Agenda

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

Access these slides via the QR code

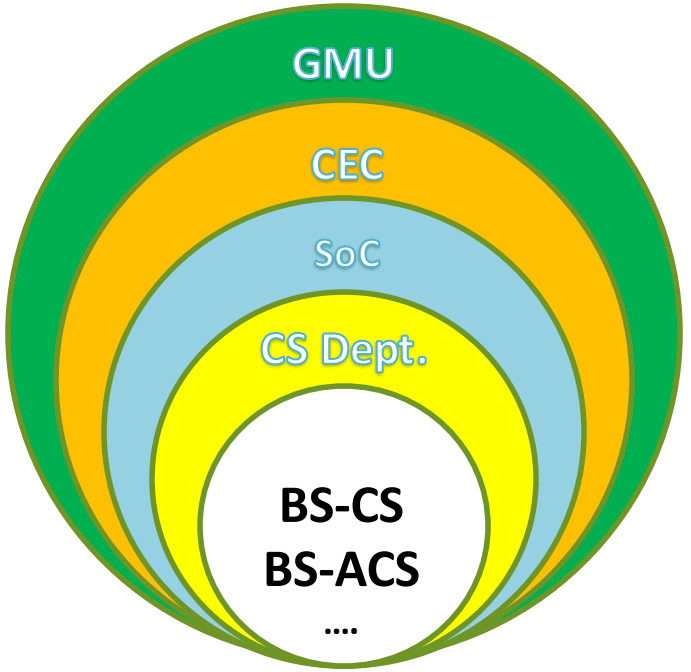
Find these slides and materials at:

- 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	
Undergraduate CS office	**Buchanan D215**
Graduate CS Office	*ENGR 4300*
advising appointments (physical and virtual)	Weekdays: 10am-12pm 1p-4pm
contact email:	**csug@gmu.edu**
contact phone:	703-993-1530

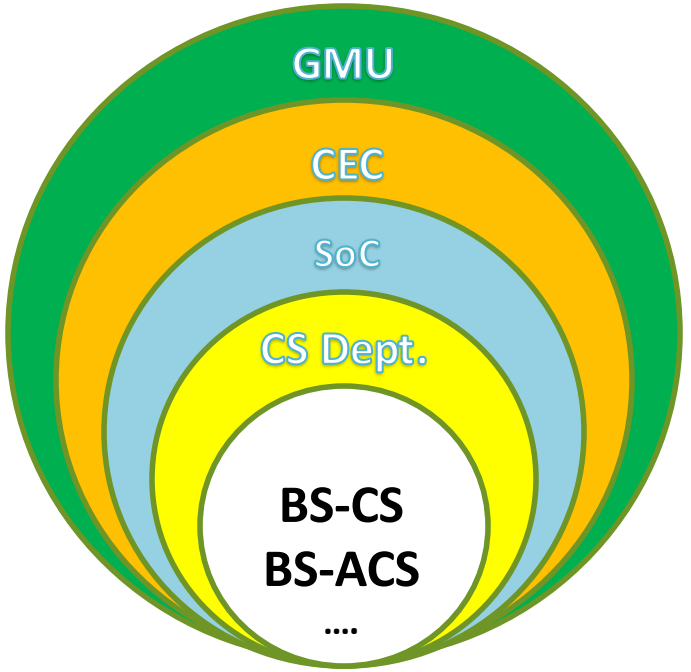
People	
Chair:	Dr. David Rosenblum
Undergraduate Associate Chairs:	Dr. Mark Snyder Dr. Shvetha Soundararajan
Undergraduate Advisors:	Joshua Fletcher Kristi Morrow Vernell Wilks Josef Simpson Emily DiCecco



College of Engineering and Computing (CEC)
Computer Science
Information Sciences and Technology
Statistics
Bioengineering
Civil & Environmental Engineering
Electrical and Computer Engineering
Mechanical Engineering
Systems Engineering & Operations Research
Cyber Security Engineering

Quick Facts

- BS-CS is ABET-accredited
  https://www.abet.org
- CS classes are daytime
  - vast majority are face-to-face



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
- Stellic – see live mapping of your degree progress

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

Examples	
email	gmason76@gmu.edu
netID	gmason76
G#	G01234567

Policies to Know

Policies to Know

- The **catalog** is published yearly.
  - you meet all requirements for ***your*** catalog year: **2025-2026**
  - Your catalog requirements don't change when we update later catalogs.

