Welcome! We will begin soon.
Please start by turning off your microphones to avoid feedback loops

Here’s how to ask a question:
• Chat. Click the purple tab, choose Everyone, and type.

• Click the Raise Hand button (bottom right icon) and we’ll answer as soon as we can.

• Talk. If no one is talking, you can turn on your mic (click mic at bottom) and ask

Can’t hear us?
• Make sure your volume is turned up. Click the gear icon under the purple tab to check audio settings. Or, click the menu (top left) to get a dial in number. Logging out and in may help, too.
Getting Started in Computer Science

Computer Science Department

http://cs.gmu.edu/

Volgenau School of Engineering
Agenda

- Finding Information
- Policies to Know
- The BS-CS and BS-ACS Degrees
- What do I register for?

Find these slides and materials at:

- https://cs.gmu.edu/ → Current Students → Undergraduates → Getting Started in CS at GMU
- https://cs.gmu.edu/current-students/undergraduates/getting-started-in-cs-at-gmu/
Department Info

Contacts

<table>
<thead>
<tr>
<th>Contacts</th>
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<tbody>
<tr>
<td>CS office</td>
<td>ENGR 4300</td>
</tr>
<tr>
<td>walk-in advising</td>
<td>11am-4pm weekdays</td>
</tr>
<tr>
<td>contact email:</td>
<td><a href="mailto:csug@gmu.edu">csug@gmu.edu</a></td>
</tr>
<tr>
<td>contact phone:</td>
<td>703-993-1530</td>
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People

<table>
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<tr>
<td>Chair:</td>
<td>summer: Dr. Rangwala</td>
</tr>
<tr>
<td></td>
<td>Fall: Dr. Rosenblum</td>
</tr>
<tr>
<td>Associate Chairs:</td>
<td>Dr. Mark Snyder</td>
</tr>
<tr>
<td></td>
<td>Dr. Elizabeth White</td>
</tr>
<tr>
<td>Undergraduate Advisors:</td>
<td>Joshua Fletcher</td>
</tr>
<tr>
<td></td>
<td>Evan Frejo</td>
</tr>
<tr>
<td></td>
<td>Linda Sheridan</td>
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Volgenau School of Engineering (VSE)

<table>
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<tr>
<td>Bioengineering</td>
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<tr>
<td>Civil &amp; Environmental Engineering</td>
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<td>Electrical and Computer Engineering</td>
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<td>Mechanical Engineering</td>
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<tr>
<td>Statistics</td>
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<tr>
<td>Systems Engineering &amp; Operations Research</td>
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Quick Facts

• BS-CS is ABET-accredited
  https://www.abet.org

• No online or night CS classes

Sites to know

password.gmu.edu – create your GMU username (netID)

cs.gmu.edu - CS website.
  • read through current students/undergraduates section

patriotweb.gmu.edu
  • unofficial transcript: Student records → Unofficial transcript
  • Patriot Scheduler – search classes and register
  • DegreeWorks – see live mapping of your degree progress

catalog.gmu.edu – course/degree details; all academic policies; catalog requirements

Examples

<table>
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<tr>
<td>email</td>
<td><a href="mailto:gmason76@gmu.edu">gmason76@gmu.edu</a></td>
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<td>gmason76</td>
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<tr>
<td>G#</td>
<td>G01234567</td>
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Policies to Know
Catalog Years

• The **catalog** is published yearly.
  • you meet all requirements for **your** catalog year: **2020-2021**
  • Your catalog requirements don't change when we update later catalogs.

• **Degree Planner** – paper copy of your requirements. (on CS website)

• **DegreeWorks** – live mapping of your degree progress
  • Great for "What if?" scenarios. [https://patriotweb.gmu.edu/](https://patriotweb.gmu.edu/)

• **Online Catalog** – [https://catalog.gmu.edu](https://catalog.gmu.edu)
  • all official catalog text, including your entire degree requirements
  • course info/prerequisites
  • all department/school/university policies
Prerequisites

• Each class has hardcoded prerequisites – courses that must be successfully completed before you can take the course
• Need **C or better** to meet the prerequisite
More Prerequisites
Grading Policies

