

## **CPE 4800: Senior Project Proposal**

### **2 Credit Hours**

*Prerequisite: CPE 3030, Senior Status, and Engineering Standing*

This course involves an in-depth examination of the principles and methods associated with the engineering design process. Students will be grouped into design teams where the engineering design principles and methods are put into practice in the developing of a computer engineering project. The final product for each design team will be a project proposal that will be assessed via design review.

## **CPE 4850: Senior Project Design**

### **3 Credit Hours**

*Prerequisite: CPE 4800 and Engineering Standing*

This course will require a design team to complete the computer engineering project they proposed in the senior project proposal course. The steps to completing this project will include building a prototype of the system/device, programming this system/device, and testing this system/device. The design team will also be responsible for drafting the project report, demonstrating that the system/device functions according to specifications, and making an oral presentation of the project.

## **CPE 4903: Neural Networks and Machine Learning**

### **3 Credit Hours**

*Prerequisite: CSE 132I and CSE 132IL and MATH 2202 and Engineering Standing*

This course introduces the student to the principles and theories associated with neural networks. Several neural networking-related architectures, algorithms, and training techniques associated with real-world applications (e.g. detection & tracking systems, traffic patterns, classification schemes) are discussed. Also, several in-class examples are given and a term project is assigned to aid the student in a practical understanding of the theory covered—Class examples and the project are conducted using OOP and the MATLAB Neural Network Toolbox. Additionally, a survey of various AI hardware implementations will be conducted to further enhance the student's knowledge.