

TO: The Faculty of the College of Engineering

FROM: School of Electrical and Computer Engineering of the College of Engineering

RE: New Graduate Course, ECE 60874 Mobile Computing Systems


The faculty of the School of Electrical and Computer Engineering has approved the following new course. This action is now submitted to the Engineering Faculty with a recommendation for approval.

ECE 60874 Mobile Computing Systems
Sem. 2, Lecture 3, Cr. 3.

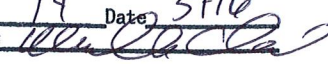
Prerequisite by Topic: Object-Oriented Programming, Computer Networks, and Operating Systems

Description: This course will introduce the technologies of mobile computing systems for various applications, including multimedia, cloud services, location-based services, data collections and privacy. This course will include both hands-on assignments writing mobile applications as well as reading recently published papers on the technologies. The students will design mobile services and present their projects.

Reason: This course will examine recent technologies in mobile computing. Thus, students should have background on general computing systems. The technologies for mobile computing change rapidly so this course will read recently published papers. The goal of this course is to survey the recent progresses in mobile technologies and develop promising mobile services. Thus, 600-level would be appropriate.


Michael R. Melloch
Michael R. Melloch, Associate Head
School of Electrical and Computer Engineering

Approved for the faculty of the Schools
of Engineering by the Engineering
Curriculum Committee

ECC Minutes 14 Date 3-11-16
Chairman ECC 

**Supporting Document to the Form 40G
for a New Graduate Course**

To: Purdue University Graduate Council

From: Faculty Member: Yung-Hsiang Lu

Department: Electrical and Computer Engineering

Campus: West Lafayette

Date:

Subject: Proposal for New Graduate Course

Contact for information if questions arise: Name: Matt Golden
Phone: 494-3374
Email: goldenm@purdue.edu
Address: EE Building, Room 135

Course Subject Abbreviation and Number: ECE 60874

Course Title: Mobile Computing Systems

Course Description:

This course will introduce the technologies of mobile computing systems for various applications, including multimedia, cloud services, location-based services, data collections and privacy. This course will include both hands-on assignments writing mobile applications as well as reading recently published papers on the technologies. The students will design mobile services and present their projects.

Semesters Offered:

For the benefit of graduate student plan of study development, how frequently will this prototype be offered? Which semesters?
Spring

A. Justification for the Course:

Provide a complete and detailed explanation of the need for the course (e. g., in

the preparation of students, in providing new knowledge/training in one or more topics, in meeting degree requirements, etc.), how the course contributes to existing majors and/or concentrations, and how the course relates to other graduate courses offered by the department, other departments, or interdisciplinary programs.

Justify the level of the proposed graduate course (500- or 600-level) including statements on, but not limited to: (1) the target audience, including the anticipated number of undergraduate and graduate students who will enroll in the course; and (2) the rigor of the course.

- This course will examine recent technologies in mobile computing. Thus, students should have background on general computing systems. The technologies for mobile computing change rapidly so this course will read recently published papers. The goal of this course is to survey the recent progresses in mobile technologies and develop promising mobile services. Thus, 600-level would be appropriate.

Use the following criteria:

Graduate Council policy requires that courses at the 50000 level in the Purdue system should be taught at the graduate level and meet four criteria: a) the use of primary literature in conjunction with advanced secondary sources (i.e., advanced textbooks); b) assessments that demonstrate synthesis of concepts and ideas by students; c) demonstrations that topics are current, and; d) components that emphasize research approaches/methods or discovery efforts in the course content area (reading the research, critiquing articles, proposing research, performing research). Such courses should be taught so that undergraduate students are expected to rise to the level of graduate work and be assessed in the same manner as the graduate students.

- Anticipated enrollment
 - Undergraduate 0
 - Graduate 15

B. Learning Outcomes and Method of Evaluation or Assessment:

ECE Graduate Learning Outcomes:

- a. Knowledge and Scholarship (thesis/non-thesis)
 - b. Communication (thesis/non-thesis)
 - c. Critical Thinking (thesis/non-thesis)
 - d. Ethical and Responsible Research (thesis) or Professional and Ethical Responsibility (non-thesis)
- List Learning Objectives for this course and map each Learning Objective to one

or more of the ECE Learning Outcomes (a-d, listed above):

- examine recent technologies in mobile computing (a, c)
- design mobile services and present their projects (b, c)
- plan for data collection and respect users' privacy (a, c, d)
- critique technologies and peer review projects (b, c)

- Methods of Instruction
 - Lecture

- Will/can this course be offered via Distance Learning?
 - The course will not be offered via Distance Learning though it could be if necessary.