• **C or better** needed for all prerequisites

• **one C-/D grade** is allowed towards CS major
  • *(can't be a prerequisite for another course though!)*

• **Repeats**: third and final (successful) attempt required in next semester, or you're terminated from VSE

• **Selective Withdrawal**: three times as undergraduate, you may drop by mid-semester from class (grade of W)

• **Honor Code**: you pledged not to lie, cheat, steal, or plagiarize in all academic matters. [oai.gmu.edu](http://oai.gmu.edu)
  • It is strictly enforced! [http://cs.gmu.edu/resources/honor-code/](http://cs.gmu.edu/resources/honor-code/)
More Programs

Minors

• Separate course sequence from major.
• Must have 8 unique credits (not used towards major)
• We offer the Software Engineering Minor (16 credit hours)

Accelerated Masters

• Use 2 graduate-level courses towards both BS and MS degrees
• Apply around 75 credits with good GPA
BS Computer Science Degree
BS CS Degree (120 credits)

- General Education (24cr)
- CS Core (35cr)
- Mathematics and Statistics (20cr)
- Natural Sciences (12cr)
- CS Senior electives (15cr)
- CS Related electives (6cr)
- General electives (8cr)
General Education (24cr)

- COMM 100/101 – oral communication
- ENGH 100/101 – composition
- ENGH 302N – advanced composition
  - *Natural Science sections only!

- Mason Core
  - One course from each list:
    - Arts
    - Global Understanding
    - Literature
    - Social and Behavioral Science
    - Western Civ/World History

- *Search lists of Mason Core courses on catalog.gmu.edu*

- *All other general education requirements are covered by CS/VSE requirements.*
CS Core Courses (35cr)

- **Ethics+**  CS 110, 306
  - Essentials of CS, Synthesis of Ethics/Law for the Computing Professional

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

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

- **Software Engineering**  CS 321

- **Theory**  CS 330, 483
  - Formal Methods & Models, Analysis of Algorithms
Math/Statistics (20cr)

- Calculus I – MATH 113 (or 123+124)
- Calculus II – MATH 114
- Calculus III – MATH 213
- Discrete Math – MATH 125
- Linear Algebra – MATH 203
- Prob/Stat – STAT 344

Math overrides contact: camaya@gmu.edu
Natural Science Requirements (12cr)

Stronger requirements by CS than General Education.

- **Required**: lecture/lab sequence in one field, plus 4cr more
  - Some are one 4cr course combo, others are a separate lecture(3cr) and lab(1cr)
  - *Example: sequence of GEOL 101(4)/102(4), and PHYS 160/161(3+1) == 12cr.*

<table>
<thead>
<tr>
<th>Field</th>
<th>First</th>
<th>Second</th>
<th>Third</th>
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<tbody>
<tr>
<td>Biology</td>
<td>103</td>
<td>106/107</td>
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<tr>
<td>Chemistry</td>
<td>211/213</td>
<td>212/214</td>
<td></td>
</tr>
<tr>
<td>Geology</td>
<td>101</td>
<td>102</td>
<td></td>
</tr>
<tr>
<td>Physics</td>
<td>160/161</td>
<td>260/261</td>
<td>262/263</td>
</tr>
</tbody>
</table>
CS Senior Electives (15cr)

• your chance to specialize your degree!
• five of the following, including at least one of 455/468/475

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 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 cr. – only)
CS 499 – Special Topics in Computer Science*
MATH 446 – Numerical Analysis I (equiv. to OR 481)
CS Related Electives (6cr)

- STAT 354
- OR 335, 441, 442
- ECE 301, 331, 332, 350, 446, 447, 511
- SWE 432, 437, 443
- SYST 371, 470
- PHIL 371, 376
- ENGH 388
- Any MATH ≥ 300 (except 351)
- Any CS ≥ 300  
  perhaps more CS-senior electives

General Electives (8cr)

- can't count remedial math (e.g. MATH 105) or military science courses
- may count up to 3cr of RECR
- university requires 120 credits total to graduate; no exceptions
BS Applied Computer Science

- Concentrations: game design and software engineering
- Students take foundation/core courses in CS and in the concentration area.

