**EECE 1954 Freshman Seminar 2**

**Class schedule** – One 50 minute lecture equivalent to One Credit

**Course Coordinator** – Mr. Chris Perez

**Course Materials** – personal laptop computer

**Course Information**

Continuation of EECE 1953 (EECE 1). COEN, ELCE, and ELEE students will have further opportunities to investigate electrical engineering and computer engineering applications though presentations by faculty, graduate students, upper-class undergraduate students, alumni, and industry representatives.

**Prerequisites:** None

**Required course**

**Engineering Percentages:**

Engineering Science 50%

Engineering Design 50%

**Course Goals**

* Introduce basic object-oriented software concepts
* Introduce the Bluetooth technology and be able to use it
* Describe the Kinect interface and be able to use it
* Discuss algorithms for solving mazes and be able to implement one
* Complete a student-initiated multi-week project
* Introduce the EECE faculty to freshman students
* Foster a “COEN/ELEN identity” with all freshman students enrolled in the EECE department
* Reinforce the student’s decision to become computer engineers and electrical engineers
* Describe specific computer engineering and electrical engineering career opportunities

**Course Objectives (learning outcomes)**

By the end of this course, you should be able to....

* Understand basic object-oriented design concepts
* Be able to use object-oriented design to create a simple computer game
* Understand the basic concepts in the Bluetooth technology
* Be able to use a Bluetooth interface to control a robot
* Understand the basic elements that comprise the Kinect interface
* Be able to program a robot to “solve” a simple maze
* Design a task for a robot of your choosing, together with members of your team
* Implement the task you designed and refine your implementation
* Present your task to the class and answer questions that arise
* Be able to identify many of the EECE department faculty
* Be able to describe specific career opportunities for computer engineers and electrical engineers

**Partial fulfillment of Criterion 3 objective E.**

**Course Topics**

* Week 1 **Project** – Install GameMaker 8.0 and create a simple game
* Week 2 **Project** – Create and demonstrate additional levels for your game
* Week 3 **Project –** Introduction to the Bluetooth Roomba interface
* Week 4 **Project –** Use Bluetooth to control the Roomba
* Week 5 **Project –** Introduction to maze algorithms
* Week 6 **Project –** Race the Roomba through a maze
* Week 7 **Project –** Introduction to the Kinect
* Week 8 **Project –** Using Kinect to control the Roomba
* Week 9 **Final Project**
* Week 10 **Final Project**
* Week 11 **Final Project**
* Week 12 **Final Project demonstrations**
* Week 13 **Final Project demonstrations**