

Registration for the Spring 2023 semester begins on Monday, November 14<sup>th</sup>. You should be receiving an email from the Registrar with your particular schedule. In order to ensure that you get a seat in a class, it is extremely important that you register as soon as possible. Due to the current budget situation we are forced to reduce the number of sections we will be offering. Once classes fill over allies will **not** be given. This applies to both undergraduate and graduate students graduating seniors or not. ***If you wait, you may find that the classes you want have been closed or cancelled due to low enrollment.***

***If you are a graduating senior, you should already know what classes you need to graduate. Make sure to register for them immediately as the excuse "I am a graduating senior" will not be accepted and you will have to postpone your graduation. Similarly, pay your bills on time. We will not make exceptions for students who have been dropped from their courses because they have not paid their bills. Do not place yourself in an uncomfortable situation. If you do not earn a C (not C-) or better in a prerequisite course you will be dropped and may not have a chance to register for another course.***

It is highly recommended that majors see a Deputy Chair each semester to plan out their schedule for the next semester.

You may meet with the advisors during their office hours or make an appointment via email.

- Undergraduate Day Deputy Chair – Professor Ira Rudowsky [Rudowsky@brooklyn.cuny.edu](mailto:Rudowsky@brooklyn.cuny.edu)
- Undergraduate SGS Deputy Chair – Professor Joseph Thurm – [thurm@sci.brooklyn.cuny.edu](mailto:thurm@sci.brooklyn.cuny.edu)
- Graduate Deputy Chair – Professor Jim Cox – [cox@sci.brooklyn.cuny.edu](mailto:cox@sci.brooklyn.cuny.edu)
- Director of BS in Information Systems – Professor Ira Rudowsky – [rudowsky@brooklyn.cuny.edu](mailto:rudowsky@brooklyn.cuny.edu)
- CUNY 2x Advisor – Ms. Fendja Larivaux – [Fendja.Larivaux@brooklyn.cuny.edu](mailto:Fendja.Larivaux@brooklyn.cuny.edu)

At this time, to the best of our knowledge classes will be completely **in person** or **hybrid** as they were before the Covid-19 pandemic. Hybrid classes may meet one or more times in person and/or have exams on campus.

**IMPORTANT NOTE:** If classes are held online, for pedagogical reasons, some instructors will require all students to have their cameras on during both lectures and examinations. Face-to-face teaching is the only way to have an effective learning process. Students who do not wish to use their cameras should choose another section. If on any given day, there is a reason why you cannot turn your camera on, you will need to contact the instructor in advance.

Instructors who require cameras will have the following listed on the CUNYFirst schedule:

***Cameras will be required. For accommodation contact the instructor***

**When writing to an advisor be sure to attach a copy of your Brooklyn College Transcript (available from CUNYFirst). We do not use DegreeWorks when advising students.**

## **The Minor in Data Science**

Data Science has become an important field of study combining elements of computer science, mathematics, statistics, and artificial intelligence, with applications to social science data analytics. The Brooklyn College Minor, under the joint auspices of the Departments of CIS and Mathematics, provides recognition to students who may want to study this new field. Any student at the College may choose to minor in Data Science.

Data Science often uses the Python programming language and the R database system. These are included in the minor. The Minor also requires courses in Calculus (already required by the majors in CIS and Math) and in Linear Algebra, a mathematics tool that is useful in solving analytic problems, including many in the social sciences. A new practical applied course in Statistics has been developed for the minor. A new Data Science Algorithms course is also included. Artificial Intelligence is represented by a CIS elective in Machine Learning, which forms the core of AI methodology in the area of expanding the capabilities of practical computer systems and applications.

The minor requires 18-19 credits.

Prerequisite requirements for the minor: MATH 1201, 1206, 2101; CISC 1215 Courses presented for the major in CIS may also be used to satisfy the minor in data science.

### **DATA SCIENCE MINOR REQUIREMENTS**

All of the following:

CISC 3225 and 3440.

MATH 4531.

Either MATH 2001 and MATH 3501, or CISC 2210 and MATH 2501.

