

Course Syllabus

Course Information

Course Number/Sections	EE/CE/TE 3102 - Sections 1U1 and 1U3
Course Title	Signals and Systems Laboratory
Term	Summer 2016
Days & Times	W 10:00am-2:15pm Section 1U1 (ECSN 3.118/3.120) W 2:30pm – 6:45pm, Section 1U3 (ECSN 3.118/3.120)

Instructor Contact Information

Instructor	Nasser Kehtarnavaz
Email Address	kehtar@utdallas.edu
Office Location	ECSN 4.622
Office Hours	Weds (email for meeting time)
Course Website	eLearning

Course Pre-requisites, Co-requisites, and/or Other Restrictions

Co-requisite: EE/CE/TE 3302 Signals and Systems; Pre-requisite RHET 1302

Course Description

In this lab course, students will acquire hands-on experience in software implementation of the theory and concepts covered in the signals and systems lecture course EE3302. The software tools that are utilized include both MATLAB and LabVIEW. The labs consist of introduction to LabVIEW, introduction to MATLAB, convolution and linear time-invariant systems, Fourier series, continuous-time Fourier transform, sampling and aliasing, discrete Fourier transform, and analysis of analog and digital systems. Each lab consists of a learning session and a design session.

Course Learning Objectives

- Implement and examine convolution of signals and linear time-invariant systems
- Implement and examine Fourier series
- Implement and examine continuous-time Fourier transform
- Implement and examine sampling, aliasing, and discrete Fourier transform
- Utilize hybrid programming (combination of MATLAB and LabVIEW) to implement signals and systems problems

Required Textbooks and Materials

An Interactive Approach to Signals and Systems Laboratory
by N. Kehtarnavaz, P. Loizou, and M. Rahman, Connexions, 2012
<https://cnx.org/contents/484d4446-da50-4af4-bc44-d6a2e0d660df@14.1>
Available online for free, print-on-demand

Supporting Materials

EE3302 Textbook

Lab Organization

Attendance is taken at the beginning of each lab via sign-up sheet. Please note that you only have 10 minutes to physically sign in your attendance. If you are more than 10 minutes late for a lab session, you will not receive the attendance credit for that lab session.

It is necessary to understand the theory behind each lab, which is covered in the accompanying lecture course EE3302. Read the lab manual of a lab session before that lab session. Most labs consist of two sessions spanned over two weeks. For the first session of a lab, the materials covered in the lab manual are implemented. 45 minutes before the end of the first session, a quiz will appear on eLearning based on the materials covered. The quiz solution must be uploaded to the eLearning website by the end of the first lab session. No late quiz solution will be accepted or can get uploaded to eLearning.

To prepare for the second session of a lab, remedy any difficulties or deficiencies you encountered during the first session by going to the open lab located in ECSN 4.324 and redoing the first session materials. In the second session, you are given a design problem or problems to implement based on the materials learned in the first session. A lab report together with codes for these problems must be uploaded to the eLearning website by the end of the second lab session. No late lab report/code will be accepted or can get uploaded to eLearning.

The labs are to be done individually. Note that you are responsible for saving your work on a memory device or email it to a permanent storage location at the end of each lab. The machines are set up in such a way that your work directory gets automatically deleted when logging off.

Lab Quizzes/Reports

You must write your own codes and reports.

Copying of codes or reports, no matter how small, is absolutely not allowed and will be regarded as a violation of the academic honesty code.

Lab reports are to be typed and should include not more than a one-page discussion of results together with a snapshot of the Front Panel and Block Diagram of your code including .vi and .m files.

A softcopy of your codes (.vi and .m files) along with your quiz/lab report should be placed into a folder and get uploaded to the eLearning website. The names of your folder, files, and codes should follow the following naming convention: *section#-lastname-quiz#/report#*

Assignments & Academic Calendar

PLANNED SCHEDULE

Dates	Labs
May 25	Lab 1 Getting familiar with LabVIEW
June 1	Lab 2 Getting familiar with MATLAB
June 8	Lab 3 Convolution (session 1)
June 15	Lab 3 Convolution (session 2)
June 22	Closed manual exam 1
June 29	Lab 4 Fourier Series (session 1)
July 6	Lab 4 Fourier Series (session 2)
July 13	Lab 5 Fourier Transform (session 1)
July 20	Lab 5 Fourier Transform (session 2)
July 27	Lab 6 Sampling and DFT
August 3	Closed manual exam 2

Grading Policy

- Lab attendance conducted via signup sheet during first 10mins (10%)
- Lab quizzes (30% for 6 quizzes)
- Lab reports (20% for 3 reports)
- 2 closed manual exams (40%; 20% each)

Final grades will be assigned according to the following scale:
100-90 A; 89-80 B; 79-70 C; 69-60 D and below 60 F.

