

# KU B.S. Computer Science Requirements

The major in Computer Science focuses on the core concepts in computer science and software engineering, allowing students to build a foundation, thus having the capability to learn any new technology. The classes are varied and exciting, utilizing a wide array of programming languages: Network Programming, Data Mining, Big Data, Game Development, Human Computer Interaction, Robotics, Artificial Intelligence, and Software Engineering.

*Note that all students must achieve 120 undergraduate credits and a minimum 2.0 overall GPA to graduate. The final major GPA requirement for Computer Science is 2.25.*

## **Required Computer Science Core Courses – 36 credits**

CPSC 125 Discrete Math for CS I (3 credits)  
CPSC 135 Comp Sci I (3 credits)  
CPSC 136 Comp Sci II (3 credits)  
CPSC 150 Ethical, Legal, and Professional Impacts of the Digital Age (3 credits)  
CPSC 225 Discrete Math for CS II (3 credits)  
CPSC 235 Computer Organization and Assembly Language (3 credits)  
CPSC 237 Data Structures (3 credits)  
CPSC 310 Programming Languages (3 credits)  
CPSC 328 Network and Secure Programming (3 credits)  
CPSC 343 Operating Systems (3 credits)  
CPSC 354 Software Engineering I (3 credits)  
CPSC 355 Software Engineering II (3 credits)

## **Computer Science Electives – 18 credits**

*0 to 9 credits of additional 200-level CPSC courses, not previously used for above requirements, excluding CPSC 280.*

*At least 9 credits of additional CPSC courses, number 300 or above and not previously used for above requirements, excluding any course numbered CPSC 87x and CPSC 380.*

## **Other Required Courses – 6 credits**

*Note: Students minoring in Math should take MATH 260 and MATH 301, not MATH 140.*

MATH 140 Applied Statistics or MATH 301 Probability and Statistics I (3 credits)

MATH 250 Applied Regression Analysis or MATH 260 Linear Algebra or MATH 330 Theory of Numbers or MATH 337 Introduction to Cryptography (3 credits)

## **Directed General Education Courses – 10 to 12 credits**

*These courses are required for the major and satisfy the general education requirement "Understanding Science and Technology."*

*Note: Students must take two sciences courses intended for a science major. At least one of these courses must include a lab.*

MATH 181 Calculus I – Category C2 (4 credits)

Natural Science Course for a Science Major – Category C1 (3-4 credits)

Natural Science Course for a Science major – Category C3 (3-4 credits)

## **University Electives – 15 to 18 credits**

*Note 1: CPSC course with a prefix below 125, CPSC 130, CPSC 280, CPSC 380 and CPSC 87x do not count toward the major requirements for a BS in Computer Science; they count as university electives only.*

*Note 2: Internships are optional for program requirements, but highly recommended. These courses, CPSC 280 and CPSC 380, count as university electives.*

**Program Plan Code:** BS\_CPSC

**Effective Date:** Spring 2024

# KU B.S. Computer Science Major Checksheet

Student Name:

Student ID Number:

This checksheet provides a mechanism for students and advisors to keep track of a student's progress in the program. Please refer to the program requirements for more details regarding options.

*Note that all students must achieve 120 undergraduate credits and a minimum 2.0 overall GPA to graduate. The GPA for major courses for Computer Science is a minimum of 2.25.*

## Required Computer Science Core Courses – 36 credits

CPSC 125 Discrete Math for CS I	3 credits	Grade:
CPSC 135 Comp Sci I	3 credits	Grade:
CPSC 136 Comp Sci II	3 credits	Grade:
CPSC 150 Ethical, Legal, and Professional Impacts of the Digital Age	3 credits	Grade:
CPSC 225 Discrete Math for CS II	3 credits	Grade:
CPSC 235 Computer Organization and Assembly Language	3 credits	Grade:
CPSC 237 Data Structures	3 credits	Grade:
CPSC 310 Programming Languages	3 credits	Grade:
CPSC 328 Network and Secure Programming	3 credits	Grade:
CPSC 343 Operating Systems	3 credits	Grade:
CPSC 354 Software Engineering I	3 credits	Grade:
CPSC 355 Software Engineering II	3 credits	Grade:
<b>Total Credits</b>	36 total credits	

## Computer Science Major Electives – 18 credits

*0-9 credits of additional 200-level CPSC courses, not previously used for above requirements, excluding CPSC 280.*

*At least 9 credits of additional CPSC courses, number 300 or above and not previously used for above requirements, excluding any course numbered CPSC 87x and CPSC 380.*

Course 1:	3 credits	Grade:
Course 2:	3 credits	Grade:
Course 3:	3 credits	Grade:
Course 4: 300-level or higher	3 credits	Grade:
Course 5: 300-level or higher	3 credits	Grade:
Course 6: 300-level or higher	3 credits	Grade:
<b>Total Credits</b>	18 total credits	

## Other Required Courses – 6 credits

*Students minoring in Math should take MATH 260 and MATH 301, not MATH 140.*

MATH 250 Applied Regression Analysis or MATH 260 Linear Algebra or MATH 330 Theory of Numbers or MATH 337 Introduction to Cryptography	3 credits	Grade:
MATH 140 Applied Statistics or MATH 301 Probability & Statistics I	3 credits	Grade:
<b>Total Credits</b>	6 total credits	

## Directed General Education Courses

*Students must take two sciences courses intended for a science major. At least one of these courses must include a lab.*

MATH 181 Calculus	4 credits	Grade:
Natural Science Course for a Science Major	3-4 credits	Grade:
Natural Science Course for a Science Major	3-4 credits	Grade:

## University Electives – 15 to 18 credits

*CPSC course with a prefix below 125, CPSC130, CPSC280, CPSC380 and CPSC87x do not count toward the major requirements for a BS in Computer Science; they count in university electives only.*

*Internships are optional for program requirements, but highly recommended. These courses, CPSC280 and CPSC380, only count in university electives.*

Course 1:	3 credits	Grade:
Course 2:	3 credits	Grade:
Course 3:	3 credits	Grade:
Course 4:	3 credits	Grade:
Course 5:	3 credits	Grade:
Course 6:	3 credits	Grade:
<b>Total Credits</b>	15-18 total credits	

## Summary of Graduation Requirements

Total credits from major courses	<b>60</b>
Total credits from general education program	<b>42-45</b>
Total credits from university electives	<b>15-18</b>
<b>Minimum total credits to graduate</b>	<b>120</b>
<b>Minimum overall GPA</b>	<b>2.0</b>
<b>Minimum GPA in major program</b>	<b>2.25</b>
<b>Comprehensive Exam (CPSC 355)</b>	<b>PASS</b>

**Program Plan Code:** BS\_CPSC

**Effective Date:** Spring 2024

# KU B.S. Computer Science 8-Semester Planner

Student Name:

Student ID Number:

*Each semester listed below provides information including course categories, typical credit hours (CH.), and space to add specific course selections. This planner is only a suggested path. Consult with your program advisor regarding your unique plans and interests as you make choices about your schedule.*

## First Semester Plan

Major	CPSC 135	3 CH.	Selection:
Major	CPSC 125 <i>or</i> CPSC 150	3 CH.	Selection:
Gen Ed	MATH 181 (C2)	4 CH.	Selection:
Gen Ed	FYSM 100	3 CH.	Selection: FYSM 100
Gen Ed	Gen. Ed. Elective	3 CH.	Selection:
<b>Total</b>		<b>16 CH.</b>	

## Second Semester Plan

Major	CPSC 136	3 CH.	Selection:
Major	CPSC 125 <i>or</i> CPSC 225	3 CH.	Selection:
Major	CPSC 150 <i>or</i> Gen. Ed. Elective	3 CH.	Selection:
Major	Computer Science (CPSC) Elective	3 CH.	Selection:
Gen Ed	Gen. Ed. Elective	3 CH.	Selection:
<b>Total</b>		<b>15 CH.</b>	

## Third Semester Plan

Major	CPSC 235	3 CH.	Selection:
Major	CPSC 237	3 CH.	Selection:
Major	CPSC 225 <i>or</i> Gen. Ed. Elective	3 CH.	Selection:
Major	MATH 140 <i>or</i> MATH 301	3 CH.	Selection:
Gen Ed	Gen. Ed. Elective	3 CH.	Selection:
<b>Total</b>		<b>15 CH.</b>	

## Fourth Semester Plan

Major	MATH 260 <i>or</i> MATH 250 <i>or</i> MATH 330 <i>or</i> MATH 337	3 CH.	Selection:
Major	Computer Science (CPSC) Elective	3 CH.	Selection:
Major	Computer Science (CPSC) Elective	3 CH.	Selection:
Gen Ed	Category C1 Natural Science Elective	3-4 CH.	Selection:
Elective	University Elective	3 CH.	Selection:
<b>Total</b>		<b>15–16 CH.</b>	

***Fifth Semester Plan***

Major	CPSC 328	3 CH.	Selection:
Major	CPSC 343	3 CH.	Selection:
Gen Ed	Category C3 Natural Science Elective	3 CH.	Selection:
Gen Ed	Gen. Ed. Elective	3 CH.	Selection:
Elective	University Elective	3 CH.	Selection:
<b>Total</b>		<b>15 CH.</b>	

***Sixth Semester Plan***

Major	CPSC 310	3 CH.	Selection:
Major	Computer Science (CPSC) Elective	3 CH.	Selection:
Gen Ed	Gen. Ed. Elective	3 CH.	Selection:
Gen Ed	Gen. Ed. Elective	3 CH.	Selection:
Elective	University Elective	3 CH.	Selection:
<b>Total</b>		<b>15 CH.</b>	

***Seventh Semester Plan***

Major	CPSC 354	3 CH.	Selection:
Major	Computer Science (CPSC) Elective	3 CH.	Selection:
Gen Ed	Gen. Ed. Elective	3 CH.	Selection:
Gen Ed	Gen. Ed. Elective	3 CH.	Selection:
Elective	University Elective	3 CH.	Selection:
<b>Total</b>		<b>15 CH.</b>	

***Eighth Semester Plan***

Major	CPSC 355	3 CH.	Selection:
Major	Computer Science (CPSC) Elective	3 CH.	Selection:
Gen Ed	Gen. Ed. Elective	3 CH.	Selection:
Elective	University Elective	3 CH.	Selection:
Elective	University Elective	3 CH.	Selection:
<b>Total</b>		<b>15 CH.</b>	

***Additional Notes:***

1. Students minoring in math should take MATH 260 and MATH 301.
2. Students must take two science courses intended for a science major. At least one of these courses must include a lab. See listing of approved courses on the CS & IT website.
3. CPSC prefix courses below 125 level, CPSC 130, CPSC 280, CPSC 380, and CPSC 87X do not count toward the major requirements for a BS in Computer Science (they can count in university electives only).
4. Internships are optional for program requirements, but highly recommended. These courses, CPSC 280 and CPSC 380, only count in university electives.
5. You may take no more than three 200-level courses.

**Program Plan Code:** BS\_CPSC**Effective Date:** Spring 2024