

Syllabus

ROB311: Artificial Intelligence for Robotics

University of Toronto

Winter 2025

Disclaimer

The details in this document have been finalized and any changes must be voted upon by the class.

Outline

- Learning Objectives
- Course Information
- Grading Scheme
- Teaching Team

Learning Objectives

In this course, you will learn how to:

- (1) define a robotic system
- (2) plan actions that a robot should take to achieve a specific goal

Topics Covered

Part 0: Background

- (1) Prologue

Part 1: Search Problems

- (1) Uninformed Search Algorithms
- (2) Informed Search Algorithms

Part 2: Probabalistic Inference Problems

- (1) Probability Review
- (2) Probabalistic Inference Algorithms

Topics Covered

Part 3: Single-Agent Decision Problems

- (1) Fully-Observable Single-Agent Decision Algorithms
- (2) Partially-Observable Single-Agent Decision Algorithms
- (3) Single-Agent Reinforcement Learning

Part 4: Multi-Agent Decision Problems

- (1) One-Shot Multi-Agent Decision Algorithms
- (2) Turn-Taking Multi-Agent Decision Algorithms

Course Information

Course Website:

- <https://q.utoronto.ca/courses/373125/>
- All materials will be posted on course website (no textbook)

Lecture Times:

- Thu 13:00 - 15:00, SF3201
- Fri 15:00 - 17:00, MY360

Contact:

- <https://piazza.com/class/m5ihd5f5a8h101>
- **Do NOT** send emails¹

¹Use “private” posts on Piazza for personal inquiries

Grading Scheme

Evaluation	Weight	Release Date(s)	Time
Assignments	$3 \times 10\%$	17/01, 14/02, 14/03	2 wk.
Quizzes	$3 \times 10\%$	31/01, 28/02, 28/03	1 hr.
Final Exam	40%	TBA	3 hr.

Assignments:

- 5 grace days
- -10% per day late w/o grace days
- -100% after 7 days incl. grace days
- missed assignment weight transferred to corresponding quiz

Quizzes:

- open book
- missed quiz weight transferred to final exam

Final Exam:

- open book

Teaching Team

Chandra Gummaluru (Instructor)



Chandra Gummaluru
Instructor



Lecturer
Computer Science, UTIAS

2021 - Present



M.ASc Computer Engineering
Systems Control Group

2022 - 2024



Research Assistant
Bernhardt-Walter Lab

2020 - 2021



Software Engineer
Coursera

2019 - 2020



B.ASc Computer Engineering
University of Toronto

2016 - 2021

Teaching Team

Teaching Assistants

There are two teaching assistants for this course:

- Daniel Guo (contact for all assignments)
- John Lee (contact for all quizzes)