CS502: Automated Reasoning
Spring 2007

Time and place: Monday 11:40–13:30 (FENS L062), Wednesday 11:40–12:30 (FASS G022)

Instructor: Esra Erdem (esraerdem@sabanciuniv.edu)

Office hour: By appointment (FENS G053)

Course description. This course is about formal principles, and algorithms for reasoning about knowledge represented in logic (e.g., methods used by the state-of-the-art SAT solvers, QBF solvers, and first-order theorem provers, algorithms for knowledge compilation, logical entailment, and model counting), and their applications in computer science (e.g., diagnosis and testing, planning, ontology reasoning, program analysis, hardware verification, security) and other sciences (e.g., biology, medicine, law, linguistics, operations research).

Prerequisite. Some familiarity with logic will be helpful.

Textbook. There is no textbook; the necessary materials (e.g., homework problems, research papers) will be handed out in class or posted on the course webpage

http://people.sabanciuniv.edu/~esraerdem/teaching/ar07.html.

Class participation. Students are expected to volunteer to present their own solutions to homework problems, and to participate in discussions about the solutions presented by others.

Paper evaluations/presentations/discussions. Students are expected to read and evaluate the research papers studied in class, present one of them, and lead a discussion on the paper they present.

Project. Students are expected to work on a research problem, in small groups, and write a short report about their own solution.

Grading (tentative). Grades will be determined by class participation (30%), paper evaluations/presentations/discussions (35%), and the project (35%). There is no exam.