

New Course Request

Indiana University

Indianapolis Campus

Check Appropriate Boxes: Undergraduate credit Graduate credit Professional credit

1. School/Division Informatics 2. Academic Subject Code INFO-I
3. Course Number 480 (must be cleared with University Enrollment Services) 4. Instructor Faiola
5. Course Title Experience Design and Evaluation of Ubiquitous Computing
 Recommended Abbreviation (Optional) Exp Design & Eval Ubiquitous Comp
(Limited to 32 Characters including spaces)
6. First time this course is to be offered (Semester/Year): Fall 2009
7. Credit Hours: Fixed at 3 or Variable from _____ to _____
8. Is this course to be graded S-F (only)? Yes _____ No x
9. Is variable title approval being requested? Yes _____ No x
10. Course description (not to exceed 50 words) for Bulletin publication: The course focuses on ubiquitous computing and related interface/system design, and user-experience issues. Applications include interactive systems which support natural/gesture/touch-based interactions on devices such as mobile, extra-small-and-large displays, and other non-traditional pervasive technologies. Projects include interaction and evaluative techniques; field observation, contextual inquiry, ethnography, survey/interviews, and cognitive walkthrough.

11. Lecture Contact Hours: Fixed at 3 or Variable from _____ to _____
12. Non-Lecture Contact Hours: Fixed at 0 or Variable from _____ to _____
13. Estimated enrollment: 15-20 of which 0 percent are expected to be graduate students.
14. Frequency of scheduling: once yearly Will this course be required for majors? no
15. Justification for new course: developing coursework for online certificate in HCI
16. Are the necessary reading materials currently available in the appropriate library? yes
17. Please append a complete outline of the proposed course, and indicate instructor (if known), textbooks, and other materials.
18. If this course overlaps with existing courses, please explain with which courses it overlaps and whether this overlap is necessary, desirable, or unimportant.
19. A copy of every new course proposal must be submitted to departments, schools, or divisions in which there may be overlap of the new course with existing courses or areas of strong concern, with instructions that they send comments directly to the originating Curriculum Committee. Please append a list of departments, schools, or divisions thus consulted.

Submitted by:  Date 3/28/09
 Department Informatics Division Director

Approved by:  Date 3/28/09
 Dean Anthony Faiola

 Date _____
 Dean of Graduate School (when required)

 Date _____
 Chancellor/Vice-President

 Date _____
 University Enrollment Services

After School/Division approval, forward the last copy (without attachments) to University Enrollment Services for initial processing, and the remaining four copies and attachments to the Campus Chancellor or Vice-President.

I480
Experience Design and Evaluation of Ubiquitous Computing
Indiana University School of Informatics - IUPUI

Course Info: 3 Credit Hours | Web Only | 0000 | On-Line

Instructor Info: Name:

Contact Info:

Office Hours:

COURSE DESCRIPTION

The course focuses on ubiquitous computing and related interface/system design, and user-experience issues. Applications include interactive systems which support natural/gesture/touch-based interactions on devices such as mobile, extra-small-and-large displays, and other non-traditional pervasive technologies. Projects include interaction and evaluative techniques: field observation, contextual inquiry, ethnography, survey/interviews, and cognitive walkthrough.

Required Textbooks

- **Mobile Interaction Design**
 - Matt Jones and Gary Marsden
 - Wiley
 - ISBN-10: 0470090898 / 13: 978-0470090893

- **Designing the Mobile User Experience**
 - Barbara Ballard
 - Wiley
 - ISBN-10: 0470033614 / 13: 978-0470033616

STATEMENT OF VALUES

- The Mission of IUPUI is to provide for its constituents excellence in Teaching and Learning, Research, Scholarship, Creative Activity, and Civic Engagement. With each of these core activities characterized by: 1) collaboration within and across disciplines and with the community, a commitment to ensuring diversity, and 3) pursuit of best practices. IUPUI's mission is derived from and aligned with the principal components – Communities of Learning, Responsibilities of Excellence, Accountability and Best Practices – of Indiana University's Strategic Directions Charter. IUPUI values the commitment of students to learning; of faculty to the highest standards of teaching, scholarship, and service; and of staff to the highest standards of service. IUPUI recognizes students as partners in learning.

