

CS 260 and 360 – Fall 2007

Since CS 260 and CS 360 are being taught together this Fall, the CS 360 syllabus includes the topics listed for CS 260 + Advanced topics that are listed after the CS 260 syllabus.

Syllabus for CS 260

No	Topic Name	Russell & Norvig Chapter
1	Introduction to AI	1
2	Intelligent Agents	2
3	Introduction to Lisp Programming Assignment 0	Handouts
4	Search and Problem Solving Introduction (Uninformed Search) Informed (Heuristic Search) Home Work 1 Constraint Satisfaction Problems (CSP) Adversarial Search (Two person games) Home Work 2 Programming Assignment 1 (Game Trees)	3 4.1-4.3, Handouts 5.1-5.3 6.1-6.3, 6.5
5	Knowledge Representation and Reasoning (Logical Representations) Propositional Logic First Order Logic and Inference Home Work 3 Exam 1	7.1-7.5 8.1-8.3, 9
6	Planning STRIPS-like planners, Forward and Backward State Space Search Partial Order Planning Introduction to Planning and Scheduling Home Work 4 Programming Assignment 2 (Planning)	11.1-11.2, Handouts 11.3, Handouts 12.1-12.2
7	Reasoning under Uncertainty Basic Probability Theory, Bayes Rule and its Application Representing uncertain knowledge, Bayes Nets Home Work 5	13 14.1-14.4
8	Learning from Observations Inductive Learning and Decision Trees Optional Home Work (6)	18.1-18.3
9	Advanced Topics AI and Learning Environments (Cognitive Science) AI in Game Environments Multi-agent Systems Programming Assignment 3 (Game Environment) Exam 2	Handouts

Syllabus for CS 360 – Additional Topics

No.	Topic	Resources
1	Advanced Search Algorithms Iterative Deepening search Advanced CSP topics	Handouts
2	Knowledge Representation Ontologies	Russell & Norvig, ch. 10 + handouts
3	Planning Planning Graphs (GRAPHPLAN algorithm) Advanced Partial Order Planning Methods Planning and Scheduling with Resource Constraints	Russell & Norvig, chs. 11 and 12 + Handouts
4	Reasoning under Uncertainty Dynamic Bayes Nets Decision Making under uncertainty	Russell & Norvig, chs. 15-17
5	Machine Learning Classification methods Clustering Methods	Russell & Norvig, ch. 18 + Handouts
6	Advanced Topic for Project Students will individually survey an AI topic of their choice	

Assigned Papers:

Search

1. R.E. Korf, "Depth-First Iterative Deepening: An Optimal Admissible Tree Search," *Artificial Intelligence*, vol. 27, pp. 97-109, 1985.
2. E.A. Hansen and R. Zhou, "Anytime Heuristic Search," *Journal of Artificial Intelligence Research*, vol. 28, pp. 267-297, 2007.

Constraint Satisfaction

3. tbd

Knowledge Representation: Ontologies and the Semantic Web

4. tbd

Planning and Scheduling

5. tbd

Uncertain Reasoning and Decision Making

6. tbd

Machine Learning

7. tbd