Course Syllabus

Communications Systems

ECE 151 - Summer session 2, 2024

Lecture: Tuesday and Thursday 9:00-12:30 p.m. Room: Engineer 2 192.

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

Phone: (831)459-1483.

Grader: Abdulaziz Alatawi, Email: aalatawi@ucsc.edu

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

Instructor Office Hours:

Friday 9-10 a.m., via zoom or by appointment.

Join Zoom Meeting
https://ucsc.zoom.us/j/94471164803?pwd=UDVZaXlDeTBmanExZXliTno1Sm5xUT09

Meeting ID: 944 7116 4803
Passcode: 048467

Textbooks:

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 (Midterm 90%, There is no Final exam for the students who pass the course.

Midterm Exams: Every week during the class schedule.

Class attendance is required and this will be enforced during each lecture.

Final Exam: Only for students who fail the course as the second chance to pass the course as long as they attend more than 90% of the lectures.

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

Course Outline:

- Amplitue Modulation: DSB-SC, SSB, DSB, QAM, VSB, receiver design, Chapter 3
- Angle Modulation: FM and PM relationship, FM narrowband and wideband modulation, FM demodulationa 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.

Final exam will cover the entire course and it is only for students who fail the course and attend the course regularly.

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

The exams will be based on class materials and homework.

Announcements:

- **The prerequisite for this course is EE 103, Signal and Systems and CE 107. 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 <u>first two weeks of the quarter.</u> 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 <u>831-459-2089</u>, or by email at drc@ucsc.edu.

- HW#1- Chapter 3, Problems 17(a,b), 23,24,25(a), and 27. Due Date: 8/4/24.
- Fourier Transform notes.
- HW#2: Chapter 4, Problems 4,5,10,11,13. Due Date: TBD.
- HW#3-Chapter 5: Problems 3,16,18,19,21. Due Date: TBD.
- HW#4-Chapter 6:Problems 8,9,10,12,14. Due Date: TBD.
- HW #5: Chapter 7: Problems 4, 9, 11(a), 17, 19. Due Date: TBD.
- HW #6: Chapter 10, Problems 4, 9, 11, 22. Due Date: TBD.

Academic Dishonesty

Any confirmed academic dishonesty including but not limited to copying homeworks or cheating on exams, will result in a no-pass or failing grade. You are encouraged to read the campus policies regarding academic integrity. Examples of cheating include (but are not limited to):

- Sharing results or other information during an examination.
- Working on an exam before or after the official time allowed.
- Using the Cell phone for any reason during exam.
- Submitting homework that is not your own work.
- Reading another student's homework solution before it is due.
- Allowing someone else to read your homework solution before the assignment is due.
- If there is any question as to whether a given action might be construed as cheating, see me before you engage in any such action.