

CEE 1065

**Introduction to SIMULINK and its Application**

*(non-credit/3.2 CEUs)*

**Objective**

The objective of this course is to introduce students to the software package SIMULINK, which is used in conjunction with MATLAB.

**Description**

SIMULINK, working with MATLAB, is an interactive and graphically-based software package needed by engineers to model, design, and simulate a wide range of dynamic systems, which include analog, digital, linear, and non-linear systems. Course participants are first introduced to the basics of SIMULINK, including how to build, connect, and run system simulations. Next, SIMULINK's functional blocks, which are used in modeling system behavior, are studied. Toward the latter part of the course, many examples will be presented for discussion, followed by a hands-on lab session during which the participants will be given an opportunity to solve representative problems.

**Topics covered**

- Invoking Simulink
- The basics of SIMULINK and its desktop windows
- Introduction to the SIMULINK main libraries
  - linear blocks
  - non-linear blocks
  - waveform generation blocks
  - display blocks
  - logical blocks
- Building and simulating simple systems and subsystems
- Running Simulations from the command window
- Passing data and parameters from and to the Simulink models
  
- Using SIMULINK with other MATLAB toolboxes
  - signal processing toolbox
  - optimization toolbox
  - control systems toolbox
- Hands-on problem solution using SIMULINK and MATLAB

**Prerequisite**

Knowledge of elementary signals and systems fundamentals is recommended. Also, some familiarity with MATLAB is helpful.

**Course material**

Instructor handout

**Instructor**

Dr. Selim Awad, Professor, 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 3.2 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

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