COLLEGE OF INTEGRATIVE SCIENCES MAJOR

ADMISSION TO THE MAJOR

Students must apply for admission to the College of Integrative Sciences (CIS). Students must download and complete application materials (https://www.wesleyan.edu/cis/application.html), which include:

- A description of the proposed research activity
- A letter of reference from the proposed faculty mentor

Normally, the deadline for applications is the Friday immediately prior to spring break. Please allow time to prepare your project description prior to the application deadline. If you miss the deadline, contact the director of the CIS to submit your application.

Students are eligible for the CIS linked major if they have chosen a Natural Sciences and Mathematics (NSM) major and are enrolled in at least one semester of the Research Frontiers Seminar (CIS221 or CIS222). Students should have an interest in interdisciplinary scientific research.

MAJOR REQUIREMENTS

In addition to majoring in one department or program in NSM, students in the CIS take the following courses for a minimum of six and a maximum of nine credits.

OUTLINE OF THE LINKED MAJOR

- CIS221/CIS222 (.5 credits/semester). This is a sophomore-level course designed to introduce students to ongoing research projects in the NSM division. All students interested in applying to the college are required to attend the course for at least one semester. The course involves weekly visits from different faculty members and their students from across the division to discuss their research programs. Potential CIS students are encouraged to take the course as early as their first year or possibly during their sophomore year to get exposure to the variety of research conducted in the NSM division.

- Two interdisciplinary electives (2 credits). These courses should provide core skills from a discipline outside the primary major. Accordingly, these courses are typically hosted by a department other than the student’s foundational major. The course catalog contains a list of courses identified as interdisciplinary and appropriate for the college. Courses not on this list may potentially be used to fulfill elective requirements, based on consultation with the CIS academic advisor. In general, the specific electives used to fulfill this requirement must be determined in consultation with a student’s CIS linked-major advisor.

- Two semesters of a journal club or seminar (.5–1 credit). The two journal clubs/seminar series must be in different disciplines. CIS221/CIS222 cannot be used to fulfill this requirement.

- Senior capstone colloquium (.5 credits). Two semesters of the capstone colloquium CIS321/CIS322 are required. In this course, students learn about and discuss inherently integrative scientific topics, such as the Drake Equation. The capstone course also focuses on developing writing and presentation skills that will be useful going forward. Senior CIS majors present their research to their peers, junior CIS majors, and potential CIS majors.

- Research (2–4 credits). Research credits normally come by enrolling in Advanced Research Seminar or Senior Thesis Tutorial. Two credits of research is the minimum requirement. Four research credits are achieved by taking research for a full credit each semester in the junior year and the senior year. Students are strongly encouraged to write a thesis based on their research during their senior year. In unusual cases, the two-credit minimum can also be satisfied through (paid) credits for summer research.

- One summer research experience. All students are required to spend at least one summer performing research (https://www.wesleyan.edu/cis/summer-program/), preferably the summer after their sophomore year, immediately following acceptance to the college. Students are supported during the summer by a CIS fellowship (unless doing the research for credit).

STUDENT LEARNING GOALS

- Have a breadth of knowledge in a variety of scientific disciplines.
- Acquire and apply skills related to scientific research: develop a testable hypothesis and formulate research questions, evaluate experimental approaches, troubleshoot, analyze data, synthesize conclusions.
- Apply quantitative and creative tools to address challenges in science and technology.
- Use the primary literature to search for and understand publications from the primary scientific literature.
- Communicate scientifically in writing (e.g., research proposal and final paper), visuals (e.g., scientific poster, slideshow), and oral presentations.

RELATED PROGRAMS

Students are eligible for the CIS linked major if they have chosen a Natural Sciences and Mathematics (NSM) major. Students should have an interest in interdisciplinary scientific research. There are many established and emerging fields of study that lie at the intersection of two or more disciplines. Examples of pathways to completing the CIS major that include synergies across departments are available on the CIS web page (https://www.wesleyan.edu/cis/about/pathways.html).

HONORS

Students pursuing a CIS linked major can pursue a senior thesis in either CIS or the department of their linked major. Honors in CIS requires completion of a senior thesis. Three thesis readers will evaluate the thesis work. One reader must be your research mentor, and the readers cannot all be from the same department.

CAPSTONE EXPERIENCE

Research is a cornerstone of the CIS major. Two credits of research is the minimum requirement, as well as participating in at least one summer research program (https://www.wesleyan.edu/cis/summer-program/).