

## 3460 COMPUTER SCIENCE

### Bachelor of Science in Computer Science

NOTE TO STUDENT: A student is expected to be familiar with the degree requirements. The following information has official approval of the Department of Computer Science but is intended only as a guide. Official degree requirements are established at the time of admission to the degree-granting college.

The B.S. in Computer Science focuses on the concepts and techniques used in the design and development of advanced software systems. Students in this program explore the conceptual underpinnings of computer science – its fundamental algorithms, programming languages, operating systems, computer organization and architecture, and software engineering techniques. In addition, students choose from a rich set of Computer Science electives – including Computer Graphics, Artificial Intelligence, Database Systems, and Computer Networks, among others. As with the introductory sequence, these advanced courses stress “hands on” learning by doing.

#### FIRST YEAR

##### Fall Semester

	<u>Semester Credit Hours</u>	<u>Prerequisites</u>
*3450:208 Discrete Mathematics (Note a.)	4	Placement Test or 3450:145 or 149 Appropriate Placement by Adviser
English Composition Requirement (Note c.)	4	
Language Requirement (Note b.)	3-4	
*3460:209 Intro to Comp. Science (Lect. Lab) (Note a.)	<u>4</u>	3450:145 or 149
	16	

##### Spring Semester

*3450:221 Analytic Geometry-Calculus I	4	Placement Test or 3450:149 3300:111 or equiv. Sequential
English Composition Requirement (Note c.)	3	
Language Requirement (Note b.)	3-4	
*3460:210 Data Structures & Algorithms I	4	3450:208, 3460:209
Physical Education/Wellness (Note c.)	<u>1-3</u>	
	15-18	

#### SECOND YEAR

##### Fall Semester

3460:306 Assembly Language Programming	4	3460:210
3450:222 Analytic Geometry-Calculus II	4	3450:221
Language Requirement (Note b.)	3	Sequential
Natural Science Requirement (Note c.)	3-4	
Speech/ Oral Communication (Note c.)	<u>3</u>	
	16-18	

\* Preadmission Requirement – must be completed with grade of C or better, prior to applying for admission into the computer science program.

##### Spring Semester

Language Requirement (Note b.)	3	Sequential
Social Science Requirement (Note c.)	3-4	
Natural Science Requirement (Note c.)	3-4	
3460:316 Data Structures & Algorithms II	3	3460:210, 3450:221
3400:210 Humanities in the Western Trad. I (lect. & disc.)	<u>4</u>	
	16-18	

#### NOTES:

- a. A continuing student who has not already completed Introduction to Computer Science, 3460:209, should take Discrete Mathematics first (3450:208) or as a corequisite. The correct mathematics sequence is as follows:  
Discrete Mathematics  
(\*Precalculus may be required per placement test results.)  
Analytic Geometry-Calculus I  
Analytic Geometry-Calculus II
- b. Completion of the second year of a foreign language is required. French, Spanish, German, Japanese and Russian are the recommended choices for fulfilling the Foreign Language requirement; other languages are possible. See your adviser for placement. Sign Language is also permitted.
- c. Please see the General Education Guide for options at <http://www.uakron.edu/advising/docs/GEN-EDUC.pdf>

**POLICY ALERT: 1) By the end of your first 48 credit hours attempted, you must have completed your General Education English, Math, and Communications (Speech) requirements; 2) By the end of your first 48 credit hours attempted, you must have declared a major and transferred to (been accepted by) a degree granting college at The University of Akron.**

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IN GENERAL:

Since 1951 when the first computer was installed for commercial use, computer systems have become increasingly important to everyday life. Today these machines bill customers, register students, record airline and hotel reservations, and monitor factory production processes. Scientific and engineering research relies on computer systems to solve complex equations as well as to collect, store and sort vast amounts of data. Indeed, the entire space exploration effort would be impossible without reliable computers. The field of computer science is relatively young and is expected to enjoy continued growth through the next decade. A graduate with good credentials can expect to find a wide range of potential employers. It is important for the student in Computer Science to be dedicated to acquisition of the knowledge and skill of the expert and to enjoy problem-solving in detail. As good as some of the new machines are, they are only as good as the people behind them.

SALARY LEVEL:

The starting salary range depends on the job category, the employer, and the job locale. It appears to fluctuate with the cost of living but is equal to that for engineers (approximately \$4,400 per month).

PLACEMENT:

A student is encouraged to check with his/her major department and with the Center for Career Management, Simmons Hall 301, (330) 972-7747, regarding employment opportunities in the field. Another office that can assist the student is the Arts & Sciences Careers Program, Olin 325, (330) 972-5714

COLLEGE OF ARTS & SCIENCES:

Degree requirements in Arts & Sciences include the first and second year of a foreign language (most majors), and 47 credits of 300/400 level courses, not including workshops or courses taken to meet Humanities in the Western Tradition and Area Studies and Cultural Diversity (World Civ) requirements. Consult your major department for any possible exceptions or problems. Total credits required for the degree: 128 semester credits.

TRANSFER TO COLLEGE OF ARTS AND SCIENCES INTO THE DEPARTMENT OF COMPUTER SCIENCE:

A student must have completed 3450:208, 3460:209, 3460:210 and 3450:221, each with C or better. A student should apply to the college upon completion of 30 credits and a 2.0 or better overall GPA (including transfer work). In addition, the student must have achieved a 2.0 in all coursework in the major field (including transfer work). The 30 credits must include the completion of both required English Composition courses and 3 credits of mathematics or statistics which meets the General Education requirement. This transfer process is completed through an appointment with an academic adviser, the Academic Advisement Center, Simmons Hall 205, (330) 972-7430, or Summit College, Polsky 301, (330) 972-7220, depending upon the college in which you reside.

COOPERATIVE EDUCATION PROGRAM:

The cooperative education program is open to students in computer science. After completing 3460:306 and 3460:316, a student alternates a semester of paid employment in his/her major field of interest with a semester of study until the senior year. The program enables a student, during college, to integrate classroom instruction with practical and valuable on-the-job experience with business, industry, government agencies or other employers. To obtain additional information on program benefits, eligibility requirements or to apply for the program, contact the Co-op staff in Simmons Hall 301, (330) 972-7747.