### Required Course:
ECE 46100 Software Engineering

### Credit and contact hours:
(3 cr.) Class 3, Lab 0

### 2014-2016 IUPUI Campus Bulletin description:
ECE 46100 Software Engineering (3 cr.) P: CSCI 24000. Class: 3. Introduction to software engineering principles with special emphasis on the process, methods, and tools needed to develop and test quality software products and systems.

### Prerequisite or corequisite:
P: CSCI 240

### Prerequisites by topic:
Object-Oriented Programming

### Textbook:

### Coordinator:
Stanley Chien, Professor of Electrical and Computer Engineering

### Goals:
To teach students various techniques for large scale software development.

### Outcomes:
A student who successfully fulfills the course requirements will have demonstrated:
1. the ability to conduct object-oriented design and use unified modeling language. [a,g]
2. the ability to understand different models of software development processes. [a,c,k]
3. the ability to analyze requirements and write project specifications. [a,c,k]
4. the ability to successfully develop a team software project in time and meet the specification. [a,c,e,f,g,k]

### Topics:
1. introduction, project description and team organization
   requirement analysis and project specification
2. version control and bug tracking
3. visual programming and user interface
4. object-oriented design and unified modeling language
5. software development process
6. open source development model
7. midterm project presentation
8. team management
9. ethics, reliability and standard
10. test and verification
11. system integration
12. estimation and product metrics
13. software release and post-release analysis
14. final project presentation
15. Engineering Design Consideration(s): economic, environmental, ethical, sustainability

### Computer usage:
None.

### Laboratory projects:
None

### ABET category:
Engineering Science 50%; Engineering Design 50%

### Prepared by:
Stanley Chien

### Date:
March 4, 2009