

# CSCI 39536-01 Intro to Robotics

Instructor: Jaime Canizales

Monday - Wednesday 4:00 - 5:15pm pm North Bldg C107, Spring 2023

**Textbooks:** Introduction To Robotics Mechanics And Control 3rd Edition. John J. Craig. ISBN: 9780201543612

Probabilistic robotics sebastian thurn

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**Office Hours:** By appointment.

## Course Description:

**Part 1 Mathematics of Robotics** The first part of the semester we will cover the necessary/fundamental topics in mathematics needed to have a deep understanding of robotics. Topics will include a review of linear algebra and probability theory, spatial descriptions and transformations(2D and 3D), manipulator kinematics, and algorithms relating to robot vision and navigation.

**Part 2 Robot Components and Programming** The second part of the semester will be more hands on and project oriented. We will discuss different types of robot hardware, such as robot joints, cameras, lidars, odometer, kinect, and more. We will also learn the basics of programming in Robot Operating System (ROS), which is an open-source framework for controlling and communicating with robots.

## Grading:

Midterm Exam: 30%

Final Exam: 30%

Assignments/Projects: 40%

**Assignments:** There will be four assignments/projects, which will be posted on blackboard.

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