SIE 377 Fall 2017 Software for Engineers

MWF 9:00 AM - 9:50 AM, ILC Rm 119

Description of Course

Rapid prototyping of decision support systems using Visual Basic for Applications (VBA) and Excel. Use of VBA, Excel, and external packages to solve optimization problems, to perform simulations, and to perform forecasting. Rapid design and implementation of decision support systems for financial, supply chain, and facility location problems. Python tools with VBA and Excel are introduced for code minimization and maintainability.

Course Prerequisites or Co-requisites

ECE 175 or CSC 127A or CSC 110

Instructor and Contact Information

Sherilyn Keaton, ENGR 256 A, (520) 621-9554, keatons@email.arizona.edu

Office Hours: MWF 1:00 – 3:00 PM and by appointment including phone and video conferences

Course Format and Teaching Methods

The course will include lectures, in-class individual and small group activities, projects, in-class discussion, web-delivered content, and intermittent assessment.

Course information and material including lecture slides, announcements, quizzes, grades, and FAQs will be posted on the course's D2L site. Students should regularly visit the D2L site to stay up-to-date during the semester.

Course Objectives and Expected Learning Outcomes

By the end of this course, students should be able to do the following:

- Determine, design, and implement the appropriate modeling approach for a problem solution.
- Construct and use spreadsheets, tools, object models and programs to help them apply SIE methodologies solve engineering problems.
- Apply the techniques and skills learned to develop customized solution software for decision support.

Required Texts or Readings

VBA for Modelers: Developing Decision Support Systems with Microsoft® Office Excel®, S. Christian Albright, 5th edition, South-Western Cengage Learning.

Grading Scale and Distribution

Semester grades use Regular Grades:

A 90% - 100%
B 80% - 89%
C 70% - 79%
D 60% - 695
E 0% - 59%

Semester grades will be based on the following components:

- Homework and Class Participation 25%
    - Homework is assigned on a regular basis and will be individually graded

    - Online quiz completion is required as part of class participation, but not individually graded
- First Midterm 15%
- Second Midterm 15%
- Project 15%
    - An in-depth application of techniques, tools, and skills to a real-world scenario
- Comprehensive Final Exam 30%

Project Due Date and Final Examination Date and Time

Project Deadline:	TBD		
Final Examination:	Tuesday	12/12/2017	10:30 am - 12:30 pm