



EE 200: Computing for Electrical Engineers
EE Sections 01E & 02E Course Syllabus, Fall 2026
Rev 2, 7/25/2026

INSTRUCTOR INFORMATION

Instructor	Gerald L. Fudge, PhD
Office Location	AG/ET 222P
Office Hours	Monday, Wednesday: 10:00 am – 11:00 am Tuesday, Thursday: 9:00 am – 10:30 am Also, by appointment at other times
Phone	Engineering & Technology Office: 903-886-5474
University Email Address	Gerald.Fudge@etamu.edu
Preferred Form of Communication	Email
Communication Response Time	Typically within 48 hours on weekdays for email

COURSE INFORMATION

Class Meeting Schedule	See schedule at end of syllabus
Class Meeting Days & Classroom	01E: T/Th, 12:30 pm – 1:45 pm, AG/ET 211 02E: M/W, 2:00 pm – 3:15 pm, Jour 102
Textbooks Required	No required textbooks
Software Required	• Microsoft Office • MATLAB (can use school computers) • Python Anaconda package (open source; can use school computers or download to personal computers)

COURSE DESCRIPTION

This course introduces students to the use of computational tools to solve engineering problems. Topics include: problem identification and formulation, computational programming techniques, data transformation and visualization, effective plotting, regression analysis, interpretation of results, team collaboration, and introductory machine learning. Students will solve problems using modern computational tools such as MATLAB, Python, and Excel. Prerequisites: MATH 2413 with min grade C.

Student Learning Outcomes

Upon successful completion of this course, students will achieve the following learning outcomes in the below five areas:

- 1 Computational Programming:
 - Demonstrate computational programming using structured MATLAB and object-oriented Python while following a set of specific software requirements
 - Demonstrate ability to use generative AI properly as a coding aid, including analyzing code, code tutorial, and generating / testing code modules that meet software requirements
 - Demonstrate ability to develop and implement algorithms, including pulse detection & measurement, and spectrogram
- 2 Matrix Math:
 - Demonstrate proficiency in matrix math, including matrix vector multiplication, dot products, and inner products
 - Demonstrate conceptual understanding of solving linear systems of equations, including full rank systems and systems with less than full rank, including least squares regression
 - Be able to use computational tools to solve linear systems
- 3 Data Visualization
 - Demonstrate data visualization techniques, including line plot, scatter plot, histogram, box plot, and heat map, with appropriate interpretation and with correct plot labeling to support reproducibility
- 4 Time and Frequency Domain Processing
 - Demonstrate time domain processing, including filtering, convolution, and signal detection
 - Demonstrate frequency domain processing using the Discrete Fourier Transform
 - Demonstrate time-frequency domain processing using the spectrogram
 - Demonstrate proper axis labeling and interpretation in all cases
- 5 Machine Learning:
 - Demonstrate ability to properly use basic machine learning (ML) tools for clustering, regression, and classification
 - Demonstrate understanding of important ML concepts, including supervised vs. unsupervised training, overfit vs. underfit, classification vs. regression vs. clustering, data scrubbing and other preprocessing steps, sample bias, the curse of dimensionality, performance metrics, and training vs. test & verification

COURSE REQUIREMENTS

Minimal Technical Skills Needed

Prerequisites: MATH 2413 (Min Grade C). Students must be able to access the Internet, use the D2L

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learning management system, and use Microsoft Office tools (Word, Excel, PowerPoint). Experience in programming, linear algebra & matrix math, and probability & statistics is helpful, but not required.

Instructional Methods

The instructional methods in this course include lectures, class discussion and participation, in-class coding exercises, quizzes, assignments (including written, coding, and reading), and exams. In addition, the Learning Assistant (LA) will provide additional one-on-one support, including in class for LA sections and outside of class for all sections.

Student Responsibilities or Tips for Success in the Course

- **Attendance & Participation:** For optimum learning and grades, students need to attend class and participate; note that attendance and participation is a graded component.
- **Engage with the Instructor and LA:** The instructor and Learning Assistant are there to help you learn. The material in this class can be very difficult, so don't wait to get help.
- **Homework:** The homework will consist primarily of computational coding assignments due approximately once per week to provide the coding experience required to develop competence in computational engineering. We will discuss selected student homework solutions during class, including code errors, lessons learned, problems encountered, and innovative approaches. Late work may be penalized, including a grade of zero, unless student has an acceptable excuse with a doctor's note or other legal documentation.
- **Supplemental assignments:** The supplemental assignments will include watching selected videos and completing assigned reading.
- **Homework Collaboration:** Students must turn in their own work, but student collaboration to help work through solutions, debug code, fix style errors, etc., is strongly encouraged.
- **Submission of Assignments:** Students shall submit assignments in D2L. If problems are encountered using D2L, then email may be used as a backup with instructor permission.
- **Quizzes:** Quizzes will be used to assess problem solving skills and provide student feedback. Student should bring a scientific calculator to class for quizzes.
- **Exams:** The exams will be closed book & closed notes, and will include a combination of written response questions and writing pseudo-code. The use of a personal phone is strictly prohibited during exams. Makeup exams may be offered with suitable documentation that fulfills University procedures provided to the instructor in a timely manner.
- **Use of Artificial Intelligence (AI) Tools:** Other than as directed by the instructor, the use of generative AI for assignments and exams is prohibited. When generative AI is allowed, the use of such software must be appropriately documented. Any undocumented use of such software constitutes an instance of academic dishonesty (plagiarism). Students will be expected to use generative AI on some assignments, but only as specified in the assignment directions.

