CS@CU COMPUTER SCIENCE (/)

COLUMBIA | ENGINEERING (http://engineering.columbia.edu/)
The Fu Foundation School of Engineering and Applied Science

CS@CU UNDERGRADUATES

FAQs for Current Undergrads

Have a question or concern about your program? You're in the right place! If you can't find the answer you are looking for here, or on our Undergraduate Homepage (https://www.cs.columbia.edu/education/undergraduate/), email CS Advising (mailto:ug-advising@cs.columbia.edu).

GENERAL ADVISING & MAJOR DECLARATION

When can I declare CS as my major? Are there any minimum requirements that I need to meet before declaring the major?

The major declaration period occurs during your sophomore year: in the fall semester for SEAS students and the spring semester for Columbia College, GS, and Barnard students. There are no minimum requirements that you need to meet before declaring the major or minor, though we do recommend that you start taking the introductory CS courses (ENGI E1006, COMS W1004) during your freshman year.

How do I declare CS as my major?

Each school has a different process for this. SEAS and CC students should discuss with their CSA Advising Dean. GS and Barnard students should speak with their respective school advisors.

I'm a Barnard student and I need a signature on my major declaration form. Who can sign for me?

Please see Barnard Department Admin, Jared Stickley, in Milstein 504, to declare a CS major.

Who is my CS Faculty Advisor?

All CS majors and concentrators are assigned a CS Faculty Advisor. You can find yours by clicking here. (http://www.cs.columbia.edu/education/undergraduate/advisors/) If you have general or administrative questions, please email CS Advising at ug-advising@cs.columbia.edu (mailto:ug-advising@cs.columbia.edu).

TRACK QUESTIONS [OLD BS/BA CURRICULUM]

If I follow the old curriculum (prior to Fall '23) am I required to declare a track?

Yes! All CS majors are required to declare a track and specialize in one of five major areas of Computer Science: Foundations, Software Systems, Digital Systems, Intelligent Systems, Applications and Vision, Interaction, Graphics and Robotics.

How do I declare my track?

Please declare your track in MICE. You can click on the blue pencil icon next to Program in your MICE profile and select a track from the dropdown menu. Please do this as soon as possible so your advisors know which program requirements you are following.

Can I change tracks?

Yes. However, if you are changing tracks in your junior or senior year, you should meet with your CS Faculty Advisor to do a degree progress check to ensure that you can still complete your program in time for graduation.

What is the Advanced Track? Can I declare it?

Entry into an Advanced Track is by CS Faculty invitation only, and it is only extended to students who have already completed the core courses and the required courses for one of the five tracks. This is extremely rare.

What is the Combo Track?

This track is for students who wish to combine computer science with another discipline in the arts, humanities, social or natural sciences. A coherent selection of six upper-level courses is required: three from computer science and three from another discipline.

The courses should be planned with and approved by the student's CS Faculty Advisor by September 30th of the junior year. The six courses are typically 4000-level elective courses that would count towards the individual majors. Moreover, the six courses should have a common theme. The combination track is not available to those students who pursue double majors. Please complete the Combo Track Proposal form (https://mice.cs.columbia.edu/c/d.php?d=248) with your CS Faculty Advisor.

COURSE WAIVERS, IMPORTS, SUBSTITUTIONS, AND OTHER EXCEPTIONS

Can I waive a required CS course?

If you already know the material in one of the required courses, either through taking another course elsewhere or through work/project experience, it may be possible to waive out of that course. Please get in touch with your CS Faculty Advisor to discuss this. Your advisor will determine whether your prior knowledge is

sufficient to satisfy that course requirement. If your waiver request is approved, please forward the approval email to ug-advising@cs.columbia.edu (mailto:ug-advising@cs.columbia.edu) so we can maintain a record of the waiver.

Please note that there is no actual point value to a course waiver. When you waive out of a course, you will still need to take a replacement course to meet the minimum credit requirement for the major.

I have taken some CS courses at another school or plan to do so during my summer break. Can I transfer those credits into Columbia and count them toward my CS major?

First, contact your school's Advising Dean in order to get the actual credit/point value of the course transferred to Columbia. In order to count a non-Columbia course toward your CS major / minor / concentration, we require a minimum grade of B or higher. To then count the course & points toward your CS major requirements, you will need to import the course on Mice, and attach your syllabus and transcript. The corresponding Columbia CS faculty member will review the course you took and the CU equivalent to determine if the import can be approved. If you have obtained approval for a course import over email, you must forward that approval to CS Advising (mailto:ug-advising@cs.columbia.edu) so we have a record. Barnard students should forward any emailed approvals to their advisor to ensure their degree audit is updated.

Can I take electives that aren't on the approved list of track electives? How about classes outside of the CS department?

