Course **CS 4341.003, Digital Logic and Computer Design**
Professor Richard Goodrum
Term Spring 2015
Meetings MW 2:30-3:45 P.M., Room: ECSS 2.415

Professor's Contact Information

Office Phone	TBD
Other Phone	(972) 883-2185 (CS Department Phone Number)
Office Location	ECSS 4.403
Email Address	Richard.Goodrum@utdallas.edu
Office Hours	8:00 A.M.-9:45 A.M. Monday through Thursday
Teaching Assistant	Baoye Xue
Other Information	The best way to communicate with me (other than meeting me in my office during the office hours) is through UTD email. Use email to set up appointments outside the office hours.

General Course Information

Pre-requisites, Co-requisites, & other restrictions	Pre-requisites: CE 2310 or EE 2310 or CS 3340 or SE 3340 or TE 3340 PHYS 2326 Co-requisite: CS 4141/TE 4141
Course Description	Fundamentals of real-time operating systems. Construction and organization. Specific constructs, functions, and services. Processes, threads, communication, synchronization, etc. Design and development of applications in a realistic RTOS environment.
Learning Outcomes	After successful completion of this course, the student should have: 1. Ability to analyze, minimize and design gate-level combinational logic circuits using Boolean algebra and 3 and 4 variable Karnaugh Maps. 2. Ability to analyze and design simple synchronous sequential circuits 3. Ability to analyze, design and utilize digital logic components such as adders, multiplexers, decoders, registers, and counters. 4. Ability to understand RAM and ROM memory components, and utilize these in digital logic design 5. Ability to design computer components such as Arithmetic-Logic-Unit (ALU) and data path 6. Ability to understand the basics of hardware description languages such as Verilog or VHDL.
Required Texts & Materials	**REQUIRED TEXTBOOK:** Digital Design – A System Approach (2012), Dally & Harting, Cambridge University Press, ISBN: 9780521199506. **SUGGESTED TEXTBOOK:** Computer Organization and Design, Fifth Edition, by David A. Patterson & John L. Hennessy, Morgan Kaufmann, 2014. ISBN: 978-0-12-407726-3. **REQUIRED READING** (Provided on eLearning)**:** Exploring Digital Logic with Logism, First Edition, by George Self.

	SUGGESTED READING: Logic and Computer Design Fundamentals, Fourth Edition, by M. Morris Mano and Charles Kime, Prentice Hall, 2007. ISBN: 978-0-13-198926-9. **OTHER MATERIALS:** Other materials including the syllabus, assignments, slides, the publication describing Logism, etc. will be posted on eLearning. https://elearning.utdallas.edu We will be using a software application called Logisim as an aid to learning about digital logic circuits. Logism is available for download free at: http://www.cburch.com/logisim/index.html

Assignments & Academic Calendar

Week	Class	Dates	Reading Materials	Course Learning Outcomes	Major Assignments
1	1, 2	Jan 11, 13	Introduction		
2	3, 4	Jan 18, 20	Holiday, Verilog	6	
3	5, 6	Jan 25, 27	Chapters 1, 3, & 6; Appendix A	1	
4	7, 8	Feb 1, 3	Chapters 7, 8 & 9	3, 4	
5	9, 10	Feb 8, 10	Chapters 10 & 11		
6	11, 12	Feb 15, 17	Chapter 14	2	Exam 1
7	13, 14	Feb 22, 24	Chapter 16		
8	15, 16	Feb 29, Mar 2	Chapter 17		
9	17, 18	Mar 7, 9	Chapter 18	5	
	Spring Break	Mar 14, 16			
10	19, 20	Mar 21, 22	Chapters 20, 21 & 22		
11	21, 22	Mar 28, 30	Chapter 23		
12	23, 24	Apr 4, 6	Chapter 15		
13	25, 26	Apr 11, 13	Chapters 27 & 28		
14	27, 28	Apr 18, 20			
15	29, 30	Apr 25, 27	Chapters 22, 24 & 25		Project
		TBD			Exam 2

Important Dates and Times	First day of class: Monday, 11 Jan 2016 Exam 1: Thursday, 17 Feb 2016 Project: Thursday, 27 Apr 2016 Exam 2: TBD

Course Policies

Grading Criteria	Exam 1: 20%, Exam 2: 20%, Project: 20%, Programs: 20%, Homework: 10%, Participation: 10%. To pass the course, you must pass each exam and the programming projects.
Make-up Exams	Make-up examinations will be offered only if the student has a valid medical reason and produces a doctor's letter.
Extra Credit	No extra credit work will be assigned.
Late Work	Programming projects and homework submitted after the due date will be penalized at the rate of 25% of the total credit for that assignment for every day by which it is late. Late submissions will not be accepted once the solution has been discussed in class or the graded submissions have been returned. All work must be submitted before the end of the final exam period as provided by the Registrar's office.
Class Attendance	Regular attendance is recommended as it represents 10% of the course grade (participation). If a student has to be absent for three or more classes except medical reasons with a doctor's note, the student will not be eligible for an incomplete grade. If a student is absent more than five times including medical reasons, the student is advised to drop the course.
Classroom Citizenship	The instructor encourages students to take active part in class discussions. No question is too simple/stupid to be asked. So, do not hesitate.
Instructor Expectations	Students will: a. Be on time to lectures. b. Be attentive to lectures. c. Be respectful of other's need to avoid distractions. d. Perform their own work unless directed to participate in a group activity. e. Avoid the use of any premade works of answers (the use of which constitutes cheating). f. All student work done outside the classroom will be typewritten.
Field Trip Policies	Not applicable.
UT Dallas Syllabus Policies and Procedures	*The information contained in the following link constitutes the University's policies and procedures segment of the course syllabus.* *Please go to http://go.utdallas.edu/syllabus-policies for these policies.*

These descriptions and timelines are subject to change at the discretion of the Professor.