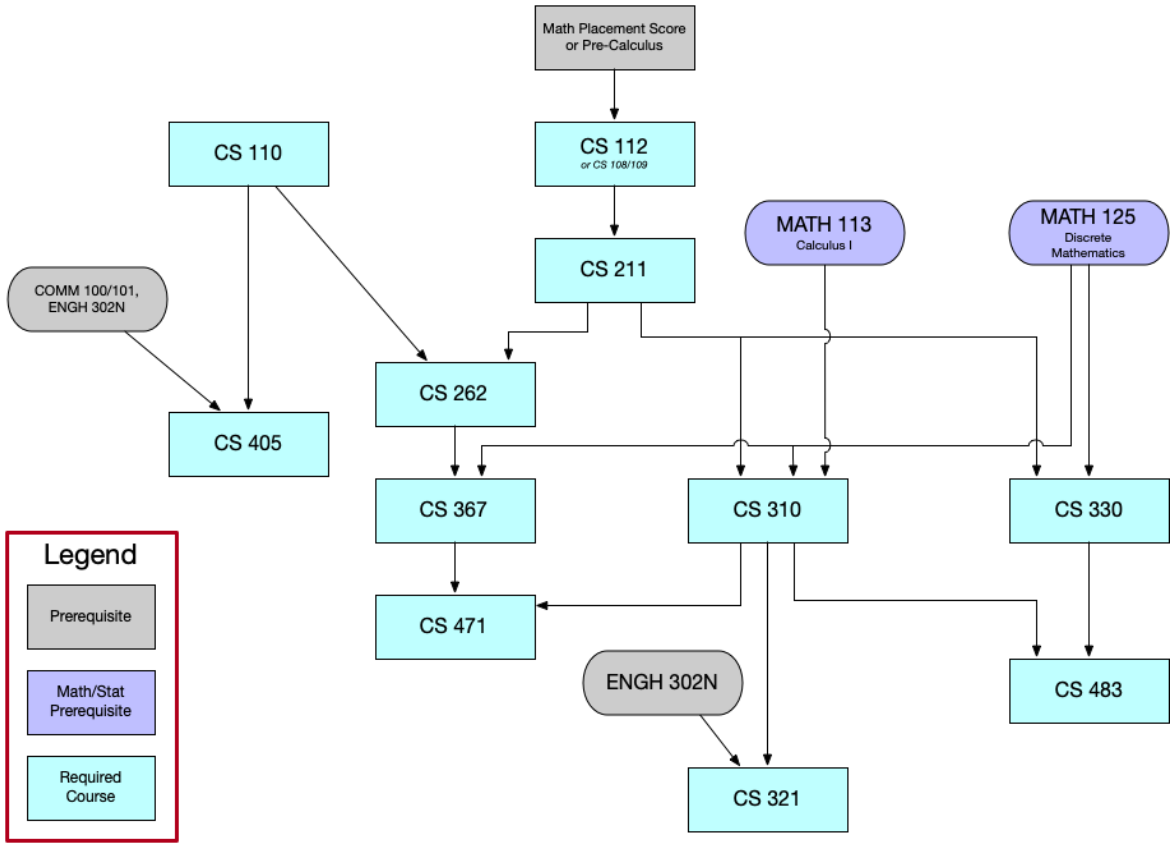
- **Degree Planner –** paper copy of your requirements. (on CS website)

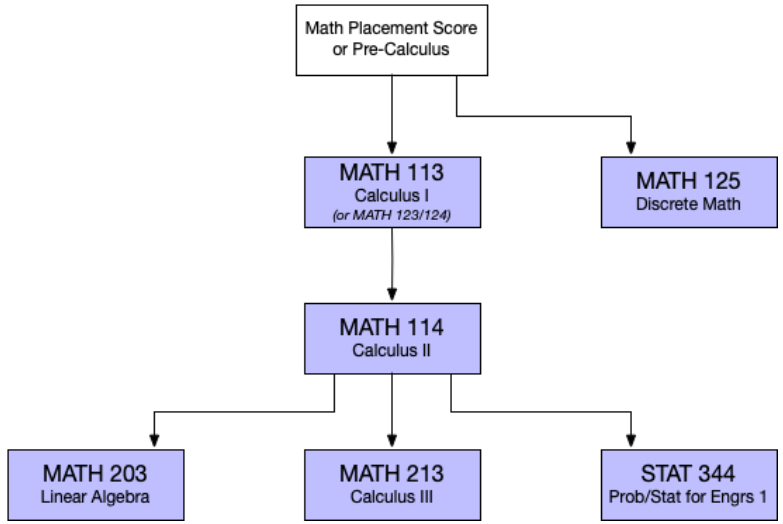
- **Stellic –** live mapping of your degree progress
  - Great for "What if?" scenarios, to consider adding or editing your program. https://patriotweb.gmu.edu/

