

GRS CS 792

Topics in Logic and Formal Methods in Computer Science

There is a variety of logics for formal reasoning in many different domains of computer science. Apart from classical *first-order logic*, most commonly taught in a standard course in mathematical logic, several others have a more direct bearing on computer science. Among the latter are *intuitionistic logic*, *modal logic*, *temporal logic*, *dynamic logic*, *Hoare logic*, *specification logic*, *separation logic*, *non-monotonic logic*, *affine logic*, *linear logic*, and several variations of each of the preceding – to name a few that have been invented by computer scientists in recent years, or have been the object of renewed interest because of applications in computer science.

During the Spring 2006 semester we will cover topics in **modal logic** and **linear logic**, in approximate equal parts. Time permitting, also based on audience interests, we may have a brief introduction to **separation logic**. Material will be drawn from two recent texts:

1. *Modal Logic* by P. Blackburn, M. de Rijke and Y. Venema – paperback available at Amazon for \$39.97.
2. *Linear Logic* by Frank Pfenning – lecture notes available in the CS Dept office for about \$10.00.

Students will take turns in making weekly presentations, drawn from the reading material, based on which they will get credit for the course.

- Time: Thur 3:30-5:30 pm.
- Place: Boston Univ, Math & Comp Sc building, room 180 (MCS 180).
- Prerequisites: Consent of instructor.

Instructor's email address: [kfoury@cs.bu.edu](mailto:kfoury@cs.bu.edu)

Group email address: [p1-reading-group@types.bu.edu](mailto:p1-reading-group@types.bu.edu)

**Organizational and first meeting:** Thursday, 19 January 2006, at 3:30 pm in MCS 180.

If need be and acceptable to the majority, we may adjust time and place for later meetings to accommodate student schedules.