

# Overview of the MS Program

Jan Prins

# The Computer Science MS

- **Objective**
  - prepare students for advanced technical careers in computing or a related field
- **Approach**
  - Accommodate diverse backgrounds and interests
  - Flexible, individualized programs of study
  - Opportunity to gain research experience
  - Technical communication

# Requirements

- **Six kinds**
  1. Background Requirement
  2. Breadth Requirement
  3. Credit Hour Requirement
  4. Program Product
  5. Writing Requirement
  6. Comprehensive Exam

# (1) Background requirement

- Requirements

- ***Computer Science***

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

- ***Mathematics and Statistics***

- **MATH 233 Calculus of Functions of Several Variables**
    - **MATH 381 Discrete Mathematics**
    - **MATH 547 Linear Algebra**
    - **STOR 435 Probability**
    - **MATH 661 Numerical Analysis (Scientific Computing I)**

- Satisfied by

- Completion of the course in your undergrad or MS program
  - Completion of a more advanced course
  - Independent study

## (2) Breadth requirement

- Graduate courses are divided into three categories
  1. Theory and formal thinking
  2. Systems and Hardware
  3. Applications
- MS requirement
  - One course in each of categories 1-3
  - At most one course at 500 level or below
  - All courses must have been taken as a graduate student
    - BS/MS may count courses not used in BS with approval of GSC
  - Grade requirement within breadth courses
    - Average grade at least P
    - Minimum grade no lower than P-

# (3) Credit Hour requirement

- MS requirement: 30 credit hours
  - Minimum 18 hours CS courses
    - COMP 400 – COMP 890 (excludes COMP 990 – 993 and COMP 892)
      - Breadth courses
      - Background COMP courses
      - Elective COMP courses
  - Maximum 12 hours of other courses
    - Courses external to the department
    - COMP 991 independent study (research topics)
    - COMP 992 comprehensive paper
    - COMP 993 MS Thesis (up to 6 hours)
  - Transfer credit
    - For BS/MS up to 9 hours of course credit not used in BS program may be transferred to MS program with GSC approval

# (4) Program Product requirement

- **Definition**
  - A program product is a piece of software developed for the use of people other than the developer and expected to be used and maintained by other developers after the initial developer is no longer working on it.
- **May be satisfied by any of the following**
  - Completion of COMP 523 (Software Engineering)
  - Industrial experience of 3 months or more
  - Graduate course or RA programming project at UNC
    - Requires approval by two faculty members

# (5) Technical Writing requirement

- Three options
  - Comprehensive exam paper
    - Provided paper has passed review
  - MS Thesis
  - Outside review option
    - Principal author of a technical document of at least 5000 words
    - Reviewed for style and content by at least two readers
    - Typically: published refereed article or previous MS/PhD dissertation
    - Approved by GSC



# (6) MS Comprehensive Exam

- Three options

1. Comprehensive paper (COMP 992)

- Comprehensive survey and/or synthesis of a substantial body of work
- Directed by a faculty adviser and reviewed by a second faculty member
- Expected to be publication quality in substance and presentation

2. MS Thesis (COMP 993)

- Document based on research or on the solution of a substantial problem
- Directed by a faculty adviser and evaluated by a thesis committee including at least 2 additional faculty members
- Oral presentation of work with examination by the committee
- Must meet standards of form and writing set by the graduate school

3. Comprehensive oral exam

- Topical exam, covering courses listed in the MS program of study
- Administered by a committee of 3 or more faculty members