- **Online Catalog –** https://catalog.gmu.edu
  - all official catalog text, including your entire degree requirements
  - course info/prerequisites
  - all department/school/university policies
- **FERPA rights –** adult students control their own academic records.
  - Access can be explicitly given to parents (and others) if desired. Advisors can't discuss records with anyone you unless you give access.

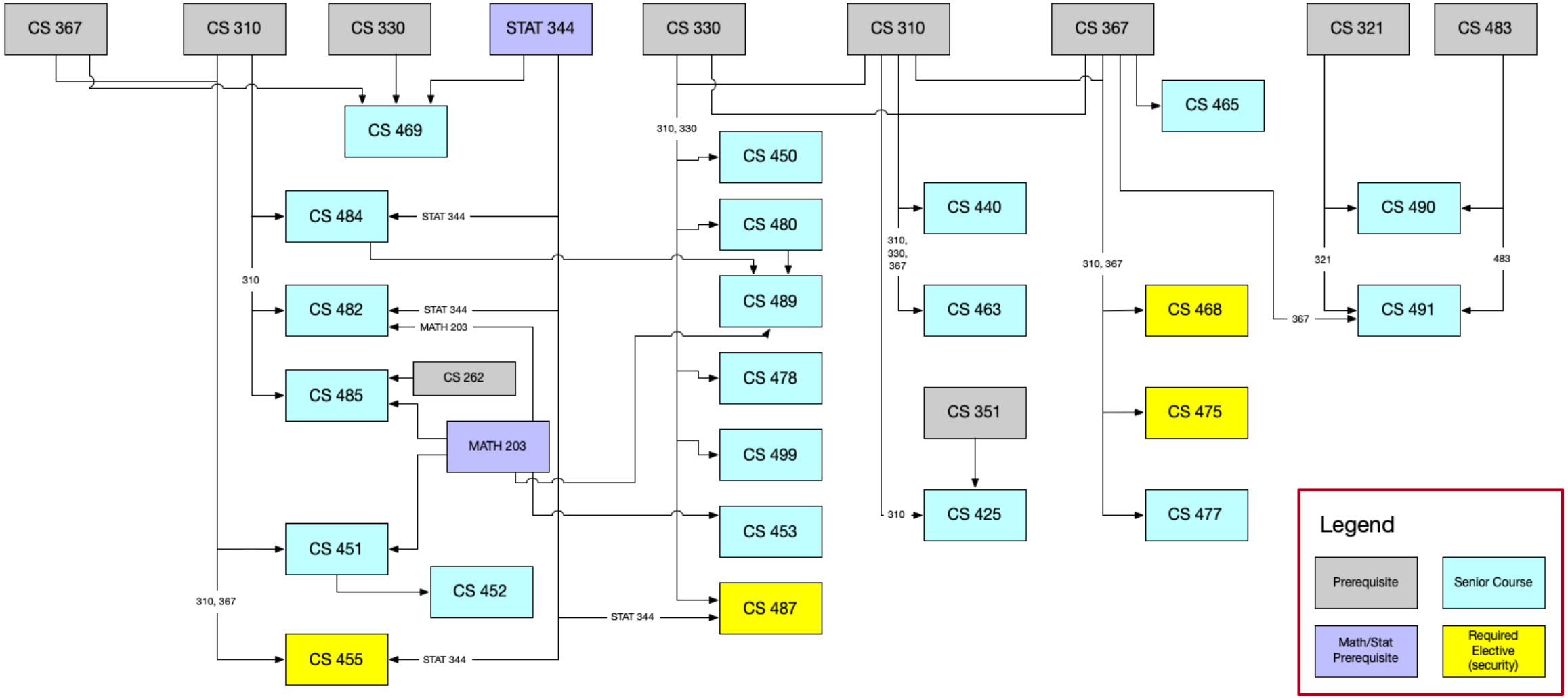
Prerequisites

- 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 – those all must be C or greater)*
- **Repeats**: third and final (successful) attempt required in next Fall/Spring semester, or you're terminated from CEC
- **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. https://academicstandards.gmu.edu/
  - It is strictly enforced!

