Graduate Programs in Computer Science

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CS Degree Requirements
Overview
MS Degree Requirements

• Required courses
  – CMSC 641 Algorithms
  – One course from “systems” area
  – One course from “applications area

• Thesis or non-thesis
  – Thesis (30 credits)
    • 6 credits of thesis research, CMSC 799
    • 24 credits
  – Non-Thesis (33 credits)
    • 33 Credits
“Systems” Courses

• CMSC 611 Computer Architecture
• CMSC 621 Operating Systems
• CMSC 661 Database Systems
• CMSC 681 Advanced Computer Networks
“Applications” Courses

- CMSC 626 Computer Security
- CMSC 634 Computer Graphics
- CMSC 671 Artificial Intelligence
- CMSC 678 Machine Learning
PhD Degree Requirements

• Required courses
  – CMSC 641 plus one from systems and one from applications, as in MS program

• Additional Credits
  – 24 additional graduate credits (see Handbook)

• Portfolio

• Preliminary Exam
  – Proposal; oral exam
  – Within 5 years of admission

• Dissertation
Research Labs

• All of our faculty are active in research, and you are welcome to approach them to learn more about it!

• Attending research group meetings can be fun and interesting - and no commitment
Before Semester Starts

- Register for Courses ASAP
  - Talk to your assigned graduate advisor
    - Most of you have already done this
    - If you don’t know who your advisor is, please ask Keara
- TA assignments were made some weeks ago, and shared with faculty
- A few changes are still possible, as courses are expanded or added.
- Sign up for graduate mailing lists. See instructions
  - [https://www.csee.umbc.edu/systems/index.php/CSEE_Mailing_Lists](https://www.csee.umbc.edu/systems/index.php/CSEE_Mailing_Lists)
After Semester Starts

- Participate in research group meetings
- Attend Departmental research talks and seminars
  - Many of these will be given by applicants for open faculty positions
- Participate in Grad Student Research Conference (usually in the Spring semester)
- Select your research advisor by end of second semester (else risk TA renewal)
- If you’re in the M.S. thesis option, start working on M.S. Thesis by start of second year
- If you’re in the Ph.D. program, start preparing portfolio by start of third semester
Algorithms, Theory, and Scientific Computation

• Faculty:
  – Profs. R. Chang, K. Kalpakis, S. Lomonoco, A. Sherman, David Chapman, Yaacov Yesha

• Specific Interests:
  – Complexity, quantum computing, cryptology, optimization

• Courses:
  – CMSC 641: Design and Analysis of Algorithms
  – CMSC 643: Quantum Computing
  – CMSC 651 Formal Languages and Automata
  – CMSC 652: Cryptography and Data Security
Databases, Information, and Knowledge Management

- Faculty:
  - Professors T. Finin, F. Ferraro, A. Joshi, K. Kalpakis, C. Matuszek, C. Nicholas, T. Oates, R. Vinjamuri, R. Yus

- Specific Interests:
  - Machine learning, agents, databases, document processing

- Courses:
  - CMSC 661: Principles of Database Systems
  - CMSC 671: Principles of AI
  - CMSC 676: Information Retrieval
  - CMSC 673: Natural Language Processing
Networks and Systems

• Faculty:

• Specific Interests:
  – Mobile computing, wireless networking, network security, real-time systems

• Courses:
  – CMSC 611: Advanced Computer Architecture
  – CMSC 621: Advanced Operating Systems
  – CMSC 681: Advanced Network Architecture
Graphics, Animation, and Visualization

• Faculty:
  – Barteil, Olano, Engel

• Specific Interests:
  – Real-time shading, data visualization, interactivity

• Courses:
  – CMSC 634: Intro to Computer Graphics
  – CMSC 636: Information Visualization
Common Questions

• Where is my advisor?
• How can I become a TA?
  – Visit UMBCworks
• How can I become an RA?
• How do I choose between thesis and non-thesis?
• How do I find a summer job?
More Questions

• My friend wants to come in Spring. Should they do this? No
• Should I take 611, 621, and 641 at the same time? No
• How do I know if XYZ constitutes academic misconduct? We’ll explain
Other Questions?

• Send email to Dr. Nicholas, nicholas@umbc.edu
• Send email to Mrs. Keara Fliggins fliggins@umbc.edu