

**EEE/CSE 120: Digital Design Fundamentals**  
**Fall 2020**

---

## General Information:

Instructor: Dr. Bahman Moraffah  
Office: GWC 333  
Email: [bahman.moraffah@asu.edu](mailto:bahman.moraffah@asu.edu)  
Office Hours: TTH 9:30-10:15 am or by appointment  
Course Website: [Link](#)  
Class Meet: Tuesday and Thursday

**Disclaimer:** *This syllabus is to be used as a guideline only. The information provided is a summary of topics to be covered in the class. Information contained in this document such as assignments, grading scales, due dates, office hours, required books and materials may be subject to change at instructor discretion. Please remember to regularly check your ASU email and Canvas.*

**Required Textbook:** *Introduction to Logic Design*, 3<sup>rd</sup> Edition, by Alan B. Marcovitz, McGraw-Hill, 2010.

## Supplemental Material:

- Instructor's Notes [Will be uploaded on course website].
- Contemporary Logic Design, 2<sup>nd</sup> Edition, by Randy H. Katz and Gaetano Borriello, 2004. [Not required]

**Communication:** We use both canvas and course website for announcement and notes. All students must regularly check these websites for update.

If there is a question as to lectures that you need to ask the professor, contact him directly through his email. The subject of the email must be as follows: **EEE/CSE 120: T TH (time of your class)**. If you use different title your email will go to spam. It is every student's responsibility to check both.

**Announcements:** Important announcements and course information will be posted through Canvas and course website. It is your responsibility to regularly check for them.

## Laboratory

Laboratory Manuals available on Canvas, Intel Quartus Prime Lite software available in the GWC 273 lab or online. Each student must submit an individual report. As of now, labs are held online through ASYSync. Information regarding the labs is provided on Canvas.

## Course Objectives:

At the completion of this course, students will be able to:

1. Design, build, debug, and demonstrate the operation of arbitrarily complex synchronous machines given a reasonable problem statement.
2. Students can use AC steady state analysis on linear circuits.
3. Set criteria to determine the "best" design and select the best design from the created designs.
4. Describe the operation of an elementary microprocessor.
5. Create an instruction set for an elementary microprocessor, and enter the instruction set into the processor's instruction PROM.
6. Enter a program in the processors memory and execute the program.

## Grade Distribution:

Labs	25%
Assignments	10%
Quizzes and Attendance	15%
Midterm	20% on October 20, 2020
Final Exam	20% As scheduled by ASU

## Letter Grade Distribution:

$\geq 97.00$	A+	77.00 - 79.99	B-
92.00 - 96.99	A	73.00 - 76.99	C+
88.00 - 91.99	A-	70.00 - 72.99	C
84.00 - 87.99	B+	60.00 - 69.99	D
80.00 - 83.99	B	$\leq 59.99$	E

**Attention:** These thresholds may change at the instructor's discretion.

**Attention:** In addition to scheduled quizzes we will have pop-quizzes.

**Extra Points:** I need volunteers to take notes each class, type it up and send it to me so it can be uploaded for the entire class. Each student can scribe at most 2 lectures.

Incorrect work and correct answer = NO CREDIT.

No work and correct answer = NO CREDIT.

## Course Policies:

### • General

- Quizzes and exams are closed book, closed notes but you will be allowed calculators and one hand-written, double-sided cheat sheet.
- No makeup quizzes or exams will be given unless the instructor excuses the absence.
- The course uses Matlab for some of the circuit analysis homework (You do not need to be an expert in Matlab to be able to answer your homework questions). You will be required to submit the Matlab code and output as your homework solution. Laboratory employs LTspice for circuit simulation. You are expected to have the tools on your computers or access them on the campus computer laboratories.

### • Labs and Assignments

Homework assignments will be posted on Canvas and must be submitted at beginning of the class on the due date. Presentation and methods for arriving at the answer are just as important as the mathematical answer. For complete credit: (1) show all work, and (2) box the answer and include the units. Assignments must be turned in on stated due dates. No late assignments will be accepted. Notify the instructor in writing BEFORE an assignment is due if an emergent situation rises and you cannot turn in the assignment on time. Other excuses will NOT be accommodated. Homework will be returned in class and if not picked up at that time will be disposed within 1 week.. Please follow the appropriate University policies to request an accommodation for religious practices or to accommodate a missed assignment due to University-sanctioned activities

- Students are expected to work independently. **Offering and accepting** solutions from others is an act of **plagiarism**, which is a serious offense and **all involved parties will be penalized according to the Academic Honesty Policy**. Discussion amongst students is encouraged, but when in doubt, direct your questions to the professor, tutor, or lab assistant.
- Labs must be submitted as your lab TA advises.