GRADING

Final grades in this course will be based on the following scale:

A	B	C	D	F
100 - 90	89 - 80	79 - 70	69 - 60	59 - 0

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Overall grades will be based on a weighted average as shown below:

Assessment Type	Percent
Participation and Attendance	10
Supplemental Assignments	10
Quizzes	10
Homework	40
Exams	30
Total	100

Note: The homework grades will be based on accuracy, efficiency of solution, proper labeling of plots, and coding style. There may also be opportunities for bonus points; these will be discussed in class.

COURSE OUTLINE / CALENDAR

Week	Days				Weekly Plan	Weeks 0-10: MATLAB Weeks 11-15: Python	HW Assignment Plan Supplemental Assignment Plan
	Mon	Tue	Wed	Thu			
0	8/17	8/18	8/19	8/20	0. Overview		
1	8/24	8/25	8/26	8/27	1. Overview, scripts, syntax, variables, plots		1. Templates SA-1: MATLAB
2	8/31	9/1	9/2	9/3	2. Complex sinusoids, magnitude, pulsed data		2. Ramp 3. Real sinusoid
3	9/7	9/8	9/9	9/10	3. Convolution, noise, LPF noise reduction, SNR		4. IQ sinusoid
4	9/14	9/15	9/16	9/17	4. SNR, logic functions & indices; edge detect HFP		5. Pulse sinusoid 6. Filters
5	9/21	9/22	9/23	9/24	5. Pulse detection, matrix math, inner product		SA-2: Linear Algebra
6	9/28	9/29	9/30	10/1	6. Frequency domain: DFT		7. Pulse detection algorithm
7	10/5	10/6	10/7	10/8	7. Time frequency: spectrogram		Fall Break
8	10/12	10/13	10/14	10/15	8. Time frequency: spectrogram		8. DFT 9. Spectrogram-1
9	10/19	10/20	10/21	10/22	9. Review, oral exam, written exam		Midterm (2)
10	10/26	10/27	10/28	10/29	10. Linear systems, least squares regression, ML intro		10. Spectrogram-2
11	11/2	11/3	11/4	11/5	11. Intro to ML, regression with ML tools		11. ML polynomial regression
12	11/9	11/10	11/11	11/12	12. Dim reduction & clustering with ML tools		12. ML dim reduction & clustering
13	11/16	11/17	11/18	11/19	13. Classification with ML tools		13. ML classification
14	11/23	11/24	11/25	11/26	14. Generative AI		Thanksgiving
15	11/30	12/1	12/2	12/3	15. Semester review & wrap-up		SA-3: Machine Learning
16					Finals Week		Final Exam
Notes							
1. The weekly topic and HW assignment plans may be revised by the instructor as needed							
2. Unless otherwise specified in D2L, HW is due on Saturdays at 11:59 pm							
3. Quizzes are assigned by the instructor as needed in D2L							

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TECHNOLOGY REQUIREMENTS

LMS

All course sections offered by East Texas A&M University (ETAMU) have a corresponding course shell in the myLeo Online Learning Management System (LMS). Below are technical requirements

LMS Requirements:

<https://community.brightspace.com/s/article/Brightspace-Platform-Requirements>

LMS Browser Support:

https://documentation.brightspace.com/EN/brightspace/requirements/all/browser_support.htm

Zoom Video Conferencing Tool

https://inside.tamuc.edu/campuslife/CampusServices/CITESupportCenter/Zoom_Account.aspx?source=universalmenu

Access and Navigation

You will need your campus-wide ID (CWID) and password to log into the course. If you do not know your CWID or have forgotten your password, contact the Center for IT Excellence (CITE) at 903.468.6000 or helpdesk@tamuc.edu.

Note: Personal computer and internet connection problems do not excuse the requirement to complete all course work in a timely and satisfactory manner. Each student needs to have a backup method to deal with these inevitable problems. These methods might include the availability of a backup PC at home or work, the temporary use of a computer at a friend's home, the local library, office service companies, Starbucks, a ETAMU campus open computer lab, etc.