Study Elsewhere Constraints

- Once you begin at GMU, your transferrable coursework is complete. **you cannot take more courses elsewhere and transfer them in later.**

- Example: if you take extra courses at NVCC and ask to transfer them in, the answer will be "no".
- To request an exception to this policy, **ahead of time,** you need to fill out a Study Elsewhere request form.
  - Some reasons it could be denied:
    - any attempts (including W) at the course at GMU
    - already have 60+ transferred credits
    - financial hardship as the stated reason to request
    - taking an online version of a natural science with lab
    - course is also offered at GMU and open seats (if you live locally)

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 up to four graduate-level courses towards both BS and MS degrees (double-counted)
- Apply after earning 60 credits, with good GMU GPA
- Effectively a five-year BS+MS program

BS Computer Science Degree

BS CS Degree (120 credits)

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

Mason Core (24cr)

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

- Additional Mason Core
  - One course from each list:
    - Arts
    - Global Contexts
    - Literature
    - Social and Behavioral Science
    - Global History (HIST 125)
  - *Search lists of Mason Core courses on catalog.gmu.edu*

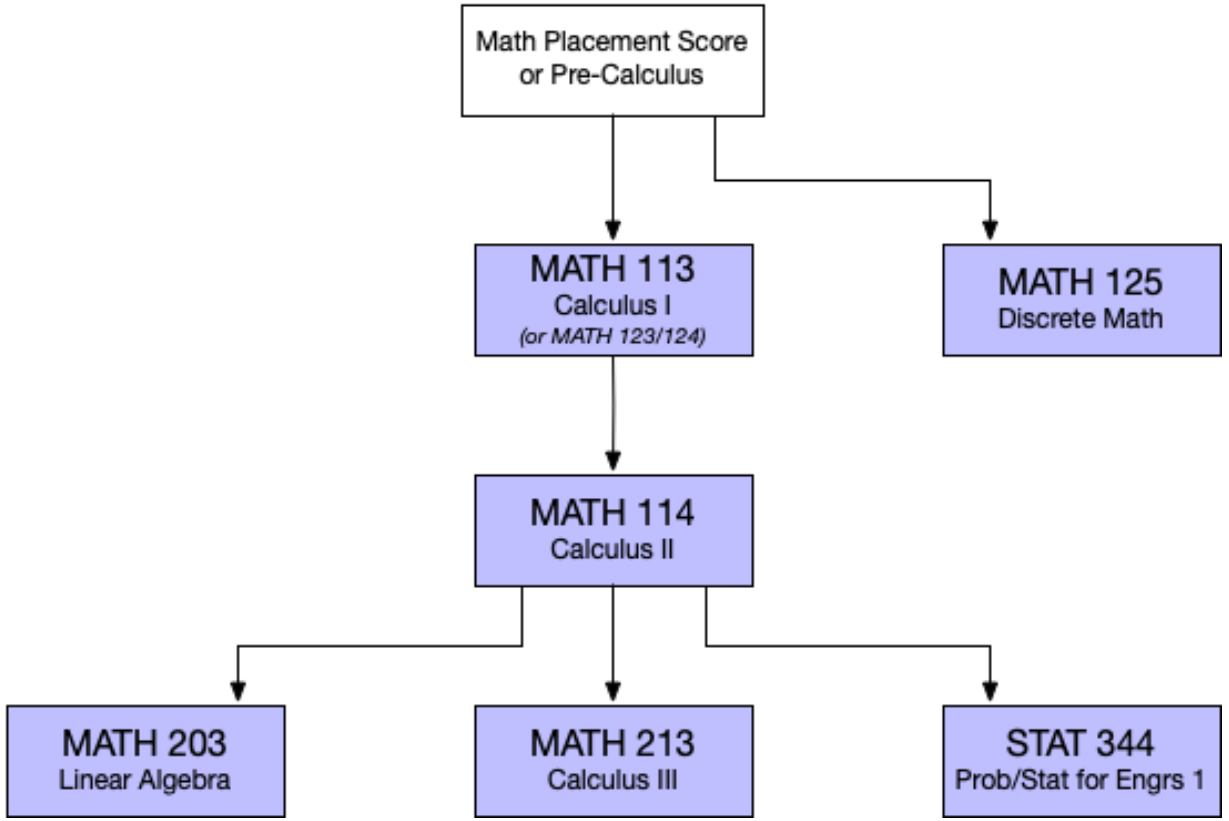
- *All other Mason Core requirements are covered by CS/SoC requirements.*

