# COEN 4610 - Object Oriented Software Engineering

**Class Schedule:** 3 credit course, meeting for 3 50-minute periods each week or 2 75-minute periods each week.

**Course Coordinator**: Dr. Richard J. Povinelli

**Required Textbook:**

Object Oriented Software Engineering: Using UML, Patterns and Java, 3/E, by Bernd Bruegge and Allen H. Dutoit, Pearson, 2009.

## Course Description:

Presents advanced software engineering concepts in the context of object-oriented analysis and design. Topics include: concept of object-orientation, UML modeling techniques, use of CASE tools, use-case requirement analysis, modeling with classes, object-oriented design, design patterns, software quality, testing and correctness, software reuse and aspect-oriented software engineering.

**Prerequisites**: COEN 2610

**Elective in** COEN Software area (breadth and depth)

**Contribution to Professional Component**:

Engineering science 50%

Engineering design 50%

**Course Goals:** This class will bring students the most up-to-date knowledge of the rapidly changing area of software engineering. Students will gain the comprehensive understanding of the entire software engineering area. During the study, students will be involved in the design projects applying several latest software design methodologies, software modeling approach, and the automated software engineering tools.

**Course Objectives:** By the end of class students are expected to gain the following knowledge:

* Advanced Software Engineering Concepts, Issues and Applications
* Advanced Requirements Engineering
* Software Specifications: Techniques, Tools and Case Studies
* Software Architectures: Components Based Software Engineering and Adaptable Systems/Software Architectures
* UML Modeling Notations, Tools and Domains
* Object Oriented Technology
* Software Quality + Testing + Correctness
* Implementation and Users Issues + Software Maintenance
* Software Reuse + Reverse Engineering + Tools
* Software Performance Engineering
* Understand how to apply the best practices under different software application environments.

**Contribution to Program Objectives**: Partial fulfillment of Criterion 3 objectives A, C, E, F, G, I, J, and K

Last modified: February 16, 2018