One additional course, chosen from among the following:

BUSN 2200 or 4400W

CISC 1410 or 3130

FINC 3377

ECON 2200 or 3370 or 4422 or 4400W

MATH 3601 or 4101 or 4501

PHIL 3203 or 3204 or 3423

POLS 3014W or 3421 or 3423

PSYC 3510 or 3520 or 3530 or 3580 or 4400

SOCY 3506 or 3604

Courses presented for the major in CIS may also be used to satisfy the minor in data science.

We will be offering, for the fourth time:

**CISC 1215 - INTRO INTRO PRGM USING PYTHON****U1****SUN****1:00PM-4:00PM**

2 hours lecture, 2 hours lab; 3 credits

The Python programming language. Algorithms, computers and programs. Writing, debugging, and testing programs. Loops and conditional control structures. Function definition and parameter passing. Strings, Lists, and Tuples. Sorting, searching and other basic algorithms. Input and output. Programming applications selected from various areas. Python tools. History and basic concepts of computer science.

**The course has no prerequisites and is open to all students.**

1. In order to assist you in long term planning, a *tentative* schedule for the next three years is posted at <http://www.brooklyn.cuny.edu/web/academics/schools/naturalsciences/departments/computers/undergraduate/registration-advice.php>. This schedule is subject to enrollments.
2. Flowcharts for the majors as well as our *Advice to Undergraduates* brochures are available online at <http://www.brooklyn.cuny.edu/web/academics/schools/naturalsciences/departments/computers/undergraduate/advice.php>
3. Checklists which may be used to plan your major requirements can be found here: <http://www.brooklyn.cuny.edu/web/academics/schools/naturalsciences/departments/computers/undergraduate/registration-advice.php>
4. **The registration system at Brooklyn College enforces prerequisites.** We almost never waive prerequisites. If you there is an extraordinary reason why you feel a prerequisite should be waived, please see the **instructor** of the course before you register and if the instructor approves have an email sent to me, and only then will a decision be made. Also, if your courses from another school have not yet been evaluated and posted to your transcript, please make sure to contact one of the Deputy Chairs as early as possible for advisement and possible waiver of prerequisites. Once a course is closed overtallies **will not be considered** and you will need to make alternative arrangements. As mentioned above we anticipate that classes will quickly fill and additional seats will **NOT** be available. The department will not approve an ePermit at any community colleges. Also note that you must present 24 credits of Advanced CIS electives (courses numbered 2000 or higher) with a grade of C (not C-) at Brooklyn College. Transfer credits/ePermits do not fulfil this requirement. ePermits are not approved until two weeks before the beginning of the semester and you must first show an advisor that you have completed the 24 credit residency requirement. **Plan ahead and register early!**
5. **Shortly before the beginning of the semester the Registrar will drop all students who do not have the proper prerequisites.** At that time, if the class is full, you will not be able to register for the class, even if the instructor waives the prerequisites.
6. Note that you must earn a C or higher in all CIS prerequisites to any CIS course. If you earn a C- or below in a prerequisite course, you **must** take the course over before going on to the next

course. (However, if you earn below a C in a Math prerequisite for a CIS course, you may still register for the next CIS course, although the Math department may require a minimum grade for registration in a subsequent Math course.) Note also that the C requirement applies only to a prerequisite and to the 24 credits of advanced electives that must be taken at Brooklyn College. Thus, for example, you need not repeat CISC 3220 if you earn less than a C since CISC 3220 is not a prerequisite for another CIS course. Similarly, you need not repeat CISC 3320 if you earn less than a C unless you want to take CISC 4330 for which CISC 3320 is a prerequisite.) Transfer students should be especially careful that they present 24 credits of advanced electives in the major (courses numbered CISC 2000 or higher) taken at Brooklyn College with a grade of C or better.

Note that the Math department allows CIS students who received a D in MATH 1206 to register for MATH 2501, but will not allow a student who received below C- in MATH 1201 to register for MATH 1206.

