

New Course – Spring 2002

# CS200: Foundations of Computer Science

*From Ada and Euclid to Quantum Computers and the World Wide Web*

Computer Science is the study of *imperative knowledge*. Where mathematics is about declarative (“what is”) knowledge, computer science is all about “how to” knowledge.

This course will focus on three simple but powerful ideas:

1. You can define things in terms of themselves (*recursive definitions*).
2. You can treat procedures and data as one and the same (*first class procedures*).
3. When you give something a name, it becomes more useful (*abstraction*).

Some things you will learn:

How languages work and what they are made of

Why there is no largest English word

How to create photomosaics and fractals

How the Allies deciphered German secrets during WWII

That there are hard problems, really hard problems and impossible problems

That all really hard problems are actually the same

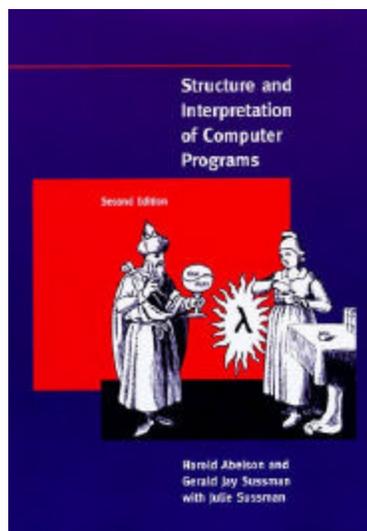
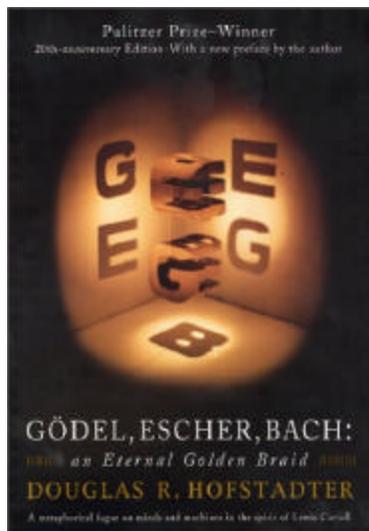
What is the true meaning of “true”

How to create infinitely many functions that return infinitely many functions

How to program a quantum computer

How to use DNA to calculate the best route for your cross-country tour

**Meetings:** Mondays, Wednesdays and Fridays at 11:00-11:50 am in Cabell Hall Room 431.



**First and second year CLAS students are especially encouraged to take this course.** No prior background is expected. Others may be allowed to take it with my permission. The course will be limited to about 30 students.

**Teacher:** David Evans developed this course as part of his University Teaching Fellowship.

**For more Information:**

<http://www.cs.virginia.edu/cs200>  
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