

UNIVERSITY OF NORTH CAROLINA AT CHARLOTTE

Department of Electrical and Computer Engineering ECGR 4161/5196 Introduction to Robotics

Experiment No. 6 – Obstacle Course Competition

Overview: This experiment is used to bring together all of the concepts that the students have learned throughout the semester. In this experiment, there will be an obstacle course to traverse and the students may use any method they wish.

Each student will be timed from the start to the end of the obstacle course and the students that finish in the least amount of time will receive extra credit.

The methods that may be used in this experiment include obstacle avoidance, A* Path Planning, or Motor Control. The students may also use the accelerometer or any other available sensors.

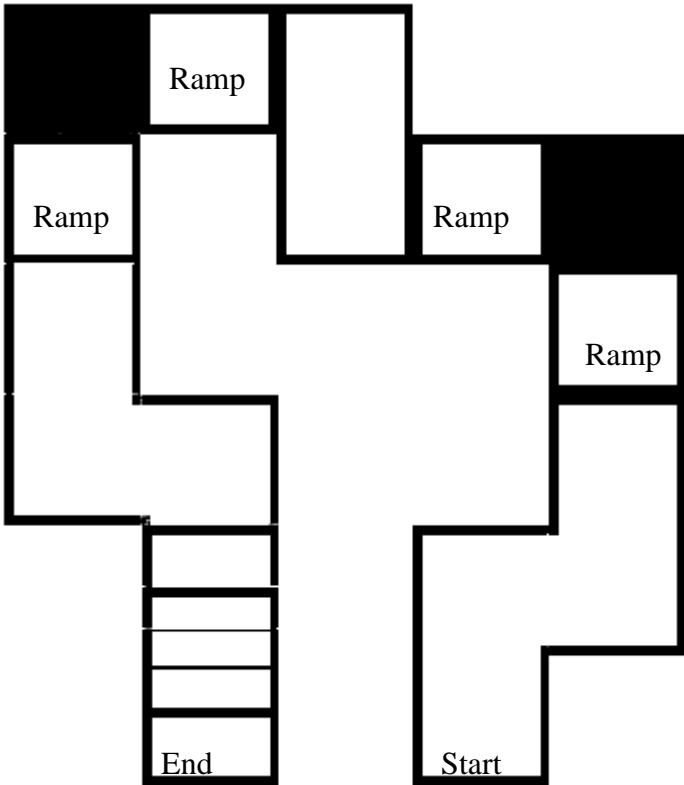


Figure 6.1: Obstacle Course Layout

Lab Session – Obstacle Course Competition

Obstacle Course

1. Write the code to traverse the obstacle course using the knowledge and fundamentals that have been obtained while writing the previous lab assignments.

Requirements

- Req. 1 The robot must traverse the obstacle course from a designated beginning point to the designated end point.
- Req. 2 A LabVIEW program will be written that will help the robot to traverse the obstacle course.
- Req. 3 The robot will operate autonomously.
- Req. 4 The robot will retain 4-wheeled locomotion.
- Req. 5 Students must follow the floor plan of the obstacle course given to them by the instructor.
- Req. 6 There will be no adjustments made to the obstacle course for any reason.
- Req. 7 Use one of the methods previously learned to traverse the obstacle course.