CMPUT 499/609: Schedule of Classes and Assignments

class num	date	lecture topic	Reading assignment (in advance)	Assignment due
1	Thu, Sep 1, 2016	The Magic of Artificial Intelligence; reasons for taking the course	Read section 1 of the Wikipedia entry for "the technological singularity"; see also Vinge2010 (http://www-rohan.sdsu.edu/faculty/vinge/misc/iaai10/) and Moravec1998 (http://www.transhumanist.com/volume1/moravec.htm)	
2	Tue, Sep 6, 2016	Bandit problems	Sutton & Barto Chapters 1 and 2	
3	Thu, Sep 8, 2016	Bandit problems as policy gradient	Sutton & Barto Chapter 2 (including Section 2.7)	
	Mon, Sep 12, 2016	W1 lab (5-6:30) & Probability tutorial (6:30-7:50)	probabilities-expectations.pdf (in the dropbox)	
4	Tue, Sep 13, 2016	Defining "Intelligent Systems"	Read the definition given for artificial intelligence in Wikipedia and in the Nilsson book on p13; google for and read "John McCarthy basic questions", and "the intentional stance (dictionary of philosophy of mind)"	W1
5	Thu, Sep 15, 2016	Markov decision problems	Sutton & Barto Chapter 3 thru Section 3.5	
	Mon, Sep 19, 2016	W2 lab		
6	Tue, Sep 20, 2016	Returns, value functions	Rest of Sutton & Barto Chapter 3	
7	Thu, Sep 22, 2016	Bellman Equations	Sutton & Barto Summary of Notation, Sutton & Barto Section 4.1	W2
	Mon, Sep 26, 2016	Tutoring lab		
8	Tue, Sep 27, 2016	Dynamic programming (planning)	Sutton & Barto Rest of Chapter 4	
9	Thu, Sep 29, 2016	Monte Carlo Learning	Sutton & Barto Chapter 5	
	Mon, Oct 3, 2016	W3 lab		
10	Tue, Oct 4, 2016	More Monte Carlo Learning	Sutton & Barto Chapter 5	W3
11	Thu, Oct 6, 2016	Temporal-difference learning	Sutton & Barto Chapter 6 thru Section 6.3	
12	Tue, Oct 11, 2016	Temporal-difference learning	Sutton & Barto rest of Chapter 6	
13	Thu, Oct 13, 2016	Multi-step bootstrapping	Sutton & Barto Chapter 7	
	Mon, Oct 17, 2016	W4 lab		
14	Tue, Oct 18, 2016	Models and planning	Sutton & Barto Chapter 8 thru Section 8.3	W4
15	Thu, Oct 20, 2016	Models and planning	Sutton & Barto rest of Chapter 8	
	Mon, Oct 24, 2016	W5 lab		
16	Tue, Oct 25, 2016	Review	Sutton & Barto Chapters 2-8	W5
17	Thu, Oct 27, 2016	Midterm Exam	No new reading	
	Fri, Oct 28, 2016	Python Tutorial 5-6:20 NRE 1-001		
	Mon, Oct 31, 2016	P1 lab		
18	Tue, Nov 1, 2016	Function Approximation; Online linear supervised learning	Nilsson Sec. 2.2.1 and Nilsson Ch. 4; Sutton & Barto Chapter 9 thru 9.4	
19	Thu, Nov 3, 2016	Prediction with linear approximation, Tile coding	Sutton & Barto rest of Chapter 9	P1
	Mon, Nov 14, 2016	Tutoring lab		
20	Tue, Nov 15, 2016	Control with approximation, differential reward	Sutton & Barto Chapter 10	
21	Thu, Nov 17, 2016	Eligibility traces	Sutton & Barto Chapter 12	
	Mon, Nov 21, 2016	P2 lab		
22	Tue, Nov 22, 2016	Off-policy learning	Sutton & Barto Chapter 11	P2
23	Thu, Nov 24, 2016	Biological reinforcement learning	Sutton & Barto Chapters 14 and 15	
	Mon, Nov 28, 2016	P3 lab		
24	Tue, Nov 29, 2016	Gradient-TD methods	GradientTDdraft.pdf in the dropbox, thru Section 5.2	
25	Thu, Dec 1, 2016	Policy-gradient learning	Sutton & Barto Chapter 13	
26	Tue, Dec 6, 2016	Monte Carlo Tree Search (Guest lecture from Prof Martin Mueller)	Monte-Carlo Tree Search (MCTS-survey.pdf in dropbox)	P3
27	Mon, Dec 12, 2016		Experimentation project should be done throughout the course	P4