

CLASS LOCATION: 101 Little Hall.

CLASS MEETING TIME(S): Tuesday: Period 4 (10:40 AM – 11:30 AM).

Thursday: Periods 4 and 5 (11:40 AM -12:35 PM).

CLASS MODALITY:

- We will have synchronous weekly meetings on Tuesday and Thursday. The instructional material will be posted online in a weekly manner and addressed/worked/discussed in these meetings.
- Students are encouraged to work (asynchronously) on the instructional material prior to our meetings.

LEADING INSTRUCTOR: Mr. Pedro Guillermo Feijóo-García, M.Sc.

- Office location: CSE Building E520.
- Email address: pfeijoogarcia@ufl.edu (please use eLearning to contact me).

TAs and Graders: TBD.

OFFICE HOURS: TBD.

**Office hours will be held online via Zoom: <https://ufl.zoom.us/my/pfeijoogarcia>

COURSE WEBSITE: available on [eLearning HCI Spring 2023](#).

COURSE COMMUNICATIONS: We will have a Discord channel for the course. Questions and Answer will be provided through Discord (mainly) and eLearning (i.e., Canvas).

REQUIRED TEXTBOOK

No textbook is required for this course. Readings in the form of textbook chapters, academic papers, and online resources will be posted to the course website. Students will be responsible for accessing the readings and downloading any relevant links provided.

COURSE DESCRIPTION

Human-Computer Interaction is a course designed for graduate students who wish to learn concepts and trends in designing and evaluating human-centered computer

interfaces. The course will help students gain technical skills, as well as competencies in the design, analysis, and evaluation of human-centered interfaces for different domains.

LEARNING OBJECTIVES

By the end of this course, students will:

- be able to characterize and critique core concepts and methods of human-computer interaction
- be able to design and build human-computer interfaces.
- be able to evaluate human-computer interfaces.
- be able to reflect on human-computer interaction research.

INSTRUCTIONAL METHODS

- Weekly lectures, student-created artifacts (video-tutorials and mental models), homework assignments, projects, and exams. Also, we will use co-evaluations strategies throughout the course, which are proposed to enhance students' learning outcomes.
- Students are encouraged to work (asynchronously) on the instructional material prior to our meetings.

PROGRAMMING

This course involves group assignments, and individual requirements will vary according to each project. Students are expected to be able to independently learn the appropriate technologies or development skills as needed for their projects.

Students should be confident and experienced with independently learning new tools or programming libraries. You will be required to implement interactive systems, hence programming at a Data Structures level is highly expected.

PREREQUISITES

COP 3530, and any other programming course (COP 2800, COP 3275, or COP 3229).

TENTATIVE CALENDAR (Subject to change*)

Week	Tuesday Period 4	Thursday Periods 4-5
1	01/10/2023 Welcome session.	01/12/2023 Introduction to HCI A history of interfaces
2	01/17/2023 Project 1 Overview Introduction to User-Centered Design. The Deep Dive.	01/19/2023 Weeks 1-2 papers User-centered design: Brainstorming techniques & affinity diagrams.
3	01/24/2023 User-centered design: Designing for interaction.	01/26/2023 User-centered design: Preparing for User Research. Focus groups, interviews, and design probes.
4	01/31/2023 User-centered design: User needs, personas, scenarios, and storyboards.	02/02/2023 Weeks 3-4 papers User-centered design: Information Architecture, Wireframing, and Interactive Prototyping.
5	02/07/2023 Project 1 Poster Fair (First Session).	02/09/2023 Project 1 Poster Fair (Second Session).
6	02/14/2023 Project 2 Overview. Formal models in HCI (P1).	02/16/2023 Weeks 5-6 papers Formal models in HCI (P2).
7	02/21/2023 Perception and Attention.	02/23/2023 Situating and distributed Cognition. Common Ground.

8	02/28/2023 Plans and context	03/02/2023 Weeks 7-8 papers Evaluation of User Interfaces Study Design in HCI.
9	03/07/2023 Quantitative methods in HCI (1)	03/09/2023 Quantitative methods in HCI (2)
10	03/14/2023 Spring break	03/16/2023 Spring break
11	03/21/2023 Project 2 Poster Fair (First Session). Project 3 Overview.	03/23/2023 Weeks 9-10 papers Project 2 Poster Fair (First Session).
12	03/28/2023 Qualitative methods in HCI.	03/30/2023 Weeks 11-12 papers Introduction to Natural User Interfaces: Conversational Systems (Dialogflow).
13	04/04/2023 Ethics and HCI.	04/06/2023 Multimodal interfaces. Embodied interfaces: virtual humans.
14	04/11/2023 Accessibility.	04/13/2023 Weeks 13-14 papers Data visualization.
15	04/18/2023 Project 3 Poster Fair (First Session).	04/20/2023 Project 3 Poster Fair (Second Session).
16	04/25/2023 Class wrap-up.	04/27/2023 Weeks 15-16 papers Reading day

