



**FLORIDA INTERNATIONAL UNIVERSITY
UNIVERSITY CURRICULUM COMMITTEE**
Proposal for a New Course

DO NOT TYPE IN THIS BOX

Bulletin # : 6

Academic Year : 2015-16

1. School/College Engineering and Computing
Div./Dept. in Which Taught School of Computing and Information Sciences
2.

<u>CEN</u>	<u>4</u>	<u>XXX</u>	<u>3</u>
Alpha Prefix	1st Digit	Last 3 Digits	Cr. Hrs.

CIP Code (Leave this blank): _____
3. Grading Method (select one): Graded Pass/Fail
- 4a. Course Title Human-Computer Interaction
- b. Abbreviated course Title (for computer class schedules, transcripts) HCI for CS
LIMITED TO 25 Characters (including spaces)
5. Statewide Course Numbering Subject Matter Area CEN (Computer Engineering)
6. Catalog Description/Major Topics (not to exceed 200 characters including spaces)
College of Medicine and College of Law: Attach description not exceeding 1,000 characters including spaces.

HCI foundations, user-centered interaction design, prototyping and programming interactive systems, qualitative and quantitative evaluation techniques, designing multimodal interfaces.
7. Attach detailed syllabus course outline and course justification on separate page(s).
8. Prerequisite(s): COP3337 (Programming II)
9. Corequisite(s): None
10. Objective(s) of Course:

Understand well-established user-centered methods and tools for expert construction and evaluation of user interfaces and user experience.
11. Does this course duplicate/overlap other courses at FIU? No Yes
If yes, please explain: Course designed with minimal overlap with CEN4010 and STA3033.
12. What other closely related department(s) have been consulted about this course?

CAP 4104 Keyed PS
& CAT

PROPOSAL REQUESTED BY:

Faculty Contact	<u>Christine Lisetti</u>		<u>4 / 20 / 2016</u>
	(Type name)	(Signature)	
	<u>lisetti@cis.fiu.edu</u>	(305) 348-6242	
	(Email address)	(Phone number)	
Chairperson (Dept./Div.)	<u>Mark Weiss</u>		<u>4 / 20 / 2016</u>
	(Type name)	(Signature)	
Chairperson (Curr. Comm.)	<u>Bilal El-Zahab</u>		<u>4 / 20 / 2016</u>
	(Type name)	(Signature)	
College/School Dean	<u>Ranu Jung</u>		<u>4 / 20 / 2016</u>
	(Type name)	(Signature)	

Submit one original form. Attach one copy of the course syllabus containing: course description, objectives, learning outcomes, major topics and textbooks.



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College of Medicine and College of Law: Attach description not exceeding 1,000 characters including spaces.

Fundamental concepts of human-computer interaction, cognitive models, user-centered design principles, evaluation techniques, and emerging technologies in various contexts and domains.
7. Attach detailed syllabus course outline and course justification on separate page(s).
8. Prerequisite(s): COP3337 (Programming II)
9. Corequisite(s): None
10. Objective(s) of Course:

Understand well-established user-centered methods and tools for expert construction and evaluation of user interfaces and user experience.
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School of Computing and Information Sciences

Course Title: Human-Computer Interaction

Date: 3/1/16

Course Number: CEN-4XXX

Number of Credits: 3

Subject Area: Human Computer Interaction	Subject Area Coordinator: Christine Lisetti email: lisetti@cis.fiu.edu
Catalog Description: Fundamental concepts of HCI, cognitive models, user-centered design, evaluation techniques, and emerging technologies in various contexts.	
Textbook: <ul style="list-style-type: none">Hartson, R. and Pyla, S. <i>The UX Book: Process and Guidelines for Ensuring a Quality User Experience</i>. Morgan Kaufmann, (ISBN: 978-0-12-385241-0), 2012.Lazar, J. Feng, J. Hochheiser, H. <i>Research Methods In Human-Computer Interaction</i>, Wiley, (ISBN: 978-0-470-72337-1), 2010.	
References: <ul style="list-style-type: none">Schneiderman, B. <i>Designing the User Interface: Strategies for Effective Human-Computer Interaction</i>, 5th Ed. Pearson New International Edition, 2013.Alan Dix et al. <i>Human-Computer Interaction</i>, 3rd Edition by, Prentice Hall, 2004.David Benyon, Phil Turner, and Susan Turner, <i>Designing Interactive Systems: Designing Interactive Systems: A Comprehensive Guide to HCI, UX and Interaction Design</i>, Addison Wesley, 3rd Ed., 2013.Johnson, <i>Designing with the Mind in Mind: Simple Guide to Understanding User Interface Design Rules</i> 1st Edition. Morgan Kaufmann, 2010.	
Prerequisites Courses: COP-3337 (Programming II)	
Co-requisites Courses: None	

Type: Elective for B.S. major in Computer Science

Prerequisites Topics:

- Basics of perception, cognition, and memory
- Familiarity with programming and program control structures
- Basic concepts of data organization

Course Outcomes:

1. Develop and use a conceptual vocabulary for analyzing human interaction with software in context: affordance, conceptual model, feedback, and so forth.
2. Define a user-centered design process that explicitly takes account of the fact that the user is not like the developer or their acquaintances.
3. Use prototyping techniques to gather, and report, user responses.
4. Use a variety of techniques to evaluate a given UI, and compare the constraints and

benefits of different evaluative methods.

5. Design a user study that will yield quantitative results.
 6. Conduct a qualitative evaluation and discuss/report the results.
 7. Conduct and report on a study that utilizes both qualitative and quantitative evaluation.
- Discuss the advantages (and disadvantages) of non-mouse interfaces.

Human-Computer Interaction - Course Justification

For computer users, the interface is the system. Software design must therefore be interaction-focused and human-centered, as well as focused on the quality of the user experience (UX). Although many software development teams now have roles for a human-computer interaction (HCI) experts, most software engineers are not trained in UX methods and, therefore, do not have the knowledge, skills, nor mindset to include UX methods in their life cycle activities. Many software developers believe that HCI techniques and methods are merely for “making the user interface look pretty”, or that it is all about UX testing, done near the end of the development process. Since the interface design impacts the software lifecycle, however, it should occur early and throughout the cycle. To address these requirements, computer science (CS) students need a different repertoire of techniques than is provided elsewhere in the SCIS curriculum.

The overarching goal of this new course on Human-Computer Interaction is therefore to counterbalance the computer programming body of knowledge that CS students acquire, and help students realize that developing the system-human interaction is not something to be done at the last minute, when the “rest of the system” is finished. At the very least, CS students need a minimal set of well-established methods and tools, to bring to interface construction and evaluation.

This course expands the traditional concept of usability to the broader notion of user experience, and it will enhance our CS program with a body of knowledge that has been included in most computer science programs worldwide, as recommended by the [ACM Curriculum 2013](#). This course will fulfill that requirement, and cover fundamentals of HCI. **Specific topics** covered in the course include: foundations of HCI, user experience, and human-centered computing; design process for user-centered development; qualitative and quantitative evaluation measures and methods; models and theories; and overview of emerging novel interaction modalities.

SCIS does not offer any HCI course for computer science students.