

Resources:

Software: Matlab

Textbook: none.

References: in Library Open Reserve

i JJ Slotine, W Li (1991). Applied Nonlinear Control (Prentice Hall)

ii H Khalil (1996,2002) Nonlinear Systems (Prentice Hall)

iii S Sastry (1999) Nonlinear Systems (Springer).

iv A Isidori (1995) Nonlinear Control (Springer).

Timetable for	Homeworks, Project, Exam	
Item	Dates(week)	<u>Late Homeworks are penalized.</u>
HW 1	out - week 4	due - week 6
HW 2	out - week 6	due - week 8
HW 3	out - week 8	due - week 10
Project	Email 2 topics in order of preference: due Tuesday August 18(week 4) One page proposal due Friday August 21(week 4) (specify division of work if 2 students) Talks held week TBA report due - Wednesday October 21(week 12)	
Final Exam	out - Wednesday October 21(week 12)	due - Friday October 30th

Teaching Strategies

Lectures to give the basic material in written form, and to highlight the importance of different sections and help with the formation of schema.

Assignments to give practice in problem solving, and to assess your progress.

Examination the final test of competency.

Learning Outcomes

At the end of the course the student will be familiar with basic aspects of nonlinear systems and control, from both an analysis and a design point of view. The student will be able to use this knowledge to solve basic problems in nonlinear systems analysis and nonlinear control design.

Academic Honesty and Plagiarism

Plagiarism means copying. You cannot copy other peoples work of any kind; you cannot copy from any source. Plagiarism is a serious offence and (severe) penalties will apply; see <http://www.lc.unsw.edu.au/plagiarism>

Administrative Matters

For special needs, equity and diversity, occupational health and safety, enrolment, rights, and general expectations of students; see <http://scoff.ee.unsw.edu.au/>.

Week	Topic
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1	Introduction
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2	Nonlinear Ordinary Differential Equations
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3	Phase Plane Methods
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4	Lyapunov Stability
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5	Input/Output Stability
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6	Describing Functions
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7	Nonlinear Control - Introduction
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8	Feedback Linearization
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9	State Feedback Linearization
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10	Gain Scheduling
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11	Sliding Mode Control
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12	Backstepping Design Method
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