Syllabus

1. Course Staff and Office Hours

Instructor: Peter Milder
(he/him)
peter.milder@stonybrook.edu

Office Hours: Tuesday 2:30pm to 4:30pm
Thursday, 10:00am to 12:00pm
Light Engineering 231
Other hours by appointment

TAs: Office hours listed on Brightspace

Office hours may change. Please check Brightspace for the most up-to-date office hours schedule.

2. Course Description

Develops methods of analysis and design of both combinational and sequential systems regarding digital circuits as functional blocks. Utilizes demonstrations and laboratory projects consisting of building hardware on breadboards and simulation of design using CAD tools. Topics include: number systems and codes; switching algebra and switching functions; standard combinational modules and arithmetic circuits; realization of switching functions; latches and flip-flops; standard sequential modules; memory, combinational, and sequential PLDs and their applications; design of system controllers. Fall and Spring.
Prerequisite*:* ESE 123
4 credits

3. Textbook

"Digital Design," M. Morris Mano and Michael D. Ciletti. Students can use either the 5th edition (2012) or the 6th edition (2017).

4. Grading

Your grade will be based on labs, homework assignments, two midterm examinations, and one final examination.

Labs	25%
Homework Assignments	20%
Midterm #1	15%
Midterm #2	15%
Final Exam	25%

5. Schedule

Lectures will be held on Tuesdays and Thursdays from 5:00pm to 6:20pm in Frey Hall 104.

Mid-term exams will be given during class. The final examination will be given during the university's assigned final exam slot. Please see Brightspace for a full schedule of exams. All exams will be given in person.

No make-up exams will be given. If you miss a midterm because of documented serious circumstances beyond your control, then, at the discretion of the instructor, the relevant score may be dropped in computing your course grade.

A full (tentative) course schedule is available on Brightspace. This schedule lists each lecture, its topics, and the corresponding sections of the textbook. It also includes planned due dates for homework assignments and a lab schedule. Please note that this schedule will be updated as needed; check Brightspace for the latest version.

6. Labs

Labs take place in Heavy Engineering 235. Labs begin the week of February 3rd. You must attend the section in which you are registered. Please see the schedule of labs on Brightspace.

Make-up labs will only be allowed due to documented serious circumstances beyond your control.

You are responsible for ensuring that the lab section in which you choose to enroll does not conflict with obligations for your other courses. Some other courses (e.g., MAT 132) occasionally have midterm exams scheduled outside of their normal class times. (Check the syllabi for your other courses.) We will not offer make-up labs if you need to miss a lab due to another course's scheduled exam or other obligation.

Each lab has a pre-lab assignment that is due at the beginning of your in-lab session, and each lab has a lab report that is due at the end of the lab. Please see the Lab Procedure Guide (available on Brightspace) for more information about labs and lab rules.

7. Homework Assignments

Homework assignments will be issued roughly weekly. A full schedule is available on Brightspace. (This schedule will be updated as needed.) All

assignments will be due at the *beginning* of class on the assigned day. Please see the Late Homework Policy, below.

All homework assignments will be submitted on Brightspace. All submissions must be in PDF format, and each assignment should be submitted as a single PDF file.

We will only grade the work that you submit on time to the proper location in Brightspace. **You are responsible for ensuring that you have uploaded the correct PDF file and that the uploaded PDF file displays correctly in Brightspace. Carefully check your uploaded file after submission.** We will not allow re-submissions after the due date has elapsed, so please check carefully when you submit.

Your lowest homework grade will be dropped.

8. Late Homework Policy

Each student is given two "late days" for homework assignments. Each late day can be used to turn in one homework assignment one day late. You may not use both late days on one assignment. **Late days may not be used on labs.**

Homework assignments are due at the beginning of class (5:00pm). Any assignment turned in **after 5:15pm** will be considered one day late. **If you are out of late days, no late homework will be accepted.**

Each calendar day counts as one late day. For example, if an assignment is due Thursday at 5:00pm, you may turn it in on Brightspace by 5:00pm on Friday with one late day. To submit a homework late, simply submit it on Brightspace before the 24-hour late period has ended.

You can check the number of late days you have remaining on Brightspace. (It is listed in the Gradebook section.)

9. Collaboration Policy

Homework assignments and labs are to be completed individually. You may *discuss* them with your classmates. (In fact, you are encouraged to do so.) However, you must write up your own solution individually without any help from any other person. For labs, you may not share files with other students in the group.

For example, it is fine if you and a friend discuss a problem together, and then separately work out the details and write your own separate solutions. On the other hand, it is not acceptable to share written solutions with another person or to create the written solutions together. In other words, the work you turn in must entirely be your own personal effort.

If you discuss homework problems with another person in the class, you must write "I discussed this assignment with…" and include the name(s) at the top of the assignment.

Labs (and pre-lab assignments) will be completed with one partner. You and your partner should work cooperatively. However, you may not collaborate on labs or pre-labs with other groups.

10. Academic Honesty

Any academic dishonesty on a homework or lab will result in a zero grade for the assignment for all parties involved.

All exam work must be entirely your own with no collaboration or outside materials/information. Any academic dishonesty on the midterm exams or the final exam will result in failing the course. The case will be submitted to the College of Engineering's Committee on Academic Standing and Appeals.

11. Piazza: Online Discussion Forum

We will be using Piazza for class discussion. The system is highly catered to getting you help fast and efficiently from classmates, the TAs, and your professor. Rather than emailing questions to the teaching staff, I encourage you to post your questions on Piazza. On the first day of classes, you will receive a signup link sent to your @stonybrook.edu email address.

12. Course Learning Outcomes

Upon completion of the course, students will have

- an understanding of the fundamentals of analysis and design of digital circuits and standard building blocks;
- skills in reading schematics of digital circuits and analysis of circuit behavior;
- skills in the design and verification of digital circuits using conventional methods and CAD tools;
- skills in troubleshooting faults in assembled circuits using pattern generators and logic analyzers.

13. Electronic Communication Statement

Email is one of the ways the faculty officially communicates with you for this course. It is your responsibility to make sure that you read your email in your official University email account.

If you need technical assistance, please contact Client Support at (631) 632-9800 or supportteam@stonybrook.edu.

14. Student Accessibility Support Statement

If you have a physical, psychological, medical, or learning disability that may impact your course work, please contact the Student Accessibility Support Center, Stony Brook Union Suite 107, (631) 632-6748, or at sasc@Stonybrook.edu. They will determine with you what accommodations are necessary and appropriate. All information and documentation is confidential.

15. Academic Integrity Statement

Each student must pursue their academic goals honestly and be personally accountable for all submitted work. Representing another person's work as your own is always wrong. Faculty is required to report any suspected instances of academic dishonesty to the Academic Judiciary. Faculty in the Health Sciences Center (School of Health Technology & Management, Nursing, Social Welfare, Dental Medicine) and School of Medicine are required to follow their school-specific procedures. For more comprehensive information on academic integrity, including categories of academic dishonesty please refer to the academic judiciary website at
http://www.stonybrook.edu/commcms/academic_integrity/index.html

16. Critical Incident Management Statement

Stony Brook University expects students to respect the rights, privileges, and property of other people. Faculty are required to report to the Office of Student Conduct and Community Standards any disruptive behavior that interrupts their ability to teach, compromises the safety of the learning environment, or inhibits students' ability to learn. Faculty in the HSC Schools and the School of Medicine are required to follow their school-specific procedures. Further information about most academic matters can be found in the Undergraduate Bulletin, the Undergraduate Class Schedule, and the Faculty-Employee Handbook.