Yes, but any course outside of the pre-approved list will need to be reviewed and approved by your CS Faculty Advisor first. Please be sure to send all substitution approvals to CS Advising (mailto:ug-advising@cs.columbia.edu) so we can maintain a record.

Please note: all track courses must be 3000-level or higher.

Can I substitute any courses in the minor?

No substitutions are allowed for the CS minor. See: http://bulletin.engineering.columbia.edu/undergraduate-minors (http://bulletin.engineering.columbia.edu/undergraduate-minors)

More specifically:
No substitutions or changes of any kind from the approved minors are permitted (see lists below). No appeal for changes will be granted. Please note that the same courses may not be used to satisfy the requirements of more than one minor. No courses taken for pass/fail may be counted for a minor. Minimum GPA for the minor is 2.0. Departments outside the Engineering School have no responsibility for non-Engineering minors offered by Engineering.

COURSE PLANNING

Can I take Linear Algebra instead of Computational Linear Algebra?

Students following the old and the new curriculum may choose to take Linear Algebra (MATH 2010, APMA 3101, or APMA 2101) or Computational Linear Algebra (COMS 3251) to satisfy this requirement.

Can I count COMS 3136: Essential Data Structures for the Data Structures requirement?

No. You must either take “Data Structures in Java” (COMS 3134) or “Honors Data Structures and Algorithms” (COMS 3137) for fulfilling the Data Structures requirement.

Which CS courses will be offered each semester?

We can’t guarantee more than 3 months in advance that a certain course will be offered during a specific semester, since course scheduling often depends on instructor availability. We try to keep our schedules as consistent as possible. You can look back at course listings (http://www.cs.columbia.edu/education/courses/) from previous years to get a sense of what we offer each fall and spring. Please check the CU Directory of Classes (http://www.columbia.edu/cu/bulletin/uwb/) for the most updated course offerings.

How can I create a program plan for my major requirements?

We have degree progress checklists on our general undergraduate info page (http://www.cs.columbia.edu/education/undergraduate/). We recommend that you use these checklists to plan out your program and figure out which courses you still need to take to complete your major requirements. Feel free to send your checklist to CS Advising (mailto:ug-advising@cs.columbia.edu) to request a course plan review. Please keep in mind that CS courses are in very high demand, so you may not be able to get in to your top choices each semester. Your program plan should be flexible and include alternate options.

Which courses can I count as General Technical Electives? (SEAS only) *OLD CURRICULUM*

Can I take a course through CVN or one of the CS department's flipped/hybrid course offerings?

CVN courses are not available to undergraduate students. SEAS undergraduates are permitted to count up to 1 flipped/hybrid course (any course with a section H01) per semester toward their degree. Students in CC, GS, or Barnard cannot count flipped/hybrid courses toward their degrees.

My DAR is incorrectly listing the courses I am using toward my major requirements and/or saying I'm missing a requirement that I have definitely satisfied. What can I do?

Ignore the DAR. It is often incorrect for CS majors. Please confirm your program requirements with your CS Faculty Advisor or CS Advising. We use our own departmental degree progress checklist, not the DAR, to clear you for graduation.

I got a 'D' in a required course. Do I need to retake it?

If you are in SEAS, GS, or CC, we will grant a one-time-only exception to count one D toward your major requirements. If this is your second D, you will need to retake the course. Barnard does not allow for a D to be counted for any major or minor, including Computer Science.

Can I take a course Pass/Fail and count it towards my major requirements?

No.

Is studying abroad possible for CS majors?

Studying abroad is possible for CS majors but requires careful planning. It is often difficult to fulfill major requirements at many universities abroad, so care must be taken when choosing where to go. You will need to confirm with your CS Faculty Advisor that the courses you take while abroad will count towards your CS major at Columbia. Most students who study abroad feel that the rewards outweigh the logistical difficulties involved. If you are interested in studying abroad, it is best to start planning with your Advising Dean by the end of your first year.

Can I take COMS W3157 and CSEE W3827 at the same time?

This seems to be a matter of personal preference. Some students suggest the courses complement one another and are interesting to take together. Others prefer to take COMS W3157 first to be better prepared for the assembly language programming in the second half of CSEE W3827.

Can I double count a CS major course in my minor? *OLD CURRICULUM*

What is the difference between Data Structures and Honors Data Structures?

Honors Data Structures is worth 4 points and has a mandatory recitation session in addition to lectures. The honors course typically covers a few additional topics, such as data structures and algorithms in functional programming languages.

How can I get involved in research?

The CS Department holds a Research Project Fair during the first week of each fall and spring semester. You can attend this fair to explore available research opportunities in the department each semester. You can also reach out directly to faculty members with whom you are interested in working to inquire about research opportunities that they may have available in their lab. Current Research Opportunities (https://studentresearch.engineering.columbia.edu/content/current-research-opportunities) are posted online, these can be for credit, pay, or both.

