

Computer Science and Physics

Department Information

- **Department Location:**
Quentin Burdick Building or South Engineering
- **Department Web Site:**
www.ndsu.edu/cs/
- **Credential Offered:**
B.S.; B.A.
- **Official Program Curriculum:**
bulletin.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 double major program is designed to allow students to complete the core requirements of both majors in a four-year degree. 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.

Plan of Study

Please note this is a sample plan of study and not an official curriculum. Actual student schedules for each semester will vary depending on start year, education goals, applicable transfer credit, and course availability. Students are encouraged to work with their academic advisor on a regular basis to review degree progress and customize an individual plan of study.

Freshman			
Fall	Credits	Spring	Credits
PHYS 171	1	ENGL 120	3
MATH 165	4	PHYS 251 & 251L	5
CSCI 160	4	PHYS 251R	1
CSCI 189	1	MATH 129 or 329	3
ENGL 110 (Based on placement)	4	MATH 166	4
Wellness Gen Ed	2	CSCI 161	4
	16		20
Sophomore			
Fall	Credits	Spring	Credits
PHYS 252 & 252L	5	PHYS 350	3
PHYS 252R	1	MATH 266	3
MATH 265	4	COMM 110	3
CSCI 213	3	CSCI 336	3
MATH 270	3	Humanities/Fine Arts Gen Ed	3
	16		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 361	3	PHYS 489	2
PHYS 462	3	CSCI 467	3
Physics Elective	3	PHYS 486	3
CSCI 474	3	CSCI 313	3
CSCI 4XX Computer Science Elective	3	or CSCI 4XX Computer Science Elective	
PHYS 485	3	Humanities/Fine Arts Gen Ed	3
PHYS 488	1	Social/Behavioral Science Gen Ed	3
	19		17

Total Credits: 133