Getting Started in Computer Science
Transfer Students

Department of Computer Science
http://cs.gmu.edu/
Volgenau School of Engineering

Agenda
PLEASE SIGN IN !!

- Department information
- General information
- Program information
  - The BS CS Degree Program
  - The BS ACS Degree Program
- What do I register for?
- Questions?

Department Info
- The CS Department office is located in the Nguyen Engineering (ENGR) Building, Room 4300
  - Department Chair: Dr. Sanjeev Setia
  - Acting Associate Chair: Dr. Jan Allbeck – oversees the undergraduate programs
  - CS Undergraduate Advisors: Ms. Kara Smith and Ms. Katie Doyle
  - There are over 45 full time Faculty in the Department and their offices are located on the 4th and 5th floors of the ENGR building
- We’re part of the Volgenau School of Engineering (VSE) which contains the following Departments:
  - COMPUTER SCIENCE
  - Bioengineering
  - Civil & Environmental Engineering
  - Electrical and Computer Engineering
  - Information Sciences and Technology
  - Mechanical Engineering
  - Statistics
  - Systems Engineering & Operations Research

General Information
- Activate your Mason ID and password at password.gmu.edu
  - All information to/from you and Mason is sent to your Mason email
- The CS Department website is cs.gmu.edu
  - It contains Student FAQs, contact information for faculty, course syllabi, jobs and student organization information
- The Mason Registration system is called PatriotWeb: patriotweb.gmu.edu
  - Use this website to register for classes
  - Use this website to check your degree progress (DegreeWorks)
  - Use this website to check your advanced placement or transfer credit
- The Mason Catalog is online: catalog.gmu.edu
  - Check it frequently for reference to your degree requirements
• The Mason Transfer Admissions website is: admissions.gmu.edu/transfer
  • Check it for AP/IB and Transfer equivalencies: http://admissions.gmu.edu/transfer/transferCreditSearch.asp

• George Mason University has an Honor Code !!
  • Make sure you understand what your responsibilities are.
  • Go to the Mason Honor Code website: oai.gmu.edu

• The Computer Science Department also has an Honor Code for Programming Projects.
  • It is strictly enforced!

Undergraduate Degree Programs

• We offer two undergraduate BS degrees:
  • BS Computer Science (BS CS)
  • BS Applied Computer Science (BS ACS)

• Both degrees require a minimum of 120 credit hours = 4 years full-time

• Other program options:
  • Software Engineering Minor (16 credit hours)
  • BS/Accelerated MS options (144 credit hours)

Course Policies

• Course designations at Mason:
  • 100 level courses are typically for freshmen
  • 200 level courses are typically for sophomores
  • 300 level courses are typically for juniors
  • 400 level courses are typically for seniors

• Courses must be taken in sequence
  • Almost every course has a prerequisite chain
  • Prerequisites are enforced by the registration system

• You must earn a C or better in a CS or MATH class in order to take the follow-on course

• Courses offered by the department may be taken at most three times; failure to pass a required Math or CS course after three attempts results in termination from the major

Selective Withdrawal:

Every GMU undergrad is allowed three selective withdrawals where you can to drop a course after the drop date (but before the selective withdrawal deadline) - use these wisely!

One C-/D rule:

Computer science majors are permitted to use one “C-” or “D” grade within Major coursework toward graduation, as long as that course is not a prerequisite for another class.
BS CS Educational Objectives

• The BS CS program is accredited by Computing Accreditation Commission of ABET (www.abet.org).
• The objectives of the BS CS degree are to provide our graduates with:
  • A foundation for successful careers in industry:
    - graduates will have a broad understanding of the fundamental concepts, methodologies and tools, and applications of computer science.
  • A foundation for graduate study:
    - graduates of the program will have the academic preparation for successful completion of rigorous graduate programs.
  • Professional preparation:
    - graduates will have effective written and oral communication skills, and be able to work collaboratively in a professional and ethical manner.

The BS CS Curriculum

• Mason Core requirements (21 credits)
  • Foundation: English composition courses
  • Core: Literature, Western Civ., Social & Behavioral Sciences, Global Understanding, Fine Arts
• Major requirements (95 credits)
  • Required CS courses (33 credits)
  • Mathematics and Engineering courses (23 credits)
  • CS-Senior elective courses (15 credits)
  • CS-Related elective courses (6 credits)
  • Natural Sciences (12 credits)
  • Communications 100 - Public Speaking (3 credits)
  • Humanities (3 credits)
• General Electives (4 credits)
  • Note: Physical activity and remedial math classes do not count towards graduation

Major Requirements (CS Core)

• CS 101
• CS 105, CS 306
• CS 112, 211, 310
• CS 262, 367, 465; ECE 301
• CS 321
• CS 330, 483
• Formal Methods & Models, Analysis of Algorithms

Five CS-Senior electives :

• CS 463 or 471 or 475
• Four additional courses chosen from
  • CS 425 - Game Programming I
  • CS 440 - Language Processors and Programming Environments
  • CS 450 - Database Concepts
  • CS 451 - Computer Graphics
  • CS 455 - Computer Communications and Networking
  • CS 463 - Comparative Programming Languages
  • CS 468 - Secure Programming and Systems
  • CS 469 - Security Engineering
  • CS 471 - Operating Systems
  • CS 475 - Concurrent and Distributed Systems
  • CS 477 - Mobile Application Development
  • CS 480 - Introduction to Artificial Intelligence
  • CS 482 - Computer Vision
  • CS 484 - Data Mining
  • CS 485 - Autonomous Robotics
  • CS 490 - Design Exhibition
  • CS 499 - Special Topics in Computer Science
  • MATH 446 - Numerical Analysis I or OR 481 - Numerical Methods in Engineering
Course Prerequisite Chains