CS Core Courses (35cr)

- **Ethics+** CS 110, 405
  - Essentials of CS, Ethics and Law in Computing
- **Programming** CS 112, 211, 310
  - Introduction to Programming; Object-Oriented Programming; Data Structures
    - ***Alternative: CS 108 + CS 109 is a two-course replacement for CS 112.***
- **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:**
  fill out their online request form. *(more info on overrides at the end of this talk)*
- *https://science.gmu.edu/academics/departments-units/mathematical-sciences/majors-and-minors/course-override-request*

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).
  - *Last 4cr: different-subject lab science from Mason Core, or uses your sequence as prereq.*
  - *Example: sequence of BIOL 102(4) & 103(3)/105(1), and PHYS 160(3)/161(1) == 12cr.*

Field	First	Second	Third
Biology	102	103/105	
Chemistry	211/213	212/214	313/315 (or 314/218)
Geology	101/103	102/104	
Physics	160/161	260/261	262/263

CS Senior Electives (15cr)

- your chance to specialize your degree!
- five of the following, including at least one of: 455/468/475/487

CS 425 – Game Programming I
CS 440 – Compilers
CS 450 – Database Concepts
CS 451 – Computer Graphics
CS 452 – Virtual Reality
CS 453 – Computational Photography
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 478 – Natural Language Processing
CS 480 – Introduction to Artificial Intelligence
CS 482 – Computer Vision
CS 484 – Data Mining
CS 485 – Autonomous Robotics
CS 487 – Introduction to Cryptography
CS 489 – Deep Learning
CS 490 – Design Exhibition
CS 491 – Industry-Sponsored Senior Design Project (3 cr. – only)
CS 499 – Special Topics in Computer Science (6cr max)
MATH 446 – Numerical Analysis I (equiv. to OR 481)

CS Related Electives (6cr)

- STAT 354
- SYST 371, 470
- PHIL 371, 376
- ENGH 388
- OR 335, 441, 442
- ECE (301 or 231/232), 350, 446, 447, 511
- SWE ≥300 *e.g. 419, 432, 437, 443*
- MATH > 300 *except 351*
- CS > 300 *more CS-senior electives*

General Electives (8cr)

- can't count remedial math (e.g. MATH 105) or some MLSC courses
- may count up to 3cr of RECR
- **university requires 120 credits total to graduate; no exceptions**

BS Applied Computer Science

- Fourteen Concentrations:
  - Artificial Intelligence ***(new!)***
  - Business: (BMGT), (BMKT)
  - Computer Game Design: (CGDS)
  - Geoinformatics (GINF), Bioinformatics (BNF)
  - Intelligence Analysis (IACN), (IAKR), (IAME), (IARU)
  - Linguistics (LING)
  - Mechanical Engineering (ME)
  - Software Engineering (SWE)
  - Technology Policy (TCHP)
- ***ACS students, please declare your concentration after this orientation.***
- Students take foundation/core courses in CS and in the concentration area.
- All concentrations share the same common ACS Foundation and ACS Core:
  - **CS 110/112/211/262/310/321/330/367/483**
  - **MATH 113/114/125/203** *(no calc III)*

ACS Concentrations

- Concentration in **Artificial Intelligence (AI)**
  - Foundation: CS 405, MATH 213, STAT 344, 12cr nat.sci. (including PHYS 160/161)
  - Core: CS 480, 484, 6cr. from (CS 478/482/485/489/499*)
  - AI-Related: 15cr electives from CS 4---, PHIL 376, OR 441, LING 471, STAT 472, PSYC 375

