Outline

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  - MS Information Systems
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The Computer Science Dept is located in the Nguyen Engineering Building (Room 4300, 4th floor)

49 full-time faculty members (40 tenure-track)

Research expertise in almost all areas of computing
- CS had $7M+ in research expenditures in FY 2016
- Mason was ranked 39th nationally in research expenditures in CS by NSF (2013)

Two Undergraduate Degree Programs with 1000 students
- BS in CS and BS in Applied CS

Four MS programs with around 400 students
- MS in CS, Software Engineering, Information Systems, Information Security

PhD in CS with around 100 students, joint PhD in IT with VSE
Graduate Programs

- Masters Programs (30 credit hours)
  - MS Computer Science (MS-CS)
  - MS Information Systems (MS-ISYS)
  - MS Information Security & Assurance (MS-ISA)
  - MS Software Engineering (MS-SWE)

- Doctoral Programs (72 credit hours)
  - PhD in Computer Science
    - Orientation was held on Wednesday, August 24
    - Director: Prof. Hakan Aydin (aydin@gmu.edu)
  - PhD in IT (administered by the office of the Associate Dean for Research & Graduate Studies)

- Graduate Certificate Programs (12 credit hours)
Key Faculty for MS Programs

- **Directors** of MS Programs
  - **MS-CS Program**
    - Professor Zoran Duric ([zduric@cs.gmu.edu](#))
  - **MS-ISYS Program**
    - Professor Alex Brodsky ([brodsky@gmu.edu](#))
  - **MS-ISA Program**
    - Professor Duminda Wijesekera ([dwijesek@gmu.edu](#))
  - **MS-SWE Program**
    - Professor Jeff Offutt ([offutt@gmu.edu](#))

- Your academic advisor
  - Identified in your letter of admission
Rules Pertaining to all MS programs

- MS program consists of 10 courses (30 credit hours)
- To graduate, GPA must be 3.0 or higher (B average)
  - Maximum of two C grades allowed for MS degree
- Students receiving two Fs or three unsatisfactory (C or F) grades are terminated from the program
- Students admitted provisionally must complete all courses that you are required to take before taking core curriculum courses
- All MS programs have a thesis option (3-6 credit hours)
MS Computer Science

Professor Zoran Duric

- **Mission**
  - To combine a sound foundation in computer science with concentrated knowledge in the advanced areas.

- **Required Academic Background**
  - Discrete Math (Math 125)
  - Data Structures (CS 310)
  - Formal Methods and Models (CS 330)
  - Computer Architecture and Systems Programming (CS 367, CS 465)
MS Computer Science

- MS CS courses are divided into 5 areas (grouped by similarity):
  1. Theoretical CS
  2. Systems & Networks
  3. Programming Languages & Software Engineering
  4. Artificial Intelligence & Databases
  5. Visual Computing

- The list of courses and their respective areas are available at:
  http://cs.gmu.edu/programs/masters/cs/
MS CS courses are classified as **basic** and **advanced**

Some **basic** courses are designated as **core** courses in their respective areas

**Degree Requirements**

- **Core courses:** CS 583 (Analysis of Algorithms) from the “Theoretical CS” area **and** 2 additional core courses from 2 different areas must be completed **with a grade of B- or better.**
- **At least five advanced courses** (15 credit hours)
- **Breadth requirement:** Advanced courses must be taken from at least three different areas of CS
- **CS requirement:** At least 6 courses (out of 10) must have CS prefix in course number and at least 2 must be advanced courses
  - **NOTE:** MS-CS students can take up to four SWE, ISA, or INFS courses
Provisionally admitted students are required to take two courses in their first semester:

- **CS 530 – Mathematical Foundations of Computer Science**
- **CS 531 – Fundamentals of Systems Programming**

CS 530 and CS 531 count towards the MS CS degree.

You can test out of these courses by passing the associated test out exams.
Foundation Courses – MS ISYS, MS ISA, MS SWE

- Ensure adequate background for graduate studies
- **Do not count for graduate credit**
- Provide basic undergraduate CS knowledge you need for graduate program
- Must be completed with grade of B or better
- You may need to take up to 4 foundation courses, depending on your background
- You can test out of some or all of the foundation courses
Foundation Requirements for MS-ISYS, MS-ISA, MS-SWE

- INFS 501 Discrete and Logical Structures
- SWE 510 Object-Oriented Programming with Java
- INFS 515 Computer Organization
- INFS 519 Program Design and Data Structures
MS-ISYS Program
Information Systems

Mission: Professional degree focusing on the technical, managerial and policy issues related to building and maintaining organizational information systems.

