COMPUTER SCIENCE - B.A.

College of Arts and Sciences
Department of Computer Science
www.kent.edu/cs

Contact Information

- Program Coordinator: Feodor F. Dragan, Augustine Samba | ugradinfo@cs.kent.edu | 330-672-9120
- Speak with an Advisor
  - Kent Campus
  - Stark Campus
- Chat with an Admissions Counselor

Fully Offered

- Kent Campus
- Stark Campus

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.

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 first-year students.

Freshman Students on the Regional Campuses: Kent State campuses at Ashtabula, East Liverpool, Geauga, Salem, Stark, Trumbull and Tuscarawas, as well as the Twinsburg Academic Center, 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, minimum 48 PTE score or minimum 100 DET 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.

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Minimum Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kent Core (see table below)</td>
<td>36-37</td>
</tr>
<tr>
<td>Writing-Intensive Course (WIC)</td>
<td>1 course</td>
</tr>
<tr>
<td>Upper-Division Requirement</td>
<td>39 (or 42)</td>
</tr>
<tr>
<td>Total Credit Hour Requirement</td>
<td>120</td>
</tr>
</tbody>
</table>

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 |

Total Credit Hours: 36-37
## Program Requirements

### Major Requirements

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS 13011 &amp; CS 13012</td>
<td>COMPUTER SCIENCE IA: PROCEDURAL PROGRAMMING and COMPUTER SCIENCE IB: OBJECT ORIENTED PROGRAMMING (min C grade)</td>
<td>4</td>
</tr>
<tr>
<td>or CS 13001</td>
<td>COMPUTER SCIENCE I: PROGRAMMING AND PROBLEM SOLVING</td>
<td></td>
</tr>
<tr>
<td>CS 23001</td>
<td>COMPUTER SCIENCE II: DATA STRUCTURES AND ABSTRACTION (min. C grade)</td>
<td>4</td>
</tr>
<tr>
<td>CS 23022</td>
<td>DISCRETE STRUCTURES FOR COMPUTER SCIENCE</td>
<td>3</td>
</tr>
<tr>
<td>CS 33101</td>
<td>STRUCTURE OF PROGRAMMING LANGUAGES</td>
<td>3</td>
</tr>
<tr>
<td>CS 33211</td>
<td>OPERATING SYSTEMS</td>
<td>3</td>
</tr>
<tr>
<td>CS 35101</td>
<td>COMPUTER ORGANIZATION</td>
<td>3</td>
</tr>
<tr>
<td>CS 44901</td>
<td>SOFTWARE DEVELOPMENT PROJECT (ELR)</td>
<td>4</td>
</tr>
</tbody>
</table>

Computer Science (CS) Upper-Division Electives (30000 or 40000 level)

• 9

Computer Science (CS) Upper-Division Electives (40000 level)

• 9

### Additional Requirements (courses do not count in major GPA)

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>UC 10097</td>
<td>DESTINATION KENT STATE: FIRST YEAR EXPERIENCE</td>
<td>1</td>
</tr>
</tbody>
</table>

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)

• 3

College General Requirement (must be from Kent Core Social Sciences)

• 3

General Electives (total credit hours depends on earning 120 credit hours, including 42 upper-division credit hours)

• 21

Minimum Total Credit Hours: 120

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1. Minimum C grade must be earned in either CS 13001 or in both CS 13011 and CS 13012 for graduation.
2. A minimum C grade must be earned to fulfill the writing-intensive requirement.
3. Students may apply a maximum of 3 credit hours of CS 33192 to the Computer Science Upper-Division Electives.
4. 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.

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### Graduation Requirements

<table>
<thead>
<tr>
<th>Minimum Major GPA</th>
<th>Minimum Overall GPA</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.000</td>
<td>2.000</td>
</tr>
</tbody>
</table>

• A minimum C grade may be required in some courses

### Foreign Language College Requirement, B.A.

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

1. Intermediate I and II of the same language
2. Elementary I and II of a second language
3. Any combination of two courses from the following list:
   - Intermediate I of the same language, or ARAB 21401, ASL 19401, CHIN 25421, MCLS 10001, MCLS 20001, MCLS 20091, MCLS 21417, MCLS 21420, MCLS 22217, MCLS 28403, MCLS 28404

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 start 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 one of the alternative credit programs offered by Kent State University; or (3) demonstrating language proficiency comparable to Elementary II of a foreign language. When students complete the requirement with fewer than 14 credit hours and four courses, they will complete remaining credit hours with general electives.

2. 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.

### Semester One

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS 13011 &amp; CS 13012 or CS 13001</td>
<td>COMPUTER SCIENCE IA: PROCEDURAL PROGRAMMING and COMPUTER SCIENCE IB: OBJECT ORIENTED PROGRAMMING or COMPUTER SCIENCE I: PROGRAMMING AND PROBLEM SOLVING</td>
<td>4</td>
</tr>
<tr>
<td>UC 10097</td>
<td>DESTINATION KENT STATE: FIRST YEAR EXPERIENCE</td>
<td>1</td>
</tr>
</tbody>
</table>

Kent Core Requirement: 3

Credit Hours: 14

### Semester Two

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS 23022</td>
<td>DISCRETE STRUCTURES FOR COMPUTER SCIENCE</td>
<td>3</td>
</tr>
</tbody>
</table>

College General Requirement: 3

Kent Core Requirement: 3

Credit Hours: 15

### Semester Three

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS 23001</td>
<td>COMPUTER SCIENCE II: DATA STRUCTURES AND ABSTRACTION</td>
<td>4</td>
</tr>
<tr>
<td>CS 35101</td>
<td>COMPUTER ORGANIZATION</td>
<td>3</td>
</tr>
<tr>
<td>Foreign Language</td>
<td></td>
<td>4</td>
</tr>
</tbody>
</table>

College General Requirement: 3

Kent Core Requirement: 3

Credit Hours: 17

### Semester Four

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS 33101</td>
<td>STRUCTURE OF PROGRAMMING LANGUAGES</td>
<td>3</td>
</tr>
<tr>
<td>CS 33211</td>
<td>OPERATING SYSTEMS</td>
<td>3</td>
</tr>
</tbody>
</table>

Computer Science (CS) Upper-Division Elective (30000 or 40000 level): 3

Foreign Language: 4

Kent Core Requirement: 3

Credit Hours: 16

### Semester Five

Computer Science (CS) Upper-Division Electives (30000 or 40000 level): 6

Foreign Language: 3

Kent Core Requirement: 3

Credit Hours: 15

### Semester Six

Computer Science (CS) Upper-Division Electives (40000 level): 3

Foreign Language: 3

Kent Core Requirement: 3

Credit Hours: 15

### Semester Seven

Computer Science (CS) Upper-Division Elective (40000 level): 3

### Semester Eight

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS 44901</td>
<td>SOFTWARE DEVELOPMENT PROJECT (ELR) (WIC)</td>
<td>4</td>
</tr>
</tbody>
</table>

Computer Science (CS) Upper-Division Elective (40000 level): 3

General Electives: 6

Credit Hours: 13

Minimum Total Credit Hours: 120