

## Syllabus

### ECE103L Signals and Systems Laboratory - Summer 2020 (10-Weeks)

<b>Professor:</b>	Dr. George S. Hurtarte
<b>Contact Information:</b>	<a href="mailto:jhurtart@ucsc.edu">jhurtart@ucsc.edu</a> , Cell/WhatsApp: +1-203-685-2492, Skype/WeChat: jeorgez
<b>Office Hours:</b>	By appointment
<b>Laboratory Session:</b>	M: 1:00 – 3:00 p.m. in Zoom Video Conferencing
<b>TA Contact Information</b>	Sam Teymoori, <a href="mailto:steymoor@ucsc.edu">steymoor@ucsc.edu</a>
<b>Required Software:</b>	MATLAB. Free download for UCSC students at <a href="https://its.ucsc.edu/software/matlab.html">https://its.ucsc.edu/software/matlab.html</a>
<b>Pre-requisites:</b>	EE101/EE101L and Applied Mathematics and Statistics 20. Concurrent enrollment in course ECE 103 (Signals and Systems) is required.

#### Course Objectives:

This lab complements the ECE 103 (Signals and Systems) course by teaching MATLAB programming as a tool for signal analysis.

#### Grading:

Laboratory Assignments:	70%
Final Exam:	30%

A uniformly distributed mapping will be employed to equate percentages to letter grades as follows:

<i>Grade</i>	A+	A	A-	B+	B	B-	C+	C	C-	D+	D	D-	F
<i>Percentage</i>	95+	85-94	80-84	75-79	60-74	55-59	50-54	35-49	30-34	25-29	10-24	5-9	<5

**Laboratory Assignments:** The lab assignments will be announced on Canvas. One assignment per lab, for a total of six assignments. See the tentative lab schedule below.

## Tentative Lab Schedule

Week	Lab	Topics	Published	Due
1	1	Introduction to MATLAB. Installation and setting up. MATLAB Command line, function, array/vector/matrix, Control, if/elseif/else, Loop (while/for), plot(x,y).	June 22 <sup>nd</sup>	July 6 <sup>th</sup>
2				
3	2	Sampling, Periodic signal, Piecewise function, Inline functions/ anonymous function, Signal scale/shift signal, Numerical integration, Energy/power signal.	July 6 <sup>th</sup>	July 13 <sup>th</sup>
4	3	Solving system of linear equations, Solving differential equations, Impulse response, Convolution, Deconvolution	July 13 <sup>th</sup>	July 20 <sup>th</sup>
5	4	Creating periodic signals in Matlab, Fourier series. Reconstruction of signal from Fourier component, Anomaly in FS reconstruction with numerical implementation.	July 20 <sup>th</sup>	August 3 <sup>rd</sup>
6				
7	5	Fourier Series to Fourier Transform, Numerical implementation of FT. Matlab Fourier Transform function: fft(), ifft(), fftshift(), ifftshift(), Convolution, Parseval's theorem, , Laplace Transformation.	August 3 <sup>rd</sup>	August 17 <sup>th</sup>
8				
9	6	Fourier Series coefficients using fft(), ECG line noise removal, Amplitude modulation (DSB-SC).	August 17 <sup>th</sup>	August 24 <sup>th</sup>
10		Final Exam	August 24 <sup>th</sup>	

## Important Summer Session Remote 2020 Deadlines:

10-Week:

Drop: Monday, July 6

Request for “W”: Friday, July 24

Summer is unique. **You will not be dropped for non-attendance or non-payment.** You must drop yourself. Dropping before the deadline results in a full-tuition reversal/refund. Withdraw posts a W for the grade and full tuition is charged (no refund).

For all dates and deadlines, including ‘change of grade option’ (P/NP) and grades due, here is the summer academic calendar: <https://summer.ucsc.edu/studentlife/index.html>

For questions about dropping, requesting a W grade for a course, or withdrawing from the summer quarter, email [summer@ucsc.edu](mailto:summer@ucsc.edu).

## DRC Remote Accommodations:

The Disability Resources Center reduces barriers to inclusion and full participation for students with disabilities by providing support to individually determine reasonable academic accommodations. Operations continue via remote appointments. If you have questions or concerns about exam accommodations or any other disability-related matter, email the DRC Schedulers at [drc@ucsc.edu](mailto:drc@ucsc.edu) for an appointment.

## Small Group Tutoring

Small Group Tutoring (SGT) supports students academically to advance educational equity by designing inclusive learning environments outside of the classroom. In SGT, you can expect the Tutor to facilitate cooperative group activities designed to have students work together on the course content and develop study skills for the course. SGT is offered at least three times each week for the entire quarter. The Tutor is an undergraduate student who took the class, did well, and is trained to facilitate group sessions to focus on students’ needs to succeed in the course. SGT is open to all students enrolled in the class and they must sign up on our online system: TutorTrac. When students sign up for SGT, they are committing to attend every week. For Summer 2020, students can begin signing up for tutoring on **Monday, June 22rd** and tutoring will begin **Wednesday, June 24th**. Students only have to sign up once for tutoring and their appointments will repeat weekly. Sign-ups will close on **Friday, August 14th** for all Summer Session Sign-Ups. This means that after **August 14th**, no new students can sign up for tutoring.

Want SGT to be successful for you? Bring your books, lecture notes, questions, and be open to working collaboratively with your peers. You can sign up using this link: <https://ucsc.go-redrock.com/tracweb40/NoAccess.4sp?errText=insufficient%20credentials%20to%20view%20content>

You can also find the link on our website: <https://lss.ucsc.edu/index.html>

## Academic Dishonesty

Academic integrity is the cornerstone of a university education. Academic dishonesty diminishes the university as an institution and all members of the university community. It tarnishes the value of a UCSC degree. All members of the UCSC community have an explicit responsibility to foster an environment of trust, honesty, fairness, respect, and responsibility. All members of the university community are expected to present as their original work only that which is truly their own. All members of the community are expected to report observed instances of cheating, plagiarism, and other forms of academic dishonesty in order to ensure that the integrity of scholarship is valued and preserved at UCSC.

In the event a student is found in violation of the UCSC Academic Integrity policy, he or she may face both academic sanctions imposed by the instructor of record and disciplinary sanctions imposed either by the provost of his or her college or the Academic Tribunal convened to hear the case. Violations of the Academic Integrity policy can result in dismissal from the university and a permanent notation on a student's transcript.

For the full policy and disciplinary procedures on academic dishonesty, students and instructors should refer to the [Academic Integrity page](#) at the Division of Undergraduate Education.

### **Title IX:**

The university cherishes the free and open exchange of ideas and enlargement of knowledge. To maintain this freedom and openness requires objectivity, mutual trust, and confidence; it requires the absence of coercion, intimidation, or exploitation. The principal responsibility for maintaining these conditions must rest upon those members of the university community who exercise most authority and leadership: faculty, managers, and supervisors.

The university has therefore instituted a number of measures designed to protect its community from sex discrimination, sexual harassment, sexual violence, and other related prohibited conduct. [Information about the Title IX Office](#), the [online reporting link](#), applicable campus resources, reporting responsibilities, the [UC Policy on Sexual Violence and Sexual Harassment](#), and the UC Santa Cruz Procedures for Reporting and Responding to Reports of Sexual Violence and Sexual Harassment can be found at [titleix.ucsc.edu](http://titleix.ucsc.edu).

The Title IX Office is actively responding to reports and requests for consultation. If you are not currently working with someone in the office and want to make a report/request a consult, you can expect the fastest response by using our [online reporting link](#).

For more information please visit the [Title IX Operations under Covid-19](#) page.