

Date Submitted: 03/09/26 3:07 pm

Viewing: **BS-CS-2 : Bachelor of Science in Computer Science**

Last approved: 02/10/26 10:48 am

Last edit: 03/09/26 3:07 pm

Changes proposed by: bauerm

Catalog Pages
Using this Program
[Bachelor of Science in Computer Science](#)

Program Status	Active		
Requestor	Name	Matthew Bauer	E-mail
	bauerm@iit.edu		
Origination Date	<u>2026-3-9</u> 2026-1-7		
Is this an interdisciplinary program?	No		
Is this an incubator program?			
Is this stem-eligible?	Yes		
Available for direct application?	Yes		
Academic Unit	Computer Science College of Computing		
Program Title	Bachelor of Science in Computer Science		
Effective Academic Year	2026 - 2027	Effective Term	
	Summer 2026		
Academic Level	Undergraduate		

In Workflow

1. CSCI Chair
2. Academic Affairs
3. Undergraduate Academic Affairs
4. CC Dean
5. Undergraduate Studies Committee Chair
6. Faculty Council Chair
7. Academic Affairs

Approval Path

1. 03/02/26 2:10 pm
Mustafa Bilgic (mbilgic): Approved for CSCI Chair
2. 03/09/26 3:06 pm
Ayesha Qamer (aqamer): Rollback to Initiator
3. 03/18/26 3:41 pm
Mustafa Bilgic (mbilgic): Approved for CSCI Chair
4. 03/19/26 12:45 pm
Ayesha Qamer (aqamer): Approved for Academic Affairs
5. 03/20/26 1:43 pm
Joseph Gorzkowski (jgorzkow): Approved for Undergraduate Academic Affairs
6. 03/20/26 2:48 pm
Nicole Beebe (nbeebe1): Approved for CC Dean

History

1. Oct 26, 2017 by clmig-jwehrheim
2. Nov 8, 2017 by Sarah Pariseau (sparisea)
3. Feb 28, 2018 by Sarah Pariseau (sparisea)
4. Mar 15, 2018 by Sarah Pariseau (sparisea)
5. Apr 2, 2018 by Sarah Pariseau (sparisea)
6. Apr 2, 2018 by Sarah Pariseau (sparisea)
7. Jun 19, 2018 by Sarah Pariseau (sparisea)
8. Oct 30, 2018 by Matthew Bauer (bauerm)
9. Mar 11, 2019 by Matthew Bauer (bauerm)
10. Nov 1, 2023 by Patty Johnson Winston (winston)
11. Nov 1, 2023 by Patty Johnson Winston (winston)
12. Feb 10, 2026 by Matthew Bauer (bauerm)

If all courses in a subject in your department are required, please enter each subject followed by the number ranges in the "Quick Add" field in the pop up box when you click the green plus button below. For example: ARCH 100-499.

What courses will factor the major GPA?

Program Type Degree
 Degree Type Bachelor of Science (BS)

CIP Code

11.0701 - Computer Science.

Is there more than one Academic Unit proposer?

No

Program Code BS-CS-2

Program Attribute

Total Program 121 ~~127~~
Credit Hours

Rationale for
change in program
credit hours.

bring credit hours in alignment with new minimum credit hours for UG degree

Please provide a
summary and
rationale for the
requested program
revision.

BS in CS (total hours reduced from 127 to 121)

• Reduce the science electives from 6 credit hours to 3 credit hours

• Reduce the free electives from 12 credit hours to 9 credit hours 1) Add an Artificial

Intelligence specialization (available to both BS in CS and BS in CIS). 2) Update the wording for

~~what courses can be used for a Computer Science elective for BS in CS and BS in CIS~~

~~degrees. Removed CS447 from specializations~~

Program Narrative and Justification

Narrative description of how the institution determined the need for the program. For example, describe what need this program will address and how the institution became aware of that need. If the program is replacing a current program(s), identify the current program(s) that is being replaced by the new program(s) and provide details describing the benefits of the new program(s). If the program will be offered in connection with, or in response to, an initiative by a governmental entity, provide details of that initiative.

Which program resources are necessary to offer this program?

