

CEE 1066

Introduction to Stateflow as Applied to Modeling and Simulation

(Non-credit / 2.4 CEU's)

Objective

The objective of this course is two fold. First, students are introduced to **Stateflow**, operating in conjunction with **Simulink** and **Matlab**, as a graphical tool to design, develop, and simulate complex control and supervisory systems. Second, students will have the opportunity to gain hands-on experience through the simulation a wide range of applications in the computer lab.

Description

Stateflow, an integral part of Simulink and Matlab, is a powerful graphical environment and tool indispensable to the development, design, and simulation of complex control and supervisory logic systems. Typical Stateflow applications include: **automotive, telecommunications, industrial machinery, graphical user interface (GUI), and hybrid systems**. Therefore, in this course, we first introduce the students to the basics of Stateflow. Second, simple and representative models are constructed, debugged and simulated. Once the students become familiar with the Stateflow basics and terminology, advanced topics are introduced. Finally, a large number of typical examples and problems will be presented and discussed in order to give the students **hands-on experience** with the aid of a **computer laboratory**.

Topics

1. Review of Simulink
2. Finite state machine fundamentals
3. Introduction to Stateflow basics
4. Stateflow block with its objects and components
 - Diagram
 - Chart
 - States
 - Transitions
 - Events
 - Actions
 - Data
 - Junctions
5. Building, simulating, and debugging simple models
6. Integrating Stateflow, Simulink, and Matlab
7. Selected and advanced topics

Prerequisite

Basic knowledge of Matlab and Simulink is required.

Course Material

- 1) Handouts supplied by the instructor.

Instructor

S. Awad, Professor of Electrical and Computer Engineering.

Target Audience

This course is intended for engineers of all disciplines, scientists, and other technical personnel who are involved in the modeling, design, and simulation of systems.

CEU

A total of 2.4 Continuing Education Units (CEU's) will be awarded to each participant who completes the program. The CEU is a nationally recognized means of tracking non-credit continuing education development. It confirms participation in a structured professional development activity or course work.

One CEU is awarded for 10 hours of completed activity or course work. A permanent record of each attendee's participation is maintained in the Office of the Registrar at the University of Michigan-Dearborn.

Register

Engineering Professional Development

Phone: 313-593-0938 ask for corporate training

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URL: <http://epd.umd.umich.edu/nonCredit/>

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