COSC 6368 (Fall 2017)

Review List Midterm Exam on Tu., October 24, 2017, 2:30p

The midterm exam is scheduled for Tuesday, October 24, 2:30p in TBDL. The exam will take 75 minutes and is open-books and, but friends and other human beings are not permitted and, more importantly, **the use of computers is not permitted!**

Relevant slide shows, pasted from the COSC 6368 Website that are relevant for the midterm exam:

* 2017 Search Transparencies:
  + [Search1](http://www2.cs.uh.edu/~ceick/ai/search1.pptx) (Classification of Search Problems, Terminology, and Overview ), [Search2](http://www2.cs.uh.edu/~ceick/ai/search2.pptx) (Problem Solving Agents), [Search3](http://www2.cs.uh.edu/~ceick/ai/search3.pptx) (Heuristic Search and Exploration), [Search4](http://www2.cs.uh.edu/~ceick/ai/search4.pptx) (Randomized Hill Climbing and Backtracking; not covered in textbook), [Search5](http://www2.cs.uh.edu/~ceick/ai/russel5.pdf) (Games; Russel transparencies for Chapter 6; will not cover transparencies that discuss card games),
* 2017 Teaching Material Evolutionary Computing (**EC**): EC1: [Introduction to Evolutionary Computing](http://www2.cs.uh.edu/~ceick/ai/EC1.pptx) and EC2:[Example: Using EC to Solve Travelling Salesman Problems](http://www2.cs.uh.edu/~ceick/ai/EC2.pptx), [Eiben-Smith Introduction to EC](http://www2.cs.uh.edu/~ceick/ai/Eiben-Smith-EC.pdf) (they call 'EC': 'EA')
* 2016 Machine Learning Transparencies:
  + Reinforcement Learning: [RL1](http://www2.cs.uh.edu/~ceick/ai/RL1.pptx) (Introduction to Reinforcement Learning)

Remarks:

* The machine learning part of the exam centers on reinforcement learning basics (goals and objectives, what is a policy, knowing what the learning and discount rate is, role of exploitation and exploration), Bellman Update, TD Learning, but not on anything else.
* As far as the evolutionary computing only very basic questions will be asked in the exam, whereas more in depth questions will be asked about the search!
* Planning and “Introduction to AI’ will not be covered in the midterm exam; they will be covered in the final exam...
* As far as search is concerned, everything covered in the lecture in 2017 is relevant for the midterm exam except constraint satisfaction problems,,

Tentative Weights of 3 main topics in the midterm exam: Search 60-80%, Reinforcement Learning 15-30%, Evolutionary Computing: 7-15%

Relevant material from the Russel textbook (Third Edition):

Chapter 3: pages 64-99, 102-107; Chapter 4: 120-129 Chapter 5: 161-180 (the discussion of card games is not relevant), Chapter 17: 645-656 Chapter 21: 830-831, 836-849.

Material that was discussed in class that is relevant for the midterm exam (but not necessarily is discussed in the textbook):

a) Simulated Annealing, traditional Hill Climbing and Randomized Hill Climbing

b.)Read [Eiben-Smith Introduction to EC](http://www2.cs.uh.edu/~ceick/ai/Eiben-Smith-EC.pdf) (they call 'EC': 'EA') pages 15-24 and 32-34