

# COMPUTER SCIENCE - B.A.

## College of Arts and Sciences

Department of Computer Science  
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## Description

The Bachelor of Arts degree in Computer Science is designed for students who seek a liberal arts education combined with a solid foundation in computer science. Students may choose electives from any complementary liberal arts program beyond computer science.

Students have the option to have a double major to attain depth of knowledge across two related areas.

## Fully Offered At:

- Kent Campus

## Admission Requirements

The university affirmatively strives to provide educational opportunities and access to students with varied backgrounds, those with special talents and adult students who graduated from high school three or more years ago.

**Freshman Students on the Kent Campus:** The freshman admission policy on the Kent Campus is selective. Admission decisions are based upon the following: cumulative grade point average, ACT and/or SAT scores, strength of high school college preparatory curriculum and grade trends. The Admissions Office at the Kent Campus may defer the admission of students who do not meet admissions criteria but who demonstrate areas of promise for successful college study. Deferred applicants may begin their college coursework at one of seven regional campuses of Kent State University. For more information on admissions, including additional requirements for some academic programs, visit the admissions website for new freshmen.

**Freshman Students on the Regional Campuses:** Kent State campuses at Ashtabula, East Liverpool, Geauga, Salem, Stark, Trumbull and Tuscarawas, as well as the Regional Academic Center in Twinsburg, have open enrollment admission for students who hold a high school diploma, GED or equivalent.

**English Language Proficiency Requirements for International Students:** All international students must provide proof of English language proficiency (unless they meet specific exceptions) by earning a minimum 525 TOEFL score (71 on the Internet-based version), minimum 75 MELAB score, minimum 6.0 IELTS score or minimum 48 PTE score, or by completing the ESL level 112 Intensive Program. For more information on international admission, visit the Office of Global Education's admission website.

**Transfer, Transitioning and Former Students:** For more information about admission criteria for transfer, transitioning and former students, please visit the admissions website.

## Program Learning Outcomes

Graduates of this program will be able to:

1. Understand the essential facts, concepts, principles and theories relating to computer science.
2. Apply computer science concepts to solve computer-related problems.
3. Analyze algorithms, computer science methods and techniques.
4. Analyze and plan the development of a typical professional computer science problem.
5. Make succinct oral presentations and written expositions about technical problems and their solutions.
6. Work effectively as a member of a software development team.

## University Requirements

All students in a bachelor's degree program at Kent State University must complete the following university requirements for graduation.

**NOTE:** University requirements may be fulfilled in this program by specific course requirements. Please see Program Requirements for details.

Destination Kent State: First Year Experience	1
Course is not required for students with 25 transfer credits, excluding College Credit Plus, or age 21+ at time of admission.	
Diversity Domestic/Global (DIVD/DIVG)	2 courses
Students must successfully complete one domestic and one global course, of which one must be from the Kent Core.	
Experiential Learning Requirement (ELR)	varies
Students must successfully complete one course or approved experience.	
Kent Core (see table below)	36-37
Writing-Intensive Course (WIC)	1 course
Students must earn a minimum C grade in the course.	
Upper-Division Requirement	39 (or 42)
Students must successfully complete 39 upper-division (numbered 30000 to 49999) credit hours to graduate. Students in a B.A. and/or B.S. degree in the College of Arts and Sciences must complete 42 upper-division credit hours.	
Total Credit Hour Requirement	120
Some bachelor's degrees require students to complete more than 120 credit hours.	

