Introduction to Robotics

Dept. of Bioengineering, CMC Vellore
Office hours: SB Fri 4:00-5:00PM.

This is a self-study course on the introduction to robotics following the same syllabus as the online introductory course in robotics by O Khatib. You are expected to go through all online lectures as part of the course.

Course Scoring and Grading

Course Activities

- **Homework assignment** 15%
  Assignments will be provided to the student by the instructor and will be due one week after the assignments are provided. Late submissions will not be evaluated. Assignments will include both regular paper-and-pencil and programming problems. The student is free to use any programming language to solve the problems. You are encourged to work in groups to solves these problems, and learn from each other. But write down your own solutions and do not copy.

- **Lab assignment** 15%
  Lab assignments are most likely to be implemented using Sensable Phantom. These assignments will be due two weeks after they are given to the student. The student must take the responsibility to learn and familiarize him/herself with programming the the Phantom. You are encourged to work in groups to solves these problems, and learn from each other. But write down your own solutions and do not copy.

- **Surprize Quiz** 15%
  These will be given throughout the duration of the course. They will be short 20-30 min open book, in-class quizes.

- **Mid-term** 15%
  Take home exam, due the next day. This can include both paper-and-pencil and programming problems. Students are not allowed to discuss among themselves in solving these problems.

- **Final** 45%
  Take home exam, due the two days after it is given. This can include both paper-and-pencil and programming problems. Students are not allowed to discuss among themselves in solving these problems.

Grading policy:No relative grading

A+ : $90 \leq$ Score; **A** : $80 \leq$ Score < 90; **B** : $70 \leq$ Score < 80; **C** : $60 \leq$ Score < 70; **D** : $50 \leq$ Score < 60; **E** : $40 \leq$ Score < 50; **F** : Score < 40;

Policy for academic dishonesty

There will be zero tolerance towards academic dishonesty, and anyone found carrying such activties will recieve an 'F' grade in the course.

References

1. Spong, M. W., & Vidyasagar, M. (2008). Robot *dynamics and control*. John Wiley & Sons.

2. Murray, R. M., Li, Z., Sastry, S. S., & Sastry, S. S. (1994). *A mathematical introduction to robotic manipulation*. CRC press. Online book

3. Siciliano, B., Sciavicco, L., Villani, L., & Oriolo, G. (2010). *Robotics: modelling, planning and control*. Springer Science & Business Media.