ECE 4437 - Spring 2017 - Jan 10

Day	Date	Reading	Class Topic	Milestone	Presentation
T	17-Jan	ARM documentatio	Overview of course & labs/project; ARM Cortex & Code Composer Studio	TI-RTOS Workshop	
Th	19-Jan	TI-RTOS	TI-RTOS		
T	24-Jan	TI-RTOS	TI-RTOS	TI-RTOS Workshop	
Th	26-Jan	TI-RTOS	TI-RTOS		
T	31-Jan	TI-RTOS	TI-RTOS	TI-RTOS Workshop	
Th	2-Feb	Notes	UART, Power and ground issues, power saving,		13. UART
T	7-Feb	Comms	Simple networking, Modbus; Bluetooth		1. GPIO
Th	9-Feb		*in lab*		
T	14-Feb		Communications driver, command interpreter	#1: Build, configure robot, Hello World program due 2/21	6. BlueTooth
Th	16-Feb		Task structure for maze contest; state machines		9. Distance Sensor
T	21-Feb	Sensors datasheets, notes	Sensor electronics (Switch debouncing, transistors, open collector, LED interfacing, interfacing optical sensors, relays, HW vs SW tradeoff)	#2: Bluetooth, communicate w/ PC (Lab 12 due 2/28)	
Th	23-Feb		Demo #1, #2 Robot communicates with PC via Bluetooth		10. Light Sensor
T	28-Feb	No class		#3: Command interpreter, comm protocol	
Th	2-Mar		Motors & servos (DC motors, H bridge, snubber diodes, PWM, servos, stepper motors)		11. PWM 12. ADC
T	7-Mar	Notes	Controls	#4: IR distance sensors (Lab 34 due March 10)	15. PID
Th	9-Mar	TI-RTOS Docs	Controls; fixed point math; Interthread communication, concurrency		7. I2C
	Mar 13-18		Spring Break	#5: Motor functions	14. Tivaware Drivers part 1
T	21-Mar		Timing measurements (input capture, measuring pulse width, period, and frequency; resolution)		5. SPI
Th	23-Mar		Timing measurements (input capture, measuring pulse width, period, and frequency; resolution)	#6 Follow wall using PID control	4. Debugging
T	28-Mar		Data acquisition		3. Tivaware Drivers part 2
Th	30-Mar		Demo #5, #6 Follow wall	#7 Intersections and Dead Ends	8. Tivawrae Drivers part 3
T	4-Apr		Data acquisition		2. Tivawrae Drivers part 4
Th	6-Apr		State machines	#8: Light sensor	
T	11-Apr		State machines		
Th	13-Apr		Demo #7, #8 Detect/respond to intersection, black and white detection with line sensor	#9: Acquire data	
T	18-Apr		SPI, synchronous serial I/O		
Th	20-Apr		Demo #9 Acquire data, transmit to PC	#10: Put it together	
T	25-Apr		Demo #10 Entire maze: TBD. Email for 30-min team appointment. In Lab.		
Th	27-Apr			#10: Put it together	
T	9-May		Final Robot Contest/Demo in Robotics Lab	Contest in lab	
W	10-May		Oral Exam: Wed & Thu, 11am-4pm. Email for 30-min team appointment. In office.		
Th	11-May				