Proposed Catalog Entry

Admission
Requirements

Course Requirements

Required Courses

Computer Science Requirements		(36)
<u>CS 100</u>	Introduction to the Profession	2
<u>CS 115</u>	Object-Oriented Programming I	2
<u>CS 116</u>	Object-Oriented Programming II ¹	2
<u>CS 330</u>	Discrete Structures	3
<u>CS 331</u>	Data Structures and Algorithms	3
<u>CS 350</u>	Computer Organization and Assembly Language Programming	3
<u>CS 351</u>	Systems Programming	3
<u>CS 425</u>	Database Organization	3
<u>CS 430</u>	Introduction to Algorithms	3
<u>CS 440</u>	Programming Languages and Translators	3
<u>CS 450</u>	Operating Systems	3
<u>CS 485</u>	Computers and Society	3
<u>CS 487</u>	Software Engineering I	3
Computer Science Electives		(12)
Select 12 credit hours ²		12
Mathematics Requirements		(20)
<u>MATH 151</u>	Calculus I	5
<u>MATH 152</u>	Calculus II	5
<u>MATH 251</u>	Multivariate and Vector Calculus	4
<u>MATH 332</u>	Linear Algebra: Theory and Applications	3

or MATH 333	Matrix Algebra and Complex Variables	
MATH 474	Probability and Statistics	3
or MATH 475	Probability	
Mathematics Elective		(3)
Select one of the following:		3
MATH 252	Introduction to Differential Equations	4
MATH 350	Introduction to Computational Mathematics	3
MATH 380	Mathematical Modeling with Data	3
MATH 410	Number Theory	3
MATH 435	Linear Optimization	3
MATH 453	Combinatorics	3
MATH 454	Graph Theory and Applications	3
MATH 476	Statistics	3
MATH 481	Introduction to Stochastic Processes	3
Science Requirements		(8)
PHYS 123	General Physics I: Mechanics	4
PHYS 221	General Physics II: Electricity and Magnetism	4
Science Elective		(3)
Select six credit hours³		6
<u>Select three credit hours³</u>		<u>3</u>
Communication Elective		(3)
Select one of the following:		3
COM 421	Technical Communication	3
COM 424	Document Design	3
COM 425	Editing	3
COM 428	Verbal and Visual Communication	3
COM 435	Intercultural Communication	3
Interprofessional Projects (IPRO)		(6)
See Illinois Tech Core Curriculum, section E		6
Humanities and Social Sciences Requirements		(21)
See Illinois Tech Core Curriculum, sections B and C		21
Free Electives		(9)

[Select 12 credit hours](#)

12

[Select 9 credit hours](#)

9

Total Credit Hours

121

1

[CS 201](#) is a one-semester, accelerated course equivalent to the two-semester [CS 115/CS 116](#) sequence.

2

Computer science electives: Any CS course at the 300-level or higher, including graduate CS courses, may be used as a Computer Science elective, except [CS 401](#) and [CS 402](#). Up to 6 credit hours of [CS 491](#) or [CS 497](#) may be used as Computer Science electives. Up to two Computer Science electives can be chosen from CSP 400-level or CSP 500-level courses, or from courses in other departments with significant computation content with Computer Science department's prior approval.

3

Science elective (no lab required): Chosen from Biology, Chemistry, Food Science, Material Science, or courses marked with an (N) (natural science attribute) in the Undergraduate Catalog. A Physics course cannot be chosen for the science elective.

Sample

Curriculum/Program

Requirements

Bachelor of Science in Computer Science Curriculum

			Year 1
Semester 1	Credit Hours	Semester 2	Credit Hours
CS 100	2	CS 116 ¹	2
CS 115 ¹	2	MATH 152	5
MATH 151	5	PHYS 123	4
Humanities 200-level Course	3	Humanities Elective (300+)	3
Social Sciences Elective	3	Social Sciences Elective (300+)	3
	15		17
			Year 2
Semester 1	Credit Hours	Semester 2	Credit Hours
CS 330	3	CS 350	3
CS 331	3	CS 425	3
MATH 251	4	MATH 332 or 333	3
PHYS 221	4	Humanities Elective (300+)	3
Social Sciences Elective (300+)	3	Science Elective ²	3
	17		15
			Year 3
Semester 1	Credit Hours	Semester 2	Credit Hours
CS 351	3	CS 430	3
CS 440	3	CS 450	3
MATH 474 or 475	3	I PRO Elective I	3
Communication Elective ³	3	Mathematics Elective	3

Semester 1	Credit Hours	Semester 2	Credit Hours
Computer Science Elective ⁴	3	Free Elective	3
	15		15
Year 4			
CS 487	3	CS 485	3
IPro Elective II	3	Computer Science Elective ⁴	3
Computer Science Elective ⁴	3	Computer Science Elective ⁴	3
Science Elective²	3	Free Elective	3
Humanities or Social Sciences Elective	3	Free Elective	3
Free Elective	3		
	15		12

Total Credit Hours: 121

¹ [CS 201](#) is a one-semester, accelerated course equivalent to the two-semester [CS 115/CS 116](#) sequence.

² Science elective (no lab required): Chosen from Biology, Chemistry, Food Science, Material Science, or courses marked with an (N) (natural science attribute) in the Undergraduate Catalog. A Physics course cannot be chosen for the science elective.

