

# Bachelor of Science in Computer Science

## Department of Computer and Information Sciences

### Indiana University South Bend

## Requirements

### FUNDAMENTAL LITERACIES (19 Credits)

- A) ENG-W 131 English Composition. A grade of C or better is required.
- B) Critical Thinking, e.g., PHIL- P 105 or P 110
- C) Oral Communication , e.g., SPCH-S 121
- D) Visual Literary, e.g., INFO-I310, FINA-A 100, JOUR-J 210
- E) Quantitative Reasoning. Satisfied by required Mathematics courses.
- F) COAS-Q 110 Information Literacy (1 cr.) Should be taken with ENG-W 131.
- G) Computer Literacy. Satisfied by required Computer Science courses.

### COMMON CORE (12 Credits). At least one course must be at the 300 level.

- A) The Natural World: N190 or N390.
- B) Human Behavior & Social Institutions: B190 or B399.
- C) Literary and Intellectual Traditions: T190 or T390.
- D) Art, Aesthetics and Creativity: A190 or A399.

### CONTEMPORARY SOCIAL VALUES (8 Credits)

- A) Non-Western Cultures, e.g., ANTH-E 105, POLS-Y 109.
- B) Diversity in U.S. Society, e.g., SOC-S 161, ENG-L 379, PSY-P 391.
- C) Health and Wellness, e.g., HPER-N 220 (2 cr.)

### LANGUAGE STUDIES (6 Credits)

Two semesters in a single language, or equivalent, chosen from Japanese, French, German, Chinese, Spanish.

### PHYSICAL & LIFE SCIENCES (14 Credits). Courses in at least two different sciences must be taken.

- A) PHYS-P 303 Digital Electronics (4 cr.). Includes a laboratory component. (Required)
- B) Electives chosen from astronomy, biology, chemistry, geology, and physics with the consent of your advisor. (10 cr.)

### MATHEMATICS (13 Credits). A grade of C or better is required.

- MATH-M 215 Calculus I (5cr.)
- MATH-M 301 Applied Linear Algebra (3 cr.)
- MATH-M 260 Combinatorial Counting and Probability (3 cr.)
- MATH-M 261 Statistical Inferences (2 cr.)

### COMPUTER SCIENCE (44 Credits). A grade of C- or better in each course is required.

At least 22 of the 44 credits must be taken at IUSB.

- CSCI-C 101 Computer Programming I (4 cr.). Test out is available.
- CSCI-C 151 Multi-user Operating Systems (2 cr.). Test out is available.
- CSCI-C 201 Computer Programming II (4 cr.)
- CSCI-C 243 Elementary Data Structures (4 cr.)
- CSCI-C 251 Foundations of Digital Computing. (3 cr.)
- CSCI-C 308 System Analysis & Design (4 cr.)
- CSCI-C 311 Organization of Programming Languages (3 cr.)
- CSCI-C 335 Computer Structures (4 cr.)
- CSCI-C 435 Operating Systems & Computer Architecture (4 cr.)
- CSCI-C 455 Analysis of Algorithms (3 cr.)

### CS Electives: (9 cr.)

Three additional computer science courses at or above the 300 level. Possible choices for these three courses include the internship course (Y398), parallel and distributed programming (B424), database systems (C442), artificial intelligence (C463), computer networks (B438), graphics (C481), and special topics (C490) such as computer security, biomorphic computing, computer vision, or advanced Java. Numerical analysis (MATH-M 471) may be counted as an elective in computer science.

### GENERAL ELECTIVES (approximately 16 Credits)

## Computer Science at IUSB?

- ◆ As the premier public institution of higher education in the region, our mission is to provide the highest quality education in the most enjoyable and friendly atmosphere possible. In pursuing this mission we work hard to attract the best and most qualified faculty and staff to our program. We also work hard to build and maintain up-to-date computer laboratories which are crucial to our program. Through our internship program for students, faculty consulting and volunteering, we interact regularly with our local industry so that we continually exchange ideas to the mutual benefit of both the business community and the university. Our goal is to bridge the gap between theories and concepts presented in the classroom and real life business and industry needs and practices.

## What is the job outlook?

- ◆ There are excellent employment opportunities for our graduates. Almost every student and every alumnus of our program is gainfully employed. In our region, the average starting salary for our graduates is currently in the mid 40's. Nationally, salaries range from low 40's to upper 70's.

## Why IUSB?

- ◆ IUSB is the only public institution in the region (60 miles radius) equipped to offer quality undergraduate and graduate programs in computing.
- ◆ Our class sizes average around 20 students, and almost never exceeding 30.
- ◆ We have 10 full time faculty with Ph.D. degrees in computer science or closely related areas.
- ◆ The typical salary for our new graduates in the region is approximately \$40,000 to \$52,000.

## Contact Information:

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