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? **Patriot Scheduler**
- Questions?

Department Info

- The CS Department office is located in the Nguyen Engineering (ENGR) Building, Room 4300
  - Department Chair: Dr. Sanjeev Setia
  - Associate Chairs: Dr. Mark Snyder; Dr. Elizabeth White; Dr. Pearl Wang
- They oversee the undergraduate programs
- CS Undergraduate Advisors: Ms. Lauren Reyna, Ms. Linda Sheridan
- There are 50 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
  - Using Patriot Scheduler will make registering much easier
  - 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

NO ONLINE OR NIGHT CS CLASSES!!!
The Mason Transfer Admissions website is: admissions.gmu.edu/transfer
   - Check it for AP/IB and Transfer equivalencies:
     http://admissions.gmu.edu/transfee/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!
   - Look for it on the Honor Code page of the CS website:
     http://cs.gmu.edu/resources/honor-code/

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

Repeat Limits & Termination

Courses offered by the VSE departments may be taken at most three times. Failure to pass a required Math or CS course after three attempts results in termination from the ACS or CS majors

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 (24 credits)
  • Foundation: English composition courses
  • COMM 100 - Public Speaking
  • Core: Literature, Western Civ., Social & Behavioral Sciences, Global Understanding, Fine Arts

• Major requirements (88 credits)
  • Required CS courses (35 credits)
  • Mathematics and Engineering courses (20 credits)
  • CS-Senior elective courses (15 credits)
  • CS-Related elective courses (6 credits)
  • Natural Sciences (12 credits)

• General Electives (8 credits)
  • Note: Remedial math classes do not count towards graduation

Major Requirements (CS Core)

• CS 110
  • Essentials of Computer Science

• CS 306
  • Synthesis of Ethics & Law for the Computing Professional

• CS 112, 211, 310
  • Introduction to Programming; Object-Oriented Programming; Data Structures

• CS 262, 367, 471
  • Intro to Low-level Programming; Computer Systems and Programming; Operating Systems

• CS 321
  • Software Engineering

• CS 330, 483
  • Formal Methods & Models, Analysis of Algorithms

Five CS-Senior electives :

• CS 425 or 468 or 475
  • Four additional courses chosen from
    CS 425 - Game Programming I
    CS 440 - Language Processors and Programming Environments
    CS 455 - Database Concepts
    CS 451 - Computer Graphics
    CS 453 - Computer Communications and Networking
    CS 463 - Comparative Programming Languages
    CS 465 - Computer Systems Architecture
    CS 469 - Security Engineering
    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 491 - Industry-Sponsored Senior Design Project (3 credits only)
    CS 498 - Special Topics in Computer Science
    MATH 446 - Numerical Analysis I or OR 481 - Numerical Methods in Engineering
Major Requirements (Math)

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

- For Math overrides contact: Camaya@gmu.edu

2018-19
Prerequisite Structure for CS Department Courses
(1 or better needed for all prerequisites)

Major Requirements (continued)

- Natural Science:
  12 credits that must include a two-semester laboratory sequence chosen from:
  - BIOL 103 (4), 106/107 (4)
  - CHEM 213 (3)/214 (1), 212 (3)/214 (1)
  - GEOG 101 (4), 102 (4)
  - PHYS 160 (3)/161 (1), 260 (3)/261 (1)
- CS Related elective courses
  - Two courses selected from an approved list of ECE, OR, PHIL, STAT, SWE, SYST, MATH, or CS courses (see catalog)
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: game design 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 110 (Essentials of Computer Science)
  • 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)
  • CS 306 (Law and Ethics for the Computing Professional)
  • CS 310 (Data Structures) / CS 330 (Formal Methods and Models)
  • CS 307 (Computer Systems & Programming)
  • CS 321 (Software Engineering)
  • CS 471 (Operating Systems)
  • CS 483 (Analysis of Algorithms)

• All concentrations must include one additional CS course numbered above 400

Concentration Requirements

• Concentration in Computer Game Design*
  • Foundation: GAME 230, CS 306, CS 325, CS 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

• 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, 465, 468, 475, 477, 491; 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 110 (Essentials 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 262 (Intro to Low-level Programming), MATH 125 (Discrete Mathematics), and/or COMM 100 (Public Speaking).
- See the Sample Schedule for students with A.S. degrees from VCCS.

If you do not have an AS or AA degree you should:

- Make sure Mason receives your final transcript.
- Register for foundation Math and CS classes.
- Work on your Mason Core classes.
  - Consult the BS CS brochure or advising checklist and take the Mason Core that you haven’t completed.
- If you are also an ACS major, register for classes needed for your ACS concentration.
  - Consult the ACS concentration handouts or ACS advising checklists.

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 accept walk-ins 10 – 4 pm every day.
  - Email: csug@gmu.edu
    - Contact us by email for CS course overrides.
    - Send from your Mason email account.
    - Include your G number on all correspondence.
What Happens Next?

• Go to the registration site at the time and location listed for Orientation.
  • Activate your Mason ID and password
  • Use PatriotWeb to determine the day/times for the classes that you want to take
  • Register on PatriotWeb. Use Patriot Scheduler
• Any questions?