

COMPUTER SCIENCE 346004BS

Bachelor of Science in Computer Science-System Track

Attention students who were admitted to this program prior to Fall 2015, please refer to the curriculum guide found on page 5. The curriculum guide below on this page is for students admitted to this program for Fall 2015 or later.

The following information has official approval of the **Department of Computer Science**, but is intended only as a supplemental guide. Official degree requirements are established at the time of transfer and admission to the degree-granting college. Students should refer to the Degree Auditing Reporting System (DARS) which is definitive for graduation requirements. *Completion of this degree within the identified time frame below is contingent upon many factors, including but not limited to: class availability, total number of required credits, work schedule, finances, family, course drops/withdrawals, successfully passing courses, prerequisites, among others.* The transfer process is completed through an appointment with your Academic Advisor.

Italicized courses fulfill General Education requirements. Unless a course is specified, refer to the General Education guide at http://www.uakron.edu/advising/docs/General_Education_Guide.pdf.

CURRICULUM GUIDE FOR STUDENTS ADMITTED TO THIS PROGRAM FOR FALL 2015 OR LATER:

1 st Year	Fall Semester	Credit Hours	Prerequisites
	<i>English Composition I Requirement</i> (Note d)	3	Appropriate placement by advisor
7700:101	Beginning Language I	4	
	-OR- American Sign Language I (Note a)	or 3	
3450:208	*Introduction to Discrete Mathematics (Note b)	4	3450:145 or 3450:149 with a C- or better or equivalent
3460:209	*Computer Science I	4	3450:145 or 3450:149 with a C- or better or equivalent
Total		14-15	

1 st Year	Spring Semester	Credit Hours	Prerequisites
	<i>English Composition II Requirement</i> (Note d)	3	3300:111 or equivalent
7700:102	Beginning Language II	4	Beginning Language I
	-OR- American Sign Language II (Note a)	or 3	or 7700:101
3460:210	*Computer Science II	4	3450:208 and 3460:209 with a C- or better
3450:221	* <i>Analytic Geometry-Calculus I</i>	4	3450:149 with a C- or better or equivalent
	<i>Physical Education/Wellness Requirement</i>	1	
Total		15-16	

* **Preadmission Requirement** – must be completed prior to applying for admission into the Computer Science program.

2 nd Year	Fall Semester	Credit Hours	Prerequisites
3450:222	Analytic Geometry-Calculus II	4	3450:221 with a C- or better
3460:421	Object Oriented Programming	3	3460:210 with a C- or better
7700:201	Intermediate Language I	3	Beginning Language II
	-OR- American Sign Language III		or 7700:102
	General Elective (Note e)	2	
	<i>Speech/Oral Communication Requirement</i>	3	
Total		15	

2 nd Year	Spring Semester	Credit Hours	Prerequisites
	Intermediate Language II	3	Beginning Language II
	-OR-	or	or

7700:202	American Sign Language IV -AND	3	7700:201
7700:222	Survey of Deaf Culture in America	2	Sign Language students only
3460:480	Software Engineering	3	3460:210 with a C- or better
3460:316	Data Structures	3	3460:210 & 3450:221 or 3450:215, C- or better
3460:3xx/4xx	Upper Level Computer Science Elective (Note e)	3	
	<i>Natural Science Requirement</i>	4	
Total		16-18	

3rd Year Fall Semester

	<i>Humanities Elective</i>	3	
	<i>Natural Science Requirement</i>	4	
3470:461 or 3470:401	Applied Statistics -OR- Probability and Statistics for Engineers	4 or 2	3450:222 or equivalent 3450:222 or equivalent
4450:320	Computer Systems	3	3460:209 or 4450:208, and 3450:208 or 4450:220
3460:307	Internet Systems Programming	3	3460:210 with a C- or better
Total		15-17	

3rd Year Spring Semester

3400:210	<i>Humanities in the Western Tradition</i> -OR-	4	32 credits & 3300:112 or equivalent
3400:221	<i>Humanities in the World Since 1300</i>		32 credits & 3300:112 or equivalent
	<i>Social Science Requirement</i>	3	
3460:426 or 4450:325	Operating Systems -or- Operating Systems Concepts	3 3	3460:210 and 3460:306 or 4450:320 or equivalent with a C- or better or 4450:320 and 3460:210
3460:3xx/ 4xx	Upper Level Computer Science Elective (Note e)	3	
	<i>Area Studies/Cultural Diversity Requirement</i>	2	
Total		15	

4th Year Fall Semester

	<i>Humanities Requirement</i>	3	
3460:435	Algorithms	3	3460:316 with a C- or better
3460:3xx/ 4xx	Upper Level Computer Science Elective (Note e)	3	
	<i>Social Science Requirement</i>	3	
Total		12	

4th Year Spring Semester

3460:490	Senior Seminar in Computer Science	3	At least 30 hours of 3460 (Computer Science) courses
3460:3xx/ 4xx	Upper Level Computer Science Elective or a related field (Notes c, e)	3	
3460:3xx/ 4xx	Upper Level Computer Science Elective or a related field (Notes c, e)	3	
	General Electives (Note e)	3	
	<i>Area Studies/Cultural Diversity Requirement</i>	2	
Total		14	

	Total Credits for Degree	120 min	
--	--------------------------	----------------	--

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.

