

# COMPUTER SCIENCE MAJOR

The Computer Science major is designed to provide students with a strong base in theoretical computer science with a very strong emphasis on preparing students to have an impact in the industry on their very first day of employment. Because of this, there is a strong emphasis on the application of knowledge through software development, and on the integration of industry standard tools and practices into the very fiber of the curriculum.

The course levels are designed to bring students through a progression of learning that begins by teaching them the fundamentals needed throughout the program and ends with them applying their acquired knowledge in real-world scenarios and in the creation of new innovative solutions.

At all levels of learning, students' progress in their working knowledge of industry tools and practices as well as soft skill development.

## Important Notes

- 40% of major requirements must be completed at Judson.
- 40% of major requirements must be upper division.

## Gen Eds Required by Major

- Any Mathematics course of 3 hours or more (fulfills Gen Ed Mathematics Requirement)
- Any Science course (with Lab) of 4 hours or more (fulfills Gen Ed Science Requirement)

## Major Requirements

Code	Title	Hours
<b>Computer Science</b>		
CSC104	Linux Programming Environment	3
CSC106	Object Oriented Programming	3
CSC110	Introduction to Programming in C	3
CSC202	Data Structures and Algorithms	3
CSC205	Software Design Patterns & Princ	3
CSC212	Database Systems	3
CSC302	Data Structures & Algorithms II	3
CSC310	Computer Operating Systems and Architecture	3
CSC314	Computer Networks	3
CSC410	Software Engineering	3
CSC420	Cloud Computing	4
CSC490	CS Senior Project	3
or CSC495	CS Internship	
<b>Mathematics</b>		
MAT211	Functions and Calculus I	3-5
or MAT215	Calculus w/Analytic Geometry I	
MAT216	Calculus w/Analytic Geometry II	4
MAT311	Probability and Statistics w/Lab	4
MAT314	Discrete Mathematics	3
<b>Biology/Chemistry/Physics</b>		
Complete one of the following sequences:		8
<b>Sequence A</b>		
BIO171	Principles of Biology w/Lab	

Select one from the following:

BIO172	Prin of Organismal Biology w/Lab
BIO177	Environmental Science w/Lab
SAP3xx Dept-approved course <sup>1</sup>	
<b>Sequence B</b>	
CHM153	General Chemistry I w/Lab
CHM154	General Chemistry II w/Lab
<b>Sequence C</b>	
PHY237	General Physics I w/Lab
PHY238	General Physics II w/Lab
<b>Total Hours</b>	<b>59-61</b>

<sup>1</sup> Dept-Approved course through Shedd Aquarium, Morton Arboretum, Au Sable Institute of Environmental Studies, etc.

## Bachelor of Science in Computer Science (even years) (Four-Year Plan)

Academic planning is the student's responsibility. This Graduation Plan is designed to be a guide to assist students as they plan their course selections. This is only a suggested schedule, and is not a substitute for a student's Degree Audit, nor the Program Requirements in the Judson University Catalog. Actual course selections should be made with the advice and approval of an academic advisor. Students should become familiar with the catalog in effect at the time at which they entered the institution. Course requirements and sequencing may vary with AP courses, transfer courses, English/math placement, or other conditions.

A full-time course load for undergraduate students is 12-18 credits per semester. Illinois residents receiving state aid should register for 15 hours per semester.

Course	Title	Hours
<b>First Year</b>		
<b>First Semester</b>		
ENG101	Expository Writing (or ACT/SAT placement)	3
GEN101	Questions of Life: Entering the Judson Conversation <sup>1</sup>	1
or ESS101	or Wellness	
Physical Activity course		1
MAT211	Functions and Calculus I	3-5
or MAT215	or Calculus w/Analytic Geometry I	
CSC110	Introduction to Programming in C	3
CSC104	Linux Programming Environment	3
<b>Hours</b>		<b>14-16</b>
<b>Second Semester</b>		
ENG102	Critical Thinking and Writing (or ACT/SAT placement)	3
PSY111	Introduction to Psychology	3
or SOC151	or Introduction to Sociology	
MAT216	Calculus w/Analytic Geometry II	4
CSC106	Object Oriented Programming	3
SPC120	Foundations of Speech	3
<b>Hours</b>		<b>16</b>
<b>Second Year</b>		
<b>First Semester</b>		
Gen Ed Visual and Performing Arts Elective		3
CSC202	Data Structures and Algorithms	3
CSC205	Software Design Patterns & Princ	3
Science Elective w/Lab <sup>2</sup>		4
Any Elective		3
<b>Hours</b>		<b>16</b>