- Grading Criteria

Grading criteria (select from checklist); include a statement describing the criteria that will be used to assess students and how the final grade will be determined. Add and delete rows as needed.

- exams and/or quizzes
- papers and/or projects
- homework

- ▶ Describe the criteria that will be used to assess students and how the final grade will be determined:

Homework Assignments (35%)
Midterm Exam (20%)
Semester Project (25%)
Final Exam (20%)

C. Prerequisite(s):

List prerequisites and/or experiences/background required. If no prerequisites are indicated, provide an explanation for their absence. Add bullets as needed.

- Graduate Standing or Consent of Instructor
- Prerequisite by Topic: Object-Oriented Programming, Computer Networks, and Operating Systems

D. Course Instructor(s):

Provide the name, rank, and department/program affiliation of the instructor(s). Is the instructor currently a member of the Graduate Faculty? (If the answer is no, indicate when it is expected that a request will be submitted.) Add rows as needed.

Name	Rank	Dept.	Graduate Faculty or expected date
Yung-Hsiang Lu	Associate Professor	ECEN	Yes

E. Course Outline:

Provide an outline of topics to be covered and indicate the relative amount of time or emphasis devoted to each topic. If laboratory or field experiences are used to supplement a lecture course, explain the value of the experience(s) to enhance the quality of the course and student learning. For special topics courses, include a sample outline of a course that would be offered under the proposed course. **(This information must be listed and may be copied from syllabus).**

Weeks	Principal Topics
1	Introduction to mobile computing systems. Course overview
1	Wireless networks
1	Multimedia and mobile applications
2	Mobile and cloud computing
3	Resource management
2	Location-based services
2	Data collection and privacy
2	Trends in mobile computing
1	Student presentations of projects

F. Reading List (including course text):

A primary reading list or bibliography should be limited to material the students will be required to read in order to successfully complete the course. It should not be a compilation of general reference material.

A secondary reading list or bibliography should include material students may use as background information.

- Primary Reading List
- Mobile Computing: Concepts, Methodologies, Tools, and Applications by David Taniar, ISBN 9781605660547. This is an electronic book, available on Purdue campus computers.
- Secondary Reading List

G. Library Resources

Describe any library resources that are currently available or the resources needed to support this proposed course.

- The course text book will be on reserve at the library. All additional assigned readings will be made available to the students electronically through Blackboard or other means.

H. Course Syllabus

(While not a necessary component of this supporting document, an example of a course syllabus is available, for information, by clicking on the link below, which goes to the *Graduate School's Policies and Procedures Manual for Administering Graduate Student Program*.

See Appendix K.

[http://www.purdue.edu/gradschool/faculty/documents/Graduate School Policies and Procedures Manual.pdf](http://www.purdue.edu/gradschool/faculty/documents/Graduate_School_Policies_and_Procedures_Manual.pdf)

PURDUE UNIVERSITY
REQUEST FOR ADDITION, EXPIRATION,
OR REVISION OF A GRADUATE COURSE
(50000-60000 LEVEL)

DEPARTMENT Electrical and Computer Engineering EFFECTIVE SESSION Spring 2016

INSTRUCTIONS: Please check the items below which describe the purpose of this request.

