Date Submitted: 12/08/25 7:27 am

Viewing: BS-CIS-2 : Bachelor of Science in Computer Information Systems

Last approved: 10/23/20 5:57 pm

Last edit: 01/06/26 9:42 am

Changes proposed by: bauerm

Catalog Pages Using this Program

Bachelor of Science in Computer Information Systems

Program Status	Active			
Requestor	Name	Matthew Bauer ~~Holli Pryor-Harris~~	E-mail	bauerm@iit.edu ~~pryor@iit.edu~~
Origination Date	2025-12-8 ~~2020-10-23~~			
Is this an interdisciplinary program?	No			
Is this stem-eligible?	Yes			
Available for direct application?	Yes			
Academic Unit	Computer Science			
College	College of Computing			
Program Title	Bachelor of Science in Computer Information Systems			
Effective Academic Year	2026 ~~2020~~ - 2027 ~~2021~~		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. 01/06/26 9:43 am Mustafa Bilgic (mbilgic): Approved for CSCI Chair
2. 01/07/26 8:36 am Ayesha Qamer (aqamer): Approved for Academic Affairs
3. 01/07/26 9:09 am Joseph Gorzkowski (jgorzkow): Approved for Undergraduate Academic Affairs

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 23, 2020 by Holli Pryor-Harris (pryor)

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

11.0101 - Computer and Information Sciences, General.

Is there more than one Academic Unit proposer?

No

Program Code	BS-CIS-2
Program Attribute	
Total Program Credit Hours	127

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

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.

3) Removed CS 447, which no longer exists. ~~10/23/2020 Updated program iteration code and effective CAT year/term for College Reorg.HPH~~

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 initative by a governmental entity, provide details of that initiative.

Narrative description of how the program was designed to meet local market needs, or for an online program, regional or national market needs. For example, indicate if Bureau of Labor Statistics data or State labor data systems information was used, and/or if State, regional, or local workforce agencies were consulted. Include how the course content, program length, academic level, admission requirements, and prerequisites were decided; including information received from potential employers about course content; and information regarding the target students and employers.

Narrative description of any wage analysis the institution may have performed, including any consideration of Bureau of Labor Statistics wage data related to the new program.

Narrative description of how the program was reviewed or approved by, or developed in conjunction with, one or more of the following: a) business advisory committees; b) program integrity boards; c) public or private oversight or regulatory agencies (not including the state licensing/authorization agency and accrediting agency); and d) businesses that would likely employ graduates of the program. For example, describe the steps taken to develop the program, identify when and with whom discussions were held, provide relevant details of any proposals or correspondence generated, and/or describe any process used to evaluate the program.

Admission Entry Details

What are the enrollment estimates?

Year 1	Year 2	Year 3

Attach Additional Program Justification Document(s)

Academic Information

Advising

Since quality advising is a key component of good retention, graduation, and career placement, how will students be mentored? What student professional organizations will be formed? How will the department work with the Career Services office to develop industry connections?

Program Resources

Which program resources are necessary to offer this program?

Proposed Catalog Entry

Admission Requirements

Course Requirements

Required Courses

Computer Science Requirements		**(18)**
CS 100	Introduction to the Profession	2
CS 115	Object-Oriented Programming I	2
CS 116	Object-Oriented Programming II	2
CS 330	Discrete Structures	3
CS 331	Data Structures and Algorithms	3
CS 350	Computer Organization and Assembly Language Programming	3
CS 351	Systems Programming	3
Computer Science Technical Electives		**(15)**
Select 15 credit hours [1]		15
Computer Science Electives		**(6)**
Select six credit hours [3]		6

Mathematics Requirement		**(5)**
MATH 151	Calculus I	5
Mathematics Elective		**(3)**
Select three credit hours		3
Science Requirements		**(11)**
BIOL 105	Introduction to Biology	3
or BIOL 114	Introduction to Human Biology	
CHEM 124	Principles of Chemistry I with Laboratory	4
PHYS 123	General Physics I: Mechanics	4
Science Elective		**(3)**
Select three credit hours		3
Psychology Requirements		**(6)**
PSYC 221	Introduction to Psychological Science	3
PSYC 301	Industrial Psychology	3
Political Science Requirement		**(3)**
Select three credit hours [2]		3
Humanities and Social Sciences Requirements		**(21)**
See Illinois Tech Core Curriculum, sections B and C		21
Interprofessional Projects (IPRO)		**(6)**
See Illinois Tech Core Curriculum, section E		6
Minor Electives		**(15)**
Select 15 credit hours		15
Free Electives		**(15)**
Select 15 credit hours		15
Total Credit Hours		127

1 Computer science technical electives are designated with a (T) in the course descriptions.

2 Any 200-level political science course.

3 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.

Sample Curriculum/Program Requirements

Bachelor of Science in Computer Information Systems Curriculum

Year 1			
Semester 1	Credit Hours	Semester 2	Credit Hours
CS 100	2	CS 116	2
CS 115	2	BIOL 105 or 114	3
MATH 151	5	Mathematics Elective	3
PSYC 221	3	Humanities or Social Sciences Elective	3
Humanities 200-level Course	3	Social Sciences Elective	3
	15		14

Year 2			
Semester 1	Credit Hours	Semester 2	Credit Hours
CS 330	3	CS 350	3
CS 331	3	PHYS 123	4
CHEM 124	4	Minor Elective	3
Political Science Course[1]	3	Computer Science Elective[3]	3
Humanities Elective (300+)	3	Computer Science Technical Elective[2]	3
	16		16

Year 3			
Semester 1	Credit Hours	Semester 2	Credit Hours
CS 351	3	PSYC 301	3
Minor Elective	3	IPRO Elective I	3
Science Elective	3	Minor Elective	3
Social Sciences Elective (300+)	3	Computer Science Technical Elective[2]	3
Free Elective	3	Humanities Elective (300+)	3
		Free Elective	3
	15		18

Year 4			
Semester 1	Credit Hours	Semester 2	Credit Hours
Minor Elective	3	IPRO Elective II	3
Computer Science Elective[3]	3	Minor Elective	3
Computer Science Technical Elective[2]	3	Computer Science Technical Elective[2]	3
Computer Science Technical Elective[2]	3	Free Elective	3
Social Sciences Elective (300+)	3	Free Elective	3
Free Elective	3		
	18		15

Total Credit Hours: 127

1 Any 200-level political science course

2 Computer science technical electives are designated with a (T) in the course descriptions.

3 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:		6
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

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

CS 492	Introduction to Computer Science Research	1
CS 491	Undergraduate Research	6
or CS 497	Special Projects	

Graduate Computer Science Electives [2]		6

1 Students will be required to take CS 492 in their first or second year.

2 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.

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 425	Database Organization	3
CS 482	Information and Knowledge Management Systems	3
Select a minimum of two courses from the following:		6
CS 422	Data Mining	3
CS 429	Information Retrieval	3
CS 481	Artificial Intelligence Language Understanding	3
CS 585	Natural Language Processing	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	127
Specialization required?	Optional
Notes about specialization requirement	
Minor required?	Yes
How many credit hours are required for the minor?	15
Details about the minor requirement	

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)	15
Semester-by-semester plan of study for the degree program	

Specialization

Reviewer Comments	

Key: 44