Second Semester		
BST110	Intro to the Christian Bible	3
HIS261 or HIS262	History of Civilization I or History of Civilization II	3
CSC212	Database Systems	3
Science Elective w/Lab <sup>2</sup>		4
Any Elective		3
<b>Hours</b>		<b>16</b>
Third Year		
First Semester		
THS110	Christian Faith: Understanding and Application	3
MAT314	Discrete Mathematics	3
CSC302	Data Structures & Algorithms II	3
Any Electives		6
<b>Hours</b>		<b>15</b>
Second Semester		
CSC490 or CSC495	CS Senior Project or CS Internship	3
MAT301	Mathematics Junior Seminar	1
MAT311	Probability and Statistics w/Lab	4
Any Elective		3
<b>Hours</b>		<b>11</b>
Fourth Year		
First Semester		
GEN401	The Good Life: Continuing the Conversation	3
CSC314	Computer Networks	3
CSC310	Computer Operating Systems and Architecture	3
Any Electives		6
<b>Hours</b>		<b>15</b>
Second Semester		
CSC420	Cloud Computing	4
CSC410	Software Engineering	3
Any Electives		9
<b>Hours</b>		<b>16</b>
<b>Total Hours</b>		<b>119-121</b>

<sup>1</sup> First-time students (those entering college directly from high school) should take GEN101; transfer students should take ESS101

<sup>2</sup> See major audit

## Bachelor of Science in Computer Science (odd years) (Four-Year Plan)

Academic planning is the student's responsibility. This Graduation Plan is designed to be a guide to assist students as they plan their course selections. This is only a suggested schedule, and is not a substitute for a student's Degree Audit, nor the Program Requirements in the Judson University Catalog. Actual course selections should be made with the advice and approval of an academic advisor. Students should become familiar with the catalog in effect at the time at which they entered the institution. Course requirements and sequencing may vary with AP courses, transfer courses, English/math placement, or other conditions.

A full-time course load for undergraduate students is 12-18 credits per semester. Illinois residents receiving state aid should register for 15 hours per semester.

Course	Title	Hours
First Year		
First Semester		
ENG101	Expository Writing	3

GEN101 or ESS101	Questions of Life: Entering the Judson Conversation <sup>1</sup> or Wellness	1
Physical Activity course		1
MAT211 or MAT215	Functions and Calculus I or Calculus w/Analytic Geometry I	3-5
CSC110	Introduction to Programming in C	3
CSC104	Linux Programming Environment	3
<b>Hours</b>		<b>14-16</b>

Second Semester		
ENG102	Critical Thinking and Writing	3
PSY111 or SOC151	Introduction to Psychology or Introduction to Sociology	3
SPC120	Foundations of Speech	3
MAT216	Calculus w/Analytic Geometry II	4
CSC106	Object Oriented Programming	3
<b>Hours</b>		<b>16</b>

Second Year		
First Semester		
Gen Ed Visual and Performing Arts Elective		3
Science Elective w/Lab <sup>2</sup>		4
CSC202	Data Structures and Algorithms	3
CSC205	Software Design Patterns & Princ	3
Any Elective		3
<b>Hours</b>		<b>16</b>

Second Semester		
Science Elective w/Lab <sup>2</sup>		4
BST110	Intro to the Christian Bible	3
HIS261 or HIS262	History of Civilization I or History of Civilization II	3
CSC212	Database Systems	3
Any Elective		3
<b>Hours</b>		<b>16</b>

Third Year		
First Semester		
THS110	Christian Faith: Understanding and Application	3
MAT314	Discrete Mathematics	3
CSC314	Computer Networks	3
CSC310	Computer Operating Systems and Architecture	3
Any Elective		3
<b>Hours</b>		<b>15</b>

Second Semester		
CSC420	Cloud Computing	4
CSC410	Software Engineering	3
MAT301	Mathematics Junior Seminar	1
MAT311	Probability and Statistics w/Lab	4
Any Elective		3
<b>Hours</b>		<b>15</b>

Fourth Year		
First Semester		
GEN401	The Good Life: Continuing the Conversation	3
CSC302	Data Structures & Algorithms II	3
Any Electives		9
<b>Hours</b>		<b>15</b>

Second Semester		
CSC490 or CSC495	CS Senior Project or CS Internship	3
Any Electives		12
<b>Hours</b>		<b>15</b>
<b>Total Hours</b>		<b>122-124</b>

<sup>1</sup> First-time students (those entering college directly from high school) should take GEN101; transfer students should take ESS101

<sup>2</sup> See major audit