RECOMMENDED LITERATURE

1. Ko, A. J., Wobbrock, J. O., & Whitmire, E. (2022). User Interface Software and Technology. <https://faculty.washington.edu/ajko/books/user-interface-software-and-technology/>, retrieved 01/04/2023.
2. MacKenzie, I. S. (2013). Human-computer interaction: An empirical research perspective.
3. Norman, D. (2013). The design of everyday things: Revised and expanded edition. Basic books.
4. Ko, A. J. (2022). *Design Methods*. <https://faculty.washington.edu/ajko/books/design-methods/>, retrieved 01/04/2023.
5. Cohen, M. H., Cohen, M. H., Giangola, J. P., & Balogh, J. (2004). *Voice user interface design*. Addison-Wesley Professional.
6. Jurafsky, D., & Martin, J. H. (2018). Speech and language processing (draft). Preparation. Available from: <https://web.stanford.edu/~jurafsky/slp3>.

COURSE POLICIES

MAKE-UP POLICY: Consistent with university policies that can be found at: <https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx>

ATTENDANCE: Students are expected to come to class and **encouraged to do so in-person**. We will have group activities and synchronous lectures that are designed to foster discussion and learning outcomes. In the case that a student needs to miss a session, they should contact the instructor at least two days prior to the session that is going to be missed. **If a student is sick or will need to be absent for a significant period**, please contact the instructor to work out a way to catch up. Providing the instructor with advanced notice (at least 2 weeks) is expected. The class format will offer students to join lectures via Zoom: <https://ufl.zoom.us/my/pfeijoogarcia>. Nevertheless, activities are expected to be in-person during the semester, unless otherwise stated.

LATE POLICY: Students can submit an assignment one day late (24 hours after the deadline) to earn up to 50% of the assignment total; otherwise, a score of zero will be earned. *This late policy does not apply to projects.*

MAKE-UPS: Students who contact the professor before the due date with appropriate requests for extension and/or makeup assignments may be given an additional amount of time to make up late assignments equal to the time lost due to unforeseen circumstances.

FINAL EXAM: There will not be a final exam.

COURSE TECHNOLOGY: This course will be conducted using the Canvas Learning Management System and Discord. Other technologies may be introduced and provided during the semester according to the topics covered in class.

INCOMPLETES: To be considered for an incomplete, the student must 1) let the instructor know in advance that they are seeking an incomplete, and 2) provide documentation to support the request.

Requirements for class attendance and make-up exams, assignments, and other work are consistent with university policies that can be found at:

<https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx>

UF POLICIES

UNIVERSITY POLICY ON ACCOMMODATING STUDENTS WITH DISABILITIES:

Students requesting accommodation for disabilities must first register with the Dean of Students Office (<http://www.dso.ufl.edu/drc/>). The Dean of Students Office will provide documentation to the student who must then provide this documentation to the instructor when requesting accommodation. You must submit this documentation prior to submitting assignments or taking the quizzes or exams. Accommodations are not retroactive; therefore, students should contact the office as soon as possible in the term for which they are seeking accommodations.

UNIVERSITY POLICY ON ACADEMIC MISCONDUCT: Academic honesty and integrity are fundamental values of the University community. Students should be sure that they understand the UF Student Honor Code at

<https://www.dso.ufl.edu/sccr/process/student-conduct-honor-code/>

****ETIQUETTE: COMMUNICATION COURTESY**:** All members of the class are expected to follow rules of common courtesy in all email messages, threaded discussions and chats. [Describe what is expected and what will occur as a result of improper behavior]

<http://teach.ufl.edu/wpcontent/uploads/2012/08/NetiquetteGuideforOnlineCourses.pdf>

GETTING HELP

For issues with technical difficulties for E-learning in Canvas, please contact the UF Computing Help Desk at:

- helpdesk@ufl.edu
- (352) 392-HELP - select option 2
- <https://request.it.ufl.edu>

** Any requests for make-ups due to technical issues MUST be accompanied by the ticket number received from LSS when the problem was reported to them. The ticket number will document the time and date of the problem. You MUST e-mail your instructor within 24 hours of the technical difficulty if you wish to request a make-up.

