

CMSC 858N: Games, Game Theory, and the Theory of Games
Fall 2009
Syllabus

Instructor:

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Office hours: TBA
Also by appointment.

Class:

Class: Tuesday and Thursday 9:30am-10:45am, CSI 1121.

References:

Avinash Dixit and Barry Nalebuff, *Thinking Strategically*
John D. Beasley, *The Mathematics of Games*
Berlekamp, Conway, and Guy, *Winning Ways for Your Mathematical Plays*
David Levy and Monroe Newborn, *How Computers Play Chess*
Marsland and Jonathan Schaeffer, *Computers, Chess, and Cognition*
Monty Newborn, *Kasparov versus Deep Blue, Computer Chess Comes of Age*
Jonathan Schaeffer, *One Jump Ahead, Challenging Human Supremacy in Checkers*
Philip D. Straffin, *Game Theory and Strategy*.
Alan Taylor and Allison M. Pacelli, *Mathematics and Politics*, Springer Science

Prerequisites: CMSC 451 or a course in algorithms. Elementary knowledge of probability and combinatorics.

Course Work: There will be periodic homework assignments, a programming project, which will need a write up, and a final exam. There will be “laboratory” work outside of class.

Syllabus: The following is a partial and tentative list of topics in no particular order.

1. Games (bridge, backgammon, chess, go, etc.)
2. How computers play strategy (or board) games
3. Game theory (von Neumann and Morgenstern)
4. Combinatorial game theory
5. Computational complexity of games