

University of Indianapolis – Shaheen College of Arts & Sciences
2024-2025 Curriculum Guide for Computer Science Majors (CSCI)
 Bachelor of Science in Computer Science

Required Computer Science Courses:

- **CSCI 155** Introduction to Programming (3)
- **CSCI 156** Introduction to Object-Oriented Programming (3)
- **CSCI 230** Computer Architecture & Parallel Computing (4)
- **CSCI 240** Data Structures and Algorithms (4)
- **CSCI 340** Computer Algorithms (4)
- **CSCI 310** Graphical User Interfaces & Game Programming (4)
- **SWEN 310** Operating Systems (3)
- **CSCI 350** Programming Languages (4)
- **CSCI 370** Database Systems (4)
- **CSCI 420** Computer Networks and Distributed Computing (4)
- **CSCI 421** Data Encryption & Network Security (4)
- **CSCI 496** Computer Science Capstone Lab I (1)
- **CSCI 498** Computer Science Capstone Lab II (2)

Students must complete **at least six credit hours** of **CSCI** or **SWEN** courses at the **200 level or higher** outside of the already required CSCI and SWEN courses, such as the following examples:

- **SWEN 200** Introduction to Software Engineering (3)
- **PHYS 280** Scientific Computing
- **CSCI 355** Mobile Development (4)
- **CSCI 390** Internet Programming (4)
- **CSCI 396** Software Entrepreneurship I (1)
- **CSCI 398** Software Entrepreneurship II (1)
- **CSCI 424** Big Data Mining (4)
- **CSCI 460** Artificial Intelligence (4)

Required Engineering, Mathematics, and Natural Science Courses:

- **ENGR 185** Orientation to Engineering (1)
- **ENGR 196** Introduction to Engineering (Design Lab I) (3)
- **ENGR 198** Engineering Design Lab II (1)
- **MATH 190** Calculus and Analytic Geometry I (4)
- **MATH 191** Calculus and Analytic Geometry II (4)
- **MATH 195** Discrete Mathematics (4)
- **MATH 280** Linear Algebra (4)
- **Natural Science** A minimum of 6 credits from the disciplines of Physics, Chemistry, or Biology which must include a laboratory course (6) See attached list.

NOTE: The Computer Science major requires a total of 76 hours.

NOTE: A grade of C- (1.7 on a 4.0 scale) or higher is required in all courses applying toward the Computer Science Major. The Bachelor of Arts and Bachelor of Science degree requires a minimum of 120 hours. See the General Education Core Guide for additional course requirements.

REMEMBER: If you have any questions about the Computer Science Major and its requirements, contact a faculty advisor from the R.B. Annis School of Engineering (Ken Reid: 788-3657, Annis Hall) or your academic advisor. Courses and requirements sometimes change so keep in contact with your advisor.

SUBJECT	NUMBER	TITLE	LAB	Counts towards Gen Ed Natural Science
BIOL	159	Introduction to Ecology and Evolution	x	
BIOL	165	Introduction to Cell Biology	x	x
BIOL	225	Introduction to Genetics	x	
BIOL	260	Biodiversity	x	
BIOL	265	Ecology	x	
BIOL	280	Evolutionary Biology	x	
BIOL	335	Cell Biology	x	
BIOL	2XX	Approved BIOL course 200 level or higher		
CHEM	150/151	General Chemistry I	x	x (150)
CHEM	160/161	General Chemistry II	x	
CHEM	250/251	Organic Chemistry I	x	
CHEM	260/261	Organic Chemistry II	x	
CHEM	230	Environmental Chemistry	x	
CHEM	310	Analytical Chemistry	x	
CHEM	320	Biochemistry	x	
CHEM	370/375	Physical Chemistry	x	
CHEM	2XX	Approved CHEM course 200 level or higher		
PHYS	153	General Physics I/Calc Based	x	
PHYS	163	General Physics II/Calc Based	x	
PHYS	230	Laboratory Instrumentation	x	
PHYS	250	Modern Physics	x	
PHYS	280	Scientific Computing		
PHYS	360	Dynamics		
PHYS	390	Electricity and Magnetism		
PHYS	415	Physical Measurements	x	
PHYS	2XX	Approved PHYS course 200 level or higher		x (207)
ESCI	100	Elements of Earth Space Science	x	x
ESCI	101	Geohazards & Natural Disasters	x	x
ESCI	150	Physical Geology	x	x
ESCI	151	Physical Geology B		
ESCI	202	Physical Geography	x	x
ESCI	206	Time, Trilobites, and T-Rex	x	x
ESCI	207	Astronomy	x	x
ESCI	230	Intro to GIS		
ESCI	211	Meteorology	x	x
ESCI	360	Earth Systems		
ESCI	2XX	Approved ESCI course 200 level or higher		