NOTES:

- a. Demonstration of ability to use another language by completion of the second year of a foreign language or sign language is required. See your advisor for placement. Please note that all four semesters must be completed in the SAME language and it's recommended you begin your first language class as soon as possible.
- b. 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
- c. Electives in areas related to Computer Science may include courses from: Engineering, Physics, or Business
- d. For English Composition I, 3300:111 (English Composition I) or 3300:113 (African-American Language and Culture I) are the recommended classes to meet the General Education English requirement. 2020:121 (English) fulfills the English Composition I requirement. For English Composition II, 3300:112 (English Composition II) or 3300:114 (African-American Language and Culture II) are the recommended classes to meet the General Education English requirement. 2020:222 (Technical Report Writing) fulfills the English Composition II requirement.
- e. General electives can be any course not already required by your major and Upper Level (300/400) electives can be any course in or outside your major excluding workshops.

Interim Chair of the Department of Computer Science – Dr. David Steer, (330) 972-2099 E-mail: steer@uakron.edu Web Address: www.uakron.edu/computer-science

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 Career Center, Student Union 211, (330) 972-7747, regarding employment opportunities in the field.

COLLEGE OF ARTS & SCIENCES:

Degree requirements in Arts & Sciences include the demonstration of ability to use another language by completion of the second year of a foreign language or sign language and a minimum of 40 credits of 300/400 level courses (excluding workshops) consisting of either:

- Upper level (300/400) courses both in and outside the student's major
- Any courses outside the major department as specified in and approved by the student's major department chair (permission should be obtained prior to enrollment) except workshops

TRANSFER TO COLLEGE OF ARTS & SCIENCES: Students should apply to the college upon the attainment of:

- ✓ completion of 3450:208, 3450:221, 3460:209, and 3460:210
- ✓ a cumulative GPA of 2.0 or better (includes transfer coursework until 30 credits are earned at UA)
- ✓ a major GPA of 2.0 or better (includes transfer coursework until 30 credits are earned at UA)

- ✓ 30 credits completed including both required English composition courses and 3 credits of mathematics or statistics that meets the General Education requirement

COOPERATIVE EDUCATION PROGRAM:

The cooperative education program is open to students in computer science. After completing 4450:320 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 Student Union 211, (330) 972-7747.

COMPUTER SCIENCE 346004BS

Bachelor of Science in Computer Science-System Track

Attention students who were admitted to this program prior to Fall 2015, please refer to the curriculum guide below on this page. The curriculum guide above is for students admitted to this program for Fall 2015 or later.

The following information has official approval of the **Department of Computer Science**, but is intended only as a supplemental guide. Official degree requirements are established at the time of transfer and admission to the degree-granting college. Students should refer to the Degree Auditing Reporting System (DARS) which is definitive for graduation requirements. *Completion of this degree within the identified time frame below is contingent upon many factors, including but not limited to: class availability, total number of required credits, work schedule, finances, family, course drops/withdrawals, successfully passing courses, prerequisites, among others.* The transfer process is completed through an appointment with your Academic Advisor.

Italicized courses fulfill General Education requirements. Unless a course is specified, refer to the General Education guide at http://www.uakron.edu/advising/docs/General_Education_Guide.pdf.

CURRICULUM GUIDE FOR STUDENTS ADMITTED TO THIS PROGRAM PRIOR TO FALL 2015:

1 st Year	Fall Semester	Credit Hours	Prerequisites
	<i>English Composition I Requirement</i> (Note d)	3	Appropriate placement by advisor
7700:101	Beginning Language I	4	
	-OR- American Sign Language I (Note a)	or 3	
3450:208	*Introduction to Discrete Mathematics (Note b)	4	3450:145 or 3450:149 with a C- or better or equivalent
3460:209	*Computer Science I	4	3450:145 or 3450:149 with a C- or better or equivalent
Total		14-15	

1 st Year	Spring Semester	Credit Hours	Prerequisites
	<i>English Composition II Requirement</i> (Note d)	3	3300:111 or equivalent
7700:102	Beginning Language II	4	Beginning Language I
	-OR- American Sign Language II (Note a)	or 3	or 7700:101
3460:210	*Computer Science II	4	3450:208 and 3460:209 with a C- or better
3450:221	* <i>Analytic Geometry-Calculus I</i>	4	3450:149 with a C- or better or equivalent
	<i>Physical Education/Wellness Requirement</i>	1	
Total		15-16	

* **Preadmission Requirement** – must be completed prior to applying for admission into the Computer Science program.

