectives:**

Upon completing this course, students will be able to:

- Verbalize the value of UX in design.
- Describe the value of human insights through biometric data.
- Critically evaluate biometric data-focused research studies.
- Design and implement a biometric data-focused research study
- Analyze and interpret human insights through fundamental biometric data such as gaze, facial expressions, and galvanic skin response (GSR)
- Be proficient in working with leading biometric trackers/biosensors and software platform
- Write a full empirical (biometric data) academic article.

### **Recommended Textbooks/Materials**

All reading materials will be provided by the instructor and posted on Sakai.

**Class Format:** In person and in class with days dedicated to lab work and research projects.

**Technology Information:**

Sakai - You will use Sakai to access instructional materials, submit assignments, and participate in weekly discussions. For step-by-step instructions on using Sakai visit the Sakai Student Guide. You can access the Sakai Student Guide by selecting Help from the tool menu in any Sakai site. For additional Sakai assistance, contact the Help Desk at helpdesk@luc.edu or 773-508-4487.

iMotions– You will use UX&B lab's equipment (trackers and biosensors) and software (iMotions) to set up your research project, collect data, and conduct initial data analysis

Additional analytical and statistical tools (free) may be used to complete the data analysis portion of the research project.

**Course Requirements and Grading Criteria**

<b>1. Research Project (Team-based)</b>	<b>450</b>	<b>45%</b>
Project Proposal	25	
IRB Documentation	75	
Literature Review	75	
Final presentation	75	
Final write-up	150	
Submission to the Undergraduate Research Symposium	50	
<b>2. Academic Manuscript Presentations (Individual)</b>	<b>100</b>	<b>10%</b>
Presentation	50	
Presentation Check-Your-Knowledge	50	
<b>3. Individual</b>	<b>450</b>	<b>45%</b>
Project Proposal	30	
Biometric Writeup/Blog post	50	
Quiz (2)	200	
Homework (4)	120	
Engaged Learning Reflection	50	
<b>Total</b>	<b>1000</b>	<b>100%</b>

**Course Grading Scale**

A	920 and above	C+	780 - 799
A–	900 - 919	C	700 - 779
B+	880 - 899	C–	680 - 699
B	820 - 879	D+	660 - 679
B–	800 - 819	D	600 - 659
		F	below 600

**Research Project (45%):**

The semester-long group-based original research project to gain human insights through biometrics is integral to this course. Each group should have up to three students. Form your group as soon as

possible (see syllabus schedule). If you need help finding a group, don't hesitate to contact the instructor. Every project assignment should be submitted by one student per group via Sakai. Project-related assignments will include proposal, IRB documentation, literature review, final presentation, and the final research write-up. Each team must submit their research to the Undergraduate Research Symposium.

### **Academic Manuscript Presentations (10%):**

Research papers will be posted in Sakai each week (check the schedule for the starting week). Presentations will require a summary and a synopsis of the merits and weaknesses. It should include an overview of theory & literature, a description of the experimental setup, and a presentation of the research story and results. Motivated by the article, the presentation is to include 1) a suggestion/description of another potential study and 2) a discussion of any ethical concerns. A small quiz will precede each manuscript presentation to ensure proper preparation for discussion.

### **Quizzes (20%)**

Two quizzes (administered viz Sakai) will evaluate your knowledge of course material.

### **HW Assignments (12%):**

There are four individual homework assignments. HW assignments are due before midnight on the due date. Most HW assignments will consist of hands-on work with the iMotions Online platform.

### **Loyola Engaged Learning Reflection (5%)**

Referencing Loyola's mission statement, students are required to compose a written reflection (at least two pages, double-spaced) that connects their in-class and out-of-class experience by responding to the following:

- How did you connect your in-class and out-of-class Engaged Learning experiences?
- How did your Engaged Learning experience help you connect to the University's mission?
- How did the Engaged Learning experience in this course affect your personal, intellectual, civic, and/or professional development

### **Other individual assignments (8%):**

Each student will submit an individual study proposal and a biometric research write-up in blog format. The requirements will be posted on Sakai.

### **Final Exam:** Final Group Project Presentations (Video) & Write-up by **TBD**

**Writing Assignments:** As this is a Writing Intensive course, significant writing is expected. This will be a major focus of the course. The writing assignments listed below will each contribute towards the writing requirement for this course. In addition to the final version of each paper, completing these assignments will require activities such as preliminary writing, drafting, and peer-review exercises. Detailed expectations for each assignment will be provided as the semester progresses. Please see the calendar below for assignment due dates.

- Project Proposal Assignment: Each student will write a proposal for their group project. Each group member will write their own proposal, which the group will use to inform its final choice of project (2.5% of grade).
- Biometric Research writing assignment - each student will write one blog post for the research lab focused on the latest academic article or biometric technology change (1000-1500 words) (5% of grade)

- IRB proposal: Each group will submit its own IRB proposal documents for approval. Each student is responsible for contributing (7% of grade).
- Group Project Final Manuscript: After completing your group project, you will write a final manuscript. The manuscript will be completed together with the group, with **each student responsible for contributing to the manuscript**. The report should be approximately 30-40 pages long and should include an abstract and introduction, literature review, hypothesis building, methodology, data analysis, and discussion. This will synthesize the work you have been doing on the group project throughout the semester (15% of your grade).
- Each student will complete a final reflection assignment. See the section above for a more detailed description (5% of your grade).