7. **Undergraduate advanced** electives being offered in the Spring include: CISC 2210, CISC 2531, CISC 2590, CISC 2820W, CISC 3115, CISC 3130, CISC 3140, CISC 3142, CISC 3160, CISC 3171, CISC 3220, CISC 3230, CISC 3225, CISC 3310, CISC 3320, CISC 3350, CISC 3410, CISC 3610, CISC 3620, CISC 3650, CISC 3667, CISC 3810, CISC 4331, CISC 4900, CISC 4905, and CISC 5001-CISC 5003.
8. Students in CISC 1001 or CISC 1003 or CISC 1050 or CISC 1590 or CISC 2531 or CISC 2820W, who have not taken CISC 1115 and wish to major or minor in CIS should register for CISC 1115 which teaches programming in Java. Most advanced CIS courses present their concepts using the Java programming language. **If you have had a programming course in a language other than Java and do not know Java please contact the Chairperson.** (Be sure to include a copy of your transcript).
9. Students who have taken CISC 1001 or CISC 1003 or CISC 1000 or CISC 1110 or CISC 1115 or CISC 1030 or CISC 1035 or CISC 1530 or CISC 1050 or CISC 1590 or CISC 2531 or CISC 2820W, **who do not wish to major in CIS** and:
  - who want proficiency in current application tools should register for **CISC 1050**.
  - who are interested in business applications of the Internet should register for **CISC 1530**.
  - who want to learn about multimedia computing should register for **CISC 1600**.
  - who are interested in how information systems operate in organizations should register for **CISC 1590**.
  - who are interested in media and business should register for **CISC 1597**.
  - who are interested in business applications of computing should register for **CISC 2531**.
10. Students who have completed CISC 1115 should register for CISC 3115 and can also register for either CISC 2210 (assuming you have taken MATH 1011 or have placed in MATH 1201, or CISC 2820W) (assuming you have taken ENGL 1012).

11. Students currently in CISC 3115 must register for CISC 3130. It is important to take CISC 3130 as soon as possible after CISC 3115 for two reasons: first, you want your knowledge of Java to be as fresh and thorough as possible when you take CISC 3130, and, second, most other CIS courses have CISC 3130 as a prerequisite, so taking CISC 3130 enables you to take a wide variety of other courses in the future. You may also wish to take CISC 3310 along with CISC 3130 if you have taken CISC 2210.
12. Students currently in CISC 2210 should take CISC 3310. Students, who have already passed CISC 2210, CISC 3110 or CISC 3115 and CISC 3130, all with a C or above, should take CISC 3310, CISC 3310 and/or CISC 3220 or CISC 3230. If you've taken CISC 3310, take CISC 3140 and/or CISC 3150.
13. CISC 2210 is required for the major and introduces important mathematics frequently used in computer science. The prerequisite for CISC 2210 (Discrete Structures) includes MATH 1011 or assignment to MATH 1201 on the basis of the Brooklyn College Mathematics Placement Test. It also requires either CISC 1110 or CISC 1180 or CISC 1115 or CISC 1170.
14. CISC 1050, Microcomputers in Business and Administration, teaches the use of word processing (Microsoft Word), spreadsheets (Excel), databases (Access), and presentation software (PowerPoint) on personal computers. There is no prerequisite for CISC 1050. This elective course may be of interest to all CIS students. This course will now be taught using Windows 10 and Microsoft Office 2019. Students can download the software from the CUNY Portal.
15. CISC 1530 Electronic Commerce is being given in conjunction with the Department of Business and Finance Management. It is a survey of practices in doing business online over the Web. The prerequisite is either CORC 1312 or Core 5.1 or CISC 1000 or CISC 1110 or CISC 1115. It is open to CIS majors and non-majors.
16. CISC 1600 Introduction to Multimedia Computing is a course for majors or non-majors. It has no prerequisites.
17. All undergraduate students who entered or re-entered Brooklyn College in Fall 2001 or later are required to take a writing-intensive course (indicated with a W after the number). In CIS, you should register for CISC 2820W, Computers and Ethics. CISC 2820W is required for the CIS major. ENGL 1012 is a prerequisite for all W courses.
18. CISC 4900 or CISC 5001 is required of all CIS majors. They both require department permission for registration. CISC 4900 requires completion of a major computer science project (involving approximately 15 hours/week of work). Students may find their own project, within or outside the school. Many students use projects at work for their CISC 4900 project. Paid CISC 4900 internships may be available for 50 students in the Summer 2023 semester.

Students who are unable to find a project and are seniors will be assigned a project and must arrange their schedule so that they have two complete days a week available for project-related activities.