³ Communication elective must be [COM 421](#), [COM 424](#), [COM 425](#), [COM 428](#), or [COM 435](#).

⁴ Computer science electives: Any CS course at the 300-level or higher, including graduate CS courses, may be used as a Computer Science elective, except [CS 401](#) and [CS 402](#). Up to 6 credit hours of [CS 491](#) or [CS 497](#) may be used as Computer Science electives. Up to two Computer Science electives can be chosen from CSP 400-level or CSP 500-level courses, or from courses in other departments with significant computation content with Computer Science department's prior approval.

Specialization Requirements

Artificial Intelligence

A minimum of four courses are required for this specialization.

CS 480	Introduction to Artificial Intelligence	3
Select a minimum of three courses from the following:		9
CS 422	Data Mining	3
CS 429	Information Retrieval	3
CS 481	Artificial Intelligence Language Understanding	3
CS 484	Introduction to Machine Learning	3
CS 512	Computer Vision	3
CS 577	Deep Learning	3
CS 579	Online Social Network Analysis	3
CS 581	Advanced Artificial Intelligence	3

CS 584	Machine Learning	3
CS 585	Natural Language Processing	3
CSP 571	Data Preparation and Analysis	3

~~Computer Science Honors Research~~ Computer Science Honors Research

A minimum of 13 credit hours are required for this specialization.

CS 492	Introduction to Computer Science Research ¹	1
CS 491	Undergraduate Research ²	6
or CS 497	Special Projects	
Graduate Computer Science Electives ³		6

¹ Students will be required to take [CS 492](#) in their first or second year.

² Students must complete an ambitious research project and associated honors thesis, advised by a computer science faculty member. The thesis/project culminates in a presentation to a committee for approval in their last semester (six credit hours of [CS 491](#) or [CS 497](#)).

³ Students must take at least two adviser approved 500-level computer science courses.

Data Science

A minimum of four courses are required for this specialization. Only two courses may be applied as computer science electives.

BUS 371	Marketing Fundamentals	3
CS 422	Data Mining	3
or CS 584	Machine Learning	
CS 451	Introduction to Parallel and Distributed Computing	3
MATH 481	Introduction to Stochastic Processes	3
or MATH 483	Design and Analysis of Experiments	

Note: [MATH 481](#) has prerequisites of [MATH 332](#) or [MATH 333](#) and [MATH 475](#); [MATH 483](#) has a prerequisite of [MATH 476](#).

Distributed and Cloud Computing

A minimum of four courses are required for this specialization.

CS 442	Mobile Applications Development	3
CS 451	Introduction to Parallel and Distributed Computing	3

CS 455	Data Communications	3
CS 553	Cloud Computing	3

Information and Knowledge Management Systems

A minimum of four courses are required for this specialization.

CS 480	Introduction to Artificial Intelligence	3
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Select a minimum of three courses from the following: 9

CS 422	Data Mining	3
CS 429	Information Retrieval	3
CS 481	Artificial Intelligence Language Understanding	3
CS 484	Introduction to Machine Learning	3
CS 512	Computer Vision	3
CS 577	Deep Learning	3
CS 579	Online Social Network Analysis	3
CS 581	Advanced Artificial Intelligence	3
CS 584	Machine Learning	3
CS 585	Natural Language Processing	3
CSP 571	Data Preparation and Analysis	3

Information Security

A minimum of four courses are required for this specialization.

CS 425	Database Organization	3
CS 458	Introduction to Information Security	3
CS 455	Data Communications	3
CS 549	Cryptography and Network Security	3
or CS 558	Advanced Computer Security	

Program Outcomes and Assessment Process

What are your learning objectives in this program? Please list each learning objective in the boxes below:

Note: These should be the same as described in your assessment plan at the bottom of this form.

Upload your assessment plan here:

Undergraduate Program Requirements

What courses will factor the major GPA?

Undergraduate Degree Requirements

Minimum credit hours 121 ~~127~~

Specialization required?
Optional

Notes about specialization requirement

Minor required?
No

Proposed General Curriculum

Degree credit hours required 127

Specialization credit hour requirement 12

List Major Course Requirements

List Mathematics Requirements

List Science Requirements

List Computer Science Requirements

List Humanities and Social Sciences Requirements

List Interprofessional Project (IPRO) Requirements

List Technical Elective Course Options

List Free Elective Credit Hours (if applicable) 12

Semester-by-semester plan of study for the degree program

Specialization

Report to Faculty Council

Reviewer

Comments

Ayesha Qamer (aqamer) (03/09/26 3:06 pm): Rollback: Please adjust the program total credit hours at the top of the form to 121 if that is the new total.

Key: 43