- Concentration in **Computer Game Design (CGDS)**
  - Foundation: GAME 230, CS 405, CS 325, CS 351; AVT 104; STAT 344
  - Core: CS 425, 426, 451, 471, one CS >400; AVT 382, 383
  - One approved elective related to game design
  - PHYS 160/161, one additional lab science course

- Concentration in **Software Engineering (SWE)**
  - Foundation: STAT 344; CS 405
  - Core: SWE 205, 301, 401; SWE 419, SWE 437
  - Five courses chosen from:
    CS 450, 455, 463, 465, 468, 475, 477, 491; SWE 432, 443
  - ENGH 388 & one of the following:
    (PSYC 333, COMM 320, COMM 335)

- Concentration in **Bioinformatics (BNF)**
  - Foundation: PHYS 160/161, BIOL 212, CHEM 211/213, CS 405, STAT 344
  - Core: BINF 450, 482, 580, CS 450, 471, CS4xx*, BINF 401, 402
  - 6cr approved electives

- Concentration in **Geoinformatics (GINF)**
  - Foundation: CS 405, GGS 102, 103, 110, 300; STAT 250
  - Core: CS 471, one CS >400; GGS 310, 311, 366, 379
  - GINF Related: 12cr in: GGS 354, 411, 416, 422, 426, 429, 462, 463, 470

ACS Concentrations

- Concentration in **Business Management (BMGT)**
  - Foundation: STAT 250; CS 405; BUS 100; PSYC 100; MGMT 303; MKTG 303
  - Core: MGMT 313, 321, 451, 453, CS 471, one CS >400
  - three courses chosen from MGMT 300-499
- Concentration in **Business Marketing (BMKT)**
  - Foundation: STAT 250; CS 405; BUS 100; PSYC 100; MGMT 303; MKTG 303
  - Core: MKTG 312, 351, 471, CS 471, one CS >400
  - four courses chosen from MKTG >300
- Concentration in **Technology Policy (TCHP)**
  - Foundation: GOVT (101|103), 134, 150, 300
  - Core: CS 405, one CS >400, GOVT 352, 363, 366|367|368, 426, 460, GOVT492
  - TCHP Related: 12cr: GOVT 304, 312, 318, 351, 369, 400, 414, 435, 444, 446, 461, 462, 464, 480

ACS Concentrations

- Concentration in **Intelligence Analysis: Chinese Studies (IACN), Korean Studies (IAKR), Middle Eastern Studies (IAME), Russian Studies(IARU)**
  - Foundation: STAT 250; CS 405; BUS 100; PSYC 100; MGMT 303; MKTG 303
  - CS Related work (9-10cr)
  - Language work (12cr)
  - Intelligence Analysis (9cr)
  - [Region] Studies (12cr)
- Concentration in **Linguistics (LING)**
  - Foundation: LING 300, 405, STAT 344, CS 405
  - Core: (LING 331|333), (335|337), 338, 471, CS 478, (CS440|480|484|499|SYST469)
  - (LING 441|451|453), three from (LING 316, 322, 323, 336, 443, 441, 451, 453, 496)
- Concentration in **Mechanical Engineering (ME)**
  - Foundation: CHEM 211/213, MATH 213, 214, PHYS 160/161
  - Core: ME 211, 212, 221, 231, 313, 322, 323, 443, 444
  - CS Related: two from (CS 451, 452, 471, 482, 485)
  - ME Related: two from (ME 445, 447, 499)

GEORGE MASON UNIVERSITY

Technology Policy

- how technology can create politics, and how political processes shape technology
- international treaties and the role of the UN in addressing technological change
- relationship between scientific achievement and geopolitical power
- legal, economic, political, and moral perspectives in examining the worlds of data and computation

Learn more

A joint concentration with

SCHAR SCHOOL OF POLICY AND GOVERNMENT
George Mason University

Special Note:

ACS Concentration Declarations

ACS Students – Declare your concentration now

- **ACS students could not specify their concentration choice when applying to GMU.**

- if you are in ACS, you need to **formally declare a concentration** via the "Undergraduate Change/Declaration of Academic Program" form.
  - found on the Registrar's Forms page: https://registrar.gmu.edu/forms/
  - or directly here: https://registrar.gmu.edu/wp-content/uploads/UG-Change-Declaration-of-Major-FORM-Feb-2022-1.pdf
- fill in the personal information through signature; leave "new major" blank; add your concentration to "New Concentration".
- Required: **turn it in** to csug@gmu.edu by the first day of class.