Other resources are available at <http://www.distance.ufl.edu/getting-help> for:

- Counseling and Wellness resources
- Disability resources
- Resources for handling student concerns and complaints
- Library Help Desk support

Should you have any complaints with your experience in this course please visit <http://www.distance.ufl.edu/student-complaints> to submit a complaint.

GRADING POLICIES

EVALUATION WEIGHTS:

- | | |
|-----------------------------|-----|
| • Projects (x3): | 60% |
| • Assignments (variable): | 25% |
| • Participation (variable): | 15% |

PROJECTS: Students will work in teams to complete a semester-long project involving the design, development, and/or evaluation of Human-computer systems. Projects are expected to be designed and presented from the context of HCI topics, methods, and theories covered in the course. More details on project concepts and

expectations will be given in class. Unless otherwise stated, each team is **expected** to work together to produce a single deliverable.

ASSIGNMENTS: Assignments will be described as the course progresses. Reading summaries fall under this category. Assignments may include in-class activities as well as out-of-class work. Quizzes fall under in-class activities. Unless otherwise stated, homework must be submitted before class on the given deadline to be eligible for full credit.

PARTICIPATION: During the semester, students will be asked to take part as reviewers of their peers' work: e.g., projects' presentations, reading summaries and mental maps, etc. Participation points will be granted or deducted **based on the students' attendance and contribution to those activities.**

GRADING SCALE: A (100-93), A-(92-90), B+(89-87), B (86-83), B- (82-80), C+ (79-77), C (76-73), C- (72-70), D+ (69-67), D (66-63), D -(62-60), F (59-0)

Grades might be curved

"A 'C' will not be a qualifying grade for critical tracking courses. In order to graduate, students must have an overall GPA and an upper-division GPA of 2.0 or better (C or better). Note: a C- average is equivalent to a GPA of 1.67, and therefore, it does not satisfy this graduation requirement. For more information on grades and grading policies, please visit:

<https://catalog.ufl.edu/ugrad/current/regulations/info/grades.asp>"

EXTRA CREDIT: Opportunities to earn extra credit are not promised, but the instructor may opt to offer supplemental assignments for extra credit. Details will be determined per assignment and must be agreed upon by both the instructor and the student.

***Disclaimer:** This syllabus represents my current plans and objectives. As we go through the semester, those plans may need to change to enhance the class learning opportunity. Such changes, communicated clearly, are not unusual and should be expected.

READING LIST

- **Weeks 1 – 2:**

1. Norman, D. A. (1992). Design principles for cognitive artifacts. *Research in Engineering Design*, 4(1), 43-50.

- **Weeks 3 – 4:**

1. Timothy Neate, Aikaterini Bourazeri, Abi Roper, Simone Stumpf, and Stephanie Wilson. 2019. Co-Created Personas: Engaging and Empowering Users with Diverse Needs Within the Design Process. In Proceedings of the 2019 CHI Conference on Human Factors in Computing Systems (CHI '19). Association for Computing Machinery, New York, NY, USA, Paper 650, 1–12. <https://doi.org/10.1145/3290605.3300880>
2. Nicola Marsden and Monika Pröbster. 2019. Personas and Identity: Looking at Multiple Identities to Inform the Construction of Personas. In Proceedings of the 2019 CHI Conference on Human Factors in Computing Systems (CHI '19). Association for Computing Machinery, New York, NY, USA, Paper 335, 1–14. <https://doi.org/10.1145/3290605.3300565>
3. Sabah Zdanowska and Alex S Taylor. 2022. A study of UX practitioners roles in designing real-world, enterprise ML systems. In Proceedings of the 2022 CHI Conference on Human Factors in Computing Systems (CHI '22). Association for Computing Machinery, New York, NY, USA, Article 531, 1–15. <https://doi.org/10.1145/3491102.3517607>
4. Shahtab Wahid, D. Scott McCrickard, Joseph DeGol, Nina Elias, and Steve Harrison. 2011. Don't drop it! pick it up and storyboard. In Proceedings of the SIGCHI Conference on Human Factors in Computing Systems (CHI '11). Association for Computing Machinery, New York, NY, USA, 1571–1580. <https://doi.org/10.1145/1978942.1979171>

- **Weeks 5 – 6:**

1. Cockburn, A., Gutwin, C., & Greenberg, S. (2007, April). A predictive model of menu performance. In *Proceedings of the SIGCHI conference on Human factors in computing systems* (pp. 627-636).
2. MacKenzie, I. S., & Buxton, W. (1992, June). Extending Fitts' law to two-dimensional tasks. In *Proceedings of the SIGCHI conference on Human factors in computing systems* (pp. 219-226).