- IUPUI values the opportunities afforded by its location in Indiana's capital city and is committed to serving the needs of its community. Thus, IUPUI students, faculty, and staff are involved in the community, both to provide educational programs and patient care and to apply learning to community needs through service. As a leader in fostering collaborative relationships, IUPUI values collegiality, cooperation, creativity, innovation, and entrepreneurship, as well as honesty, integrity, and support for open inquiry and dissemination of findings. IUPUI is committed to the personal and professional development of its students, faculty, and staff and to continuous improvement of its programs and services.

COURSE OUTCOMES

1. Students will learn basic principles, practices and methods to:
 - Design and evaluate interactive artifacts that enable people to access and interact with information and services in their work, social and everyday lives using beyond-desktop devices and technologies
 - Design and evaluate interfaces that are part of the environment but where there are no obvious controlling devices (and new input mechanisms should be used, such as touch, gesture, voice, direct manipulation).
 - Decide how and in what form to provide contextually-relevant information to people at appropriate times and places to support them while on the move
2. Throughout these knowledge domains, students will acquire specific and practical skills related to:
 - Eliciting and analyzing requirements for non-conventional interaction contexts and interface paradigms
 - Elaborate innovative conceptual designs, and low-fidelity prototypes for early user validation
 - Plan and execute in-depth systematic evaluation of the user experience, through analytical methods, usability testing and on-the-field studies

SPECIAL NOTE TO ONLINE STUDENTS

1. For students who are taking this course online, it is important to note that you are receiving the **same** content as in-class students, with minor variations in content delivery.
2. Because you will not be present during the weekly class discussions and lectures, you will be required to participate in the online forum and listen to the pre-taped lectures using Breeze or other media outlined by the instructor.
3. **All** due dates and requirements related to weekly reading, forum questions, quizzes, and projects are exactly the same as those in-class students.
4. Throughout the descriptions and explanations of course requirements outlined below, the instructor regularly refers to the class time (6 p.m. or other times) as the cut-off or due date and time for quizzes, assignments, etc. **These due dates and times also apply to online students**, even though you are not required to attend class at that time.

COURSE TEXT, READING, and CLASS DISCUSSIONS, QUIZZES, PROJECTS

Assessing Your Comprehension of the Weekly Reading

We will cover approximately one chapter per week from the course texts. Each student should not only read but arrive at a competent understanding of the materials. Three measures will be used to assess learning competency from the weekly readings:

- Weekly quizzes will be given to assess learning and comprehension.
- Weekly discussions, directed by specific questions, will be given in an open class discussion format, either in class or in an online forum. During this time the instructor will challenge student comprehension, while adding practical applications to the theoretical content.
- A final paper and/or project report will be assigned in which students will summarize and integrate theories and project assignments from the semester-long reading assignments.

Supplemental Reading

At times, there are students who desire a greater depth of content (theory/application) pertaining to certain subjects covered throughout the semester, because this HCI foundation course only provides a basic overview of the discipline. As a result, if any student(s) would like supplemental reading in addition to the weekly assigned reading, please let the instructor know the week prior to the assigned reading week. Once the class convenes for its weekly discussion time, that student(s) who requested the supplemental reading will be given a chance to integrate the relevant portions from his/her reading into the discussion. Although supplemental reading assignments can add depth and richness to the weekly discussions, they are not required due to the limitation of time and knowledge level of students who are new to HCI.

