Syllabus

CS 2204 Syllabus, Sp 2020

New York University

Electrical and Computer Engineering

Course Outline CS 2204 [**Digital Logic and State Machine Design**], Spring 2020

Instructor: Azeez Bhavnagarwala

Instructor: **ajb20@nyu.edu,** *Tel:* **646-997-3320** *Room 817, ECE*

Class Lecture*:* **Tuesday, Thursday 2:00 PM – 3:50 PM,** *Room:* **RH 475**

Weekly Lab/Problem Set**:**

Section 1: Monday: 2:30PM – 5:20PM *Room:* **RH 227**

Section 2: Tuesday: 9:30AM – 12:20PM *Room:* **RH 227**

Section 3: Wednesday: 2:30PM – 5:20PM *Room:* **RH 227**

Section 4: Friday: 4:30PM – 7:20PM *Room:* **RH 227**

Instructor Office hours: **Monday** 9:30AM-11:00 AM**, Wednesday:** 11:00AM ï 12:30PM**, Thursday** 4:00PM ï 5:00PM

Course Assistant Office Hours: **Tuesdays, Fridays TBD**

Course Pre-requisites ENGR 1000 or CSUH 1001: Introduction to Computer Science/ Computer Programming for Engineers. Please see instructor if you have an equivalent background.

Summary Course Description: This course covers combinational and sequential digital circuits. Topics: Introduction to digital systems. Number systems and binary arithmetic. Switching algebra and logic design. Error detection and correction. Combinational integrated circuits, including adders. Timing hazards. Sequential circuits, flipflops, state diagrams and synchronous machine synthesis. Programmable Logic Devices, PLA, PAL and FPGA. Finite-state machine design. Memory elements. A grade of C or better is required of undergraduate computer-engineering majors. | Prerequisite for Brooklyn Students: CS-UY 1114 (C- or better) or CS-UY 1133 (C- or better) | Prerequisite for Abu Dhabi Students: CS-UH 1001 (C- or better) or ENGR-UH 1000 (C- or better) | Prerequisite for Shanghai Students: CSCI-SHU 101 (C- or better)

Course structure:

Your performance in the course will be assessed with your performance in **weekly HW assignments** (15% of total grade), Weekly Problem Sets/Labs (10% of total grade) **Two Quizzes** (20% of total grade each) and a **final** (35% of total grade).

Course Textbook:

John Wakerly, Digital Design: Principles and Practices (5th Edition)

Moses Center Statement of Disability:

If you are student with a disability who is requesting accommodations, please contact New York Universityôs Moses Center for Students with Disabilities at 212-998-4980 or mosescsd@nyu.edu. You must be registered with CSD to receive accommodations. Information about the Moses Center can be found at www.nyu.edu/csd. The Moses Center is located at 726 Broadway on the 2nd floor.

Course Schedule:

Week	CS 2204 Lecture Content	Lab Session
1 Jan 27	Number Systems and Codes for Error Detection	**Problem Set**
2 Feb 3	Switching Algebra & Combinational Logic	**Problem Set**
3 Feb 10	Digital Design Practices, Hardware Description Language	**FPGA setup - Simple Examples**
4 Feb 17	Introduction to behavioral Verilog for Digital Circuit Synthesis	**Verilog Problem Set using FPGA**
5 Feb 24	Combinational Logic Elements	**Problem Set**
6 Mar 2	Combinational Building Blocks and Arithmetic components in Verilog **Quiz 1**	**Problem Set – Quiz Prep,** **FPGA Lab - 3**
7 Mar 9		
8 Mar 16	State Machines and Sequential Logic Elements	**Problem Set** **FPGA Lab - 4**
9 Mar 23		

10 **Mar 30**	Sequential Circuits in Verilog	**FPGA Lab - 5**
11 **Apr 6**	Counters & Shift Registers	**Problem Set**
12 **Apr 13**		**FPGA Lab - 6**
13 **Apr 20**	State Machines in Verilog **Quiz 2**	**Problem Set – Quiz Prep**
14 **Apr 27**		**FPGA Lab - 7**
15 **May 4**	Sequential Circuit Design Practices	**Problem Set,**
16 **May 11**	**Review Problems for Final**	**Final Exam: Thu May 14th**

Policy on Academic Honesty:

In pursuing these goals, NYU expects and requires its students to adhere to the highest standards of scholarship, research and academic conduct. Essential to the process of teaching and learning is the periodic assessment of students' academic progress through measures such as papers, examinations, presentations, and other projects. Academic dishonesty compromises the validity of these assessments as well as the relationship of trust within the community. Students who engage in such behavior will be subject to review and the possible imposition of penalties in accordance with the standards, practices, and procedures of NYU and its colleges and schools. Violations may result in failure on a particular assignment, failure in a course, suspension or expulsion from the University, or other penalties.

More details about specific actions that constitute a violation of the NYU policy can be found here. https://www.nyu.edu/about/policies-guidelines-compliance/policies-and-guidelines/academic-integrity-for-students-at-nyu.html

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