- **Weeks 7 – 8:**

1. Hollan, J., Hutchins, E., & Kirsh, D. (2000). Distributed cognition: toward a new foundation for human-computer interaction research. *ACM Transactions on Computer-Human Interaction (TOCHI)*, 7(2), 174-196.
2. Vetek, A., & Lemmelä, S. (2011, November). Could a dialog save your life? Analyzing the effects of speech interaction strategies while driving. In *Proceedings of the 13th international conference on multimodal interfaces* (pp. 145-152).

- **Weeks 9 – 10:**

1. Nielsen, J., & Molich, R. (1990). Heuristic evaluation of user interfaces. In *Proceedings of the SIGCHI conference on Human factors in computing systems* (pp. 249-256). ACM.

- **Weeks 11 – 12:**

1. Parviainen, E., & Søndergaard, M. L. J. (2020, April). Experiential qualities of whispering with voice assistants. In *Proceedings of the 2020 CHI Conference on Human Factors in Computing Systems* (pp. 1-13).
2. Luger, E., & Sellen, A. (2016, May). " Like Having a Really Bad PA" The Gulf between User Expectation and Experience of Conversational Agents. In *Proceedings of the 2016 CHI conference on human factors in computing systems* (pp. 5286-5297).
3. Porcheron, M., Fischer, J. E., Reeves, S., & Sharples, S. (2018, April). Voice interfaces in everyday life. In *proceedings of the 2018 CHI conference on human factors in computing systems* (pp. 1-12).

- **Weeks 13 – 14:**

1. Speicher, M., Hall, B. D., & Nebeling, M. (2019, May). What is mixed reality?. In *Proceedings of the 2019 CHI Conference on Human Factors in Computing Systems* (pp. 1-15).
2. Gomes de Siqueira, A., Bhargava, A., Venkatakrisnan, R., & Venkatakrisnan, R. (2021, February). PPCards: Toward Enhancing Electronic Prototyping with Editions of a Card-based Platform. In *Proceedings of the Fifteenth International Conference on Tangible, Embedded, and Embodied Interaction* (pp. 1-11).
3. Zalake, M., de Siqueira, A. G., Vaddiparti, K., Antonenko, P., & Lok, B. (2021, September). Towards Understanding How Virtual Human's Verbal Persuasion Strategies Influence User Intentions To Perform Health Behavior. In *Proceedings of the 21st ACM International Conference on Intelligent Virtual Agents* (pp. 216-223).
4. Joosse, M., Lohse, M., Pérez, J. G., & Evers, V. (2013, May). What you do is who you are: The role of task context in perceived social robot personality. In *2013 IEEE International Conference on Robotics and Automation* (pp. 2134-2139). IEEE.

- **Weeks 15 – 16:**

1. Collins, J., Langlotz, T., & Regenbrecht, H. (2020, November). Virtual Reality in Education: A Case Study on Exploring Immersive Learning for Prisoners. In *2020 IEEE International Symposium on Mixed and Augmented Reality Adjunct (ISMAR-Adjunct)* (pp. 110-115). IEEE.
2. Dhruv Jain, Angela Lin, Rose Guttman, Marcus Amalachandran, Aileen Zeng, Leah Findlater, and Jon Froehlich. 2019. Exploring Sound Awareness in the Home for People who are Deaf or Hard of Hearing. In *Proceedings of the 2019 CHI Conference on Human Factors in Computing Systems (CHI '19)*. Association for Computing Machinery, New York, NY, USA, Paper 94, 1–13. <https://doi.org/10.1145/3290605.3300324>
3. Olle Bälter, Olov Engwall, Anne-Marie Öster, and Hedvig Kjellström. 2005. Wizard-of-Oz test of ARTUR: a computer-based speech training system with articulation correction. In *Proceedings of the 7th international ACM SIGACCESS conference on Computers and accessibility (Assets '05)*. Association for Computing Machinery, New York, NY, USA, 36–43. <https://doi.org/10.1145/1090785.1090795>

4. Reddy, G. R., & Lingaraju, G. M. (2020, November). A Brain-Computer Interface and Augmented Reality Neurofeedback to Treat ADHD: A Virtual Telekinesis Approach. In *2020 IEEE International Symposium on Mixed and Augmented Reality Adjunct (ISMAR-Adjunct)* (pp. 123-128). IEEE.
5. Bickmore, T., Parmar, D., Kimani, E., & Olafsson, S. (2021, September). Diversity Informatics: Reducing Racial and Gender Bias with Virtual Agents. In *Proceedings of the 21st ACM International Conference on Intelligent Virtual Agents* (pp. 25-32).