# Computer Science and Physics

Department Information

- **Department Web Site:**
  www.ndsu.edu/cs/ (http://www.ndsu.edu/cs/)
- **Credential Offered:**
  B.S.; B.A.
- **Official Program Curriculum:**
  catalog.ndsu.edu/undergraduate/program-curriculum/computer-science-physics/ (http://catalog.ndsu.edu/undergraduate/program-curriculum/computer-science-physics/)

Since the dawn of the computer age, Computer Science and Physics have been closely intertwined disciplines. Computational physics is now an established branch of physics, complementing experiment and theory, that develops and applies computer modeling approaches to the solution of a wide range of physical problems. At the same time, software development (e.g., for graphics and data mining applications) is increasingly inspired by physics. Computer modeling, including simulation and numerical analysis, is an essential component of modern research and development. Correspondingly, the demand is growing for scientists with multidisciplinary training that combines fundamental knowledge of physics and computer science with practical skills in programming and computation.

The Computer Science and Physics dual major program is designed to allow students to complete one degree and the core requirements of both majors. Graduates of the program will have a unique background qualifying them to work in industry or to pursue graduate studies in physics, computer science, engineering, or other technical fields.

## Sample Program Guide

IMPORTANT DISCLAIMER: A Sample Program Guide provides an unofficial guide of program requirements and should be used by prospective students who are considering attending NDSU in the future. It is NOT an official curriculum and should NOT be used by current NDSU students for official degree planning purposes. Note that the official curriculum used by current NDSU students can vary from the Sample Program Guide due to a variety of factors such as, but not limited to, start year, education goals, transfer credit, and course availability.

To ensure proper program completion, enrolled students should utilize Degree Map (https://www.ndsu.edu/registrar/degreemap/) and Schedule Planner (https://www.ndsu.edu/onestop/degree-map-and-planning/) in Campus Connection and consult regularly with their academic advisor to ensure requirements are being met.

| Freshman | | | |
|---|---|---|---|
| **Fall** | **Credits** | **Spring** | **Credits** |
| PHYS 171 | 1 | ENGL 120 | 3 |
| MATH 165 | 4 | PHYS 251 & 251L | 5 |
| CSCI 160 | 4 | MATH 129 or 329 | 3 |
| CSCI 189 | 1 | MATH 166 | 4 |
| ENGL 110 (Based on placement) | 3 | CSCI 161 | 4 |
| Wellness Gen Ed | 2 | | |
| | **15** | | **19** |
| **Sophomore** | | | |
| **Fall** | **Credits** | **Spring** | **Credits** |
| PHYS 252 & 252L | 5 | PHYS 350 | 3 |
| MATH 265 | 4 | MATH 266 | 3 |
| CSCI 213 | 3 | COMM 110 | 3 |
| MATH 270 | 3 | CSCI 336 | 3 |
| | | Humanities/Fine Arts Gen Ed | 3 |
| | **15** | | **15** |

| Junior | | | |
|---|---|---|---|
| **Fall** | **Credits** | **Spring** | **Credits** |
| PHYS 360 | 3 | PHYS 370 | 3 |
| CSCI 366 | 3 | ENGL 324 | 3 |
| PHYS 355 | 3 | PHYS 361 | 3 |
| Social/Behavioral Sci and Cult Diversity Gen Ed | 3 | CSCI 372 | 3 |
| Humanities/Fine Arts & Global Perspectives Gen Ed | 3 | CSCI 374 | 3 |
| | **15** | | **15** |
| **Senior** | | | |
| **Fall** | **Credits** | **Spring** | **Credits** |
| PHYS 462 | 3 | PHYS 489 | 2 |
| Physics Elective | 3 | CSCI 467 | 3 |
| CSCI 474 | 3 | PHYS 486 | 3 |
| CSCI 4XX Computer Science Elective | 3 | CSCI 313 | 3 |
| PHYS 485 | 3 | or CSCI 4XX Computer Science Elective | |
| PHYS 488 | 1 | Humanities/Fine Arts Gen Ed | 3 |
| | | Social/Behavioral Science Gen Ed | 3 |
| | **16** | | **17** |

**Total Credits: 127**