

Kennesaw State University
MTRE 4400 – Directed Research – Mechatronics
Course Syllabus – Spring 2020

I. Identifying information

Student(s): XXXXXXXXXX

Course: MTRE 4400 CAN Bus Communication, 3 credits

Instructor: Kevin McFall, PhD.

II. Course Description

The Southern Polytechnic College is launched a makerspace for students Fall 2019. Electronics equipment relating to the automotive industry will become part of the makerspace, in support of an externally funded grant. Students in this course will learn to read and write values over a CAN bus and develop tutorials to teach visitors of the makerspace how CAN communication can be applied to the automotive industry.

III. Objective of the Course

This directed research will result in working hardware and an accompanying tutorial for its use to help students explore CAN bus communication in automobiles.

IV. Detailed Schedule

Week 1: Familiarize with hardware for CAN bus communication

Week 2: Test functionality of hardware

Week 3: Develop exercises to read values from simulator

Week 4: Develop exercises to write value to simulator

Week 5: Finalize exercises to be included in tutorial

Week 6: Compile tutorial for working hardware

Week 7: Prepare manuscript for publication

The student is expected to work independently on this project, of course under direction of the instructor. Meeting with the instructor is expected at least once weekly, demonstrating completion of the week's task. A minimum total of 150 hours of total effort is required on this project. The student is expected to follow all safety guidelines when interacting with equipment as directed by instructors and laboratory technicians.

V. Basis for Evaluation

The primary deliverables for this course are tutorials for the working hardware and a manuscript to be submitted to the [Kennesaw Journal of Undergraduate Research](#) or [Early Career Technical Conference](#). The student will be evaluated on satisfactory create of the tutorials (40%), compilation of a logbook documenting the progress made and time spent (20%), and preparation of a manuscript for publication (40%). Grades will be assigned for each component according to the following rubric:

- A (90-100): Exceptional deliverable quality and/or completion of extended topics
- B (80-89): Satisfactory completion of deliverables
- C (70-79): Incomplete completion of deliverables
- D (60-69): Partial completion of deliverables
- F (0-59): Little or no completion of deliverables

Federal, BOR, & KSU Course Syllabus Policies

Information contained in the links below constitutes the Federal, BOR, and KSU course syllabus policies and procedures and may be referenced by faculty members in their course syllabi. These policies are updated on the Academic Affairs Website annually.

[Academic Affairs - Federal, BOR, & KSU Policies](#)

[Academic Affairs - KSU Student Resources for Syllabus](#)

Note to Faculty: The KSU faculty handbook requires the Academic Integrity Policy in the course syllabus.

Note to Faculty and Students: The Office of the Provost will work to keep the policies and links in this document as accurate as possible.

Academic Integrity Statement

Every KSU student is responsible for upholding the provisions of the Student Code of Conduct, as published in the Undergraduate and Graduate Catalogs. Section 5c of the Student Code of Conduct addresses the university's policy on academic honesty, including provisions regarding plagiarism and cheating, unauthorized access to university materials, misrepresentation/falsification of university records or academic work, malicious removal, retention, or destruction of library materials, malicious/intentional misuse of computer facilities and/or services, and misuse of student identification cards. Incidents of alleged academic misconduct will be handled through the established procedures of the Department of Student Conduct and Academic Integrity (SCAI), which includes either an "informal" resolution by a faculty member, resulting in a grade adjustment, or a formal hearing procedure, which may subject a student to the Code of Conduct's minimum one semester suspension requirement. See also [KSU Student Code of Conduct](#).

Electronic Communication

The University provides all KSU students with an "official" email account with the address "students.kennesaw.edu" or "kennesaw.view.usg.edu" (in D2L). As a result of federal laws protecting educational information and other data, this is the sole email account you should use to communicate with your instructor or other University officials.