2016-17 Prerequisite Structure for CS Department Courses
[C or better needed for all prerequisites]

Prerequisite Chains

Major Requirements (Math & ECE)

- MATH 113, 114, 213
  - Calculus I, II, III
- MATH 125, 203, STAT 344
  - Discrete Math,
  - Linear Algebra
  - Prob/Stat for Engineers
- ECE 301
  - Digital Electronics

Prerequisite Structure for required MATH and ECE courses
Specified score on Math Placement Test or
C or better in MATH 105, MATH 108, or MATH 113.
Specified score on Math Placement Test or
C or better in MATH 104 or MATH 105

Major Requirements (continued)

- Natural Science:
  12 credits that must include a two-semester laboratory sequence chosen from:
  - ASTR 111 (3)/112 (1), 113 (3)/114 (1)
  - BIOL 103 (4), 104 (4)
  - CHEM 211 (3)/213 (1), 212 (3)/214 (1)
  - GEOL 101 (4), 102 (4)
  - PHYS 160 (3)/161 (1), 260 (3)/261 (1)
  - EVPP 110 (4), 111 (4)
- CS Related elective courses
  - Two courses selected from an approved list of ECE, OR, PHIL, STAT, SWE, SYST, MATH, or CS courses (see catalog)
- Humanities: (3 additional credits)
BS Applied CS Degree

- BS Applied Computer Science
  - Created for students who want to work in one of the many disciplines that require advanced computing techniques.
  - Concentrations: bioinformatics, game design, geography, and software engineering
  - Students take foundation and core CS courses along with foundation and core courses in the concentration area.

BS ACS Degree Requirements

- All concentrations share the same common foundation requirements as the BS CS:
  - CS 101 (Preview of Computer Science)
  - CS 105 (Computer Ethics & Society)
  - CS 112 (Introduction to Computer Programming)
  - CS 211 (Object-Oriented Programming)
  - MATH 113, MATH 114, MATH 125, MATH 203, STAT 344
  - Calculus I, II, Discrete Mathematics, Linear Algebra, Prob & Stat for Engineers
- All concentrations share the same common core requirements as the BS CS:
  - CS 262 (Intro to Low-Level Programming) / ECE 301 (Digital Electronics)
  - CS 306 (Law and Ethics for the Computing Professional)
  - CS 310 (Data Structures) / CS 330 (Formal Methods and Models)
  - CS 367 (Computer Systems & Programming)
  - CS 321 (Software Engineering)
  - CS 483 (Analysis of Algorithms)
- All concentrations must include one additional CS course numbered above 400

Concentration Requirements

- Concentration in Bioinformatics*
  - Foundation: PHYS 160/161, CHEM 201, BIOL 213, STAT 344
  - Core: BINF 450, BIOL 482, BIOL 580; CS 306, 444, 445, 450
  - Two approved electives related to bioinformatics
- Concentration in Computer Game Design*
  - Foundation: CS 225, 306, 325, 351; AVT 104; STAT 344
  - Core: CS 425, 426, 451; AVT 382, 383
  - One approved elective related to game design
  - PHYS 160/161, one additional lab science course

*Not all concentration courses are offered every semester

- Concentration in Geography*
  - Foundation: GGS101, 102, 103, 110, 300; STAT 344
  - Core: CS 306; GGS 310, 311, 411, 412, 416, 463
  - One GGS course numbered above 300
- Concentration in Software Engineering*
  - Foundation: STAT 344; CS 306
  - Core: SWE 205, 301, 401; CS 332, SWE 437
  - Five courses chosen from:
    - CS 450, 455, 463, 468, 471, 475; SWE 432, 443
  - ENGL 388 & one of the following:
    - PSYC 333, COMM 320, COMM 335

*Not all concentration courses are offered every semester
Transfer Student FAQs

• What courses transferred?
  • Check your transcript on PatriotWeb
  • Make sure your Associate’s Degree is recorded on your transcript if you have one.

• What should I do if a previous course didn’t transfer?
  • Submit course information to the CS Department Office if you did not receive a pre-approved transfer equivalency
  • Check with us after classes have started to make sure the paperwork is updated.

• Make sure Mason receives your most recent transcript from your previous school !!

What Do I Register For?

• All transfer students must take CS 101 (Preview of Computer Science) their first semester at Mason

• If you have an Associate’s Degree in Computer Science from VCCS
  • Make sure Mason receives your final transcript
  • You must still take ENGH 302 (Advanced Composition) even if your Mason Core requirements might be ‘waived’
  • Only the Natural Sciences section of ENGH 302 is acceptable
  • You may still need CS 105 (Ethics), CS 262 (Intro to Low-level Programming), MATH 125 (Discrete Mathematics), COMM 100 (Public Speaking), and/or an extra Humanities elective beyond Mason Core

• See the Sample Schedule for students with A.S. degrees from VCCS

Mason Core

• How do I select Mason Core courses?
  • The catalog has a list of courses for each category: e.g. Fine Arts, Social & Behavioral Sciences, Literature, etc.

• Consult the online Mason catalog under Mason Core here: catalog.gmu.edu
  • It lists the courses that qualify for each of the Core categories
Getting Help

• After classes begin, you will be assigned a CS Faculty Advisor. We will email you to let you know who your Faculty Advisor is.

• If you have concerns about meeting the prerequisites for a class, contact the CS Department.

• If you are in need of assistance before the semester starts, contact the CS Department Office staff.
  • We are open 9 – 5pm every day.
  • Email: csadmin@cs.gmu.edu

What Happens Next?

• Activate your Mason ID and password

• Use PatriotWeb to determine the day/times for the classes that you want to take

• Register on PatriotWeb. (Go to the registration site at the time and location listed for Orientation.)

• Any questions?