COURSE STRUCTURE OVERVIEW

The course structure is composed of four parts:

- Lectures / discussion time (For In-class and Online students)
 - This activity will be covered in the first half of the scheduled in-class time.
 - This activity will be videotaped and/or audio taped and placed online for the Online students to access. This will serve as their lecture.
- Quizzes (For In-class and Online students)
 - This is provided through OnCourse and is available several days before class time.
 - The quiz closes down at 6 p.m. on the day that the in-class time is scheduled.
- Forum (For Online students)
 - This is an interactive tool for students to engage in a dialogue related to each week's readings.
 - This takes the place of the interactive in-class portion of the course
- Projects (For In-class and Online students)
 - The instructor will review project progress of the students in the second half of the in-class time while the students are still available.
 - The instructor will review the online students' work weekly as needed and provide feedback.
 - Both online and in-class students **MUST** submit their work to OnCourse in the Drop Box by 6 p.m. of the in-class course time.

GRADING

Grade Breakdown

Midterm Project*	40%
Final Project*	40%
Quizzes	10%
Class participation (attitude /investment in course)*	10%

* Weekly class preparation or forum assignment tracking

Grade Scale

A+	97 – 100
A	93 – 96.99
A–	90 – 92.99
B+	87 – 89.99
B	83 – 86.99
B–	80 – 82.99
C+	77 – 79.99
C	73 – 76.99
C–	70 – 72.99
D+	67 – 69.99
D	63 – 66.99
D–	60 – 62.99
F	Below 60%

Grade Review at the Midterm: Students will be shown their midterm grades after the midterm project has been evaluated. If students want to see their grades at any other time during the semester, they should contact the Instructor by email and the Instructor will send them the grades by email.

POLICIES for ATTENDANCE & ASSIGNMENT/PROJECT DEADLINES

1. **Missing class WILL impact your grade.** (For in-class students only.) Students are allowed two (excused or unexcused) absences before their grade will be effected. In other words, whether you are sick or have personal problems or issues for missing class, it will amount to the same. Missing class means you do not show for the whole or majority of the session. The grade reduction policy works in this way.
 - On the third missed class time your final grade will drop 5 points (regardless of the reason).
 - On the fourth missed class your final grade will drop 10 points (regardless of the reason), and 5 additional points thereafter for each additional class missed.
2. **Responsible for due dates and related materials:** All weekly due assignments are each student's responsibility. If class is missed, the student is still responsible for the assignment, as well as to find out what was covered in class, e.g., any new assignments or variations to an existing assignment. ALL assignment deadlines are outlined in the syllabus or syllabus supplemental documents provided on OnCourse. Ultimately, each student is responsible for the deadline. Also, weekly assignment deadlines should be adhered to, to insure fairness to all students. For the purpose of maintaining an equal and fair evaluation of each student's work, no student will receive special treatment. As a result, the following rules will apply to this course:
 - All assignments must be submitted through OnCourse at the designated time as stated on the assignment sheet, as communicated via email, or on the syllabus.
 - All assignments (projects) handed in late will be reduced 10 points for every day late (24 hrs. from the due date and time). For example, if the assignment is due at 6PM on the due date and it is post-marked 6:01PM, it will be reduced automatically by 10 points. If the class meets in the class room, students must be ready to hand the assignment in at the start of class time.
 - Incompletes will NOT be issued except under very extreme personal conditions that have been reviewed by the instructor and in some cases in consultation with the Dean's Office.

UNIVERSITY POLICIES (* Does not apply to online students.)