## Kent Core Requirements

Kent Core Composition (KCMP)	6
Kent Core Mathematics and Critical Reasoning (KMCR)	3
Kent Core Humanities and Fine Arts (KHUM/KFA) (min one course each)	9
Kent Core Social Sciences (KSS) (must be from two disciplines)	6
Kent Core Basic Sciences (KBS/KLAB) (must include one laboratory)	6-7
Kent Core Additional (KADL)	6
<b>Total Credit Hours:</b>	<b>36-37</b>

## Program Requirements

### Major Requirements

[BA-CS]

Code	Title	Credit Hours
<b>Major Requirements (courses count in major GPA)</b>		
CS 13011 & CS 13012	COMPUTER SCIENCE IA: PROCEDURAL PROGRAMMING and COMPUTER SCIENCE IB: OBJECT ORIENTED PROGRAMMING (min C grade) <sup>1</sup>	4
or CS 13001	COMPUTER SCIENCE I: PROGRAMMING AND PROBLEM SOLVING	
CS 23001	COMPUTER SCIENCE II: DATA STRUCTURES AND ABSTRACTION (min. C grade)	4
CS 23022	DISCRETE STRUCTURES FOR COMPUTER SCIENCE	3
CS 33101	STRUCTURE OF PROGRAMMING LANGUAGES	3
CS 33211	OPERATING SYSTEMS	3
CS 35101	COMPUTER ARCHITECTURE	3
CS 44901	SOFTWARE DEVELOPMENT PROJECT (ELR) (WIC) <sup>2</sup>	4
Computer Science Upper-Division Electives (CS 30000 or 40000 level) <sup>3</sup>		
Computer Science Upper-Division Electives (CS 40000 level only)		
<b>Additional Requirements (courses do not count in major GPA)</b>		
UC 10097	DESTINATION KENT STATE: FIRST YEAR EXPERIENCE	1
Foreign Language (see Foreign Language College Requirement below)		14-16
Kent Core Composition		6
Kent Core Mathematics and Critical Reasoning		3
Kent Core Humanities and Fine Arts (minimum one course from each)		9
Kent Core Social Sciences (must be from two disciplines)		6
Kent Core Basic Sciences (must include one laboratory)		6-7
Kent Core Additional		6
College General Requirement (must be from Kent Core Basic Sciences) <sup>4</sup>		3
College General Requirement (must be from Kent Core Social Sciences) <sup>5</sup>		3
General Electives (total credit hours depends on earning 120 credit hours, including 42 upper-division credit hours)		21
Minimum Total Credit Hours:		120

- <sup>1</sup> Minimum C grade must be earned in either CS 13001 or in both CS 13011 and CS 13012 for graduation.
- <sup>2</sup> A minimum C grade must be earned to fulfill the writing-intensive requirement.
- <sup>3</sup> Students may apply a maximum of 3 credit hours of CS 33192 to the Computer Science Upper-Division Electives.
- <sup>4</sup> One additional course taken from the Kent Core Basic Sciences courses in the following Arts and Sciences disciplines: Anthropology (ANTH), Biology (BSCI), Chemistry (CHEM), Geography (GEOG), Geology (GEOL) or Physics (PHY). Students may take the courses listed in the "introductory" sequences with the restrictions noted above in the Kent Core Basic Sciences section. The course may not be from the student's major.
- <sup>5</sup> One additional course taken from the Kent Core Social Sciences courses in the following Arts and Sciences disciplines: Anthropology (ANTH), Applied Conflict Management (CACM), Geography (GEOG), Criminology and Justice Studies (CRIM), Political Science (POL), Psychology (PSYC) or Sociology (SOC). The course may not be from the student's major.

## Graduation Requirements

Minimum Major GPA	Minimum Overall GPA
2.000	2.000

- A minimum C grade may be required in some courses

### Foreign Language College Requirement

Students pursuing the Bachelor of Arts degree in the College of Arts and Sciences must complete 14-16 credit hours of foreign language.<sup>1</sup> To complete the requirement, students have the equivalent of Elementary I and II in any language, plus one of the following options:

- Intermediate I and II of the same language<sup>2</sup>
- Elementary I and II of a second language
- Any combination of two courses from the following list:

- MCLS 10001 INTRODUCTION TO STRUCTURAL CONCEPTS FOR LANGUAGE STUDENTS
- MCLS 20000 GLOBAL LITERACY AND CULTURAL AWARENESS
- MCLS 20091 VARIABLE CONTENT SEMINAR IN GLOBAL LITERACY: CASE STUDIES
- MCLS 21417 MULTICULTURALISM IN TODAY'S GERMANY (DIVG)
- MCLS 22217 DIVERSITY IN TODAY'S RUSSIA (DIVG)
- MCLS 23217 THE FRANCOPHONE EXPERIENCE (DIVG)
- MCLS 28404 THE LATIN AMERICAN EXPERIENCE (DIVG)
- MCLS 28405 THE SPANISH EXPERIENCE (DIVG)

- <sup>1</sup> All students with prior foreign language experience should take the foreign language placement test to determine the appropriate level at which to start. Some students may begin beyond the Elementary I level and will complete the requirement with fewer credit hours and fewer courses. This may be accomplished by (1) passing a course beyond Elementary I through Intermediate II level; (2) receiving credit through Credit by Exam (CBE), Advanced Placement (AP), International Baccalaureate (IB) or College Level Examination Program (CLEP); or (3) being designated a "native speaker" of a non-English language (consult with the College of Arts and Sciences Advising Office for additional information). When students complete the requirement with fewer than 14 credit hours and four courses, they will complete remaining credit hours with general electives.
- <sup>2</sup> Certain majors, concentrations and minors may require specific languages, limit the languages from which a student may choose or require coursework through Intermediate II. Students who plan to pursue graduate study may need particular language coursework.

# Roadmap

This roadmap is a recommended semester-by-semester plan of study for this major. However, courses designated as critical (!) must be completed in the semester listed to ensure a timely graduation.

Course	Title	Credits
<b>Semester One</b>		
! CS 13011 & CS 13012 or CS 13001	COMPUTER SCIENCE IA: PROCEDURAL PROGRAMMING and COMPUTER SCIENCE IB: OBJECT ORIENTED PROGRAMMING or COMPUTER SCIENCE I: PROGRAMMING AND PROBLEM SOLVING	4
UC 10097	DESTINATION KENT STATE: FIRST YEAR EXPERIENCE	1
	Kent Core Requirement	3
	Kent Core Requirement	3
	Kent Core Requirement	3
Credit Hours		14
<b>Semester Two</b>		
! CS 23022	DISCRETE STRUCTURES FOR COMPUTER SCIENCE	3
	College General Requirement	3
	Kent Core Requirement	3
	Kent Core Requirement	3
	Kent Core Requirement	3
Credit Hours		15
<b>Semester Three</b>		
! CS 23001	COMPUTER SCIENCE II: DATA STRUCTURES AND ABSTRACTION	4
! CS 35101	COMPUTER ARCHITECTURE	3
	Foreign Language	4
	College General Requirement	3
	Kent Core Requirement	3
Credit Hours		17
<b>Semester Four</b>		
! CS 33101	STRUCTURE OF PROGRAMMING LANGUAGES	3
! CS 33211	OPERATING SYSTEMS	3
	Computer Science Upper-Division Elective (CS 30000 or 40000 level)	3
	Foreign Language	4
	Kent Core Requirement	3
Credit Hours		16
<b>Semester Five</b>		
	Computer Science Upper-Division Electives (CS 30000 or 40000 level)	6
	Foreign Language	3
	Kent Core Requirement	3
	Kent Core Requirement	3
Credit Hours		15
<b>Semester Six</b>		
	Computer Science Upper-Division Electives (CS 30000 or 40000 level)	3
	Foreign Language	3
	Kent Core Requirement	3
	Kent Core Requirement	3
	General Elective	3
Credit Hours		15

<b>Semester Seven</b>		
	Computer Science Upper-Division Elective (CS 40000 level)	3
	General Electives	12
Credit Hours		15
<b>Semester Eight</b>		
! CS 44901	SOFTWARE DEVELOPMENT PROJECT (ELR) (WIC)	4
	Computer Science Upper-Division Elective (CS 40000 level)	3
	General Electives	6
Credit Hours		13
Minimum Total Credit Hours:		120