



APPALACHIAN STATE UNIVERSITY
COMPUTERSCIENCE

Welcome to the
Department of Computer Science
Fall 2022 Open House
compsci.appstate.edu

CS faculty at the Open House ..

- Professor. Courtney Dixon
- Professor. Joel Swanson
- Professor. Chad Waters
- Dr. Jay Fenwick
- Dr. Cindy Norris
- Dr. Rahman Tashakkori

Degrees and Programs

- Bachelor's degree in Computer Science
 - about 500 students
 - ABET Accredited (Academic Board for Engineering and Technology)
- Minor in Computer Science (12 hours of 2000+ courses)
- Master's degree in Computer Science (more later)
 - about 20 students
- University and Departmental Honors (more later)
- Data Science Certificate (more later)

Master's program

- 36 hours
 - 9 hours per semester is considered full time
- Concentration in one of:
 - Data Science and Visual Computing
 - Systems
 - Theoretics
 - Web & Mobile
- Complete a project or a thesis
- <https://compsci.appstate.edu/academics/graduate-program/course-study>

Accelerated Graduate Admissions

- Earn Bachelor's and Master's in 5 years (4 + 1)
- Take up to 12 hours of graduate courses in senior year that count for both degrees
- Eligible students
 - minimum 3.2 cumulative GPA
 - 90 credit hours
- <https://graduate.appstate.edu/graduate-admissions/apply-graduate-school/accelerated-admissions-applicant>

Honors Programs

University Honors

- 18 hours of honor courses
 - at least 3 must be within the major department
 - includes 3 hours for senior honors thesis
- International Education Component
- More information about requirements and admission can be found at:

<https://honors.appstate.edu/academics>

Departmental Honors

- 9 hours of honors courses in the department at 2000 level or above
 - graduate courses count as honors courses
 - includes 3 hours for senior honors thesis
- More information about requirements and admission can be found at:

<https://compsci.appstate.edu/academics/honors>

Data Science Certificate Program

- CS 2435: Introduction to Scientific Programming (Programming in Python)
- Math 2240: Linear Algebra
- Stat 3850: Statistics
- CS 3435: Data Acquisition and Visualization
- CS 4755: Applied Machine Learning
- Data scientists extract meaningful insights from data using
 - statistics
 - algorithms
 - programming skills
- Data scientists use data to answer questions like:
 - Will this person renew their subscription?
 - What kind of car is this person likely to buy?
 - Is this a picture of a cat or a dog?

Academics

[*compsci.appstate.edu/academics*](http://compsci.appstate.edu/academics)

- Computer Science, BS (Total of 120 hours)
 - 44 hours of General Education
 - 41 hours of Computer Science
 - theory, systems, programming, writing in the discipline, capstone course or honors thesis
 - 12 hours of Computer Science electives
 - 18 hours of Mathematics
 - discrete mathematics, calculus 1 and 2, linear algebra, statistics
 - 8-10 hours of a science sequence
 - astronomy, biology, chemistry, geology, or physics
 - two physics sequences - one algebra based and one calculus based

Computer Science Electives

- Mobile Device Programming
- Server and Client Side Web Programming
- System Administration and Security
- Artificial Intelligence
- Data Communication and Networking
- Human Computer Interfaces
- Embedded Systems
- Machine Learning
- Neural Networks
- Computer Graphics
- Digital Image Processing
- Operating Systems
- Advanced Theory
- Special topics courses; recently:
 - Bioinformatics
 - Cybersecurity
 - Parallel Computing
 - GPU programming
 - Digital forensics
 - Problem Based AI
 - Functional Programming
 - Modern Data Structures
 - Discrete Structures and Reasoning
 - Algorithms

S-STEM/ECRS Scholarship Programs

- \$6000/\$4000 Annually for financially needy and academically talented freshmen intending on majoring in chemistry, computer science, geology, mathematics, and physics
- Weekly seminars
- Study groups for core classes
- Mentoring and Tutoring
- Leadership workshop series
- Peer-mentoring
- Community building
- Resume workshops and internship/job search

S-STEM Program:

www.cs.appstate.edu/sstem

ECRS Program:

www.cs.appstate.edu/ecrs

Clubs

- ASCII
- Competitive Programming
- Mountain Linux
- Women in Computer Science



Women in Computer Science students

Internships

- 2018-2019 graduates
 - 58% of those graduates sought an internship
 - 73% of those seeking an internship were able to obtain one
- Spring 2021 graduates
 - 63% of those graduates sought an internship
 - 50% of those seeking an internship were able to obtain one
- You can find one if you look ...
 - Take advantage of the networking opportunities on campus: Club meetings, AppHack, Job and internship fair
 - Off campus events: NC state job fair, hackathons
 - Build an impressive online presence: linkedIn, Indeed.com
- And you can get elective credit for an internship

Classes for Calculus Ready First Year Students

- MAT 1110: Calculus 1 (4 hrs)
- CS 1440: Computer Science 1 (4 hrs)
- CS 1100: Discrete Math (3 hrs)
- General Education:
 - First year seminar (3 hrs)
 - Physical Education (1 hr)
- Total of 15 semester hours

How do I know if I'm Calculus Ready?

- Need to take the calculus readiness test:
 - <https://orientation.appstate.edu/course-registration-placement-testing/math-placement-and-calculus-readiness-tests>
- Do not take if you've scored a 3 or higher on the AP calculus exam or if you are transferring in credit for Calculus 1 (MAT 1110)
- Do take it even if you are currently enrolled in AP calculus (3 or higher on AP exam will override placement score)

Classes for First Year Students not Calculus Ready

- MAT 1025: Precalculus (4 hrs)
- First course of science sequence (4 hrs)
 - excluding PHY 1150
- General Education courses (3 hrs each)
- Physical Education (1 hr)
- CS 2435: Scientific Programming (4 hrs)
 - not required for CS majors, but is a good course to get introduced to CS in the first semester

If you are a transfer student ...

- It may be challenging for the first two semesters to build a full-time course load
 - particularly if you don't need any gen ed courses
- Options
 - CS 2435: Scientific Programming (does not count toward major requirements, but provides Python experience. CS 1 and 2 are in Java) [4 hrs]
 - CS 3435: Data Collection and Visualization (prereq is CS 2435 or CS 2440) [3 hrs]
 - Science elective
 - PHY 1150 has Calculus 1 (MAT 1110) as co-requisite; most others have “readiness for college math” as prerequisite
 - Explore another major or minor

It's a hard major, but you can do it if you ...

Get Engaged & Stay Engaged

- CS Clubs
 - ASCII Club
 - Women in Computer Science Club
 - Game Dev Club
 - Linux Club
- Programming Contest
- Research opportunities

Commit to

- doing your own work
- asking for help when you need it
 - we can help
 - we want you to succeed
 - <https://studentlearningcenter.appstate.edu>
 - tutoring, learning labs, and more
- mastering the material in each course (each course builds upon the previous one)

Where our students have gone after graduation

- Big companies: Amazon, Fidelity, Google, IBM, Microsoft, SAS, Wells Fargo
- Smaller companies: CGI, Duke Energy, Inmar, Premier, Sunrise, Epic Games, ...
- Local: ASU, ECRS, Samaritan Purse, and Jackson Sumner & Associates, ...
- Graduate School: Clemson, UNC Chapel Hill, NC State, Iowa State, Indiana University



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