### • Attendance and Absences

- Attendance is expected to be taken each class. In case of emergency, you must notify the instructor within a reasonable time. It is at instructor's discretion to excuse your absence. You are allowed to miss 1 class during the semester without penalty (You still must notify the instructor to be excused). Any further absences will result in point and/or grade deductions. Attendance will be taken through random quizzes.
- Students are responsible for all missed work, regardless of the reason for absence. It is also the absentee's responsibility to get all missing notes or materials.

### • Quizzes

Several announced/unannounced quizzes will be given through the course and given at any time of a class. No makeup will be offered for the quizzes except in cases of emergency or medical reasons that are accompanied by a valid doctor's note.

- **Course Preparation**

It is very important that you closely read all the material assigned and be prepared to ask questions about the material when you are stumped, indeed "there are no bad questions," so don't be shy. Please come and see me if you feel you are falling behind in the course anytime.

- **Tutors**

They provide individual help on class topics and homework assignments. You can find out more about them through <https://tutoring.engineering.asu.edu/>.

## **Academic Integrity**

ASU expects and requires all students to act with honesty and integrity, and respect the rights of others in carrying out all academic assignments. Each student in this class is expected to abide by the ASU Academic Integrity Policy and Student Code of Conduct (available at <https://provost.asu.edu/academicintegrity>). Discussions are encouraged for assignments. However, Homework assignments have to be prepared and submitted individually and must be your own work. Copying is not allowed. Students are expected to abide by the FSE Honor Code (<https://engineering.asu.edu/integrity/>). All laboratory assignments have to be completed individually. Submitting lab reports from previous semesters or other students is considered an academic integrity violation and will be reported. All contents of the lectures, including written materials distributed to the class, are under copyright protection. Notes based on these materials may not be sold or commercialized without the express permission of the instructor. [Note: Based on [ACD 304-06](#).]

## **Instructor's Intended Purpose**

You are encouraged to work with others on assignments. However, assignments denoted as individual assignments MUST be your own, original work. If you work with others on these assignments, you must acknowledge their help. Direct copying of others assignments will result in an XE for this course. Cheating on exams will also result in an XE for this course. Any cheating will be reported to the ASU academic integrity office. In addition to skills and knowledge, COLLEGE/UNIVERSITY aims to teach students appropriate Ethical and Professional Standards of Conduct. The Academic Honesty Policy exists to inform students and Faculty of their obligations in upholding the highest standards of professional and ethical integrity. All student work is subject to the Academic Honesty Policy. Professional and Academic practice provides guidance about how to properly cite, reference, and attribute the intellectual property of others. Any attempt to deceive a faculty member or to help another student to do so will be considered a violation of this standard.

## **Disability Accommodations**

Suitable accommodations will be made for students having disabilities and students should notify the instructor as early as possible if they will require same. Such students must be registered with the Disability Resource Center and provide documentation to that effect.

## **Harassment and Sexual Discrimination**

Arizona State University is committed to providing an environment free of discrimination, harassment, or retaliation for the entire university community, including all students, faculty members, staff employees, and guests. ASU expressly prohibits discrimination, harassment, and retaliation by employees, students, contractors, or agents of the university based on any protected status: race, color, religion, sex, national origin, age, disability, veteran status, sexual orientation, gender identity, and genetic information.

Title IX is a federal law that provides that no person be excluded on the basis of sex from participation in, be denied benefits of, or be subjected to discrimination under any education program or activity. Both Title IX and university policy make clear that sexual violence and harassment based on sex is prohibited. An individual who believes they have been subjected to sexual violence or harassed on the basis of sex can seek support, including counseling and academic support, from the university. If you or someone you know has been harassed on the basis of sex or sexually assaulted, you can find information and resources at <https://sexualviolenceprevention.asu.edu/faqs>. As an employee of the University I am considered a mandated reporter and therefore obligated to report any information regarding alleged acts of sexual discrimination that I am informed of or have a reasonable basis to believe occurred. ASU Counseling Services, <https://eoss.asu.edu/counseling>, is available if you wish to discuss any concerns confidentially and privately.

## **Tentative Course Outline**

The tentative course schedule can be found on the course website. The weekly coverage may change as it depends on the progress of the class. Note that you should read the textbook sections provided in the following table before the class meeting that day.