Make-up Lab Policy

No make-up work will be accepted except for extenuating circumstances such as medical emergency (proof is required).

Lab Room Conduct

- No phone calls, texting, or browsing is allowed in the labs. Cellphones or similar electronic devices must not be used in the labs.
- No food or drink must be consumed in the labs. Keep the lab rooms clean by not leaving any materials behind.
- In case of fire alarms or emergency, leave the lab rooms immediately and follow the closest stairs (do not use the elevators) to exit the building.

Student Conduct & Discipline

The University of Texas System and The University of Texas at Dallas have rules and regulations for the orderly and efficient conduct of their business. It is the responsibility of each student and each student organization to be knowledgeable about the rules and regulations which govern student conduct and activities. General information on student conduct and discipline is contained in the UTD publication, A to Z Guide, which is provided to all registered students each academic year.

The University of Texas at Dallas administers student discipline within the procedures of recognized and established due process. Procedures are defined and described in the Rules and Regulations, Board of Regents, The University of Texas System, Part 1, Chapter VI, Section 3, and in Title V, Rules on Student Services and Activities of the university's Handbook of Operating Procedures. Copies of these rules and regulations are available to students in the Office of the Dean of Students, where staff members are available to assist students in interpreting the rules and regulations (SU 1.602, 972/883-6391).

A student at the university neither loses the rights nor escapes the responsibilities of citizenship. He or she is expected to obey federal, state, and local laws as well as the Regents' Rules, university regulations, and administrative rules. Students are subject to discipline for violating the standards of conduct whether such conduct takes place on or off campus, or whether civil or criminal penalties are also imposed for such conduct.

Academic Integrity

The faculty expects from its students a high level of responsibility and academic honesty. Because the value of an academic degree depends upon the absolute integrity of the work done by the student for that degree, it is imperative that a student demonstrate a high standard of individual honor in his or her scholastic work.

Scholastic dishonesty includes, but is not limited to, statements, acts or omissions related to applications for enrollment or the award of a degree, and/or the submission as one's own work or material that is not one's own. As a general rule, scholastic dishonesty involves one of the following acts: cheating, plagiarism, collusion and/or falsifying academic records. Students suspected of academic dishonesty are subject to disciplinary proceedings.

Plagiarism, especially from the web, from portions of papers for other classes, and from any other source is unacceptable and will be dealt with under the university's policy on plagiarism (see general catalog for details). This course will use the resources of turnitin.com, which searches the web for possible plagiarism and is over 90% effective.

Email Use

The University of Texas at Dallas recognizes the value and efficiency of communication between faculty/staff and students through electronic mail. At the same time, email raises some issues concerning security and the identity of each individual in an email exchange. The university encourages all official student email correspondence be sent only to a student's U.T. Dallas email address and that faculty and staff consider email from students official only if it originates from a UTD student account. This allows the university to maintain a high degree of confidence in the identity of all individual corresponding and the security of the transmitted information. UTD furnishes each student with a free email account that is to be used in all communication with university personnel. The Department of Information Resources at U.T. Dallas provides a method for students to have their U.T. Dallas mail forwarded to other accounts.

Withdrawal from Class

The administration of this institution has set deadlines for withdrawal of any college-level courses. These dates and times are published in that semester's course catalog. Administration procedures must be followed. It is the student's responsibility to handle withdrawal requirements from any class. In other words, I cannot drop or withdraw any student. You must do the proper paperwork to ensure that you will not receive a final grade of "F" in a course if you choose not to attend the class once you are enrolled.

Student Grievance Procedures

Procedures for student grievances are found in Title V, Rules on Student Services and Activities, of the university's Handbook of Operating Procedures.

