



Institute for Aerospace Studies
UNIVERSITY OF TORONTO

AER525H1F Robotics

Syllabus and Course Information Fall 2015

Lecturer:	Peter Szabo, PhD Candidate Space Robotics Group University of Toronto Institute for Aerospace Studies Phone: 416-667-7731 E-mail: peter.szabo@mail.utoronto.ca	
TAs:	GRADING:	Allen Chee (allen.chee@mail.utoronto.ca)
	LAB:	Xiaoqi Shi (xiaoqi.shi@mail.utoronto.ca)
Lectures:	Wednesday	9:00am-10:00am (WB130)
	Friday	9:00am-11:00am (WB130)
Tutorials:	Wednesday	10:00am-11:00am (WB130)
Office Hours:	Wednesday	11:00am-12:00pm (SF4001)
Laboratories:	(see Laboratory Schedule)	
Primary Text:	<i>Introduction to Robotics - Mechanics and Control</i> , Third Ed. John J. Craig, Pearson Prentice Hall, 2005.	
Supplementary:	<i>Robotics: 2008 AER525 Course Notes</i> , M. Reza Emami, University of Toronto. (provided)	
Grading Breakdown:	Assignments	15%
	Laboratories	15%
	Midterm Exam	20%
	Final Exam	50%

Syllabus:

Chapter	Description	Dates
1	Introduction	Sep 11
2	Spatial Descriptions & Transformations	Sep 16, Sep 18, Sep 23
3	Manipulator Kinematics	Sep 25, Sep 30, Oct 2
4	Inverse Manipulator Kinematics	Oct 7, Oct 9
5	Jacobians: Velocities & Static Forces	Oct 14, Oct 16, Oct 21
	Midterm	Oct 30
6	Manipulator Dynamics	Oct 23, Oct 28, Nov 4, Nov 6
7	Trajectory Generation	Nov 11, Nov 13, Nov 18
8	Manipulator-Mechanism Design	Nov 20
9	Linear Control of Manipulators	Nov 25, Nov 27, Dec 2
10	Nonlinear Control of Manipulators	Dec 4, Dec 9
	Exam Period	Dec 10-23

Laboratory Schedule:

Section	Group	Room	Time	Lab 1	Lab 2	Lab 3	Lab 4
PRA0101	A	MB68	3pm-6pm	Sep 16	Sep 30	Nov 11	Nov 25
PRA0102	B	MB68	3pm-6pm	Sep 23	Oct 7	Nov 18	Dec 2
PRA0103	C	MB68	6pm-9pm	Sep 16	Sep 30	Nov 11	Nov 25
PRA0104	D	MB68	6pm-9pm	Sep 23	Oct 7	Nov 18	Dec 2

Assignment Schedule:

	Assign. 1	Assign. 2	Assign. 3	Assign. 4
Chapters Covered	2/3	4/5	6/7	8/9/10
Available	Sep 16	Sep 30	Oct 28	Nov 18
Due	Oct 7	Oct 21	Nov 18	Dec 9

Examination Details:

	Topics Covered	Type	Date
Midterm	Chapters 1-5	C	Oct 30
Final Exam	Chapters 1-10	X	TBA