CSCE990 Seminar Advanced Multiagent Systems
Course Syllabus
Fall 2018

Instructor & Info

Name	Professor Leen-Kiat Soh
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Office	122E Avery Hall
Office Hours	1:00 – 2:30 PM TR and Open Door Policy
Class Time	11:00 AM – 12:15 PM TR
Classroom	Room 204 Oldfather Hall
Website	http://cse.unl.edu/~lksoh/Classes/CSCE990AMAS_Fall18

Course Description

Study of advanced multiagent systems (MAS) in theory, applications, and connections to other AI disciplines, notably in uncertainty reasoning and machine learning. The course is a hybrid of project-based and seminar-based presentations with follow-up discussions. Involve developing and implementing MAS solutions for real-world problems or simulations.

Required Background

Prerequisites: Graduate standing at the University of Nebraska. Background in artificial intelligence (AI) or MAS is also preferred.

Textbooks

Optional: Shoham, Y. and K. Leyton-Brown (2010*). Multiagent Systems: Algorithmic, Game-Theoretic, and Logical Foundations*, Cambridge University Press.

Course Objective Overview

1. **Mastery** of advanced MAS issues such as team formation, multiagent learning, multiagent reasoning including dealing with uncertainty, decision making, and planning
2. **Familiarity** with negotiations, knowledge representation, modeling, and resource allocation in multiagent system
3. **Familiarity** with applying MAS-based techniques solve problems such as observing emergent behaviors; with agent-based modeling; with building MAS simulations
4. **Exposure** to research processes such as problem modeling, hypothesis forming, experimental design, discussion of results, empirical analysis.

Course Schedule

The course schedule will be determined in the first week after our first meeting of the semester.

Attendance Policy

Attendance at all officially scheduled class meetings is expected. Students are responsible for knowing all material discussed in class meetings. Changes to class schedules and assignments will be announced in class.

Grading

Final grades in this class will be assigned based on the following scale:

A:	94% - 100%	B-:	80% - 82%	D+:	67% - 69%
A-:	90% - 93%	C+:	77% - 79%	D:	63% - 66%
B+:	87% - 89%	C:	73% - 76%	D-:	60% - 62%
B:	83% - 86%	C-:	70% - 72%	F:	below 60

A+ is awarded to a student whose work and understanding of the class prove to be exceptional.

There will be about in-class participation (10%), seminar presentations (30%), and one final project (group) (60%).

In-Class Participation

In-class participation includes attendance and active contributions to the seminars and discussions. These will be subjectively graded by myself. Overall, if you attend classes and contribute regularly, I expect that you will receive the full 10% credit.

Seminars

The seminar presentation is for the students to present technical papers in the areas of multiagent systems—both theories and applications—and relevant machine learning and uncertainty reasoning topics. A list of papers will be provided to the students. Each presentation will involve a Q&A session paneled by the presenters and moderated by the instructor; and all groups are required to participate in Q&A as well. These seminar presentations will be graded based on: (1) 50% Summary of Paper; (2) 20% Organization; (3) 20% Conclusions: Comparisons, Insights, etc.; and (4) 15% Q&A and Participation

Final Project

The final project will be for design and implementation of a system (e.g., a simulation or an adaptive system or a solution for a MAS-based contest) that aims to show how MAS and multiagent learning paradigms can be used to improve the quality (effectiveness and/or efficiency) of the system performance. This assignment will be graded in 2 parts: programming (50%) and report (50%). Each group member receives the same score for his or her group. The programming part will be graded based on: (1) 45% Program Correctness (also demonstration), (2) 15% Software Design, (3) 10% Programming Style, (4) 15% Testing, and (5) 15% Documentation

The report will be graded based on: (1) 50% Methodology, Implementation, Results, and Conclusions, (2) 25% Organization, (3) 15% Requirements, and (4) 10% Grammar and Errors

Disabilities

Students with disabilities are encouraged to contact Christy Horn for a confidential discussion of their individual needs for academic accommodation. It is the policy of the University of Nebraska-Lincoln to provide flexible and individualized accommodation to students with documented disabilities that may affect their ability to fully participate in course activities or to meet course requirements. To receive accommodation services, students must be registered with the Services for Students with Disabilities (SSD) office, 132 Canfield Administration, 472-3787 voice or TTY.

Academic Misconduct

Violations of academic integrity will result in automatic failure of the class and referral to the proper university officials. The work a student submits in a class is expected to be the *student's own work and must be work completed for that particular class and assignment*. Students wishing to build on an old project or work on a similar topic in two classes must discuss this with both professors. Academic dishonesty includes: handling in another's work or part of another's work as your own, turning in one of your old papers for a current class, or turning in the same or similar paper for two different classes. Using notes or other study aids or otherwise obtaining another's answers for an examination also represents a breach of academic integrity. Sanctions are applied whether the violation was intentional or not.

Academic dishonesty of any kind will be dealt with in a manner consistent with the CS&E Department's Policy on Academic Integrity (http://cse.unl.edu/undergrads/academic_integrity.php). You are expected to know and abide by this policy.

Those who share their code and those who copy other's code will be penalized in the same way; both parties will be considered to have plagiarized.

To help avoid these problems, please start assignments early and seek help when you need it.

PLAGIARISM OF ANY KIND IN THIS COURSE WILL RESULT IN A GRADE OF F.