# B.S. Computer Science

For students starting at IUB Summer 2013-Spring 2014

## IUB General Education Common Ground

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## Additional School Requirements

**English Composition with a C or higher**
- ENG-W 131, W170, CMLT-C 110 (all are EC)

**Intensive Writing**
- one College-approved Intensive Writing course

**Natural Science**
- Twelve credit hours chosen from PSY-P 106, PSY-P 211, COGS-Q 270 and/or any natural and mathematical science course from: AST, BIOL, CHEM, GEOL, and PHYS (most are also N&M)

## World Languages and Cultures (3-14 credits) choose one of the following options:

1. Language Study: Two world language courses (same language) at the second year level, or equivalent proficiency (WL)
2. World Cultures: Two approved World Cultures courses (WC)
3. International Experience: An approved study abroad program for at least 6 credit hours outside of the US (WL/WC)

- [ ] ____________________________________________
- [ ] ____________________________________________
- [ ] ____________________________________________

**Checklist**

- [x] You must receive a grade of C- or better in all major and minor requirements, and your GPA must be at least 2.0, both in your major and overall.
- [x] A grade of C or higher is required in English Composition for admission to the School of Informatics and Computing.
- [x] Please note that many courses have prerequisite requirements. It is the student’s responsibility to fulfill these requirements.
- [x] These requirements are for informational purposes only and subject to revision. Refer to the SoIC Undergraduate Bulletin for detailed information on these requirements and official graduation requirements.
Computer Science Major

Students must complete a minimum of 45 credit hours of computer science coursework, including the core, an area of specialization, and CS electives. At least 26 of the 45 hours must be at the 300 level or above. Minimum grade of C- in all CS/Math courses.

Computer Science Core Courses (15 credits)

- CSCI C211 Introduction to Computer Science 4
- CSCI C212 Introduction to Software Systems (P: CSCI-C211) 4
- CSCI C241 Discrete Structures for Computer Science (P: CSCI-C211; R: MATH-M211) 3
- CSCI C343 Data Structures (P: CSCI-C212; P/C: CSCI-C241) 4

Specialization (Choose ONE Area – 13 to 16 credits)

Artificial Intelligence

- CSCI B351 Introduction to Artificial Intelligence and Computer Simulation 3
- One of: CSCI-B355, INFO-I441, LING-L445, INFO-I400 (approved topics), INFO-I485, or INFO-I486 3
- One of: CSCI-B403 Algorithm Design and Analysis or CSCI-P415 Introduction to Verification 3
- One CSCI “P” course (may be P415) 3-4
- INFO I427 Search Informatics 3

Data and Search

- CSCI B403 Algorithm Design and Analysis 3
- CSCI B461 Database Concepts 3
- One project course from P434 Distributed Systems, P462 Database Applications & Design, or INFO-I427 Search Informatics 3
- Two additional courses from B351, P434, P462 B490 (approved topic), INFO-I 427, or INFO-I 453 6

Foundations

- CSCI B401 Fundamentals of Computing Theory 3
- CSCI B403 Algorithm Design and Analysis 3
- One of: CSCI-P415 Introduction to Verification or CSCI-B461 Database Concepts 3
- Two of (in addition to BS Math requirement): CSCI-C311, CSCI-P423, MATH-M453, MATH-M455, MATH-M301 or M303, MATH-M365, MATH-M471, and MATH-M584 6-8

Programming Languages

- CSCI C311 Programming Languages 4
- Two of: CSCI-C335, CSCI-P423 (Recommended), CSCI-P436, CSCI-B441, CSCI-B443, CSCI-B490 6-8
- One of: CSCI-B401, CSCI-B403, CSCI-P415 3

Systems

- CSCI C335 Computer Structures 4
- Two of: P434, P436 (Recommended), P438, B441, P442, B443, P545, B490 (approved topic) 6-8
- At least one CSCI-P course from the above list 3
- One of: CSCI-B401, CSCI-B403, CSCI-P415 3

CS Electives (remaining credits to reach a minimum of 45 in the major)

- CSCI C, P, H, or B courses 200 or above
- CSCI-Y 390, Y391, Y399, Y499 (at most 6 hours)
- CSCI-H 498 Honors Seminar (at most 1 hour)
- MATH-M 471 and 472
- INFO-I 101 (before or concurrent with CSCI-C 212)
- INFO-Y 395 Career Development (at most 1 hour)
- INFO-I 494-1 495 Capstone Project

Mathematics Requirements (10-12 credits)

- MATH M211 Calculus I (or equivalent proficiency, MM) 4

Two additional mathematical science courses from the following: All Mathematics courses accepted for the BA in Mathematics, PHIL-P 251, P 350, P 352, STAT-S 320 or higher with approval of the Computer Science Director of Undergraduate Studies, and ECON-E 370. Courses cross-listed as MATH and CSCI and taken to fulfill a CS requirement will not count here.

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