# EEE: Electrical and Electronic Engineering Courses

## Courses

**EEE 3308 Electronic Circuits I**
College of Sci and Engineering, Department of Electrical & Computer Engineer

3 sh (may not be repeated for credit)
Prerequisite: (EGN 3204 OR EGM 3344) AND ((EEE 3308L* AND EEL 3111))

Fundamentals of analog electronic circuits and systems. A grade of "C" or better is required in the prerequisites. Credit may not be received in both EEE 3308 and EEL 3304.

**EEE 3308L Electronics Laboratory**
College of Sci and Engineering, Department of Electrical & Computer Engineer

1 sh (may not be repeated for credit)
Prerequisite: EEE 3308* AND EEL 3111L

Electronic instrumentation devices and systems. Material and supply fee will be assessed. A grade of "C" or better is required in the prerequisites. Credit may not be received in both EEE 4308L and EEL 4304L.

**EEE 3396 Solid-State Electronic Devices**
College of Sci and Engineering, Department of Electrical & Computer Engineer

3 sh (may not be repeated for credit)
Prerequisite: (EEL 3111) AND (CHM 2045 OR CHM 1045 OR CHM 1045C)

Introduction to the principles of semiconductor electron device operation. A grade of "C-" or better is required in the prerequisite.

**EEE 4306 Electronic Circuits II**
College of Sci and Engineering, Department of Electrical & Computer Engineer

3 sh (may not be repeated for credit)
Prerequisite: EEE 3308/L AND EEL 3112

Design-oriented continuation of Electronics I; feedback on am circuits and applications, digital electronics. A grade of "C" or better is required in the prerequisites.

**EEE 4306L Electronic Circuits II Laboratory**
College of Sci and Engineering, Department of Electrical & Computer Engineer

1 sh (may not be repeated for credit)
Prerequisite: EEE 3308/L AND EEE 4306* AND EEL 3112

Electronic Circuits II laboratory. A grade of "C" or better is required in the prerequisites. Material and Supply fee will be assessed. Credit may not be received in both EEE 4306L and EEL 4306L.

**EEE 4310 VLSI Circuit Design**
College of Sci and Engineering, Department of Electrical & Computer Engineer

3 sh (may not be repeated for credit)
Prerequisite: ((EEE 3308 AND EEL 3701)) AND (CHM 2045 OR CHM 1045 OR CHM 1045C)

Analysis and design of digital circuits using MOS and bipolar devices.

**EEE 5327 VLSI Circuit Design**
College of Sci and Engineering, Department of Electrical & Computer Engineer

3 sh (may not be repeated for credit)

Advanced topics in the design and analysis of digital circuit using MOS and bipolar devices. Study and applications of various layouts and CAD tools.

**EEE 5905 Directed Study**
College of Sci and Engineering, Department of Electrical & Computer Engineer

1-12 sh (may be repeated indefinitely for credit)

**EEE 6730 Special Topics in Intelligent Systems**
College of Sci and Engineering, Department of Intelligent Systems & Robotics

3 sh (may be repeated for up to 9 sh of credit)
Prerequisite: EEE 6772 OR EML 6805

In this course the student will acquire a robust understanding of the foundations and fundamental results in a specific area of interest in the field of intelligent systems. Examples include knowledge representation, Bayesian reasoning, graphical models, multi-agent systems, computational social choice, social networks, cognitive models, ethical aspects of AI, natural language processing and human-computer interaction. This course is meant to provide a solid foundation in the area on which the student intends to focus for his/her dissertation.

**EEE 6734 Bipedal Walking Robots**
College of Sci and Engineering, Department of Intelligent Systems & Robotics

3 sh (may not be repeated for credit)
Prerequisite: EEE 6772

The study of walking robots and what it means to balance. Topics include static balance/stability, dynamic balancing and the study of the fundamentals of the inverted pendulum. The course addresses a series of increasingly complex bipedal walkers and various ways to interpret stability including static stability, center of mass, center of pressure, zero moment point and capturability. Concepts include what it means to walk and how complex movement such as running and trotting are achieved, and how disturbances affect walking, such as unexpected step-downs and pushes.

**EEE 6772 Foundations of Intelligent Systems**
College of Sci and Engineering, Department of Intelligent Systems & Robotics

3 sh (may not be repeated for credit)

The aim of this course is to provide the student with an introduction to the main concepts and techniques playing a key role in the modern arena of artificial intelligence. In addition to covering the main topics that concern modern AI, such as automated reasoning and search, particular attention will be devoted to its applications in several fields. Among the topics covered are, "What is an intelligent artificial agent?", problem solving using search and constraint satisfaction, uncertainty, Bayesian networks and probabilistic inference, reinforcement learning, multi-agent systems, ethics, as well as several additional topics which may vary from semester to semester.

* This course may be taken prior to or during the same term.