KENNESAW STATE UNIVERSITY

SYLLABUS

SOUTHERN POLYTECHNIC COLLEGE OF ENGINEERING AND ENGINEERING TECHNOLOGY
DEPARTMENT OF ROBOTICS AND MECHATRONICS ENGINEERING
MTRE 8100 / MTRE 6100: Advanced Robot Programming

Course Information

Class meeting time: TR 5PM – 7:45PM
Modality and Location: Face to Face and Asynchronous Combined.
Location: Atrium Building (J) 1216
The syllabus is posted in D2L

Instructor Information

Name: Razvan Voicu (Chris), Ph.D.,
Email: rvoicu@kennesaw.edu
Office Location: Q319
Office Phone: 470-578-5988 (Text Only)
Office Hours: By appointment
Preferred method of communication: email

Course Description

Prerequisites: N/A
Credit Hours: 3 credit hours (3-0-3)

The key aim of the course is to provide students with a multidisciplinary, creative approach to program the control and development of new robotic components and technologies. This course covers activities from introduction for a variety of programming languages, which are popular in robotics applications, and cut-edges scheme of robotic programming with alive examples.

Course Materials

Recommended Textbooks: C. Hughes, T. Hughes T, “Robot programming: a guide to controlling autonomous robots, Que Publishing.”
Technology requirements: Laptop/desktop running a compatible Linux distribution either in virtual container or direct boot.

Learning Outcomes

- Analyze moderately complex robot tasks
- Learning the basic skills of robot programming
- Implement the corresponding robot programs

Course Requirements and Assignments

Five HomeWorks will be assigned, and students need to finish the homework on D2L following the instructions. The students will be required to write codes based on python and C++ to solve some fundamental robotic problems.

Evaluation and Grading Policies

- Assignments 100%

Final Letter Grade:

- 90-100 A
- 80-89 B
- 70-79 C
- 60-69 D
- Less than 60 F

Students must turn in the assignments within a reasonable time. Late submissions are accepted. Students will be provided feedback within two weeks of the due date.

The assignments are graded on completion and correctness. Points will be deducted from improper syntax, formatting, improper commenting, and incorrect approaches.

Course Policies

Communication: Course material will be disseminated in D2L, including lecture notes, etc. All course announcements will be sent via email or D2L. Email is the surest means of contacting the instructor regarding problems or requests. The subject line of the email should have the course number "MTRE 6100".

Attendance Policy: Attendance is optional. A student is responsible for any material covered in class. No credit is possible for any missed grade items.

Instructional Continuity Plan

Kennesaw State University (KSU) may decide to close campuses, operate on a delayed schedule, or transition to remote instruction for inclement weather or in case of emergency.

The University will announce campus closures, delayed schedules, or remote instruction through KSU Alerts sent to your cell number on file and to your university email account. In addition, announcements will be posted on KSU's home page: www.kennesaw.edu.

Our class continuity plan includes:

1. Communication: Please check D2L or e-mail for necessary instructions.
2. Virtual Classes: If in-person classes are not possible, we may transition to virtual classes using MS Teams.
3. Assignments and Assessments: Deadlines for assignments and assessments may be adjusted to accommodate the emergency situation.

We understand that emergencies create unique challenges. If you need additional support during an emergency, reach out via Brightspace or e-mail. The university also offers resources such as counseling and academic support, which can be accessed remotely.

In Case of illness

If you are feeling ill, please stay home and contact your health professional. In addition, please email your instructor to say you are missing class due to illness. Wearing a face covering inside campus facilities is permitted for anyone who feels more comfortable doing so.

Policy on the Usage of Artificial Intelligence

AI Use Allowed, but Not Required: In this class, you are welcome to use AI for any purpose. However, you should note that all AI generative tools still tend to make up incorrect facts and fake citations, code generation models tend to produce inaccurate outputs, and image/art generation tools can produce copied work or offensive products. You will be responsible for any inaccurate, biased, offensive, or otherwise unethical content you submit regardless of whether it originally comes from you or an AI tool. If you use an AI tool, its contribution must be credited in your submission. The use of an AI tool without acknowledgement is cheating and constitutes a violation of the KSU Code of Academic Integrity.

Relying on AI in a programming course may prevent you from developing the core fundamental skills needed to truly understand the content, which can lead to gaps in your knowledge and the inability to apply concepts independently in future work.

However, it is equally important to know how to use it.

Institutional Syllabus Policies, Procedures, and Resources

Federal, BOR, & KSU Required Syllabus Policies and Student Resources

Tentative Schedule

Week	Topic A	Topic B
Week 1	Introduction to Robot Programming	Introduction to Robot Programming Continue
Week 2	Python Review	Python Review Continue
Week 3	Image Processing with OpenCV	Image Processing with OpenCV Continue
Week 4	C++ Review	C++ Review Continue
Week 5	Object Oriented Programming	Object Oriented Programming Continue
Week 6	Advanced Programming Topics	Advanced Programming Topics Continue
Week 7	MATLAB Review	Course Review