**Late submission policy:** An assignment can be submitted up to 48 hours after the due date but will receive a 20%-point deduction.

**Additional notes:**

- Check your grades often in the gradebook on Sakai.
- If you are experiencing any problems, do not hesitate to schedule an appointment. Also, feel free to reach out to get advice on follow-up classes, discuss career choices, or simply introduce yourself.

**Quinlan School of Business Policies:**

**Attendance**

Class attendance and participation are fundamental components of learning, so punctual attendance at all classes for the entire class meeting period is expected of Quinlan students.

**University Privacy Statement**

Assuring privacy among faculty and students engaged in online and face-to-face instructional activities helps promote open and robust conversations and mitigates concerns that comments made within the context of the class will be shared beyond the classroom. As such, recordings of instructional activities occurring in online or face-to-face classes may be used solely for internal class purposes by the faculty member and students registered for the course, and only during the period in which the course is offered. Students will be informed of such recordings by a statement in the syllabus for the course in which they will be recorded. Instructors who wish to make subsequent use of recordings that include student activity may do so only with informed written consent of the students involved or if all student activity is removed from the recording. Recordings including student activity that have been initiated by the instructor may be retained by the instructor only for individual use.

**Make-Up Examinations**

Loyola University academic policy provides that tests or examinations may be given during the semester or summer sessions as often as deemed advisable by the instructor. Because Quinlan faculty believe examinations represent a critical component of student learning, required examinations should be taken during the regularly scheduled class period. **Make-up examinations are discouraged.** Exceptions may be granted only by the faculty member or department chair, and only for unavoidable circumstances (illness verified by a signed physician's note, participation in intercollegiate athletic events, subpoenas, jury duty, military service, bereavement, or religious

observance). A make-up final examination may be scheduled only with the permission of the appropriate Quinlan Assistant or Associate Dean.

For a student with a documented special testing need, please consult University policy concerning use of the testing center in Sullivan Center at Lake Shore Campus.

### **Academic Integrity**

All members of the Quinlan School shall refrain from academic dishonesty and misconduct in all forms, including plagiarism, cheating, misrepresentation, fabrication, and falsehood. Plagiarism or cheating on the part of the student in individual or group academic work or in examination behavior will result minimally in the instructor assigning the grade of "F" for the assignment or examination. In addition, all instances of academic dishonesty must be reported to the chairperson of the department involved.

For further information about expectations for academic integrity and sanctions for violations, consult the complete Quinlan School of Business Honor Code and Statement of Academic Integrity on the Quinlan website:

<http://luc.edu/media/lucedu/quinlan-graduate/pdfs/Honor-Code-Quinlan-July2012.pdf>

### **Notes:**

This class may occasionally deviate from the stated course outline below.

The instructor reserves the right to make changes to the course syllabus as needed.

Any issue not described in this syllabus will be resolved at the instructor's sole discretion.

WEEK NO	DATES	TOPICS	RESEARCH MILESTONES	QUIZ/ EXAM	ASSIGNMENTS
WEEK 1	Jan 13 - 17	Course Overview, Introduction to UX & Human Subject Research	<b>Project Teams Formed</b>		
WEEK 2	Jan 18 - 24	UX data & Introduction to Biometrics	No class on 1/20 MLK		<b>HW 1 (Human Subject Certification)</b> <b>Individual Project Proposals</b>
WEEK 3	Jan 25 – Jan 31	Study Design & Biometric Workshop/iMotions	<b>Project Proposal Completed</b>		<b>Project Proposal</b>
WEEK 4	Feb 1 – Feb 7	Eyetracking in UX research	<b>IRB Application Completed</b>		<b>IRB Documentation</b>
WEEK 5	Feb 8 – Feb 14	Eyetracking in UX research		<b>Quiz 1</b>	<b>HW 2</b> <b>Paper Presentations</b> <b>Blog posts/write-ups</b>
WEEK 6	Feb 15-21-	Eyetracking in UX research			<b>HW 3</b> <b>Paper Presentations</b> <b>Blog posts/write-ups</b>
WEEK 7	Feb 22 – Feb 28	Facial Expression in UX research	<b>Literature Review Completed</b>		<b>Literature Review (write-up)</b>
WEEK 8	Mar 1 - Mar 7	<b>SPRING BREAK</b>			
WEEK 9	Mar 8 – Mar 14-	Facial Expression in UX research			<b>HW 4,</b> <b>Paper Presentations</b> <b>Blog posts/write-ups</b>
WEEK 10	Mar 15 – Mar 21	Facial Expression/GSR in UX research	<b>Data Collection Completed</b>		<b>Blog posts/write-ups</b>
WEEK 11	Mar 22 – Mar-28	GSR in UX research			<b>Blog posts/write-ups</b>
WEEK 12	Mar 29 – Apr 04	<b>No class on 4/1</b> GSR in UX research	<b>Data Analysis Completed</b>		<b>Paper Presentation</b>
WEEK 13	Apr 05 – Apr 11	Voice in UX research	<b>Undergraduate Research Symposium</b>		<b>Paper Presentation</b>
WEEK 14	Apr 12 – Apr 17	Brain (EEG, fMRI) in UX research		<b>Quiz 2</b>	<b>Paper Presentation</b>
	Apr 18- Apr 21	<b>EASTER BREAK</b>			
WEEK 15	Apr 22 – Apr 25	Ethics/Research Work/Reflection			<b>Engaged Learning Reflection</b>

**Final Project – Research Write-up and Presentations submit by TBD**

