Date Submitted: 02/10/26 4:11 pm

Viewing: BS-CPE : Bachelor of Science in Computer Engineering

Last approved: 07/01/22 10:06 am

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Changes proposed by: catino

Catalog Pages Using this Program	Bachelor of Science in Computer Engineering

Program Status	Active		
Requestor	Name	Joanette Catino ~~Patty Johnson Winston~~	E-mail
Origination Date	2026-2-10 ~~2022-7-1~~		
Is this an interdisciplinary program?	No		
Is this stem-eligible?	Yes		
Available for direct application?	Yes		
Academic Unit	Electrical & Computer Engrg	College	Armour College of Engineering
Program Title	Bachelor of Science in Computer Engineering		
Effective Academic	2026 ~~2022~~ - 2027	Effective Term	Summer 2026

Year	~~2023~~
Academic Level	Undergraduate

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	14.0901 - Computer Engineering, General.
Is there more than one Academic Unit proposer?	
	No
Program Code	BS-CPE
Program Attribute	
Total Program Credit Hours	131
Please provide a summary and rationale for the requested program revision.	Updated footnotes ~~Updated curriculum to include more elective choices.~~

Program Narrative and Justification

Louis Cattafesta III (lcattafestaiii): Approved for AC Dean

6. 02/10/26 3:07 pm Kathiravan Krishnamurthy (kkrishn2): Rollback to Initiator
7. 02/24/26 3:35 pm Erdal Oruklu (oruklu): Approved for EECE Chair
8. 02/25/26 2:25 pm Ayesha Qamer (aqamer): Approved for Academic Affairs
9. 02/26/26 12:09 pm Joseph Gorzkowski (jgorzkow): Approved for Undergraduate Academic Affairs
10. 02/26/26 12:13 pm Louis Cattafesta III (lcattafestaiii): Approved for AC Dean

History

1. Oct 18, 2017 by clmig-jwehrheim
2. Nov 8, 2017 by Sarah Pariseau (sparisea)
3. Apr 27, 2018 by

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

Curriculum

Required Courses

Electrical Engineering Requirements		(28)
ECE 100	Introduction to the Profession I	3
ECE 211	Circuit Analysis I	3
ECE 213	Circuit Analysis II	4
ECE 218	Digital Systems	4
ECE 242	Digital Computers and Computing	3
ECE 311	Engineering Electronics	4
ECE 441	Smart and Connected Embedded System Design	4
ECE 485	Computer Organization and Design	3
Computer Science Major Requirements		**(16)**
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 351	Systems Programming	3
CS 450	Operating Systems	3
Junior Computer Engineering Elective		**(3-4)**
Select one of the following:		3-4
ECE 307	Electrodynamics	4
ECE 308	Signals and Systems	3
ECE 319	Fundamentals of Power Engineering	4
Professional ECE Electives		**(6-8)**
Select six to eight credit hours		6-8
Computer Systems/Software Elective		**(3-4)**
Select one of the following:		3-4

[ECE 407](#)	Introduction to Computer Networks with Laboratory	4
[ECE 408](#)	Introduction to Computer Networks	3
[ECE 443](#)	Introduction to Computer Cyber Security	3
[ECE 449](#)	Object-Oriented Programming and Machine Learning	3
[CS 425](#)	Database Organization	3
[CS 487](#)	Software Engineering I	3
Hardware-Design Elective		**(4)**
[ECE 429](#)	Introduction to VLSI Design	4
or [ECE 446](#)	Advanced Logic Design	
Mathematics Requirements		**(24)**
[MATH 151](#)	Calculus I	5
[MATH 152](#)	Calculus II	5
[MATH 251](#)	Multivariate and Vector Calculus	4
[MATH 252](#)	Introduction to Differential Equations	4
[MATH 374](#)	Probability and Statistics for Electrical and Computer Engineers	3
[MATH 333](#)	Matrix Algebra and Complex Variables	3
or [MATH 350](#)	Introduction to Computational Mathematics	
Physics Requirements		**(8)**
[PHYS 123](#)	General Physics I: Mechanics	4
[PHYS 221](#)	General Physics II: Electricity and Magnetism	4
Chemistry Requirement		**(3)**
[CHEM 122](#)	Principles of Chemistry I	3
Career Elective		**(9) [1]**
Career Elective I [2]		3
Career Elective II [3]		3
Career Elective III [4]		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
Total Credit Hours	131-135

1

Advisor-approved course from engineering, science, math, computer science, business, and law that is the same level or more advanced than the academic level of the student.

2

Career Elective I is 100-level or above

3

Career Elective II is 200-level or above

4

Career Elective III is 300-level or above

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Sample Curriculum/
Program
Requirements

Bachelor of Science in Computer Engineering Curriculum

			Year 1	
Semester 1	Credit Hours	Semester 2		Credit Hours
MATH 151	5	MATH 152		5
CHEM 122	3	PHYS 123		4
CS 115	2	Career Elective I[1]		3
ECE 100	3	CS 116		2
Humanities 200-level course	3	Social Sciences Elective		3
	16			17
			Year 2	
Semester 1	Credit Hours	Semester 2		Credit Hours
MATH 252	4	MATH 251		4
PHYS 221	4	Career Elective II[1]		3

ECE 211	3	ECE 213	4
ECE 218	4	ECE 242	3
CS 331	3	CS 330	3
	18		17

Year 3

Semester 1	Credit Hours	Semester 2	Credit Hours
IPRO Elective I	3	Junior CPE Elective[2]	3-4
ECE 311	4	CS 450	3
CS 351	3	MATH 374	3
MATH 333 or 350	3	Social Sciences Elective (300+)	3
Humanities Elective (300+)	3	Career Elective III[1]	3
	16		15-16

Year 4

Semester 1	Credit Hours	Semester 2	Credit Hours
ECE 485	3	ECE 441[5]	4
Computer Systems/Software Elective[3]	3-4	Professional CPE Elective[4]	3-4
ECE 429 or 446	4	IPRO Elective II	3
Professional CPE Elective[5]	3-4	Additional Hum. or Soc. Sci. Elective	3
Humanities Elective (300+)	3	Social Sciences Elective (300+)	3
	16-18		16-17

Total Credit Hours: 131-135

[1]

Career Electives: Advisor-approved course from engineering, science, math, computer science, business, and law that is the same level or more advanced than the academic level of the student. Career Elective I is 100-level or above, Career Elective II is 200-level or above, Career Elective III is 300-level or above.

[2]

Junior CPE elective: Choose one of ECE 307, ECE 308, or ECE 319.

[3]

Computer systems/software elective: Choose one of ECE 407, ECE 408, ECE 443, ECE 448, ECE 449, CS 425, or CS 487.

[4]

Professional CPE Elective: ECE 4xx with (P) or any CS 4xx except CS 485. A maximum of 3 credit hours of ECE 491, or ECE 497.

[5]

ECE 441 is a Major Design Experience (M) course.

[6] ~~ECE 441 is a Major Design Experience (M) course.~~

Specialization
Requirements

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	131
Specialization required?	No
Minor required?	No

Proposed General Curriculum

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)

Semester-by-semester plan of study for the degree program	
Report to Faculty Council	
Reviewer Comments	**Erdal Oruklu (oruklu) (12/12/25 1:51 pm):** Rollback: Add the footnote number 2 for the Junior Elective in the sample program **Kathiravan Krishnamurthy (kkrishn2) (02/10/26 3:07 pm):** Rollback: Per request of Erdal Oruklu on February 10, 2026, this proposal is rolled back.