- | | |
|--|--|
| <input checked="" type="checkbox"/> 1. New course with supporting documents (complete proposal form) | <input type="checkbox"/> 7. Change in course attributes |
| <input type="checkbox"/> 2. Add existing course offered at another campus | <input type="checkbox"/> 8. Change in instructional hours |
| <input type="checkbox"/> 3. Expiration of a course | <input type="checkbox"/> 9. Change in course description |
| <input type="checkbox"/> 4. Change in course number | <input type="checkbox"/> 10. Change in course requisites |
| <input type="checkbox"/> 5. Change in course title | <input type="checkbox"/> 11. Change in semesters offered |
| <input type="checkbox"/> 6. Change in course credit/type | <input type="checkbox"/> 12. Transfer from one department to another |

PROPOSED: Subject Abbreviation <u>ECE</u> Course Number <u>60874</u> Long Title <u>Mobile Computing Systems</u> Short Title <u>Mobile Computing Systems</u> <small>Abbreviated title will be entered by the Office of the Registrar if omitted. (30 CHARACTERS ONLY)</small>	EXISTING: Subject Abbreviation _____ Course Number _____	TERMS OFFERED Check All That Apply: <input type="checkbox"/> Fall <input checked="" type="checkbox"/> Spring <input type="checkbox"/> Summer CAMPUS(ES) INVOLVED <input type="checkbox"/> Calumet <input type="checkbox"/> N. Central <input type="checkbox"/> Cont Ed <input type="checkbox"/> Tech Statewide <input type="checkbox"/> Ft. Wayne <input checked="" type="checkbox"/> W. Lafayette <input type="checkbox"/> Indianapolis
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CREDIT TYPE 1. Fixed Credit: Cr. Hrs. <u>3</u> 2. Variable Credit Range: Minimum Cr. Hrs. _____ (Check One) To <input type="checkbox"/> Or <input type="checkbox"/> Maximum Cr. Hrs. _____ 3. Equivalent Credit: Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> 4. Thesis Credit: Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	COURSE ATTRIBUTES: Check All That Apply 1. Pass/Not Pass Only <input type="checkbox"/> 2. Satisfactory/Unsatisfactory Only <input type="checkbox"/> 3. Repeatable <input type="checkbox"/> Maximum Repeatable Credit: <input type="checkbox"/> 4. Credit by Examination <input type="checkbox"/> 5. Fees <input type="checkbox"/> Coop <input type="checkbox"/> Lab <input type="checkbox"/> Rate Request <input type="checkbox"/> Include comment to explain fee _____ 6. Registration Approval Type Department <input type="checkbox"/> Instructor <input type="checkbox"/> 7. Variable Title <input type="checkbox"/> 8. Honors <input type="checkbox"/> 9. Full Time Privilege <input type="checkbox"/> 10. Off Campus Experience <input type="checkbox"/>
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Schedule Type	Minutes Per Mtg	Meetings Per Week	Weeks Offered	% of Credit Allocated	Cross-Listed Courses
Lecture	3	50	16	100	
Recitation					
Presentation					
Laboratory					
Lab Prep					
Studio					
Distance					
Clinic					
Experiential					
Research					
Ind. Study					
Pract/Observ					

COURSE DESCRIPTION (INCLUDE REQUISITES/RESTRICTIONS):
This course will introduce the technologies of mobile computing systems for various applications, including multimedia, cloud services, location-based services, data collections and privacy. This course will include both hands-on assignments writing mobile applications as well as reading recently published papers on the technologies. The students will design mobile services and present their projects.

***COURSE LEARNING OUTCOMES:**
examine recent technologies in mobile computing (a, c)
design mobile services and present their projects (b, c)
plan for data collection and respect users' privacy (a, c, d)

Calumet Department Head _____ Date _____	Calumet School Dean _____ Date _____	Calumet Director of Graduate Studies _____ Date _____
Fort Wayne Department Head _____ Date _____	Fort Wayne School Dean _____ Date _____	Fort Wayne Director of Graduate Studies _____ Date _____
Indianapolis Department Head _____ Date _____	Indianapolis School Dean _____ Date _____	IUPUI Associate Dean for Graduate Education _____ Date _____
North Central Department Head _____ Date _____	North Central School Dean _____ Date _____	North Central Director of Graduate Studies _____ Date _____
<i>Michelle R. Mellish</i> _____ Date <u>11/20/15</u>	<i>Michael P. Davis</i> _____ Date <u>3/16</u>	Date Approved by Graduate Council _____ Date _____
West Lafayette Department Head _____ Date _____	West Lafayette College/School Dean _____ Date _____	Graduate Council Secretary _____ Date _____
Graduate Area Committee Convener _____ Date _____	Graduate Dean _____ Date _____	West Lafayette Registrar _____ Date _____