

Syllabus

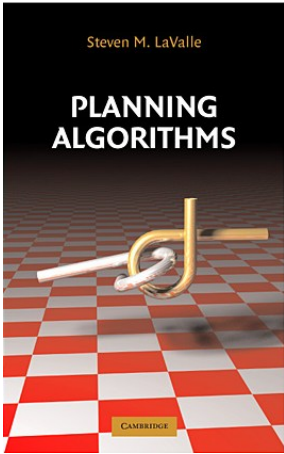
CIS 6930 – Planning in Robotics

Instructor Information

Professor:	Dr. Ayan Dutta
Email:	a.dutta@unf.edu
Office:	15/3222
Hours:	TR 11 am - 1 pm R 3-5 pm

- Please **allow 24-48 hours** to receive a response to your email if it is related to current lecture material or assignments. Allow slightly longer otherwise.
- Please include your name, N# and course number (**CIS 6930**) when sending mail.
- It is solely a student's responsibility to check their **UNF email accounts** and **Canvas course announcement section** to get notified of an update.

Books

	<p>[Text] LaValle, S. M. (2006). <i>Planning algorithms</i>. Cambridge university press.</p> <p>Link: http://planning.cs.uiuc.edu/bookbig.pdf</p>
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Topics

The students will complete assignments and project(s) in order to pass the course. Topics that will be covered in this course are listed below:

- Chapter 1: Introduction.
- Chapter 2: Discrete Planning.
- Chapter 3: Geometric Representation and Transformations.
- Chapter 4: The Configuration Space.
- Chapter 5: Sampling-Based Motion Planning.
- Chapter 6: Combinatorial Motion Planning.
- Chapter 9: Decision Theory.
- Chapter 10: Sequential Decision Theory.
- Chapter X: Miscellaneous topics including multi-robot planning and constrained planning.

Student Outcomes

At the end of the course, students will achieve the following:

- Develop and implement efficient path/motion planning strategies for autonomous robots.
- Understanding of which planning algorithm to use for a given problem.
- Describe and illustrate the role of discretization of an environment.
- Differentiate between continuous and discrete planning methods.
- Discuss the role of machine learning in robot motion planning.
- Experiment with multiple motion planning techniques and compare the results.

Performance Evaluation Scale

Letter Grade	Final Score Range
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A	≥ 93.00%
A-	90.00 – 92.99%
B+	87.00 – 89.99%
B	83.00 – 86.99%
B-	80.00 – 82.99%
C+	75.00 – 79.99%
C	70.00 – 74.99%
D	60.00 – 69.99%
F	< 60.00%

Grading Criteria

A student's final grade is based on the following evaluation methods:

Assignment Type	Count	Weight
Exams	1	10%
Project	1	35%
Homework	5	35%
Paper reading and presentation	4-5	20%

- Late submissions **Will Not Be Accepted**. Format and requirements for submission of assignments will be provided with each assignment.
- Make-Up Exams **Will Not Be Given**. Exams need to be taken during the scheduled class time. Being absent from the exam will result in 0 for that exam.
- Students are expected to arrive on time for the classes/exams.

Student Responsibilities

- Class attendance is essential.
- To avoid disruptions, please turn off or silence all cell phones, pagers, and similar electronic devices during classes and exams.
- Any electronic devices, such as a laptop, lab computer, and other electronic device utilization, in class, are only allowed if used for the AI class-related purposes. The

connection of electronic devices to the network for surfing the Internet, personal use, and any other non-related course usage is inappropriate and is prohibited during the class.

- Personal lecture notes should be used for class and not posted for any group other than class members.
- Video, audio, or pictures should not be taken during the class unless there is prior permission.
- **Cheating & Plagiarism** will not be tolerated and will result in grade **F** for the course.
- To get the most out of this class:
 1. Attend all of the lectures.
 2. Read the chapters from the textbook.
 3. **Start early on your assignments/projects.**

Attendance Policy

The faculty of the School of Computing believe that students need to make their academic studies a priority during their enrollment in our programs. Due to the amount and complexity of the material, students should ensure their ability to attend the entire class period. Thus, we have developed the following attendance policy which may be used at the discretion of the course instructor:

- Students who miss more than 25% of scheduled class meetings, regardless to their grades, may be asked to withdraw from the class or given an “F” grade in the course.

Non-Discrimination Policy

The University of North Florida (UNF) is committed to providing an inclusive and welcoming environment for all who interact in our community. To accomplish this intent, UNF shall not commit or permit discrimination or harassment on the basis of genetic information, race, color, religion, age, sex, disability, gender identity/expression, sexual orientation, marital status, national origin or veteran status in any educational, employment, social or recreational program or activity it offers. Similarly, UNF will not commit or permit retaliation against an individual who complains of discrimination or harassment or an individual who cooperates in an investigation of an alleged violation of University Regulation. In exercising these standards, the University will not abridge either free speech or academic freedom based on its context. Accordingly, any member of the UNF community who believes that they have been subjected to discrimination, discriminatory harassment, retaliation, or sexual misconduct may seek guidance, counseling and/or file a complaint by contacting: Cheryl Gonzalez, Director, E.O.D. and Title IX Administrator, located at Building One, J.J. Daniel Hall, Suite 1201, 1 UNF Drive, Jacksonville, Florida 32224-7699, or call (904) 620-2507 or via 711 Florida Relay for persons who are deaf or hard of hearing or those with speech impairments and/or limitations.