ASEN 1320: Aerospace Computing and Engineering Applications

Lecture: M/W/F 10:10 AM – 11:00 PM, ECCR 256

Instructor	Alexandra Le Moine (she/her/hers) Email: Alexandra.LeMoine@colorado.edu Office: Aero N209
Teaching Assistant	Karina Rivera (karina.riveralopez@colorado.edu)
Teaching Facilitators	Ankur Sharma (ankur.sharma@colorado.edu) Ben Watanapongse (benjamin.watanapongse@colorado.edu) Austin Hunter (austin.hunter-1@colorado.edu) Thomas Dunnington (thomas.dunnington@colorado.edu) Aidan Wood (aiwo9411@colorado.edu) Andrea Patella (andrew.patella@colorado.edu)

Recitations

Section	Time	Room	Recitation Lead
011	(Th) 3:10 – 4:00 PM	ECCR 143	Ankur Sharma
012	(Th) 2:05 – 2:55 PM	ECCR 143	Ben Watanapongse
013	(W) 9:05 – 9:55 AM	ECCR 143	Austin Hunter
014	(W) 4:15 – 5:05 PM	AERO N100	Ben Watanapongse
015	(Th) 9:35 – 10:25 AM	ECCR 143	Thomas Dunnington
016	(Th) 10:40 – 11:30 AM	ECCR 143	Ankur Sharma
017	(Th) 1:00 – 1:50 PM	ECCR 143	Aidan Wood

OFFICE HOURS: See Canvas for current information about office hours.

COURSE TEXTBOOKS (Loose-leaf or eBook of both texts is required):

1. Savitch, Walter (2016). Absolute C++ (6th edition). Pearson
2. Attaway, Stormy (2019), MATLAB, A Practical Introduction to Programming and Problem Solving (5th edition). Elsevier

COURSE WEBSITE – Canvas Course Link

COURSE PURPOSE - Most aerospace engineering programs require literacy in some programming language (e.g., C++, MATLAB) for automating various types of numerical and symbolic computation. This course is intended for students with little to no experience in programming and teaches basic programming concepts and useful tools for solving engineering problems with an emphasis on aerospace applications.

COURSE OBJECTIVES - The goal of this course is to build the foundation in computing and programming required to succeed in the sophomore and junior curriculum in aerospace engineering and other related domains of engineering. By the end of this course, students should b(os)8.6 ((d)12.6 (t)-2.6 6 (d b

- ¾ Implement fundamental programming constructs such as variables, assignment statements, expressions, conditionals, and iterative constructs.
- ¾ Create and manipulate 1D and 2D arrays, implement arrays within looping constructs, and pass arrays into functions
- ¾ Understand the scope of functions and know how to use functional programming.
- ¾ Read/write data and use file I/O.
- ¾ Understand the concepts of class, object, and object oriented programming.
- ¾ Develop skills to write, test, and debug code requited to solve basic aerospace engineering application problems.

POLICIES AND PROCEDURES

I. STUDENT EXPECTATIONS

- Students are expected to attend all class sessions and participate in addition to completing all assignments by the requested deadline.

- Students are expected to prepare for each lecture and recitation. This includes: watching pre-recorded lecture videos, reading required textbook assignments, and taking online quizzes. Additionally, students are expected to turn in all classwork including in-class activities, recitation coding challenges, and C++ projects. A passing grade will not be guaranteed by just showing up for lectures and recitations.

- % í J U D G H V D Q G D E R Y H D U H U H T X L U H G C S C 2 7 0 (D 6 (1 D Structures) which is a pathway to a CS minor.

- Students may discuss and collaborate on in-class programming assignments, but students are NOT free to copy another student's assignment. Additionally, the use of Generative AI (e.g., ChatGPT) is strictly prohibited. Students who are violating these rules will receive an "F"

messages to instructor will not be a primary communication method. Any Canvas DM sent to the instructor may go unanswered.

- Deadlines – Student communication that occurs within 24 hours of project, quiz, or exam deadlines,

CU BOULDER POLICIES

CLASSROOM BEHAVIOR

Both students and faculty are responsible for maintaining an appropriate learning environment in all instructional settings, whether in person, remote or online. Those who fail to adhere to such behavioral standards may be subject to discipline. Professional courtesy and sensitivity are especially important with respect to individuals and topics dealing with race, color, national origin, sex, pregnancy, age, disability, creed, religion, sexual orientation, gender identity, gender expression, veteran status, political affiliation or political philosophy. For more information, see the classroom behavior policy, the Student Code of Conduct, and the Office of Institutional Equity and Compliance.

REQUIREMENTS FOR INFECTIOUS DISEASES

Members of the CU Boulder community and visitors to campus must follow university, department, and building health and safety requirements and all public health orders to reduce the risk of spreading infectious diseases.

The CU Boulder campus is currently mask optional. However, if masks are again required in classrooms, students who fail to adhere to masking requirements will be asked to leave class. Students who do not leave class when asked or who refuse to comply with these requirements will be referred to Student Conduct & Conflict Resolution. Students who require accommodation because a disability prevents them from fulfilling safety measures related to infectious disease will be asked to follow the steps in the "Accommodation for Disabilities" statement on this syllabus.

For those who feel ill and think you might have COVID-19 or if you have tested positive for COVID-19, please stay home and follow the further guidance of the Public Health Office. For those who have been in close contact with someone who has COVID

HONOR CODE

All students enrolled in a University of Colorado Boulder course are responsible for knowing and adhering to the Honor Code. Violations of the Honor Code may include but are not limited to: plagiarism (including use of paper writing services or technology