

Exam Information

CMPT 310

Survey Artificial Intelligence

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Format

- Exam is given on Canvas
- Mix of question types:
 - Multiple choice
 - Concept matching
 - Compute numeric answers
 - Short answer (write text); only a couple of these
- Links to Sample Exams are posted

Taking the Exam

- Material from both book and lecture notes may be examined.
- Open book but not open neighbour.
 - No text is to be copied and pasted from external resources, your answers must be in your own words
- Connect to zoom, keep your camera on, show ID

Topics Covered: Part 1

- See Lecture Schedule for textbook sections covered.
- Agents and Environments
 - Agent Types: rational, intelligent, autonomous
 - Agent Architectures
 - Environment Types
- Local Search
 - Gradient Descent
 - Newton-Raphson
- Matrix Games
 - Game Types
 - Nash Equilibrium
 - Dominance, Pareto-Dominance, Pareto-Optimality
- Search and Problem Solving
 - Uninformed Search: Breadth-First, Depth First, iterative Deepening
 - Informed Search: Best-First, A*
 - Heuristics
- Adversarial Search
 - Minimax and alpha-beta pruning.

Topics Covered: Part 2

- See Lecture Schedule for textbook sections covered.
- Probabilistic Reasoning
 - Probability Axioms
 - Probability Rules (Bayes' theorem, product rule)
 - (Conditional) Independence
- Bayesian Networks
 - Probabilistic Semantics (Product Formula)
 - Independence Semantics (Markov Condition)
- Learning
 - Decision Trees: ID3
 - Neural nets: backpropagation
- Markov Decision Processes
 - Definition: States, Actions, Rewards, transition probabilities
 - The Value function
 - Value iteration, policy iteration

Question Distribution

Topic	Percentage of Questions
AI Foundations	7%
Adversarial Search/Sequential Games	21%
Decision Trees	10%
Problem Search	7%
Local Search (Continuous Space)	3%
Probabilistic reasoning and Bayesian Networks	21%
Matrix Games	10%
Neural Networks	10%
MDPs/RL	10%

Exam Logistics

- **Please bring ID to the exam.**
- See exam instructions posted on line
- Review Session (see schedule)
May 10 1:30pm -2:30 pm PST