

GEORGE MASON UNIVERSITY  
Department of Computer Science  
Volgenau School of Engineering

**SWE 760 - Software Analysis and Design of Real-Time Systems**

**Prerequisite:** SWE 621 or CS 571, or permission of instructor.

Fall 2016

Tuesday 4:30-7:10 PM

Location: IN 208

Dr. Hassan Gomaa

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**Office Hours:** Wednesdays 3:00-4:00 PM, by appointment, phone & e-mail

**Course Description:**

Investigation of the characteristics of real-time embedded systems and important concepts in the design of these systems. In-depth study of object-oriented and component-based analysis and design modeling of real-time embedded systems using the Unified Modeling Language (UML), SysML, and MARTE notations, including design of hardware/software boundary, real-time design patterns, real-time scheduling, and quality of service issues. Case studies of a range of real-time applications.

**Required Course Text** (Available from Johnson Center bookstore):

H. Gomaa, *Real-Time Software Design for Embedded Systems*, Cambridge University Press, 2016.  
Also available as e-book from GMU library.

**Course Material** (Download from course Web site):

Download from Blackboard Web site as follows:

**To access Courses, log in at: <http://mymasonportal.gmu.edu>, click on the Courses tab and locate SWE 760 link in the Course List.**

**Assignments:**

Students will undertake a term project in the real-time software design of a complex embedded system and write a term paper on some aspect of real-time software design.