Preparing People to Lead Extraordinary Lives
LOYOLA UNIVERSITY CHICAGO

Department of Computer Science
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Syllabus - COMP 388/488 – Robotics Software Development
Dr. William L. Honig

Course Description – Technical Seminar Course Version

The course is an introduction to robotics and robotic software development using humanoid robots. The course will use modern robot platforms and provide hands on experience with robotic sensor systems, motion and navigation, robot behavior planning and implementation. Students will explore the history of robotics, overview the theory of autonomous robotic systems, and develop complete robot projects.

Prerequisites

Students are expected to have strong programming skills and experience from Comp 271 (required) and Comp 313 (recommended), or similar programming-intensive courses. Students must have a good knowledge of programming languages and proven skills in writing, compiling, and debugging software. Students will be expected to learn new languages as necessary for the course without extensive class time on the mechanics of the languages.

Special Course Requirements

This class will meet as a technical seminar and requires students to participate actively in the course learning. Students will typically meet with the instructor and classmates once a week during which time they will participate in discussions and contribute to the group knowledge of the subject. Outside of class students will be responsible for reading and analyzing materials from the course, doing further research into the course topic, and for experimenting with software and hardware implementations. Passive listening during the course will not result in student success.

This class will involve hands on laboratory work both during and outside of the formal class time.

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Textbook

Required: *Mobile Robotics*: A Practical Introduction, 2e, Ulrich Nehmzow,

Springer 2003, ISBN: 1-85233-726-5
Online materials and other documents will also be provided in the course.

Academic Honesty

Students are expected to have read the statement on academic integrity available http://www.luc.edu/academics/catalog/undergrad/reg_academicintegrity.shtml. This policy applies to the course. The minimum penalty for academic dishonesty is a grade of F for that assignment. Multiple instances or a single severe instance on a major exam or assignment may result in a grade of F for the course. All cases of academic dishonesty will be reported to the department office and the relevant college office where they will be placed in your school record.

Academic dishonesty includes, but is not limited to, working together on assignments that are not group assignments, copying or sharing assignments or exam information with other students except in group assignments, submitting as your own information from current or former students of this course, copying information from anywhere on the web and submitting it as your own work, and submitting anything as your own work which you have not personally created for this course. If you do wish to use materials that are not your own, please check with me ahead of time and cite you source clearly. **When in doubt, ask first!**

Course Objectives and Goals

By successfully completing the course, the student will:

1. Understand the history of robotics and provide reasoned perspectives to current developments and inventions
2. Comprehend the key theories of robotic systems and demonstrate their application to hands on projects
3. Complete creative robotics projects and demonstrate them to others and evaluate their success and limitations.

Course Grading

Your grade will consist of two components with relative weights as follows (I reserve the right to adjust the percentages in **your favor** if circumstances warrant).

Weekly Participation and Contribution (55%)

All students are expected to attend all class sessions and fully support the class active learning model. Students will be given feedback on the effectiveness of their participation by the instructor and other students. Participation and contribution will be measured by the ability of the student to engage in meaningful discussion and experimentation with the other members of the course, to offer information to other students, to explore and use the required

development tools, and to demonstrate thorough understanding of the course materials. Individual assignments, reports, software, designs, exams, and quizzes, if given, will be part of this grade.

Robotics Project Implementation and Report (45%)

Each student or student team will define, design, implement, and demonstrate a robotics project using a robot platform. The project will be demonstrated to and rated by the entire class.

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NOTE: The instructor may change this grading scheme at any time based on class performance. In particular, if *all* students are not actively participating in the experimental seminar nature of the course, the grading may be changed to include additional assignments, quizzes, and traditional exams.

If for any reason you do miss a class session, it is your responsibility to determine what you missed, locate any handouts, determine any changes in assignments, course plans, or schedules, etc. It is not my obligation to help you make up for missing class.

Please do not ask for "extra credit" to improve your grade as this is neither practical in the course nor fair to your fellow students. I will be happy to discuss your performance in the course with you at any time, including discussing possible grade based on performance to date and ways to improve your performance during the remainder of the course.

The grading rubric for the course, based on the percentages above, will attempt to generate letter grades as follows (with + and – grades for cases falling between the full letter grades):

A = Student demonstrates complete comprehension of all topics in the course and successfully explores information beyond the strict course requirements, bringing new information into the seminar discussions and their projects. (100 – 91%)

B = Student demonstrates complete comprehension of majority of topics in the course and participates fully in all class discussions and successfully implements their projects. (90 – 81%)

C = Student demonstrates comprehension of some topics in the class but limited knowledge of other topics. Student does not fully contribute to seminar nature of the class and has incomplete project. (80 – 71%)

D = Student does not fully participate in class and demonstrates knowledge of only limited topics in the course. Student project show limited or no success at applying class concepts. (70% and below)

Comp388/488 ROBOTICS Syllabus Seminar Version
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Dr. W. L. Honig
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