How can I do a research project for credit or write a senior thesis?

First, you need to find a CS faculty member who will agree to serve as your research advisor. Then reach out to CS Advising (mailto:ug-advising@cs.columbia.edu), and we can give you the call numbers for the project or thesis courses (e.g. COMS W3902, COMS W3998, COMS W4901, COMS E6901). You can count a maximum of 6 points of research/project credit toward your major.

Do I have to take COMS 1006? What if I already know Python?

In general, only SEAS students must take 1006. SEAS students who can demonstrate that they are familiar with the course content can request to waive the course. However, they need to make up the 3 credit points by taking an extra 3000 or 4000 level CS course. Course waivers for COMS 1006 are on an exceptional basis, and are not guaranteed.

Can I take COMS 3134: Data Structures and COMS W3203: Discrete Math at the same time?

Yes.

I already know Java, can I go straight into COMS 3134?

Maybe, email Professor Paul Blaer (mailto:pblaer@cs.columbia.edu) first.

Can I take COMS 3134: Data Structures and COMS W3157: Advanced Programming at the same time?

It is recommended that you take Data Structures before taking Advanced Programming.

How can I find a tutor for a CS course?

Email CS Advising (mailto:ug-advising@cs.columbia.edu) and we can provide you with a list of available tutors. You may also ask your instructor/ TA for advice on tutors.

I already know Discrete Math. Can I skip COMS W3203 and take a higher level?

You will have the option to test out of the course. Tests are offered at the beginning of every semester. Please discuss this with Professor Ansaf Salleb-Aouissi (mailto:as2933@columbia.edu).

CAREER DEVELOPMENT

How do I find out about CS jobs and internships?

Check your email! Our Career Placement Officers (https://www.cs.columbia.edu/career/student-resources/) will send opportunities, announcements, and helpful hints from career@cs.columbia.edu (mailto:career@cs.columbia.edu). Additional opportunities are also advertised through the Center for Career Education (http://www.cce.columbia.edu/) (CCE).

What resources does the CS department provide to help students with their professional development?

Read all about it here! (http://www.cs.columbia.edu/career/student-resources/)

Questions? Email CS Advising! (mailto:ug-advising@cs.columbia.edu)

Updated 06/29/2023

Search

Find the COVID-19 Resource Guide here (https://news.columbia.edu/news/update-covid-19-university-guidance).

Computer Science at Columbia University

The computer science department advances the role of computing in our lives through research and prepares the next generation of computer scientists with its academic programs.
Find out more about the department here (/about).

Upcoming Events

NOV
03

Theory Lunch - Tamalika Mukherjee

Theory Lunch

Friday 12:30 pm

CS conference room (CSB453)

Tamalika Mukherjee, Columbia University

NOV
06

Academic Holiday (No Classes Held)

Monday 9:00 am

NOV
07

Election Day (University Holiday)

Tuesday 9:00 am

NOV

Causal Representation Learning and Optimal Intervention Design

08

Distinguished Lecture Series

Wednesday 11:40 am

CSB 451 CS Auditorium

Caroline Uhler, Massachusetts Institute of Technology

View All >> (https://www.cs.columbia.edu/calendar/)

In the News

The Computer Scientist Who Hunts for Costly Bugs in Crypto Code (https://www.cs.columbia.edu/2023/the-computer-scientist-who-hunts-for-costly-bugs-in-crypto-code/?redirect=0c99d322ac4a621f0cb1bf31ffea64ba)
(Ronghui Gu)

MIT Technology Review

(https://www.cs.columbia.edu/2023/the-computer-scientist-who-hunts-for-costly-bugs-in-crypto-code/?redirect=0c99d322ac4a621f0cb1bf31ffea64ba)

This Self-Aware Robot Taught Itself How to Control Its Own Body (https://www.cs.columbia.edu/2022/this-self-aware-robot-taught-itself-how-to-control-its-own-body/?redirect=2275dd724f7cd014090b808bf9f6c3c9)
(Carl Vondrick)

YAHOO!

