COURSE DESCRIPTION

Department and Course Number: COMP 3710
Course Title: Wireless Software Engineering
Total Credits: 3
Required: Yes (WIRS)
Prerequisites: COMP 2710
Class meetings per week: 3 hours
Lab meetings per week: 0 hours
Course Coordinator: David Umphress
Date Prepared: February 18, 2004

Current Catalog Description:
Software engineering for wireless applications: specification, process, testing, and performance evaluation. Design and development of wireless application layer software, including current protocols.

Textbooks:

References:

Course Objectives:
1. Understand the complexities of mobile device software development.
2. Understand design notation for embedded systems.
3. Understand cross-platform development tools and processes.
4. To be able to design and develop a solution for a mobile device.

Prerequisites by Topic:
1. Familiarity with Java and C++

Topics Covered: (specify number of hours on each)
1. Introduction to mobile devices (3 hours)
2. Software tools, embedded processes (3 hours)
3. Design methods, user interfaces, database design, file organization (12 hours)
4. Application programmer interfaces, event handling, memory management, communication technologies (17 hours)
5. Testing principles, user tests (8 hours)
6. Exams (2 hours)

Laboratory Projects: (specify number of weeks on each)
1. Mobile device "Hello world" (1 week)
2. Embedded design (2 weeks)
3. User interface design for mobile devices (2 weeks)  
4. I/O (1 week)  
5. Event models (2 weeks)  
6. Memory and power management (1 week)  
7. Application design (2 weeks)  
8. Network connectivity (2 weeks)  
9. Application certification testing (1 week)

**Oral and Written Communications:**
Students are required to provide complete process documentation for every assignment.

**Social and Ethical Issues:**
None.

**Theoretical Content:**
Hard, real-time scheduling algorithms (5 hours)

**Problem Analysis and Solution Design:**
All students apply fundamental software engineering practices to analyze, design, implement, test, and document solutions to all programming assignments. Students apply the analysis and design skills already acquired to the development of software components, subsystems, and systems for wireless applications. Students are responsible for applying a controlled, iterative process for developing software artifacts that meet desired needs.