COMMUNICATION AND SUPPORT

Technical Support

If you are having technical difficulty with any part of Brightspace, please contact Brightspace Technical Support at 1-877-325-7778. Other support options can be found here:

<https://community.brightspace.com/support/s/contactsupport>

Interaction with Instructor

If you have any questions or are having difficulties with the course material, please contact your instructor. Correspondence will be through your university "myLeo" email, including emails from the instructor, whether direct or via D2L. Students are encouraged to check university email daily. You can ask questions during lectures or office hours. Students can also ask questions and make appointments outside of office hours via email.

COURSE AND UNIVERSITY PROCEDURES / POLICIES

Syllabus Change Policy

The syllabus is a guide. Circumstances and events, such as student progress, may make it necessary for the instructor to modify the syllabus during the semester. Any changes made to the syllabus will be announced in advance.

Student Conduct

All students enrolled at the University shall follow the tenets of common decency and acceptable behavior conducive to a positive learning environment. The [Code of Student Conduct](#) is described in detail online in the [Student Guidebook](#). Students should also consult the [Rules of Netiquette Webpage](#) for more information regarding how to interact with students in an online forum.

ETAMU Attendance

For more information about the attendance policy, please view the [Attendance Webpage](#) and the [Class Attendance Policy](#)

Academic Integrity

Students at East Texas A&M University are expected to maintain high standards of integrity and honesty in all their scholastic work. For more details and the definition of academic dishonesty see the following procedures:

[Undergraduate Academic Dishonesty University Procedure 13.99.99.R0.03](#)

[Undergraduate Student Academic Dishonesty Form](#)

[Graduate Student Academic Dishonesty University Procedure 13.99.99.R0.10](#)

[Graduate Student Academic Dishonesty Form](#)

Use of Artificial Intelligence

East Texas A&M University acknowledges that there are legitimate uses of Artificial Intelligence, ChatBots, or other software that has the capacity to generate text, or suggest replacements for text beyond individual words, as determined by the instructor of the course. Any use of such software must be documented. Any undocumented use of such software constitutes an instance of academic dishonesty (plagiarism).

Individual instructors may disallow entirely the use of such software for individual assignments or for the entire course. Students should be aware of such requirements and follow their instructors' guidelines. If no instructions are provided the student should assume that the use of such software is disallowed.

In any case, students are fully responsible for the content of any assignment they submit, regardless of whether they used an AI, in any way. This specifically includes cases in which the AI plagiarized another text or misrepresented sources.

Students with Disabilities-- ADA Statement

The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you have a disability requiring an accommodation, please contact:

Office of Student Disability Resources and Services

East Texas A&M University

Velma K. Waters Library Rm 162

Phone (903) 886-5150 or (903) 886-5835

Fax (903) 468-8148

Email: studentdisabilityservices@etamu.edu

Website: [Office of Student Disability Services](#)

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Nondiscrimination Notice

East Texas A&M University will comply in the classroom, and in online courses, with all federal and state laws prohibiting discrimination and related retaliation on the basis of race, color, religion, sex, national origin, disability, age, genetic information, or veteran status. Further, an environment free from discrimination on the basis of sexual orientation, gender identity, or gender expression will be maintained.

Campus Concealed Carry Statement

Texas Senate Bill - 11 (Government Code 411.2031, et al.) authorizes the carrying of a concealed handgun in East Texas A&M University buildings only by persons who have been issued and are in possession of a Texas License to Carry a Handgun. Qualified law enforcement officers or those who are otherwise authorized to carry a concealed handgun in the State of Texas are also permitted to do so. Pursuant to Penal Code (PC) 46.035 and ETAMU Rule 34.06.02.R1, license holders may not carry a concealed handgun in restricted locations.

For a list of locations, please refer to the [Carrying Concealed Handguns On Campus](#) document and/or consult your event organizer. Pursuant to PC 46.035, the open carrying of handguns is prohibited on all East Texas A&M University campuses. Report violations to the University Police Department at 903-886-5868 or 9-1-1.

East Texas A&M Supports Students' Mental Health – Counseling Services

The Counseling Center at East Texas A&M University, located in the Halladay Building, Room 203, offers counseling services, educational programming, and connection to community resources for students. Students have 24/7 access to the Counseling Center's crisis assessment services by calling 903-886-5145. For more information regarding Counseling Center events and confidential services, please visit www.tamuc.edu/counsel

Mental Health and Well-Being

The university aims to provide students with essential knowledge and tools to understand and support mental health. As part of our commitment to your well-being, we offer access to Telus Health, a service available 24/7/365 via chat, phone, or webinar. Scan the QR code to download the app and explore the resources available to you for guidance and support whenever you need it.

