

# Syllabus

Cleveland State University  
Electrical and Computer Engineering  
**Distributed:** January 21, 2009

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**Class:** Mon/Wed, 4:00 p.m. — 5:50 p.m., SH 324.

**Course Web Page:** The following URL will contain class announcements, handouts, assignments, and other useful resources. In general, this will be the primary way in which I will communicate information to you (other than class lectures, of course)

<http://selab.csuohio.edu/~nsridhar/teaching/spring09/eec522>

**Instructor:** Dr. Nigamanth Sridhar

**Office:** 435 Stilwell Hall

**Office Hours:** Tue/Thu, 4:00 p.m. – 6:00 p.m., and by appointment.

**Email:** n.sridhar1@csuohio.edu

**Phone:** 216.687.5341

**Short Description:** Software system formal mechanisms, including specification, validation, and verification. Formal specification of concurrent systems using temporal logics. Evolution of formalism to model a certain system. Use of model checking tools for verification of concurrent software.

**Objectives:** Upon successful completion of this course, the student should:

1. Be able to write and understand safety and liveness properties of concurrent systems
2. Be able to write and understand specifications of concurrent systems using various temporal logics
3. Be able to design state transition systems and Kripke structures to model concurrent software
4. Have command over techniques of explicit-state and symbolic model checking
5. Be able to use a variety of model checking tools (SPIN, SMV, etc.) for verifying concurrent systems
6. Be able to understand the benefits of program verification, and have an understanding of available tools for program verification.

**Textbook:** Michael Huth and Mark Ryan, Logic in Computer Science: Modelling and reasoning about systems. Cambridge University Press. ISBN 0 521 54310X. 2004.

The material in the textbook will be supplemented by lecture notes and a set of research papers that will be assigned in class.

**Grading:** The following grade components will be assessed in this course:

**Pop Quizzes:** 5%

**Mid-term Exam:** 15%

**Final Exam:** 25%

**Project:** 20%

**Homework Assignments:** 35%

**Important Dates:** Please mark these dates in your calendars:

**Pop Quizzes:** Randomly scattered though the term.

**Midterm Exam:** Wednesday, March 11, 2009.

**Final Exam:** Monday, May 11, 2009.

**Course Timeline:** A timeline for the course is posted on the course web site at:

<http://selab.csuohio.edu/nsridhar/teaching/spring09/eec522/schedule.html>

This is a fairly accurate timeline for the various topics we will cover in this course. We may yet move topics around a little to suit class progress.

**Attendance:** Since this is a lecture-based course, although there is no official attendance policy, students are strongly encouraged to attend every class. Only a portion of the course material will be covered in the textbook. The majority of the exam material will be covered only during the lecture periods. Based on previous experience, since each lecture builds upon the lectures that preceded it, missing even a single class can make it difficult for you to keep up with the course material. Please attend every class — it makes it easier to earn your participation points, and more important, makes it more enjoyable for me to grade your exams.

As a courtesy to me, if you choose to attend class, please show up on time. If you must miss a class, it is your responsibility to get any missed lecture notes, handouts, and project assignments from your fellow students.

If I will miss a class period, I will make every effort possible to notify you at least one class period in advance. If I am more than fifteen minutes late to class, you should assume that I am dealing with an emergency, and will not be able to make it to class. In such a rare case, class is automatically canceled, and you are free to leave.

**Pop Quizzes:** At random times throughout the semester, I will give quick quizzes about current concepts and materials. The quizzes will be in a variety of formats. Most will be given during class, some at the start of class and some at the end of class. If you are not present for a pop quiz, you automatically receive a zero grade for the quiz. At the end of semester, the average of the quiz grades will be computed after dropping the lowest quiz grade. No make-up will be given for pop quizzes.

**Late Assignments, Missed Exams, Quizzes, and Presentations:** Any assignments must be submitted in class at the beginning of the period on their due date. Late projects will not receive any credit. Similarly, failure to attend class on the day of an exam, quiz, or scheduled presentation will result in an automatic zero grade for the work. If you arrive late on the day of an exam, quiz, or scheduled presentation, you will be allowed to participate, but will not be given additional time to compensate for being tardy. Make-up work will be granted only with a valid, written, medical, or university excuse. It is your responsibility to give me the written excuse and to arrange for the make-up work within one week of your absence.

**Academic Integrity:** This course is all about training to be a software professional, so I will expect you to be professional during the course as well. No form of cheating will be condoned. Please refer to the Department Ethics policy for details on how students found cheating will be handled. This document is available at [http://www.csuohio.edu/ece/Ethics\\_Policy.doc](http://www.csuohio.edu/ece/Ethics_Policy.doc).

It is not, however, wrong to refer to other sources when preparing your written submissions. Make sure that you cite the source properly when doing so.