**COEN 4630 Software Testing**

**Class schedule:** 3 credit course, meeting for 3 50-minute periods each week.

**Course coordinator:** Ed Yaz

**Course materials:** Pragmatic Software Testing, Rex Black, Wiley 2007

**Catalog description:** Examines the relationship of software testing to quality, emphasizing testing techniques and the role of testing in the validation of system requirements. Topics include: module and unit testing, integration, walkthroughs and inspections, verification and validation, preventing and detecting errors, selecting and implementing project metrics, and defining test plans and strategies traced from system requirements.

**Prerequisites:** EECE 2710Introduction to Computer Hardware and Software,COSC 2010 Data Structures for Engineers, COSC 2100 Data Structures, or equivalent experience.

**Selected Elective** in ELEN Computer Hardware & Software area, COEN Software area (breadth and depth)

**Professional component:**

Engineering science – 40%

Engineering design – 60%

**Course Goals:** This class will be successful if you

* Are prepared to enter a career in testing
* Are able to handle yourself well in a job interview
* Have improved your design skills
* Have improved your system design and development skills
* Have improved teamwork and management skills

**Specific outcomes of instruction***By the end of this course, students should be able to perform the following tasks:*

* Analyze requirements and identify appropriate test strategies.
* Design and implement test plans.
* Understand and apply a variety of testing techniques in an effective manner that is appropriate to the application and the business context
* Organize and execute full test plans.
* Report test results in a clear manner appropriate to the audience.

**Student outcomes addressed by the course:**Partial fulfillment of Criterion 3 objectives A, C, E, F, G, H, I, J, and K

**Brief list of topics to be covered**

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|  | **Topic** | **Text**  |
| **Main Topics** | Introduction | 1-4 |
| Risk based testing | 5-7 |
| Static testing | 8-9 |
| Behavioral Testing | 10-20 |
| Structural Testing | 21-26 |
| **Ancillary Topics** | Verification vs. Validation |  |
| Test Tools & Test Automation |  |
| Testing Management |  |
| Documentation & Communication |  |
| Economics of Testing |  |
| Test Driven Development |  |

Last modified: January 24, 2017