

# COMPUTER SCIENCE

## Integrated Undergrad-Grad Programs Integrated B.S. in Computer Science and M.S. in Computer Science

This Integrated Undergraduate/Graduate (IUG) degree program combines the B.S in Computer Science with the M.S. in Computer Science offered at the following campuses:

### Undergraduate Degree

- Abington
- Harrisburg

### Graduate Degree

- Harrisburg

The graduate portion of this IUG is currently offered as face-to-face residential instruction. While the undergraduate curriculum for this IUG may be completed at multiple campuses, the ease and feasibility of completing the integrated program may be heavily dependent upon the location of the graduate instruction. Please discuss the feasibility of completing the IUG with a representative for the graduate program before beginning the application process.

Requirements listed here are in addition to requirements listed in GCAC-210 Integrated Undergraduate-Graduate (IUG) Degree Programs (<https://gradschool.psu.edu/graduate-education-policies/gcac/gcac-200/gcac-210-integrated-undergraduate-graduate-degree-programs/>).

The Computer Science program offers a limited number of academically superior Bachelor of Science candidates the opportunity to enroll in an integrated, continuous program of study leading to both the Bachelor of Science in Computer Science and the Master of Science in Computer Science. The ability to coordinate as well as concurrently pursue the two degree programs enables the student to earn the two degrees in five years.

Students in the IUG program must satisfy the degree requirements for both Bachelor of Science and Master of Science degrees. However, the total course load is reduced due to the maximum of 12 credits that can count towards both degrees.

The first two years of the IUG program are identical to the first two years of the Bachelor of Science program. The third and fourth years of the IUG program differ from those of the Bachelor of Science program due to the courses that count toward the Master of Science degree requirements. Student performance will be monitored on an on-going basis. In addition, a formal evaluation of student academic performance will be performed when the student has completed 100 to 105 credits, which is at the end of the first semester of the fourth undergraduate year for a typical student in the program. Students who have not maintained a 3.0 GPA in their Math and Computer Science courses will be put on probationary status with respect to the IUG program. Their ability to continue in the IUG program will be based on their academic performance in the last semester of their fourth undergraduate year.

As part of the review in the fourth undergraduate year, students will be advised about the paper option and thesis option in the graduate program. Students intending to pursue the thesis option would be advised to do so only if they have been doing very well in the program and are in no danger of not being able to continue into the fifth year.

A minimum grade point average of 3.0 must be earned in all math and computer science course work that is applied toward the graduate degree. This includes any courses that count toward both the undergraduate and graduate degrees, as well as all courses taken during the fifth year.

Students who successfully complete the courses listed in the recommended schedule will satisfy the requirements for the Bachelor of Science degree by the end of their fourth year.

### Admission Requirements

Applicants apply for admission to the program via the Graduate School application for admission (<https://gradschool.psu.edu/graduate-admissions/how-to-apply/>). Requirements listed here are in addition to Graduate Council policies listed under GCAC-300 Admissions Policies (<https://gradschool.psu.edu/graduate-education-policies/>).

To initiate the application process, students must submit an Integrated Undergraduate-Graduate (IUG) Degree in Computer Science Application Form, a transcript, and a faculty recommendation, in addition to applying for admission to the Graduate School (<http://gradschool.psu.edu/prospective-students/how-to-apply/>).

Students must apply to the program via the Graduate School application for admission (<http://www.gradschool.psu.edu/prospective-students/how-to-apply/>), and must meet all the admission requirements of the Graduate School and the Computer Science graduate program for the Master of Science degree, listed on the Admission Requirements tab. Before applying to the Graduate School, students must have completed entrance to their undergraduate major and have completed no less than 60 credits. Students must be admitted no later than the end of the second week of the semester preceding the semester of expected conferral of the undergraduate degree. Transfer students must have completed at least 15 credits at Penn State to enroll in an IUG.

In consultation with an adviser, students must prepare a plan of study appropriate to this integrated program, and must present their plan of study to the head of the graduate program or the appropriate committee overseeing the integrated program prior to being admitted to the program. The plan should cover the entire time period of the integrated program, and it should be reviewed periodically with an adviser as the student advances through the program.

For consideration for acceptance into the program, students must have completed and earned a minimum grade point average of 3.0 in the following Computer Science and Mathematics courses:

Code	Title	Credits
MATH 140	Calculus With Analytic Geometry I	4
MATH 141	Calculus with Analytic Geometry II	4
MATH 220	Matrices	2-3
CMPSC 121	Introduction to Programming Techniques	3
	or CMPSC 131 Programming and Computation I: Fundamentals	
CMPSC 122	Intermediate Programming	3
	or CMPSC 132 Programming and Computation II: Data Structures	
CMPSC 360	Discrete Mathematics for Computer Science	3

Student applications will be evaluated based on their overall academic performance, in addition to the above requirements. In all cases, admission to the program will be at the discretion of the Graduate Admissions Committee in Computer Science.

### **Degree Requirements**

Students must fulfill all degree requirements for each degree in order to be awarded that degree, subject to the double-counting of credits as outlined below. Degree requirements for the Bachelor of Science in Computer Science are listed in the Undergraduate Bulletin (<http://bulletins.psu.edu/undergraduate/>). Degree requirements for the Master of Science in Computer Science are listed on the Degree Requirements tab. Students must sequence their courses so all undergraduate degree requirements are fulfilled before taking courses to count solely towards the graduate degree. Students are expected to complete the undergraduate degree requirements within the typical time to degree for the undergraduate major. In the semester in which the undergraduate degree requirements will be completed, IUG students must apply to graduate, and the undergraduate degree should be conferred at the next appropriate Commencement. If students accepted into the IUG program are unable to complete the M.S. degree, they are still eligible to receive their undergraduate degree if all the undergraduate degree requirements have been satisfied.

Up to 12 credits may be double-counted towards the degree requirements for both the graduate and undergraduate degrees; a minimum of 50% of the double-counted credits must be at the 500 or 800 level. Independent study courses and credits associated with the culminating experience for the graduate degree cannot be double-counted.