CEE 6185-A Syllabus

Construction Automation and Robotics, Section A, 3 Credits

FALL 2026

Instructor Information

Instructor: Dr. Yong K. Cho

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General Course Information

Description

This course covers recent developments in construction automation and robotics. The emphasis is on understanding the capabilities and methods that can be selected for a particular construction automation project. Lectures on Automation in Construction provide exposure to available state-of-the-art technologies. Lectures on needs assessment, AHP, and economic feasibility provide the means to evaluate the new technology. Case studies and hands-on activities provide more details on specific applications and address obstacles to implementing new automation technology in the construction industry.

Course Learning Outcomes

By taking this course, the following outcomes can be obtained:

- The student will understand industrial robotics that aids partial or full automation of construction processes.
- The student will be able to systematically prioritize the need and feasibility of the construction technologies based on safety, productivity, quality, and economics.
- The student will be able to design a conceptual automated construction system based on the criteria of need, economic feasibility, and technical feasibility.
- The student will experience state-of-the-art construction technologies, including 3D reconstruction, virtual reality, augmented reality, aerial and ground robots, and global industry robotic applications.

Required Course Materials

All required materials will be provided in the course slides.

Grading Policy

Attendance and Participation	10%
Homework	30%
Test	30%
Final Group Project	30%

*Attendance -2 % per day for unexcused absence or late

A>90; B>80; C>70; D>60

Description of Graded Components

An exam and quizzes will cover material given in the lecture slides, notes, handouts, homework, movies, guest lectures, and/or projects. Unless stated otherwise, all quizzes, tests, and examinations will be a closed book exam without notes or any other mnemonic methods. Sufficient information will appear on these items to complete them. Students not taking the required quizzes, tests, and examinations will receive a grade of zero for them. The only university excused circumstances will be considered. A grade of zero will be assigned for missed exams. Exams will not be rescheduled to accommodate early trips home or any other trips of a personal nature. Bring only the required resources (pen, pencil, ruler, calculator, etc.) to exams. Nothing else will be allowed; bags or cell phones are not allowed with the person or underneath the table. If necessary, the seating diagram needs to be followed during exams.

Course Policies

Attendance and/or Participation

Although class attendance is mandatory, up to one absence is allowed during the semester. All students are still expected to attend class regularly, as well as be punctual in every class session. Sleeping in class, being late, or leaving early without prior notice may result in an unexcused absence. Each student is responsible for all material and administrative instructions given during the lecture period. Instructions will not be repeated outside of class. Each unexcused absence will result in one percentage point deducted from your final grade up to a maximum of 10%. It is a student's own risk if a student misses homework deadlines, exams, or

quizzes due to any absence. Also, each excused absence requires prior approval (before class begins), followed by proofing materials (e.g., interview invitation, other class field trips, institute athletic activities). Please see other absences related to personal emergencies in the next section. Also, using a cell phone, talking, or eating during the class is inappropriate, discourteous, and inexcusable and will negatively affect the participation grade.

PERSONAL EMERGENCY:

Students who experience personal emergencies (e.g., hospitalization or a car accident) that may affect class attendance or assessments should contact the instructor as soon as possible. For serious or extended situations, students may also seek assistance from the Office of the Dean of Students, which can help by notifying instructors when appropriate. For more information, please contact the Office of the Dean of Students at 404-894-6367.

Academic Integrity

Georgia Tech aims to cultivate a community based on trust, academic integrity, and honor. Students are expected to act in accordance with the highest ethical standards. Review Georgia Tech's Honor Code and the student Code of Conduct.

Any student suspected of cheating or plagiarism on a quiz, exam, or assignment will be reported to the Office of Student Integrity, which will investigate the incident and determine the appropriate penalty.

Accommodations for Students with Disabilities

Georgia Tech is committed to providing equal access to students with disabilities. Students seeking accommodations should register with Georgia Tech Disability Services. Once approved, students should provide their accommodation letter to the instructor as early as possible. Accommodations are designed to support student access while maintaining the essential requirements of the course and program. In some cases, modifications to course requirements may be considered, consistent with program standards and accreditation requirements. For more information, please contact Georgia Tech Disability Services at 404-894-2564 or visit https://disabilityservices.gatech.edu.

Student-Faculty Expectations Agreement

At Georgia Tech, we believe that it is important to strive for an atmosphere of mutual respect, acknowledgement, and responsibility between faculty members and the student body. The Student-Faculty Expectations articulate some basic expectations that you can have of me and that I have of you. In the end, simple respect for knowledge, hard work, and cordial interactions will help build the environment we seek. Therefore, I encourage you to remain committed to the ideals of Georgia Tech while in this class.