(https://www.cs.columbia.edu/2022/this-self-aware-robot-taught-itself-how-

to-control-its-own-body/?
redirect=2275dd724f7cd014090b808bf9f6c3c9)

Columbia Awarded $185 Million in Patent-Infringement Lawsuit (https://www.cs.columbia.edu/2022/columbia-awarded-185-million-in-patent-infringement-lawsuit/?redirect=00ff51e39830d7b7a1521ed64b5174b7)
(Salvatore Stolfo)

(https://www.cs.columbia.edu/2022/columbia-awarded-185-million-in-patent-infringement-lawsuit/?
redirect=00ff51e39830d7b7a1521ed64b5174b7)

Mathematicians Transcend Geometric Theory of Motion (https://www.cs.columbia.edu/2021/mathematicians-transcend-geometric-theory-of-motion/?redirect=5673fa940ca6c0bede69f18e4810731e)
(Andrew Blumberg)

(https://www.cs.columbia.edu/2021/mathematicians-transcend-geometric-theory-of-
motion/?
redirect=5673fa940ca6c0bede69f18e4810731e)

Auto-scans of phones would violate data privacy, say security experts (https://www.cs.columbia.edu/2021/auto-scans-of-phones-would-violate-data-privacy-say-security-experts/?redirect=2ed01b3c9d786fd4c2557ead92be01b1)
(Steven Bellovin)

(https://www.cs.columbia.edu/2021/auto-scans-of-phones-would-violate-
data-privacy-say-security-experts/?
redirect=2ed01b3c9d786fd4c2557ead92be01b1)

Press Mentions

TIME

How The Morning Show Rewrites the Notorious 2014 Sony Hack (https://www.cs.columbia.edu/2023/how-the-morning-show-rewrites-the-notorious-2014-sony-hack/?redirect=01cb778274fb38a72826afd84056ab79)
(Suman Jana)

(https://www.cs.columbia.edu/2023/how-the-morning-show-rewrites-the-notorious-2014-sony-hack/?redirect=01cb778274fb38a72826afd84056ab79)

The Washington Post

Your Résumé Isn't the Only Thing Popular Job Sites Evaluate (https://www.cs.columbia.edu/2023/your-resume-isnt-the-only-thing-popular-job-sites-evaluate/?redirect=f25fb139a595563c5d6b2ebf335c354a)

(https://www.cs.columbia.edu/2023/your-resume-isnt-the-only-thing-popular-job-sites-evaluate/?redirect=f25fb139a595563c5d6b2ebf335c354a)

SCIENTIFIC AMERICAN

Yes, AI Models Can Get Worse over Time (https://www.cs.columbia.edu/2023/yes-ai-models-can-get-worse-over-time/?redirect=bd00821a18c6554527db1cab787c273b)
(Kathleen McKeown,Vishal Misra)

(https://www.cs.columbia.edu/2023/yes-ai-models-can-get-worse-over-

time/?
redirect=bd00821a18c6554527db1cab787c273b)

Here's how AI is being used to unlock secrets still hidden in the human brain (https://www.cs.columbia.edu/2023/heres-how-ai-is-being-used-to-unlock-secrets-still-hidden-in-the-human-brain/?…
(Richard Zemel)

(https://www.cs.columbia.edu/2023/heres-how-ai-is-being-used-to-unlock-secrets-still-hidden-in-the-human-brain/?
redirect=4055e95b510974c140a3520975491b7)

Does AI in NYC need restrictions? Officials hold closed-door meeting to discuss (https://www.cs.columbia.edu/2023/does-ai-in-nyc-need-restrictions-officials-hold-closed-door-meeting-to-discuss…
(Jeannette Wing)

(https://www.cs.columbia.edu/2023/does-ai-in-nyc-need-restrictions-officials-hold-closed-door-meeting-to-discuss/?
redirect=557ac481d534504ff10bb8a2246504e8)

Apply

Columbia Undergraduate Admissions (SEAS) (http://undergrad.admissions.columbia.edu/learn/academiclife/engineering)

M.S./Ph.D. Application (https://apply.engineering.columbia.edu/apply/)

MS Express Application for Current Undergrads (http://gradengineering.columbia.edu/ms-express-application-columbia-university-undergraduates)

CS@CU MS Bridge Program in Computer Science (https://www.cs.columbia.edu/ms-bridge/)

(https://www.columbia.edu)

Links

Map (https://www.cs.columbia.edu/wp-content/uploads/2022/07/morningsidemap_2015aug-7.pdf)

School of Engineering And Applied Science (http://engineering.columbia.edu/)

Data Science Institute (http://datascience.columbia.edu/)

CRF (http://www.cs.columbia.edu/crf)

MICE (https://mice.cs.columbia.edu)

ASCENT Program (https://www.cs.columbia.edu/ascent/)

Copyright FAQ (https://www.cs.columbia.edu/resources/copyright/)

CS Advising (https://www.cs.columbia.edu/academic-advising/)

Contact

Computer Science Department
500 West 120 Street, Room 450
MC0401
New York, New York 10027

Phone: +1-212-853-8400
Fax: +1-212-853-8440

Contact Us (/contact)

Directions (https://www.cs.columbia.edu/resources/directions/)

Webmaster (mailto:webmaster@cs.columbia.edu)
Privacy Policy (https://www.cs.columbia.edu/privacy-policy/)