CSE 505 – Computing with Logic
Course Information

Fall 2017
Stony Brook University
Instructor: Dr. Paul Fodor

http://www.cs.stonybrook.edu/~cse505
Course Description

“The course explores logic-based computing and logic programming. It includes an introduction to programming in logic, covering basic techniques for solving problems in a logic programming system. Particular attention will be paid to user interface issues and how a logic system can provide a useful computing environment. The course covers implementation issues, emphasizing how a logic programming system generalizes both traditional programming language systems and traditional database systems.”

(https://www.cs.stonybrook.edu/students/Graduate-Studies/courses/CSE505)
General Information

• Meeting Information:
  • Lectures: Mo We 2:30PM - 3:50PM, Harriman Hall 116.
  • Course Web page: http://www.cs.stonybrook.edu/~cse505

• Blackboard will be used for assignments, grades and course material
Instructor Information

• Dr. Paul Fodor
  214 New Computer Science Building

• Office hours: Mondays and Wednesdays 5:30PM-7:00PM.

• I am also available by appointment

• Email: paul(dot)fodor(at)stonybrook (dot) edu
  • Please include “CSE 505” in the email subject and your name in your email correspondence
Course Outcomes

• Develop a fundamental understanding of logic as a programming language.
• Explore the computable fragments of first-order logic.
• Study the use of logic for specifying and programming complex systems.
What will you learn in CSE505?

• Logic Programming:
  • Programming in Prolog
  • Computational Basis
    • Resolution, Unication, Memoization
  • Extensions and Applications
    • Non-monotonic reasoning
    • Knowledge Representation
    • Probabilistic Logic Programming
    • Satisfiability (SAT) and descendants
    • Constraint Programming
    • Abduction and Inductive Logic Programming
Logic Programming

• A framework for unambiguously specifying knowledge and computation
Textbooks

- Foundations: Ulf Nilsson, Jan Maluszynski, Logic, Programming and Prolog, Wiley. Online (PDF); linked from Blackboard.


- Additional References:
Grading Schema

- Grades will be based on homework and exams according to the following formula:
  - Homework assignments = 15%
  - Project phase 1 = 2.5%
  - Project phase 2 = 2.5%
  - Project phase 3 (final) = 10%
  - Quizzes = 10%
  - Midterm exam 1 = 20%
  - Midterm exam 2 = 20%
  - Final exam = 20%
Examinations

• Midterm exam 1: Monday 10/16, during class time, in classroom.

• Midterm exam 2: Monday 11/13, during class time, in classroom.

• Final exam: Tuesday, December 12, 2017, 5:30-8:00 PM, in classroom (see the Stony Brook University Final Exam Schedule Calendar in http://www.stonybrook.edu/registrar/finals.shtml)
Grading Schema

• Grade Cutoffs
  • A [95-100], A- [90-95], B+ [87-90], B [83-87], B- [80-83], C+ [77-80], C [73-77], C- [70-73], D+ [65-70], D [60-65], F [0-60]
  • SPECIAL RULE: If all your grades, including homework assignments, quizzes, recitation and your three exam grades are above the respective class averages, you're guaranteed to receive a grade of C or higher for this class.

• There will be extra credit problems as a part of quizzes and homework assignments which values to an increase of less than 4% in the final grade.

• There will be in-class quizzes / brief assessments used to practice the class material and measure growth in knowledge, abilities, and skills. They will be solved in class and they are valued 2 points each.
Grading

- The final grade you receive in this class will reflect, as far as possible, the extent to which you have mastered the concepts and their applications.

- How much someone needs a grade, or how close they are to the next higher grade, will have no effect on grade.

- As the instructor, I want everyone to do well in this course, and will make every reasonable effort to help you understand the material taught.

- However, the grades provided at the end of the semester are final, except for rare situations involving grading errors.

- They will not be altered for any reason, so please do not ask me to do so.
Assignments

• Homework assignments due on fixed dates and times.
  • no late submission is permitted
• All assignments should be submitted electronically
  • Blackboard
Regrading of Homework/Exams

• Please meet with a TA or the instructor and arrange for regrading.

• You have one week from the day grades are posted or mailed or announced

• Late requests will not be entertained
Academic Integrity

- You can discuss general assignment concepts with other students: explaining how to use systems or tools and helping others with high-level design issues
- You **MAY NOT share** assignments, source code or other answers by copying, retyping, looking at, or supplying a file
  - Assignments are subject to manual and automated similarity checking (We do check! and our tools for doing this are much better than cheaters think)
- If you cheat, you will be brought up on academic dishonesty charges - we follow the university policy:
  - [http://www.stonybrook.edu/uaa/academicjudiciary](http://www.stonybrook.edu/uaa/academicjudiciary)
Disability

• If you have a physical, psychological, medical or learning disability, contact the DSS office at Room 128 ECC. Phone 632-6748/TDD

• If you are planning to take an exam at DSS office, you need to tell me ahead of time for every exam.

• All documentation of disability is confidential.
Course Software and Facilities

• SWI-Prolog, XSB Prolog, Flora-2, clingo: freely available for Unix-based systems (Linux, Solaris, BSD, ...) and Windows.

• Work from home or use CS Graduate Lab.

• You can also use the SINC sites, but you have to download a binary version of the software.
Course Support

- Course web pages are partly hosted by the Blackboard system.
- Course Material: handouts, homeworks, notes, etc will be available directly from the course web site.
- Course Announcements: available from the blackboard system.
  - Check these regularly!
- Piazza
  - Use this to discuss any course-related material: lectures, homework problems, exams, etc.
  - All homework assignments will be submitted via the Blackboard system.
Questions

• How to contact course staff:
  • Post your question on Piazza.
  • Come to my office during my office hours:
  • Send me email. (Post on discussion board unless the question is personal).
Catastrophic events

- Major illness, death in family, …
- Formulate a plan (with your CEAS academic advisor) to get back on track
- Advice
  - Once you start running late, it’s really hard to catch up
Please

- Please be on time
- Please show respect for your classmates
- Please turn off (or use vibrate for) your cellphones

...

- On-topic questions are welcome
Welcome and Enjoy!