

CS404/504 - Real Time Operating Systems

Course Syllabus

Spring 2009

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Text: *An Embedded Software Primer*, by David E Simon, Addison-Wesley, 1999.

Lec	Topic	Text/Ref
1	Introduction, RTOS Characteristics	Chap 1
2	Processor architectures	
3	The ATMEL AVR Processor	Notes
4	The ATMEL AVR Processor	Notes
5	Embedded Processor Development Environment	Chap 9, Notes
6	Embedded Processor Development Environment	Notes
7	C Language review - for embedded systems	Notes
8	Hardware fundamentals	Chap 2,3
9	Hardware fundamentals	Chap 2,3
10	Hardware fundamentals	Chap 2,3
11	Interrupts	Chap 4
12	Interrupts	Chap 4
13	Clocks and interrupts	Notes
14	Interrupts, the shared data problem	Chap 4
15	Scheduling	Chap 5
16	Scheduling	Chap 5
17	Real-time scheduling	Chap 5
	**** Test 1 ****	
	Exam Review	
18	Real-time scheduling	Chap 5
19	Tasks, task states	Chap 6
20	Tasks, task states	Chap 6
21	Tasks	Chap 6
22	Tasks, memory	Chap 6
23	Tasks, memory	Chap 6
24	Memory management	Notes
25	Memory management	Notes
26	RTOS Specification and Design	Notes, Chap 8
27	RTOS Specification and Design	Notes, Chap 8
	**** Test 2 ****	Handout
	Exam Review	
28	The Shared data problem, semaphores	Chap 6
29	Shared data, semaphores	Chap 6
30	Interprocess structures, queues	Chap 7
31	Interprocess structures, pipes	Chap 7
32	Interprocess structures, mailboxes	Chap 7
33	Timers, events	Chap 7
34	Timers, events	Chap 7
35	Timers, events	Chap 7
36	RTOS Reports	
37	RTOS Reports	
38	RTOS Reports	
39	RTOS Reports	
40	RTOS Reports	
41	Final Exam Review	

Grading:

	CS404	CS504
Two Midterm Tests (15% ea)	30%	30%
Final Exam	20%	15%
Homework/Programming Projects	40%	30%
RTOS Report	10%	10%
Grad Project		15%
Total	100%	100%

The letter grade you receive from the course will be determined as follows:

90%	-	100%	A
89.9%	-	80%	B
79.9%	-	70%	C
69.9%	-	60%	D
59.9%	-	0%	F

The instructor reserves the right to adjust these percentages lower if deemed necessary.