

# Introduction to Autonomous Vehicle Systems

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ECE 5532

## Final Project Requirements

The purpose of the final project is to apply the concepts presented in the course, and to focus on particular aspects deeper than was discussed in lecture. The scope and deliverables of the project are similar to what is expected in other project-based courses, with a presentation in front of the class, as well as a written report.

### 1. Presentation

This year you will be video recording your presentations and submitting them to me by your final exam time of 10:00pm on Monday, April 26<sup>th</sup>. Presentations should be about 10 – 15 minutes.

It is recommended to create some slides that describe the overall behavior and interesting aspects of the project. A live demo or video illustrating the performance of the system is highly encouraged as well.

### 2. Report

A technical report documenting the details of the system is also required. This should read much like a typical lab report that would be written for any senior level engineering course, but a particular format will not be enforced.

Screenshots, block diagrams and well-described code segments are greatly encouraged, as opposed to just a ton of text. Besides documenting your system, also describe how you went about developing it.

### 3. Code

All code, launch files, YAML files, etc. that were used for the project should be submitted. To submit, take all the ROS packages that are needed and put them in a compressed archive (zip, tar.gz, etc.). Don't zip up your entire workspace. Instead, just submit the relevant ROS packages that are in the workspace's **src** folder.

Alternatively, set up a repository for your project on Github and give me read access. Indicate the final version by making an appropriate commit message. If you set up a repository, only add the ROS packages, not your entire workspace.

## 4. Due Dates

All materials are due by the final exam time of Monday, April 26 at 10:00PM. This includes the slides, project itself, code, video presentation, and report.

## 5. Grading Rubric

The final project will be graded on the following guidelines:

Percentage	Criterion
40%	Overall project completeness
<b>Presentation</b>	
15%	Clear and concise description of the system
10%	Live demonstration and/or video
5%	Quality of the slides
<b>Report</b>	
15%	Sufficient explanation of the system
10%	Description of the development process
5%	Documentation quality

### 5.1 Project Completeness

Project completeness is defined as how close the system performs to the intended application. It is sometimes difficult to estimate how long it takes to develop a complicated system, and judging completeness can be quite subjective. If certain key pieces are not finished, be sure to document what was tried and how you went about it in the report, and I'll be able to reasonably assess how close they came to working properly.

In another scenario, if you have good base functionality but ran out of time to implement extra features to make the system work better, you won't lose too many completion points, if at all. Again, be sure to document your efforts thoroughly!

## **5.2 Slide and Documentation Quality**

Good presentation slides tend to have less text and more pictures. For example, instead of verbosely describing a system with text, replace most of that text with a block diagram, leaving a few short bullet points outlining key aspects.

Good technical reports are similar; use pictures and block diagrams to aid the reader in following the documentation presented in the text.