

Department of Software Engineering
 Building 70 # 1690
 Phone: (585) 475-5461

Application Domain Description

UNDERGRADUATE

Name of domain: Computer Engineering

This application domain provides students with exposure to the design of computer hardware and the design of software that interacts directly with the hardware or that interfaces to physical devices. A student interested in the design of the next generation of high-performance computers should consider this domain. Many devices, such as automobile engine controllers, cardiac pacemakers, and common appliances, use embedded software controllers. This domain can explore the design of both the controller hardware and software.

Courses

<i>Course number</i>	<i>Course title</i>	<i>Prerequisites</i>
	Select three of the following	
0306-341	Introduction to Digital Systems	
0306-351	Hardware Description Languages	0306-341
0306-451	Digital Signal Processing	1016-306, 1016-331, 0306-381
0306-550	Computer Organization	0306-250
0306-551	Computer Architecture	0306-550
0306-553	Digital Control Systems	0306-451
4010-461/0306-663	Real-Time and Embedded Systems	4010-441 or 4003-440
4010-462/0306-664	Modeling of Real-Time Systems	4010-441 or 4003-440
4010-463/0306-672	Performance Engineering of Real-Time and Embedded Systems	4010-441 or 4003-440

Domain Prerequisites

<i>Course number</i>	<i>Course title</i>

Considerations

Credit on your SE program worksheet will not be granted for both 0306-341 and 0306-340 Engineering Fundamentals of Computer Systems. If you will take 0306-341 as part of this domain, you must request permission to substitute 0306-250 Assembly Language for 0306-340 on your SE program worksheet.

Students taking the real-time and embedded systems courses only for application domain credit should register using the software engineering course number. The use of these courses in a Computer Engineering minor is discussed in the next paragraph.

Students selecting this domain can consider getting a minor in Computer Engineering. The path to a minor would be to request permission to substitute 0306-250 for 0306-340 on your SE program worksheet, take three courses in this domain, and then take one additional Computer Engineering course as a free or engineering elective. If you are taking any of the real-time and embedded systems courses as part of a minor you must register for the course using the Computer Engineering course number.

Before you start on an application domain you should work through the impacts on your schedule. There may be a need to coordinate your co-op blocks based on the quarters in which courses are typically offered as well as considering course pre-requisite chains required within the application domain. Be sure to check with the sponsoring department to obtain the latest information on course prerequisites, scheduling, and registration constraints. Before embarking on a minor you should meet with the department sponsoring the minor to review their current minor requirements, register for the minor, and review scheduling strategies.

Last reviewed: 01 February 2010