- All concentrations share the same common foundation/core:
  - CS 110/306
  - CS 112/211/310
  - CS 262/367/471
  - CS 321
  - CS 330/483
  - MATH 113/114/125/203, STAT 344 (no calc III)
  - One additional course CS≥400
ACS Concentrations

• 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)
Transferrable Credits

- Only **college-level approved coursework** is transferrable
- **AP/IB scores** with sufficient scores
- **specific courses from specific places** have been approved for specific courses here at GMU
- All listed online (search for "GMU transfer credit")
  
  [https://www2.gmu.edu/admissions-aid/how-apply/transfer/transfer-credit-policy](https://www2.gmu.edu/admissions-aid/how-apply/transfer/transfer-credit-policy)

Getting Credits

- **Send scores/official transcript** to GMU *after* grades posted.
- GMU receives scores, processes manually – then they should show up on your transcript. (patriotweb → student records → unofficial transcript)
- **appeal elective credit** as specific course: send syllabus, coursework samples, etc. to relevant department.
When/How to Request Overrides

- If your transferred prerequisite credits aren't in the system yet:

  - **Email the relevant department** with a printed-to-pdf copy of your unofficial transcript/scores, requesting the override.
    - Use your **GMU email**, including G#, e.g. G01234567
    - Attach **PDF of unofficial scores** (with your name and score visible)
  - Registration should succeed after the override is approved

Computer Science  csug@gmu.edu
Mathematics       camaya@gmu.edu
Others            <email the department>
What do I register for?
What do I register for? (Freshmen)

Recommendation: only four courses.

• Are you calculus-ready?
  • Math Placement Test score or credit for MATH 113/123
  • Take four courses:
    • CS 110
    • CS 112
    • MATH 113 (or MATH 124)
    • Gen-Ed (e.g. approved Mason Core Literature course, COMM 100/101)

• Not calculus ready yet?
  • CS 110
  • proscribed next Math course (105, 123)
  • Gen-Ed (e.g. approved Mason Core Literature course, COMM 100/101)
  • another Gen-Ed or Natural Science
What do I register for? (Transfers)

Each transfer is different – here are guidelines. Four courses recommended.

- **CS 110** (*needed first semester, everyone*)
- next programming course (e.g. 211, 262, 310)
- next math course (e.g. MATH 113, 114, 213, 125)
- next natural science or gen-ed
- ENGH 302N (Natural Science sections only!)
- CS-Related courses (PHIL 376, ENGH 388, more math, SWE courses)

- **Goal**: finish CS 310, 330 367 to open up prerequisite chains
COVID-19 Notes

Many classes may be online. They still might use a mix of synchronous and pre-recorded materials.

Math placement test is currently closed.
- [https://science.gmu.edu/academics/departments-units/mathematical-sciences/mathematical-sciences-testing-center](https://science.gmu.edu/academics/departments-units/mathematical-sciences/mathematical-sciences-testing-center)
- To register for MATH 113/123:
  - Accepting >=B in HS precalculus/trig, or any calculus grade.
  - Accepting >=C in college precalc+trig from other institutions.
- To register for CS 112:
  - Accepting co-enrollment in MATH 104/105; credit or co-enrollment in calculus

Offices on campus might require appointments, or email/video visits.

It's certainly an unusual start to college – but life goes on! We are here for you 😊
Getting Help

• 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 11am – 4pm every day. *(pending campus reopening)*
  • Email: csug@gmu.edu
    • Contact us by email for CS course overrides
    • Send from your Mason email account (@gmu.edu)
    • Include your G number on all correspondence (e.g. G01234567)
What Happens Next

• Activate your Mason ID/password
• Take the Math Placement Test if needed
• Use PatriotWeb/PatriotScheduler to plan your semester
• Register on PatriotWeb (part of orientation schedule)

Things to Read/Explore

• CS website: Current Students→Undergraduates
• Unofficial Transcript (on PatriotWeb)
• Catalog: BS CS policies

Getting Help

Walk-in Advising
ENGR 4300, 11am-4pm weekdays

Override requests for CS courses. (must use @gmu account)