1. **University Attendance Policy:*** Attendance is required. The University regulations state: "Students are expected to be present for every meeting of the classes in which they are enrolled." IUPUI faculty are required to submit to the office of the Registrar a record of student attendance through the semester, on which they will take action if the record conveys a trend of absenteeism. As a result, ATTENDANCE WILL BE TAKEN IN ALL CLASSES. An attendance sheet will be passed out in class for each student to sign their name. If you do not sign your name while in class you will be marked absent. The instructor is not expected to remember who attended when, so signing the sheet while in class is important. Signing the attendance sheet for another student is absolutely prohibited. Any student found doing so will be in violation of university policies on ethics and/or conduct.
2. **Bringing your children to class:** * University Policy states that: "Children are not permitted to attend class with parents, guardians, or childcare providers. This conduct has the effect of unreasonably interfering with an individual's work or academic performance creating an offensive learning environment." "A student must not violate course rules as contained in a course syllabus, which are rationally related to the content of the course or to the enhancement of the learning process in the course." [*Code of Student Rights, Responsibilities, and Conduct, page 29*]
3. **Academic Dishonesty / Integrity / Plagiarism:** Using another student's work on a project or assignment, cheating on a test, or any other form of dishonesty or plagiarism will result in a grade of zero on that assignment and possibly an "F" in the course, and will be referred to the Dean of Students. All students should aspire to high standards of academic honesty. This class encourages cooperation and the exchange of ideas. For further reference, students may see: <http://life.iupui.edu/dos/code.htm>
4. **Values and ethics:** Profanity or derogatory comments about or towards the instructor or any member of the class will NOT be tolerated. Violating this rule will result in a warning and if the offense continues, administrative action will be taken.
5. **Code of Student Rights, Responsibilities and Conduct:** All students are responsible for reading, understanding, and applying the Code of Student Rights, Responsibilities and Conduct of IUPUI. (Students can access www.iupui.edu/code for further information regarding the above points.)
6. **Disabilities Policy:** In compliance with the Americans with Disabilities Act (ADA), all qualified students enrolled in this course are entitled to "reasonable accommodations." Please notify the instructor during the first week of class of any accommodations needed for the course. Students with learning disabilities must provide written verification for this policy to be recognized.

Weekly Schedule & Information

Wks	Quiz # & Chapter Covered M: "Mobile Interaction Design" book U: "Designing for the Mobile User Experience" Book	General Project Activity	Project Stage Due
1			Course introduction and project overview
2	Quiz 1,2 M: Chapter 1, 2	Midterm project: Exploration of technological landscape and application domains for topic selection	Description of the selected topic and definition of the problem space
3	Quiz 3,4 M: Chapter 3, 4	Midterm project: requirements definition	Requirements Specification (stakeholders, users, and goals)
4	Quiz 5 M: Chapter 5	Midterm project: requirements definition	Requirements Specification (scenarios)
5	Quiz 6 U: Chapter 5	Midterm project: design	Design Sketches and Storyboards
6	Quiz 7 U: Chapter 6	Midterm project: prototyping	Low-fidelity Prototype
7	Quiz 8 M: Chapter 6	Midterm project: evaluation	Results from User Experience Evaluation
8	Quiz 9 M: Chapter 7	Midterm project: reporting	Draft Midterm Project Report
9			Mid-term presentation
10		Break	Break (midterm project complete report)
11	Quiz 10 M: Chapter 8	Final project: design iteration	Re-design of low-fidelity prototype with incorporated changes from user's feedback
12	Quiz 11 M: Chapter 9	Final project: advanced prototyping	Advanced Interactive Prototype (electronic or paper-simulated)
13	Quiz 12 M: Chapter 10	Final project: advanced prototyping	Advanced Interactive Prototype (electronic or paper-simulated)
14	Quiz 13 M: Chapter 11	Final project: evaluation	Results from User Experience Evaluation
15		Final project: reporting	Draft Final Project Report
16	NONE		Final presentation
17	NONE	Final Report Due	Final Product & Report Due (Due by Midnight TODAY)

ⁱ Examples of demonstrations of emerging ubiquitous paradigms:
<http://www.youtube.com/watch?v=K197cqMFreg>
<http://www.youtube.com/watch?v=Soox8s4OQU>
<http://www.youtube.com/watch?v=IBS6cq70vJM>
http://www.youtube.com/watch?v=5_72UPq12ME&feature=channel