EENG 2905.001 - Engineering Tools
Fall 2025

Instructor: Colleen Bailey PhD, NTDP B252, Colleen.Bailey@unt.edu

Office Hours: TR 3:30 PM to 4:00 PM or by appointment, NTDP B252

Lecture: TR 4:00 PM to 5:20 PM; NTDP B227

TA: Tejaswini Dendi, TejaswiniDendi@my.unt.edu, MW 1:00 PM - 3:00 PM, NTDP B250

Course Description: This modular course introduces assorted tools beneficial to the analysis of electrical engineering problems.

Textbook: NONE

Course Outline: Topics include graphical communication through engineering drafting and computer-aided design (CAD); programming with Python and MicroPython with emphasis on syntax, structure, and application to microcontrollers; and an introduction to embedded control systems, progressing from technical foundations to hardware–software integration in hands-on projects.

Drafting and Computer Aided Design	5 weeks
Python (MicroPython)	4 weeks
Introduction to Embedded Control	6 weeks

Grading: Grades will be determined by assignments and projects from each unit and a final comprehensive chat, which together assess the integration of graphical communication, Pythonic programming, and embedded control skills. The balance of grading across these components may be adjusted to ensure a fair representation of your overall achievement in the course.

Course Objectives: This course is designed to build foundational skills in communication, programming, and embedded systems that enable students to analyze, model, and implement solutions to electrical engineering problems. Emphasis is placed on developing a versatile set of engineering tools, including graphical communication, coding for microcontrollers, and embedded control, that support effective problem-solving, technical communication, and design in both advanced coursework and professional applications.

Canvas: Course material and grades will be maintained on the course Canvas site. Be sure to check the site regularly to stay current on assignments and announcements: *https://unt.instructure.com*

Course Policies:

- Assignments are due by the date and time posted on Canvas. Late submissions will receive a 50% penalty and assignments more than 24 hours past the posted deadline will not be accepted.
- Make-up assignments or assessments are only allowed if prearranged with the instructor for a university-approved absence.
- You have one week from the date a grade is returned to contest it. If the assignment or assessment was graded by a TA or grader, you must first discuss the issue with them before escalating it to the instructor.
- Letter grades will not be finalized until the end of the term, after all assignments have been graded. Any grade posted prior to the end of the course should be considered tentative and subject to change.

Rights and Responsibilities:

- Students are expected to communicate any issues regarding their performance in class to the instructor in advance as soon as possible.
- Students who are aware of an authorized absence from a scheduled class or assessment (e.g., religious observance, military service, official university function) should notify the instructor as soon as possible, in accordance with UNT Policy 06.039.
- Students with disabilities should inform the instructor of their needs at the beginning of the semester, in accordance with UNT Policy 16.001, to receive appropriate accommodations.
- Cheating and academic dishonesty will not be tolerated. Any student found to have engaged in academic dishonesty may receive an F in the course and could be subject to further disciplinary action. Acts of academic dishonesty include, but are not limited to: academic fraud (e.g., altering solutions to appeal a grade), copying or allowing one's work to be copied, fabrication or falsification, plagiarism, sabotage of others' work, or substitution (e.g., taking an exam for someone else). For more details, see UNT Policy 06.003.