Four required courses:
- INFS 612 – Principles/Practices of Communication Networks
- INFS 614 (or CS 550) – Database Management
- INFS 622 – Info Systems Analysis and Design
- ISA 562 – Information Security Theory and Practice

Note: Students taking the emphasis area and/or Graduate Certificate in Software Engineering should substitute SWE 620 for INFS 622 and also take SWE 621

Six elective courses:
- Grouped into emphasis areas
MS-ISYS Program
Emphasis Areas

- MS-ISYS students take 6 electives from an emphasis area or may mix and match from different emphasis areas:
  - Database Management
  - Data Mining and Data Warehousing
  - Electronic Commerce
  - Software Engineering
  - Knowledge Management
  - Information Security and Assurance

- For more information: http://cs.gmu.edu/programs/masters/infs/
MS-ISA PROGRAM
Information Security and Assurance

Mission: Focus on the technical and management aspects of information security and examine ways to provide secure information processing systems

Three required courses (9 credits):
- INFS 612 Principles/Practices of Communication Networks
- ISA 562 Information Security Theory and Practice
- ISA 656 Network Security

Students have to pick one of two concentrations (15 credits)
- Networks and Systems Security
- Applied Cyber-Security

Two additional elective courses (6 credits)
- From pre-approved list
Two concentrations
- Not optional – students have to pick one

Networks & Systems Security concentration
- Required course: ISA 564 – Security Laboratory
- Four additional elective courses from a list of courses

Applied Cyber-Security concentration
- Five elective courses from a list of courses

For more information: http://cs.gmu.edu/programs/masters/isa/
Mission: To teach students to become leaders in engineering high quality, large scale, computing solutions to real life problems.

Four required courses:
- SWE 619  Object-Oriented Software Specification and Construction
- SWE 621  Software Modeling and Architectural Design
- SWE 622  Distributed Software Engineering
- SWE 637  Software Testing

Emphasis Area — 3 Courses

Electives — 3 Courses
- See approved list of electives
MS–SWE Program
Emphasis Areas

- 3 Courses - (9 Credits) Required from Emphasis Area
  - Software Design
  - Software Assurance
  - Software Management
  - Web Applications

Note: With permission from the advisor, an MS-SWE student may choose not to take an emphasis area

For more information: [http://cs.gmu.edu/programs/masters/swe/](http://cs.gmu.edu/programs/masters/swe/)
A Graduate Certificate program consists of four or five courses that provide specialized knowledge.

Students may obtain one graduate certificate in conjunction with their MS studies.

Average grade of B or better (Only 1 C grade allowed)

Graduate Certificates offered by the CS Department:
- Foundations of Information Systems
- Information Security and Assurance
- Software Engineering
- Web-based Software Engineering

For more information: http://cs.gmu.edu/programs/certificates/
MS Students Transferring from Non-degree Status

Please note the following:

- Only 12 hours of credit can be transferred into degree status
  - There will be no exceptions to this rule.

- Classes must be successfully completed with a grade of B or better to be transferred

- Simply complete a masters graduate application and submit it to Graduate Admissions
MS Students Transferring from Provisional Status

- Transfer from Provisional status to Degree Status
  - Completion of all provisional requirements with B or better grade

- You must apply to transfer; it will not happen automatically

- Provisional requirements must be satisfied before taking additional classes
If you plan to transfer between MS programs (e.g., MS-CS to MS-ISYS)
- You will need to take at least 18 credits in the new program
- You can request a program transfer after your first semester

Depending on new MS program’s requirements
- You may have to take one or more additional courses

Talk to your Academic Advisor or the Program Director for your target MS
Plan of Study Forms

- The plan of study forms are to be filled out by the student and submitted to the CS Dept office for approval during your first semester.
  - Available on the CS web site

- Designed to help students plan their course of study:
  - Students have 6 years to complete the degree.
  - Part-time students usually take 1 or 2 courses per semester.
  - Electives may be taken at any time as long as pre-requisites are satisfied.
  - Any electives that do not appear on approved list MUST have your advisor’s approval before registration.
  - Note pre-requisites when planning course of study.
Advising Procedures

- Call the CS office at 703-993-1530 and ask for the Graduate Program Specialist
- The Graduate Program Specialist will try to answer your question on the phone
  - MS CS and PhD CS – Mr. Ryan Lucas (wlucas@gmu.edu)
  - MS ISYS, MS ISA, and MS SWE – Ms. Anne Hamill (ahamill2@gmu.edu)
- If the Graduate Program Specialist cannot answer your question, it will be forwarded to your faculty advisor
- Your academic advisor is identified in your letter of admission
- MS Program Directors can also answer questions
Miscellaneous

- Various forms can be found in the department web page at http://cs.gmu.edu

- You can send a written query by fax, letter, or email
  - Email: csadmin@cs.gmu.edu
  - Phone: 703-993-1530        Fax: 703-993-1710
  - Mailing Address:   George Mason University
                      CS Department – MS 4A5
                      4400 University Drive
                      Fairfax, Virginia 22030-4444

- Please keep the department informed of any name, address or phone changes by sending email to csadmin@cs.gmu.edu
Questions?