

ECE 151 - Summer 2023-Session 2

Lecture: Monday and Wednesday 1:00-4:30 p.m. ONLINE .

Discussion: Tuesday 2:00 - 3:15 p.m. ONLINE. Same Zoom Link as Lecture.

Office Hours By TA: Thursday 2:00 - 4:00 p.m. ONLINE. Or Special Request by Email. Same Zoom Link as Lecture.

All lectures are presented online and we will upload lecture notes after each class lecture.

Instructor: Hamid R. Sadjadpour, BE2-245B, Email: hamid@soe.ucsc.edu,

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Grader: Aishwarya Janardhana Rajur, Email: arajur@ucsc.edu

TA: Xiangjian Gao, xgao41@ucsc.edu

Any question regarding the homework gradings, should be directed to the grader.

Instructor Office Hours: Online

Simon Haykin, Michael Moher, Introduction to Analog and Digital Communications, Second edition, John Wiley Publisher.

Homeworks (10%):

Problems will be given at the end of each chapter. Late homework will not be accepted.

Exams (Midterms 90%, No Final Exam):

There will be many midterm exams based on each chapter. We are not going to have any final exam for this course.

Midterm Exam(s): TBD during the class schedule.

No make-up exam under any circumstances. Exams are closed book.

Course Outline:

- Amplitude Modulation: DSB-SC, SSB, DSB, QAM, VSB, receiver design, Chapter 3
- Angle Modulation: FM and PM relationship, FM narrowband and wideband modulation, FM demodulation and receiver, Chapter 4
- Pulse Modulation: PAM, PPM, PCM, Delta modulation, DPCM, Line codes, Chapter 5
- Baseband Data Transmission: ISI, Nyquist channel, Raised-Cosine Pulse Spectrum, M-ary data transmission, Eye pattern, Chapter 6
- Digital Band-Pass Modulation: ASK, PSK, FSK, DPSK, non-coherent modulation, M-ary modulation, Chapter 7
- Noise in Digital Communications, Chapter 10.

We may not be able to teach all sections of these chapters.

The exams will be based on class materials and homeworks.

Announcements:

- **The prerequisite for this course is ECE 103, Signal and Systems and CSE 107 or STAT 131. It is strongly recommended that all students review Fourier Transform topic.**
- If you qualify for classroom accommodations because of a disability, please get an Accommodation Authorization from the Disability Resource Center (DRC) and submit it to me in person outside of class (e.g., office hours) within the first two weeks of the quarter. Contact the DRC at 459-2089 (voice), 459-4806 (TTY), or <http://drc.ucsc.edu> ~~<http://drc.ucsc.edu/>~~ for more information on the requirements and/or process.
- *UC Santa Cruz is committed to creating an academic environment that supports its diverse student body. If you are a student with a disability who requires accommodations to achieve equal access in this course, please submit your Accommodation Authorization Letter from the Disability Resource Center (DRC) to me privately during my office hours or by appointment, preferably within the first two weeks of the quarter. At this time, I would also like us to discuss ways we can ensure your full participation in the course. I encourage all students who may benefit from learning more about DRC services to contact DRC by phone at 831-459-2089, or by email at drc@ucsc.edu.*
 - HW#1- Chapter 3, Problems 17(a,b), 23,24,25(a), and 27. Due Date: 8/4/23, 5 p.m.
 - Fourier Transform notes.

- **Midterm 1 exam: 8/7/23 during lecture. It is based on chapter 3.**
- HW#2: Chapter 4, Problems 4,5,10,11,13. Due Date: 8/11/23, 5 p.m.
- **Midterm 2 exam: 8/14/23 during lecture. It is based on chapter 4.**
- HW#3-Chapter 5: Problems 3,16,18,19,21. Due Date: 8/18/23, 5 p.m.
- **Midterm 3 exam: 8/21/23 during lecture. It is based on chapter 5.**
- HW#4-Chapter 6:Problems 8,9,10,12,14. Due Date: 8/22/23, 5 p.m.

- HW #5: Chapter 7: Problems 4, 9, 11(a), 17, 19. Due Date: 8/25/23, 5 p.m.
- **Midterm 4 exam: 8/28/23 during lecture. It is based on chapter 6 and 7.**
- HW #6: Chapter 10, Problems 4, 9, 11, 22. Due Date: 8/30/23. **No need to submit.**
- **Midterm 5 exam: Can take it anytime until Sunday, September 3. It is based on chapter 10. The exam is for one hour and the deadline to take the exam is 11:59 p.m. on that day.**