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://www.gmu.edu/transfer/credits

- **Remember: once starting courses at GMU, GMU students cannot take coursework elsewhere for GMU credit (without PRIOR permission).**
  - As an example, you cannot take coursework at NVCC to bring back to GMU for credit, even if it's equivalent.

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. Rarely approved with only a syllabus.

When/How to Request Overrides

- **When do I need to request an override?:** only if you plan on immediately taking a course that needs to use your pending transfer credits as a prerequisite, but they aren't yet in the system.
- **How: contact the course's 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)
  - You must re-attempt registration after the override is approved

- Computer Science csug@gmu.edu
- Mathematics via online form (you can google "GMU math override")
  https://science.gmu.edu/academics/departments-units/mathematical-sciences/majors-and-minors/course-override-request
- Others <email the department>

What do I register for?

What do I register for? (Freshmen)

Recommendation: only four courses.

Are you calculus-ready? (via **Math Placement Test** score of 80+ or having credit for MATH 105/123)

- Take four courses:
  - CS 110
  - CS 112
  - MATH 113 (or MATH 123/124)
  - Mason Core *(e.g. approved Mason Core Literature course, COMM 100/101)*

Not calculus ready yet?

- CS 110
- CS 108 *(covers first half of CS 112)*
- proscribed next Math course (e.g. 105, 123)
- Mason Core *(e.g. approved Mason Core Literature course, COMM 100/101*

What do I register for? (Transfers)

Each transfer's starting point is different! Here are guidelines.
Four courses recommended.

- **CS 110** *(needed first semester, everyone)*
- next programming course (e.g. 112, 211, 262 and/or 310)
- next math course (e.g. MATH 113, 114, 213, 125, 203, STAT 344)
- next natural science or mason core
- 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

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 Academic Advisors.

  - We offer appointments every workday. (10am-12pm, 1pm-4pm) https://go.gmu.edu/cs-ug-advising
  - **repeated no-shows may be barred from scheduling additional appointments.**

  - Email: ***csug@gmu.edu***
    - *Contact us by email – for questions, sending forms, requesting CS course overrides*
    - *Only send from your Mason email account (@gmu.edu)*
    - ***Always** include your G number on all correspondence (e.g. G01234567)*
    - *Attach print-to-pdf webpage showing your relevant scores, e.g. A.P., transcript, etc. (needs to show your name on it too, of course!)*

What Happens Next

- Take the Math Placement Test if needed https://math.gmu.edu/placement_test
- Use PatriotWeb/PatriotScheduler to plan your semester
  - *patriotweb.gmu.edu ⟶ Student Services ⟶ Registration*
- Register on PatriotWeb (part of orientation schedule)
  - Registration Guide: https://registrar.gmu.edu/topics/registration-guide/
  - Adding to a waitlist: https://registrar.gmu.edu/students/patriot-web-tutorials/interactive-demo-adding-yourself-to-waitlists/

Getting Help

Advising

csug@gmu.edu

Buchanan D215
10am-12pm. 1-4pm weekdays

https://go.gmu.edu/cs-ug-advising

Override requests for CS courses.
(use @gmu.edu account, G#)

Things to Read/Explore

CS website: cs.gmu.edu

Current Students⟶Undergraduates

Unofficial Transcript (on Patriotweb)

Catalog: BS CS policies

More Useful Orientation Links

These slides: (or via QR code to the right ⟶)
cs.gmu.edu/media/uploads/programs/undergraduate/files/cs_orientation.pdf

Math Placement Test & Override Request:
science.gmu.edu/academics/departments-units/mathematical-sciences/mathematical-sciences-testing-center

Info about AP Scores:
www2.gmu.edu/admissions-aid/apply-now/how-apply/transfer/transfer-credit-policy#exams

George Mason Course Catalog: catalog.gmu.edu

How to Register for Classes:

- video: https://registrar.gmu.edu/wp-content/uploads/8E519658-EC8A-4DE5-ADA7-515A28693764-.mp4
- pdf: https://registrar.gmu.edu/wp-content/uploads/Registration-Instructions_4-2-21.pdf

Adding yourself to a Waitlist:

- https://registrar.gmu.edu/students/patriot-web-tutorials/interactive-demo-adding-yourself-to-waitlists/

Access these slides via the QR code