

MAE 4345 Section 001 Introduction to Robotics

Fall 2009

3:30 - 4:50pm Tuesday-Thursday Wolf Hall 210

- **Instructor**

- Alan Bowling, 315A Wolf Hall
Phone: (817) 272-0206
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Office Hours: Wed. 3:30-4:50pm or by appointment

- **Teaching Assistant**

- Sun Xi, 410 Wolf Hall
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- **Course Web Site**

<http://www-woolf.uta.edu>

username: 4345bowling

password: 40robitor11

- All course information can be found on the web site.
- Students should frequently check the web site for bulletins and updates as the course progresses.

- **Textbooks and References**

Required “Introduction to Robotics”, John J. Craig, Third Edition, Addison-Wesley, 1989. It is recommended that the textbook be brought to each class.

“Autolev 4 User’s Manual”, Thomas R. Kane and David A. Levinson, 2005. Available in the engineering library.

- **Software Used**

Autolev by Online Dynamics, for symbolic manipulation. Basically *Mathematica* for dynamics using syntax resembling *Matlab*. Students should download a demonstration copy of the software from the site www.Autolev.com. A manual for the software can be checked out from the library, however use of the software will be covered extensively in the lectures.

Matlab for general computation. It is assumed that student is familiar with this program.

Scilab for general computation. It is similar to Matlab and is available for free at www.scilab.org. Students familiar with this software can use it, but it is not officially supported by the Instructor or Teaching assistant.

C or *Fortran programming language* for dynamic simulation. It is assumed that the student is familiar with one of these languages. However, there will be help available outside of class on these languages at the appropriate time.

- **Topics**

The list of topics covered is given in the *Theoretical Developments Schematic* and the *Lecture, Reading, and Assignment Schedule* on the course web site.

- **Homework Policy**

Collaboration on homework is encouraged. You may consult outside reference materials, other students, the teaching assistants, and/or the instructor. However, all solutions that are handed in should reflect your understanding of the subject matter at the time of writing.

The homework assignment and lecture schedule is posted on the course web site. Late homeworks will not be accepted. However, the lowest homework grade will be dropped.

Objections concerning the grading of homeworks and tests should be raised within one week after they are returned. After one week the grade is permanent. Questions about homework grading should be discussed with the TA first. If the problem cannot be resolved with the TA, then it can be brought to my attention.

- **Projects**

There will be two projects during the semester which involve examining the workspace and control of a two degree-of-freedom robotic manipulator.

- **Attendance Policy**

Students are not penalized for not attending the lectures, but it is strongly advised that they do. Material is presented in the lectures which is not available in the textbook.

- **Code of Conduct**

- No persistent talking during lecture.
- No newspaper reading during lecture.
- No laptops open during lecture.

If these behaviors occur, the students involved will be asked to leave and should promptly do so.

- **Grading**

The final grade will be based on homework sets, two tests and a final exam.

1. Homework (25%)
2. Two Projects (30%)
3. Midterm exam (20%)
4. Final exam (25%)

- **Test dates**

Midterm October 15
Final Exam December 10 2-4:30pm

The final exam date and time cannot be changed, except in extreme cases.

- **Americans with Disabilities Act**

The University of Texas at Arlington is on record as being committed to both the spirit and letter of federal equal opportunity legislation; reference Public Law 93112-The Rehabilitation Act of 1973 as amended. With the passage of new federal legislation entitled Americans with Disabilities Act (ADA), pursuant to section 504 of The Rehabilitation Act, here is renewed focus on providing this population with the same opportunities enjoyed by all citizens. As a faculty member, I am required by law to provide “reasonable accommodation” to students with disabilities, so as not to discriminate on the basis of that disability. Student responsibility primarily rests with informing faculty at the beginning of the semester and in providing authorized documentation through designated administrative channels. If you require an accommodation based on disability, I would like to meet with you in the privacy of my office no later than the second class meeting to make sure that you are properly accommodated.

- **Academic Dishonesty**

It is the philosophy of The University of Texas at Arlington that academic dishonesty is a completely unacceptable mode of conduct and will not be tolerated in any form. All persons involved in academic dishonesty will be disciplined in accordance with University regulations and procedures. Discipline may include suspensions or expulsion from the University. “Scholastic dishonesty includes but is not limited to cheating, plagiarism,

collusion, the submission for credit of any work or materials that are attributable in whole or in part to another person, taking an examination for another person, any act designed to give unfair advantage to a student or the attempt to commit such acts.” (Regents’ Rules and Regulations, Part One, Chapter VI, Section 3, Subsection 3.2, Subdivision 3.22)