

# Overview of CS Graduate Program Rules

8/24/2011

# Requirements

- The MS and PhD program have the following categories of requirements
  1. Background
  2. Course requirements (breadth and credit hour)
  3. Program product
  4. Technical writing
  5. Comprehensive exam
  6. Residence credit and time limits
- PhD program has additional requirements
  - Teaching, PhD oral exam, PhD Dissertation and defense
- Goal today is to review categories 1 – 6.

# (1) Background requirement

- Requirements for the MS and PhD are identical
  - **Computer Science**
    - COMP 411 Computer Organization
    - COMP 410 Data Structures
    - 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
    - COMP 455 Models of Languages and Computation
  - **Mathematics and Statistics**
    - MATH 233 Calculus of Functions of Several Variables
    - MATH 381 Discrete Mathematics
    - MATH 547 Linear Algebra
    - MATH 661 Numerical Analysis (Scientific Computing I)
    - STOR 435 Probability
- Satisfied by
  - Previous course work
  - Coursework in your graduate program
  - Independent study
- Complete in consultation with your academic adviser
  - File form CS-01

## (2) MS Breadth requirement

- **Course 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
  - All courses must have been taken as a graduate student
    - BS/MS may count courses not used in BS with approval of GSC
    - Previous grad study elsewhere may be used with approval of GSC
  - Grade requirement within breadth courses
    - Average grade at least P
    - Minimum grade no lower than P-

## (2) Ph. D. Breadth requirement

- **Course categories**
  1. Theory and formal thinking
  2. Systems and Hardware
  3. Applications
  4. Outside of CS (supporting dissertation)
- **Ph.D. requirement**
  - Six courses total
  - At least one course in each of categories 1-3 at 600 level or above
  - (\*) At most one course at 500 level or COMP 455 (COMP 550 is excluded)
  - (\*) No more than 2 courses per category
  - Courses outside of CS must support research area
  - All courses must have been taken as a graduate student
    - Previous grad study elsewhere may be used with approval of GSC
  - Grade requirement (within breadth courses)
    - *Calingaert Score* at least 0 (average grade  $\geq$  midpoint between P+ and H-)
    - Minimum grade no lower than P-

(\*) rules may be relaxed by petition to GSC

## (2) Credit Hour requirement

- MS requirement: 30 credit hours
  - Minimum 18 hours CS courses
    - COMP 400 – COMP 899 (excludes COMP 990 - 993)
      - Breadth requirement
      - Background 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
    - Up to 6 hours from previous graduate work with GSC approval
- No credit hour requirement for Ph.D.

# (3) Program Product requirement

- Identical requirement for MS and PhD
- May be satisfied by any of the following
  - Completion of COMP 523 (Software Engineering)
  - Graduate course or RA programming project at UNC
    - Requires approval by two faculty members
  - Industrial experience
- File form CS-13 to document completion

# (4) 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. Comprehensive oral exam
    - Topical exam, covering courses listed in the MS program of study
    - Administered by a committee of 3 or more faculty members
  3. 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
- Options 1 and 2 are terminal exams for the MS
  - A PRP or MS Thesis is needed for admission to the PhD program



# (4) PhD Comprehensive Exam

- Two options
  1. Preliminary research presentation (COMP 991 or COMP 992)
    - Demonstrate ability to conduct independent research and effectively communicate results
    - Publication quality document describing research and related work
    - Directed by a faculty adviser and examined by a committee appointed by the exam committee
    - Public presentation and exam
  2. Waiver of the Exam
    - Major contributor to a publication submitted to a well known, refereed, venue
    - Public presentation of the work in the department
    - Waiver determined by faculty vote
- Use form CS-09 to register
- Typically attempted in 3<sup>rd</sup> or 4<sup>th</sup> semester
  - Implications for satisfactory progress

# (5) Technical Writing requirement

- MS: Three options
  - Comprehensive exam paper or PRP
    - 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
  - File form CS-08 to document completion
- PhD: no additional technical writing requirement beyond dissertation

## (6) Residence Credit

- Residence credit for a semester is earned at a rate determined by credit hours completed on campus

On-campus Credit hours	Residence credit
$\geq 9$	1
$\geq 6$	$\frac{3}{4}$
$\geq 3$	$\frac{1}{2}$
$> 0$	$\frac{1}{4}$

- **MS requirement**
  - 2 semesters credit
- **PhD requirement**
  - 4 semesters credit total
  - At least two semesters with 6 or more hour registration

# Putting it together: Program of study

- Documents how you satisfied or will satisfy the rules
  - Courses taken
    - Background requirement
    - Breadth requirement
  - Other requirements
    - Program product
    - Writing requirement
    - Teaching requirement
- Submit program of study in preliminary form and final form
  - MS (CS-03)
    - Preliminary at end of 2<sup>nd</sup> semester
    - Final in middle of 4<sup>th</sup> semester
  - PhD (CS-06)
    - Preliminary at end of 4<sup>th</sup> semester
    - Final at end of 6<sup>th</sup> semester