

General Information

Instructor	Dr. Harry H. Cheng Office: 2018 Bainer Phone: 752-5020 Email: hhcheng@ucdavis.edu WWW: http://iel.ucdavis.edu Office hours: 11-12am MW, or by appointment (I might be in the computer lab during the office hour)
Lecture Hours	10:00-10:50am MWF, 201 Wellman
Discussion Hour	2:10-3:00pm W, 3 Wellman
Course Outline	Computational kinematics, spatial kinematics, spatial mechanisms analysis and synthesis, forward and inverse kinematics, workspace, path planning, forward and inverse dynamics, control, collision detection and avoidance, vision and force sensor fusion, robot programming, real-time architecture, software design for spatial kinematics and robotics (items in the list may be dropped and other related topics may be added).
Prerequisites	C language and Engineering 102 (1) Jorge Angeles, <i>Fundamentals of Robotic Mechanical Systems — Theory, Methods, and Algorithm</i> , Second edition, Springer-Verlag, 2003. (2) Harry H. Cheng, <i>C for Engineers and Scientists</i> . (3) Instructor's lecture notes.
Computer Lab	HP workstations, Linux, Windows at MAE graduate computer lab in Bainer
Course Handouts	The course handouts are distributed at lecture time. Some of them are available on the World Wide Web of the home page for MAE225 at the Uniform Resource Locator address http://iel.ucdavis.edu/course/MAE225/spring07/ For example, this handout is stored as <code>general.pdf</code> under <i>General Policy</i> .
Homework	Homework is given out periodically through email and is due at the beginning of the class on the date stated on the homework. If you used computer programs to solve a problem, you should send me computer programs. Otherwise, you will not get the full credit for the homework. Remember that computer programs are always treated as an Appendix. If without text, appendix alone is not sufficient enough to receive a full credit.

- The homework should be submitted in class.
 If you hand it in my office before 5:00pm on due date,
 there will be 10% deduction for the *entire* homework.
 After that, late homework will not be accepted.
 No exception unless there is a documented medical excuse.
- Examinations** *Midterm examination:* this is an open book/open notes examination.
 The specific date of examination will be announced
 one week before the examination date. No early or late exam will be given.
 If you miss the exam for medical reasons (You **must** document this;
 no other excuses are acceptable), the other parts of the course will be
 counted proportionally more or you may be allowed or required to
 take a make-up exam (the choice is the instructor's).
Final project: a comprehensive project with a technical report.
- Grading System** Written and computer homework 30%
 Midterm examination 40%
 Final Project 30%
- Computer Account** All students enrolled in this course should contact Ben Ransom
 at bransom@ucdavis.edu for a computer account.
 Provide him with your full name and social security number.
- Academic Integrity** (1) All work submitted for credit must be your own.
 You may discuss your assignment with classmates and instructor,
 in the course to get ideas or a critique of your ideas, but the ideas
 and words you submitted must be your own. Unless **explicitly** stated
 otherwise in the homework assignment, collaboration is considered cheating
 and will be dealt with accordingly.
 (2) For written homework, you must write up your own solutions and may
 neither read nor copy another student's solutions.
 (3) **For computer programs, you must create and type in
 your own code and document it yourself.**
 But, you are free to copy programs from toolkit
 CHHOME/toolkit/demos and modify them to solve
 the similar problems. Modifications made should be clearly documented.
**You are free to seek help from instructor and fellow students
 while you are debugging a program once it is written.**