ELEG 4061 – SENIOR DESIGN I

Credits and Contact Hours
One credit hour, 16 hours of instructor contact; laboratory weekly.

Instructor’s Name
Randle Overbey

Textbook
None.

a. Other supplemental materials:
Designing Embedded Hardware, John Catsoulis, O’Reilly Media, 2005.
Microsoft Project
Microsoft Powerpoint

Specific Course Information

a. Catalog description:
   Capstone design and application in electrical engineering.

b. Pre-requisites or co-requisites:
   Prerequisite: Electronics 2 (ELEG 3224) and Microprocessor Systems Design (ELEG 3924).

c. Required.

Specific Goals for the Course

1. Specific outcomes of instructions:
   1) Design, simulate and begin the construction of a prototype system to demonstrate understanding of the fundamentals of electrical engineering (electronics, microprocessors and signal processing) by applying knowledge gained in classes taken.
   2) Work as part of a group.
   3) Analyze an ethical case in electrical engineering and draw applicable conclusions; a written paper is required.
   4) Identify and understand the need for life-long learning; a written paper is required.
   5) Demonstrate a knowledge of contemporary issues involved in electrical engineering; a written paper is required.
   6) Make 2 formal oral presentations to a group of students and faculty (including the use of Microsoft Powerpoint and Microsoft Project.)
   7) Submit a formal written proposal outlining the objectives in item a) following the report guidelines established by the faculty.
2. Indicate the student outcomes listed in Criterion 3 addressed by the course
   (a) Students are required to apply knowledge of mathematics, science, and engineering;
   (b) Students must demonstrate the ability to design and conduct experiments, as well as to analyze and interpret data
   (c) Students must demonstrate the ability to design a system, component, or process to meet desired needs;
   (d) Students must demonstrate an ability to function on multi-disciplinary teams;
   (e) Students are required to identify, formulate, and solve engineering problems;
   (f) Students must demonstrate an understanding of professional and ethical responsibility;
   (g) Students must demonstrate an ability to communicate effectively;
   (h) Students must have the ability to understand the impact of engineering solutions in a global and societal context
   (i) Students must demonstrate a recognition of the need for, and an ability to engage in life-long learning;
   (j) Students must demonstrate a knowledge of contemporary issues;
   (k) Students must demonstrate an ability to use the techniques, skills, and modern engineering tools necessary for engineering practice.