The Graduate Program

Jan Prins
Director of Graduate Studies
Graduate Program Goals

• Objectives
  ♦ Accommodate diverse backgrounds
  ♦ Accommodate diverse degree objectives
  ♦ Flexible, individualized programs of study
  ♦ Focus on research experiences
    • Both MS and PhD
  ♦ Writing, oral communication, and teaching
MS and PhD programs

• Entering students start in the MS or the PhD program
  ♦ little practical significance to this initial classification
  ♦ both degrees possible from either starting point

• To proceed to a PhD requires formal admission to PhD candidacy
Overview of Graduate Programs

• Course requirements

• Admission to PhD candidacy

• Exams
Course Requirements

M.S. Degree

- Comp Sci courses (18 hrs)
  - breadth (9 hrs)
  - background, electives
- General courses (12 hrs)
  - research topic courses
  - external courses
  - other comp sci courses

- Total: 30 credit hours
  - up to 6 hrs transferred from previous grad work

Ph.D. Degree

- Background courses
- Breadth courses (up to 18 hrs)
  - can use graduate courses completed elsewhere
- Primary concentration (9-12 hrs)
  - can use courses completed elsewhere

No fixed hour requirement
COMP 991: Research Topics

• Individualized research with a faculty member
  ♦ For credit, not for $

• For PhD intending
  ♦ To explore a research area
  ♦ To gain breadth and depth complementary to a research assistantship
  ♦ To enable you to show research potential

• For MS students
  ♦ To enable you to explore areas of interest
  ♦ To get research experience
  ♦ To complete the masters project / research report
  ♦ To become a PhD student!
COMP 991: Research Topics

• How to find such a course?
  ♦ Faculty *advertise* possible topics in the “research fair” just before the start of the fall semester
  ♦ You can *ask* faculty members for possible topics
  ♦ You can *propose* topics to faculty members
Background Courses

• **Computer Science**
  ♦ COMP 410 Data Structures
  ♦ COMP 411 Computer Organization
  ♦ COMP 455 Models of Languages and Computation
  ♦ COMP 550 Algorithms and Analysis
  ♦ COMP 524 Programming Language Concepts
  ♦ COMP 541 Digital Logic and Computer Design
  ♦ Any *two* of the following
    • COMP 521 Files and Databases
    • COMP 520 Compilers
    • COMP 530 Operating Systems

• **Mathematics and Statistics**
  ♦ MATH 233 Calculus of Functions of Several Variables
  ♦ MATH 381 Discrete Mathematics
  ♦ MATH 547 Linear Algebra
  ♦ MATH 566 Numerical Analysis or Numerical Methods
  ♦ STAT 435 Probability
Background Requirements

• Background requirements worksheet
  ♦ determine missing background
    • two missing courses is typical
  ♦ make a plan for remediation with your adviser

• Ways to make up missing background
  ♦ take the course
  ♦ complete a more advanced course that subsumes the content
  ♦ arrange an independent study
    • variable credit graduate module course available but not required
There are two Breadth Requirement categories: Formal Systems Applications and External to CS. 

**M.S.**
- one from each
- 3 Total

**Ph.D.**
- at least one from each
- 6 Total

You may use grad courses taken elsewhere if their content and depth is similar.
Expectation for admission to PhD Candidacy

• During the first two years, students should
  ♦ Get started on research
  ♦ Find a research adviser
  ♦ Demonstrate ability to conduct independent research (e.g. surveying literature, analytical & formal thinking, creativity, integration of concepts, etc)
  ♦ Meet the required writing and oral presentation skills
Exam structure

M.S. Degree

- M.S. Thesis Substitute – one of
  - Refereed Publication(s)
  - Research Report
  - Comprehensive Survey & Synthesis Paper

OR

- M.S. Thesis

OR

- M.S. Comprehensive Oral Exam

Ph.D. Degree

- Research Report
- Preliminary Research Presentation
  - admission to Ph.D. candidacy
  - (Dissertation proposal)
- Doctoral oral examination
- Final oral examination (“Defense”)

The UNIVERSITY of NORTH CAROLINA at CHAPEL HILL
Where is all this spelled out?

- Department web site
  - Academic affairs
    * [http://cs.unc.edu/academics/graduate/](http://cs.unc.edu/academics/graduate/)
    * Summary and Official MS and PhD requirements
    * Course offerings and category assignments for courses
    * Student progress forms
Questions?

• Sign up for a 20 min or drop by in an open slot this afternoon FB334