

Welcome to 106A!

Contents

- [Table of Contents](#)

In this course, you'll learn about the underlying theory and practice of robotics. In this set of online notes we'll guide you through some of the more challenging theory topics in the course.



Why are we interested in developing this theory? Outside of pure mathematical interest, in the real world, we're interested in establishing *safety* and *performance* guarantees on the robots we design and program. Using the language of mathematics, we may develop a framework with which we may formally prove these properties for our robots. In this course, we'll gain a brief introduction to how this is done. Let's get started!

Table of Contents

Fundamentals of Robot Motion

- [Rigid Body Rotations](#)
- [Further Representations of Rotations](#)
- [Rigid Motions in Three Dimensions](#)
- [Screw Motion](#)
- [Forward Kinematics](#)