Syllabus
CS309 – Switching Theory, Spring 2010
MW 3:55-5:15, N326 Technology Hall

Instructor:	Dr. Glenn Cox	**Email**:	gcox@cs.uah.edu
Office:	N341 / 824-6433	**Class page**:	Click "CS309" at www.cs.uah.edu/~gcox
Office Hours:	T 12-2 and W 10-12 (or by appt)		

Description: Intro to the design of computer logic: Numeric and non-numeric representation in computers, Boolean Algebra and Boolean functions, Combinational and Sequential Logic Design, Computer memory design and operation.

Class Prereqs: CS214

Text: Mano and Ciletti, *Digital Design*, 4th Edition.

Grading:	2 Midterm exams.....50%	90-100 A
	Lab 15%	80-89 B
	Homework..... .....10%	70-79 C
	Final Exam 25%	60-69 D
	Unexcused late homework< 50% off per day	< 60 F

Lecture Plan (subject to change):

Jan	11	Class Orientation, Binary, Binary arithmetic	1.1-1.3
	13	Other bases, 1's and 2's Complement, Signed Binary	1.4-1.6
	18	**Holiday**	
	20	Binary codes, Binary Storage, Binary Logic, Gates	1.7-1.9
	25	Boolean Algebra: Axioms, Theorems	2.1-2.4
	27	Boolean Functions, Canonical & standard forms, Basic logic using gates	2.5-2.8
Feb	1	Hand simplification of Boolean functions, conversion between forms	2.6
	3	Related topics	2.7-2.9
	8	**Midterm 1**	Ch 1-2
	10	Karnaugh maps, Don't Cares	3.1-3.6
	15	"" ""	
	17	Basic Two-Level Circuits: NAND, NOR, A-O-I, O-A-I, XOR	3.7-3.8
	22	Comb. Circuit Analysis & Design Processes. Design of a code converter	4.1-4.4
	24	Half and Full Adders, Adder/Subtractors	4.5-4.6
Mar	1	Multipliers, Comparators, Decoders, design using decoders	4.7-4.9
	3	Encoders, Muxes, Tri-state logic	4.10-4.11
	8	Combinational design exercises	
	10	**Midterm 2**	Ch 3-4
	15	**Spring break**	
	17	**Spring break**	
	22	Intro to Sequential Circuits, latches, Flip-flops	5.1-5.4
	24	Seq. Circuit Analysis	5.5
	29	Seq Circuit Design Procedure, Sequence Detectors & Counters	5.8
	31	Sequential design exercises	
Apr	5	"" ""	
	7	Registers, Shift Registers, Counters	6.1-6.5
	12	"" ""	
	14	RAM Organization & Operation, Technologies	7.1-7.3
	19	"" ""	
	21	Error Control, ROMs, PLAs, PALs, FPGAs	7.4-7.8
	26	Review	
May	3	**Final exam, 3:00-5:30**	

UAH COMPUTER SCIENCE DEPARTMENT POLICIES AND PROCEDURES

1. Responsibilities of the teacher

- Provide a detailed syllabus. This syllabus should list office hours, course objectives, textbooks, references, prerequisites, and grading policy/method of assessment.
- Come to class well prepared, on time, and make full use of the class time.
- Provide timely and adequate feedback on grades. Return graded material promptly.
- Conduct final exam at the time designated in the class schedule. Never post grades.
- Not assign **new** work (i.e. not listed on syllabus) that is due in last two weeks of classes.
- Avoid leaving the examination room without a proctor. Provide paper for exams.
- Make reasonable use of the assigned textbook.
- Check students have proper prerequisites. Instructor does not waive assigned prerequisites.
- **Report all incidences of academic misconduct to the Department and VP for Student Affairs**

2. Responsibilities of the student (see also, Student Handbook Article II)

1) Come to class with proper prerequisites, well prepared, on time, and make full use of class time.
2) Provide adequate notice of anticipated absences and take full responsibility for finding out about missed work, announcements, and assignments.
3) Submit assessment material on time and submit **only your own work**. (see integrity)
4) Do not allow other students to copy your work.
5) Read and understand the syllabus and follow announced policies.

3. Integrity

We expect CS instructors and students to conduct themselves in a professional manner. Students are subject to all the provisions in the UAH Code of Student Conduct, which is available free from the Office of Admissions and Records. Information on plagiarism and other forms of misconduct is presented in the **Student Handbook Article III**. *Departments are obliged to report all student misconduct to the Office of Student Affairs.*

4. Complaint Procedure

If you have difficulties or complaints related to this course, your first action should be to discuss them with your instructor. If such a discussion would be uncomfortable for you or fails to resolve your difficulties, you should ask for a meeting with the Chair of the Computer Science Department in Technology Hall N-300, info@cs.uah.edu, telephone 824-6088. If you are still unsatisfied, you should discuss the matter with Dr. Dan Rochowiack, Associate Dean of the College of Science.

5. Students with disabilities

Your instructor would like to hear from anyone who has a disability that may require a modification of seating, testing, or other class procedures. Please see instructor after class or during office hours to discuss appropriate modifications. You should also contact Student Development Services in UC 113 (Ph. 824 6203) for further assistance.

6. Student computer account

Students enrolled in any CS course are entitled to an account on the departmental computer network. Use of such an account is subject to departmental and university policies. To apply for an account, and see the current policies, go to the departmental web site at *http://www.cs.uah.edu/account/*

7. Examination policy

In response to past student complaints about problems during examinations, the Computer Science Department has developed the following guidelines for in-class examinations in all courses.

1. Come to the exam prepared to complete it without a break. If you think you will need a break, please inform the proctor before the exam if possible.
2. Do not communicate with other students. Talk only to the instructor.
3. Whenever you leave the exam room turn in your exam.
4. Use only the paper provided by the instructor for all writing.
5. If assigned a specific seat, remain in that seat.
6. Unless specifically permitted by the instructor, use no books or other reference materials. Do not bring calculators, computers, pocket-organizers, cell phones, pagers, or other electronic devices to the exam.