Instructor:
Prof Y. Xiang (email: cisprof2x@gmail.com)
Office hours: Monday 6:25 – 7:25pm (539NE)

Course website:
http://www.sci.brooklyn.cuny.edu/~xiang/cisc3415/ (for lecture notes, readings, homework assignments and project descriptions)

Class meeting time and room:
MW 5:05 – 6:20pm Room 234NE.
Dates college is closed or no classes: 9/4, 9/20, 10/9.

Prerequisites:
CISC 3130 and CISC 2210

Course description:
Basic principles of mobile robotics: architectures, mathematical foundations, control algorithms, human robot interaction, and practical applications. Applications include robots in the home and robots in search and rescue work.

The course consists of generally alternate lectures and labs. Lecture topics include an introduction to robotics, legged vs wheeled robots in locomotion and their characteristics of kinematics, sensors and perception, feature extraction and basics of computer vision, localization and mapping based on probabilistic filtering, robot path planning and navigation. Labs involve C/C++ programming projects on a hobby/education robot kit, iRobot Create, using the open source player/stage suite.

Textbook:

Homework and Lab/Projects:
Homework will be assigned roughly every 2-3 weeks online, and due dates will be posted individually. You should always submit your finished homework in hard copy (printout). Late submission will carry a penalty, and the deduction depends on how late it is.

There will be 5-6 Projects that gradually explore the control of a robot in movement, perception, localization and navigation, either in simulation or using the real iRobot robot. You will be working in groups of 3-4 members, so it is your responsibility to obtain your lab partners’ contact information. The lab sheets (instructions) and project-related files for each project have been posted on the class website. Please print out and bring the lab sheets, together with the project file on a flash drive, to each lab session. Programs of your finished projects should be submitted via email.

Please be advised that, your homework submissions should always reflect your own independent work. For projects, you work together with your group partners and submit only one final copy for the whole group. Copied work will not only earn you no credit, but also further damage your academic standing in this class.

Grading:
Term grade is based on component grades of your homework assignments, projects and final exam. The percentile score will be eventually converted to a letter grade with some curving.

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<tr>
<th>Component</th>
<th>Points</th>
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<tr>
<td>Homework assignments</td>
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<td>Projects</td>
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<td>Final exam (Mon 12/18, 3:30-5:30pm)</td>
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University's policy on Academic Integrity:

The faculty and administration of Brooklyn College support an environment free from cheating and plagiarism. Each student is responsible for being aware of what constitute cheating and plagiarism and for avoiding both. The complete text of the CUNY Academic Integrity Policy and the Brooklyn College procedure for policy implementation can be found at www.brooklyn.cuny.edu/bc/policies. If a faculty member suspects a violation of academic integrity and, upon investigation, confirms that violation, or if the student admits the violation, the faculty member MUST report the violation.

Center for Student Disability Services:

In order to receive disability-related academic accommodations students must first be registered with the Center for Student Disability Services. Students who have a documented disability or suspect they may have a disability are invited to set up an appointment with the Director of the Center for Student Disability Services, Ms. Valerie Stewart-Lovell at (718)951-5538. If you have already registered with the Center for Student Disability Services, please provide your professor with the course accommodation form and discuss your specific accommodation with him/her.

Non-attendance due to religious beliefs:

Please refer to the state law regarding this issue on p.72 in the Undergraduate Bulletin or p.46 of the Graduate Bulletin.