In attempting to resolve any student grievance regarding grades, evaluations, or other fulfillments of academic responsibility, it is the obligation of the student first to make a serious effort to resolve the matter with the instructor, supervisor, administrator, or committee with whom the grievance originates (hereafter called "the respondent"). Individual faculty members retain primary responsibility for assigning grades and evaluations. If the matter cannot be resolved at that level, the grievance must be submitted in writing to the respondent with a copy of the respondent's School Dean. If the matter is not resolved by the written response provided by the respondent, the student may submit a written appeal to the School Dean. If the grievance is not resolved by the School Dean's decision, the student may make a written appeal to the Dean of Graduate or Undergraduate Education, and the dean will appoint and convene an Academic Appeals Panel. The decision of the Academic Appeals Panel is final. The results of the academic appeals process will be distributed to all involved parties.

Copies of these rules and regulations are available to students in the Office of the Dean of Students, where staff members are available to assist students in interpreting the rules and regulations.

Incomplete Grade Policy

As per university policy, incomplete grades will be granted only for work unavoidably missed at the semester's end and only if 70% of the course work has been completed. An incomplete grade must be resolved within eight (8) weeks from the first day of the subsequent long semester. If the required work to complete the course and to remove the incomplete grade is not submitted by the specified deadline, the incomplete grade is changed automatically to a grade of F.

Disability Services

The goal of Disability Services is to provide students with disabilities educational opportunities equal to those of their non-disabled peers. Disability Services is located in room 1.610 in the Student Union. Office hours are Monday and Thursday, 8:30 a.m. to 6:30 p.m.; Tuesday and Wednesday, 8:30 a.m. to 7:30 p.m.; and Friday, 8:30 a.m. to 5:30 p.m.

The contact information for the Office of Disability Services is:
The University of Texas at Dallas, SU 22
PO Box 830688
Richardson, Texas 75083-0688
(972) 883-2098 (voice or TTY)

Essentially, the law requires that colleges and universities make those reasonable adjustments necessary to eliminate discrimination on the basis of disability. For example, it may be necessary to remove classroom prohibitions against tape recorders or animals (in the case of dog guides) for students who are blind. Occasionally an assignment requirement may be substituted (for example, a research paper versus an oral presentation for a student who is hearing impaired). Classes enrolled students with mobility impairments may have to be rescheduled in accessible facilities. The college or university may need to provide special services such as registration, note-taking, or mobility assistance.

It is the student's responsibility to notify his or her professors of the need for such an accommodation. Disability Services provides students with letters to present to faculty members to verify that the student has a disability and needs accommodations. Individuals requiring special accommodation should contact the professor after class or during office hours.

Religious Holy Days

The University of Texas at Dallas will excuse a student from class or other required activities for the travel to and observance of a religious holy day for a religion whose places of worship are exempt from property tax under Section 11.20, Tax Code, Texas Code Annotated.

The student is encouraged to notify the instructor or activity sponsor as soon as possible regarding the absence, preferably in advance of the assignment. The student, so excused, will be allowed to take the exam or complete the assignment within a reasonable time after the absence: a period equal to the length of the absence, up to a maximum of one week. A student who notifies the instructor and completes any missed exam or assignment may not be penalized for the absence. A student who fails to complete the exam or assignment within the prescribed period may receive a failing grade for that exam or assignment.

If a student or an instructor disagrees about the nature of the absence [i.e., for the purpose of observing a religious holy day] or if there is similar disagreement about whether the student has been given a reasonable time to complete any missed assignments or examinations, either the student or the instructor may request a ruling from the chief executive officer of the institution, or his or her designee. The chief executive officer or designee must take into account the legislative intent of TEC 51.911(b), and the student and instructor will abide by the decision of the chief executive officer or designee.

Off-Campus Instruction and Course Activities

Off-campus, out-of-state, and foreign instruction and activities are subject to state law and University policies and procedures regarding travel and risk-related activities. Information regarding these rules and regulations may be found at the website address given below. Additional information is available from the office of the school dean. (http://www.utdallas.edu/Business Affairs/Travel_Risk_Activities.htm)

These descriptions and timelines are subject to change at the discretion of the Professor.