Students who wish to receive permission to register for CISC 4900 should contact Professor Chuang, (email: [chuang@sci.brooklyn.cuny.edu](mailto:chuang@sci.brooklyn.cuny.edu)). Students who have already taken CISC 4900 may take CISC 4905 to continue their project or do an additional project. **Please do not wait**

**until the end of registration to contact Professor Chuang. The chair cannot give permission for this class.**

19. CISC 5001-CISC 5003 are honors courses that are only open to superior CIS majors. It involves doing a research project under the supervision of a senior faculty member. Students need permission from the faculty member and from the Chair of the Department. *Prior* to obtaining permission from the Chair a written proposal, in consultation with the sponsoring faculty member, must be submitted to and approved by the Honor Course Committee. Faculty members who have sponsored CISC 5001 projects in the past are Profs. Arnow, Bar-Noy, Chen, Kletenik, Halevi, Langsam, Levitan, Mandel, Raphan, Sokol, and Weiss. **Proposals must be submitted no later than 2 weeks before the beginning of the semester. Proposals that are submitted later, may not be approved.**
  
20. A number of courses are offered jointly with other departments. Although most are not required for the CIS major, majors may gain a lot of useful knowledge and skills from these courses. Some of these are required for the Information Systems major.
  - **CISC 1530** (Electronic Commerce, also BUSN 3120).
  - **CISC 1580W** (Computer Management Games, also BUSN 4202W).
  - **CISC 1590** (Management Information Systems, also BUSN 3420) is a course that surveys how computers are used in large organizations for organizing and retrieving information.
  - **CISC 1597** (Media and Business, also BUSN 3110 and TVRA 3537) is a course that surveys new media such as the Web and how it is used in Business applications.
  - **CISC 2531** (Operations Management, also BUSN 3430 is offered jointly with the Department of Business and Finance Management. It teaches how to manage the operations of a company using computers. Students who want to go into commercial computing will find this course very useful.
  - **CISC 2820W** (Computers and Ethics, also PHIL 3318W).
  
21. The CIS Department offers a **Minor in Multimedia Computing**, for which computer science (and other) majors are eligible. The minor requires CISC 1110 or CISC 1180 or CISC 1115, CISC 1600, CISC 3110 or CISC 3115, CISC 3120, CISC 3130, CISC 3620 or CISC 3630, and two courses chosen from among CISC 3610, CISC 3620, CISC 3630, CISC 3650, CISC 3660, CISC 3665, and CISC 4610. You can have a major in computer science with a minor in multimedia computing if you satisfy the major requirements and take the above courses. Courses presented for the major in computer and information science may also be used to satisfy the minor in multimedia computing. Students who have begun their studies in Fall 2017 will take CISC 1115, 3115 instead of 1110, 3110 and 3120.
  
22. The CIS Department offers a **Minor in Cognitive Science** together with the Departments of Philosophy and Psychology. The minor consists of CISC 1110 or CISC 1115, PHIL 3422, PSYC 1000, PSYC 3530, and a choice of one course from each of the following groups: Group A: PHIL 3123, PHIL 3410, PHIL 3401, PHIL 3420 or PHIL 3601. Group B: CISC 3410 or CISC 1410; or PHIL 3423, or PSYC 3580. The minor can be taken together with the CIS major and deals with the issue of "What is

cognition and how can it be created artificially?”

23. Advanced (senior year) students with good records can also consider taking a graduate course offered by the department, as an advanced elective, if they satisfy the prerequisite conditions. This requires the approval of both the department and the Academic Advisement Center. For information, contact Professor Jim Cox – [cox@sci.brooklyn.cuny.edu](mailto:cox@sci.brooklyn.cuny.edu).
24. Urge your non-major friends who have not taken CIS classes to take CISC 1003 *Exploring Robotics*, to satisfy a Brooklyn College Pathways requirement. See the Schedule of Classes for details.
25. You are welcome to visit our departmental website for all sorts of good stuff at: <http://www.sci.brooklyn.cuny.edu/cis>. You will be able to link to the other items from this page.
26. You can also join the CIS department email list by clicking on the following link to get regular email about courses, jobs and other information of interest to CIS students: <http://www.sci.brooklyn.cuny.edu/cis/majordomo?cistalk>