Welcome to CSE 250A!

“I've always considered the most boring 20 minutes of the semester the time I spend reading the syllabus on the first day of class.

Students come in, potentially excited about getting started, only to end up listening to me read aloud.

I imagine them paraphrasing in their heads one of my favorite Woody Allen lines: Thanks, but I've been doing my own reading since about the first grade.”

http://chronicle.com/article/The-Promising-Syllabus/46748/
CSE 250A. Intro to AI

Probabilistic Reasoning and Decision-Making
Who uses probabilistic methods in AI and ML?

- **Google** - pattern matching
- **Amazon** - customer profiling
- **Microsoft** - multimedia OS
- **Wall Street** - time series prediction
- **Game makers** - enemy AI
- **FBI** - forensic speaker ID
Prerequisites

• Programming
  – Homeworks will involve coding.
  – Also: basic data analysis and visualization.
  – Solutions accepted in any language!
  – Java, C/C++, MATLAB, Perl, Python, etc.
  – No hand-holding with compiling, debugging.

Non-CS majors are welcome.
Prerequisites

• Elementary probability
  – Random variables
  – Expected values

• Multivariable calculus
  – Chain rule
  – Gradients and partial derivatives
  – Computing maxima and minima
  – Constrained optimization
  – Lagrange multipliers
Prerequisites

• **Linear algebra**
  – Vectors and matrices
  – Matrix multiplication, inverse, determinants
  – Systems of linear equations

• **Mathematical maturity**
  – Patience and persistence
  – Willingness to fill in gaps
  – Not for “hackers”
Readings versus lectures

• **Readings**
  – No required texts.
  – Frequent handouts (on web site).

• **Lectures**
  – Designed to be self-contained.
  – Crucial for homework assignments.
  – Emphasis on mathematical development.
  – Blackboard, not powerpoint!
Homework

• Weekly problem sets
  – Distributed (usually) on Tuesdays.
  – Due (usually) on Tuesdays.

• Rules of the game
  – One two-day extension.
  – Other late assignments: half credit.
  – Okay to work in groups.
  – Write up your own solutions.
  – Typesetting is discouraged.
Grading

• **Breakdown**
  – 25% problem sets
  – 40% in-class exams
  – 35% final exam

• **Academic dishonesty**
  – Neither ethnical nor in your self-interest.
  – Always credit your sources.
  – Plagiarism is severely punished.
Not in CSE 250A

- Things we won’t cover
  - Mathematical logic
  - Traditional search (A*)
  - Theorem proving
  - Genetic algorithms
  - Philosophy of AI
Enrollment priority

- CSE graduate students
  - PhD students
  - Masters students

- PhD students in other programs
  - ECE
  - Bioinformatics
  - Cognitive science

- Other
Medical diagnosis
(http://www.norsys.com/net_library.htm)
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