2 nd Year	Fall Semester	Credit Hours	Prerequisites
3450:222	Analytic Geometry-Calculus II	4	3450:221 with a C- or better
3460:421	Object Oriented Programming	3	3460:210 with a C- or better
7700:201	Intermediate Language I	3	Beginning Language II
	-OR- American Sign Language III		or 7700:102
	General Elective (Note e)	3	
	<i>Speech/Oral Communication Requirement</i>	3	
Total		16	

2 nd Year	Spring Semester	Credit Hours	Prerequisites
	Intermediate Language II	3	Beginning Language II
	-OR-	or	or

7700:202	American Sign Language IV -AND	3	7700:201
7700:222	Survey of Deaf Culture in America	2	Sign Language students only
4450:320	Computer Systems	3	3460:209 or 4450:208, and 3450:208 or 4450:220
3460:316	Data Structures	3	3460:210 & 3450:221 or 3450:215, C- or better
3460:3xx/4xx	Upper Level Computer Science Elective (Note e)	3	
	<i>Natural Science Requirement</i>	4	
Total		16-18	

3rd Year Fall Semester

	<i>Humanities Elective</i>	3	
	<i>Natural Science Requirement</i>	4	
3470:461 or 3470:401	Applied Statistics -OR- Probability and Statistics for Engineers	4 or 2	3450:222 or equivalent 3450:222 or equivalent
3460:426 or 4450:325	Operating Systems -OR- Operating Systems Concepts	 3	3460:210 and 3460:306 or 4450:320 or equivalent with a C- or better or 4450:320 and 3460:210
3460:307	Internet Systems Programming	3	3460:210 with a C- or better
Total		15-17	

3rd Year Spring Semester

3400:210	<i>Humanities in the Western Tradition</i>	4	32 credits & 3300:112 or equivalent
3400:221	-OR- <i>Humanities in the World Since 1300</i>		32 credits & 3300:112 or equivalent
	<i>Social Science Requirement</i>	3	
3460:480	Software Engineering	3	3460:210 with a C- or better
3460:3xx/ 4xx	Upper Level Computer Science Elective (Note e)	3	
	<i>Area Studies/Cultural Diversity Requirement</i>	2	
Total		15	

4th Year Fall Semester

	<i>Humanities Requirement</i>	3	
3460:435	Algorithms	3	3460:316 with a C- or better
3460:3xx/ 4xx	Upper Level Computer Science Elective (Note e)	3	
xxxx:3xx/ xx	Upper Level Elective (Note e)	4	
	<i>Social Science Requirement</i>	3	
Total		16	

4th Year Spring Semester

3460:490	Senior Seminar in Computer Science	3	At least 30 hours of 3460 (Computer Science) courses
3460:3xx/ 4xx	Upper Level Computer Science Elective or a related field (Notes c, e)	3	
3460:3xx/ 4xx	Upper Level Computer Science Elective or a related field (Notes c, e)	3	
	General Electives (Note e)	1-5	
	<i>Area Studies/Cultural Diversity Requirement</i>	2	
Total		12-16	

	Total Credits for Degree	128 min	
--	---------------------------------	----------------	--

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.

NOTES:

- a. Demonstration of ability to use another language by completion of the second year of a foreign language or sign language is required. See your advisor for placement. Please note that all four semesters must be completed in the SAME language and it's recommended you begin your first language class as soon as possible.
- b. 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
- c. Electives in areas related to Computer Science may include courses from: Engineering, Physics, or Business
- d. For English Composition I, 3300:111 (English Composition I) or 3300:113 (African-American Language and Culture I) are the recommended classes to meet the General Education English requirement. 2020:121 (English) fulfills the English Composition I requirement. For English Composition II, 3300:112 (English Composition II) or 3300:114 (African-American Language and Culture II) are the recommended classes to meet the General Education English requirement. 2020:222 (Technical Report Writing) fulfills the English Composition II requirement.
- e. General electives can be any course not already required by your major and Upper Level (300/400) electives can be any course in or outside your major excluding General Education courses and workshops.

Interim Chair of the Department of Computer Science – Dr. David Steer, (330) 972-2099 E-mail: steer@uakron.edu Web Address: www.uakron.edu/computer-science

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 Career Center, Student Union 211, (330) 972-7747, regarding employment opportunities in the field.

COLLEGE OF ARTS & SCIENCES:

Degree requirements in Arts & Sciences include the demonstration of ability to use another language by completion of the second year of a foreign language or sign language and a minimum of 47 credits of 300/400 level courses (excluding workshops and General Education courses) consisting of either:

- Upper level (300/400) courses both in and outside the student's major
- Any courses outside the major department as specified in and approved by the student's major department chair (permission should be obtained prior to enrollment) except workshops and General Education courses

TRANSFER TO COLLEGE OF ARTS & SCIENCES: Students should apply to the college upon the attainment of:

- ✓ completion of 3450:208, 3450:221, 3460:209, and 3460:210
- ✓ a cumulative GPA of 2.0 or better (includes transfer coursework until 30 credits are earned at UA)

- ✓ a major GPA of 2.0 or better (includes transfer coursework until 30 credits are earned at UA)
- ✓ 30 credits completed including both required English composition courses and 3 credits of mathematics or statistics that meets the General Education requirement

COOPERATIVE EDUCATION PROGRAM:

The cooperative education program is open to students in computer science. After completing 4450:320 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 Student Union 211, (330) 972-7747.