University of Wisconsin-Whitewater
Curriculum Proposal Form #3

New Course

Effective Term: 2141 (Spring 2014)

Subject Area - Course Number: COMPSCI 461 **Cross-listing: N/A**
(See Note #1 below)

Course Title:(Limited to 65 characters) Mobile Computing Architecture

25-Character Abbreviation: Mobile Computing Architec

Sponsor(s): Dr. Jiazhen Zhou

Department(s): Mathematical and Computer Sciences

College(s): Letters and Sciences

Consultation took place: ☒ NA ☐ Yes (list departments and attach consultation sheet)
Departments:

Programs Affected: **Computer Science**

Is paperwork complete for those programs? (Use "Form 2" for Catalog & Academic Report updates)

☐ NA ☐ Yes ☒ will be at future meeting

Prerequisites: COMPSCI 223 and COMPSCI 271, or Consent of Instructor

Grade Basis: ☒ Conventional Letter ☐ S/NC or Pass/Fail

Course will be offered: ☐ Part of Load ☐ Above Load
☒ On Campus ☐ Off Campus - Location

College: Letters and Sciences **Dept/Area(s):** Math and Computer Science

Instructor: Dr. Jiazhen Zhou
Note: If the course is dual-listed, instructor must be a member of Grad Faculty.

Check if the Course is to Meet Any of the Following:

☐ Technological Literacy Requirement ☐ Writing Requirement
☐ Diversity ☐ General Education Option: Select one:
Note: For the Gen Ed option, the proposal should address how this course relates to specific core courses, meets the goals of General Education in providing breadth, and incorporates scholarship in the appropriate field relating to women and gender.

Credit/Contact Hours: (per semester)

Total lab hours:	0	Total lecture hours:	48
Number of credits:	3	Total contact hours:	48

Can course be taken more than once for credit? (Repeatability)

☒ No ☐ Yes If "Yes", answer the following questions:

No of times in major: No of credits in major:
No of times in degree: No of credits in degree:

Proposal Information:(***Procedures for form #3***)

Course justification:

Wireless communication and networking has been one of the fastest growing technical areas for many years. And the revolution in this area has not slowed down. The mobile computing architecture course will equip our students with the most fundamental design and analysis skills necessary for the wireless networking architecture and application area.
Currently Dr. Jiazhen Zhou is teaching the mobile computing course under the umbrella of the generic course – COMPSCI 451 – Topics in Applied Computing. But it will be more appropriate to create a new course for it as this course will be an important part of the forthcoming networking emphasis area in our Computer Science program.

Relationship to program assessment objectives:

The following Computer Science program objectives are at least partially addressed by this course:
To provide students with:

- Technical, analytic, problem solving skills required for an entry-level position.
- Hands-on experience with appropriate technology.
- High level of adaptability to new technology and a commitment to continual learning.
- Group and individual communication skills.
- Professional and personal development skills.

Budgetary impact:

Staffing: Several members of the current Computer Science staff have the expertise necessary to staff this course. It is anticipated that Dr. Jiazhen Zhou a will initially be the instructors. Computer laboratory space on campus is already sufficient to run this course.

Academic unit library and service & supply budget:
It is not anticipated that this course will affect the department's service & supply or library budget.

Impact on campus instructional resource units: This course will serve as an emphasis area course in networking for our newly established Computer Science program.

Laboratory facilities: adequate lecture space is available. This course can be taught in any classroom or lab rooms such as McGraw 115 or Hyer 210. The networking lab of Dr. Jiazhen Zhou can provide space and equipment necessary for the hand-on experiments.

Course description:

This course discusses fundamentals of wireless communication and mobile computing, and emphasizes the analysis and design of network architectures in support of mobility related services. It involves intensive critical thinking practices, programming, and hand-on experiments.

Course Objectives and tentative course syllabus with mandatory information(paste syllabus below):

COMPSCI 461: Mobile Computing Architecture

Required Texts: None

Reference Texts:

Mobile Communications, second edition, (Chapter 1-3), by Jochen Schiller, Addison-Wesley
Wireless and Mobile Network Architecture, by Yi-Bing Lin and Imrich Chlamtac, John Wiley & Sons

Course Description

This course discusses fundamentals of wireless communication and mobile computing, and emphasizes the analysis and design of network architectures in support of mobility related services. It involves intensive critical thinking practices, programming, and hand-on experiments.

Prerequisite: COMPSCI 223 and COMPSCI 271, or Consent of Instructor

CourseObjectives

1	Understand fundamentals of wireless communication and networks, can design basic communication protocol for a mobility based communication service.
2	Can design a basic algorithm to provide mobility based computing services.

Tentative Course Schedule

Week	Notes	Description	Projects/Presentations
1		Introduction to Wireless Communications	
2		Microwave Transmissions	
3		Fundamentals of Communications	
4		Cellular Networks Architecture	
5		Roaming Management	Project 1
6		Handoff Management	
7		Mobile Number Portability	
8		Mobile Internet	
9		Emerging Wireless Networks	
10		Wireless Sensor Networks	
11		Location Services	Project 2
12		Positioning	

13		Navigation Services	
14		Mobile Computing in HealthCare	
15		Mobile Computing in HealthCare	

GradingPolicy

GRADABLE	Percentage
Projects	40%
Labs	15%
Quizzes	5%
Midterm	15%
Final Exam	25%
Total	**100%**

Letter Grade	Percentage	Letter Grade	Percentage
A	90 to 100%	A-	87 to 89.9%
B+	83 to 86.9%	B	80 to 82.9%
B-	77 to 79.9%	C+	73 to 76.9%
C	70 to 72.9%	C-	67 to 69.9%
D+	63 to 66.9%	D	60 to 62.9%
D-	50 to 60%	F	Less than 50%

Attendance and participation:

Class participation is very important and will be based on class attendance, punctuality, ability to contribute in class discussions, answer questions and coming prepared to class with assigned readings. All students are expected to prepare for and participate in all of classes except absences for university-sponsored events,absences caused by medical reasons in which cases, doctor's notes are required, or absences by family emergencies which will be determined on case-by-case basis.

Absence for University-Sponsored Events:

University policy adopted by Faculty Senate and the Whitewater Student Government states that students will not be academically penalized for missing class in order to participate in university-sanctioned events. They will be provided an opportunity to make up any work that is missed; and if class attendance is a requirement, missing a class in order to participate in a university-sanctioned event will not be counted as an absence. A university-sanctioned event is defined to be any intercollegiate athletic contest or other such event as determined by the Provost. Activity sponsors are responsible for obtaining the Provost's prior approval of an event as being university-sanctioned and for providing an official list of participants. Students are responsible for notifying their instructors in advance of their participation in such events.

Technology requirement

1. Java SDK and Eclipse