Date Submitted: 01/15/26 4:58 am

Viewing: CER-FSC : Certificate in Foundations of Computer Science

Last approved: 05/31/22 1:16 pm

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Changes proposed by: bauerm

Catalog Pages Using this Program
Certificate in Foundations of Computer Science

In Workflow

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

History

1. May 31, 2022 by Shlomo Argamon (argamon)

Program Status	Active		
Requestor bauerm@iit.edu ~~argamon@iit.edu~~	Name	Matthew Bauer ~~Shlomo Argamon~~	E-mail
Origination Date	2026-1-15 ~~2021-12-15~~		
Is this an interdisciplinary program?	No		
Is this stem-eligible?	Yes		
Available for direct application?	Yes		
Academic Unit College of Science	Computer Science		College
Program Title	Certificate in Foundations of Computer Science		
Effective Academic Year	2026 ~~2022~~ - 2027 ~~2023~~	Effective Term	Summer 2026
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 Undergraduate Certificate

Are you seeking Title IV federal financial aid student eligibility status for this program?

Yes

CIP Code
11.0701 - Computer Science.

SOC Code 15-1252.00

Is there more than one Academic Unit proposer?

No

Program Code CER-FSC

Program Attribute

Total Program Credit Hours 12

Please provide a summary and rationale for the requested program revision.
Allowing UG course options for CS401

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.

We have had inquiries from industry about certificate programs for upskilling and cross-skilling their employees. One key need is for people in non-computing professions to learn fundamental computer science, which will expand their reach in their professions. This certificate also will give students the foundation for further certificate or degree studies in computer science, data science, and artificial intelligence.

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.

See above. We have had specific interest in this program from HACE, a career enhancement network with over 80,000 members.

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.

Per BLS statistics:
Employment of computer and information technology occupations is projected to grow 12 percent from 2018 to 2028, much faster than the average for all occupations. These occupations are projected to add about 546,200 new jobs. Demand for these workers will stem from greater emphasis on cloud computing, the collection and storage of big data, and information security.

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.

Program developed and approved by the CS department undergraduate studies committee.

Admission Entry Details

What are the enrollment estimates?

Year 1	20	Year 2	40	Year 3	80

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?

Students will be advised by CS faculty through usual processes, and we will work with Career Services and M&C to expand industry connections.

Program Resources

Which program resources are necessary to offer this program?

Personnel

Facilities

Describe the personnel requirements necessary to offer the program. Describe how and when resources will be made available to hire any additional personnel that are required.

Usual faculty for existing courses.

Describe the facilities requirements necessary to offer the program. Describe how and when resources will be made available to obtain any additional facilities that are required.

Usual teaching facilities.

Proposed Catalog Entry

Admission Requirements

Completion of at least 45 college credits with a GPA of at least 2.5/4.0 and evidence of computer programming ability are required; students without demonstrated programming ability may be required to take CS 201 as a deficiency course.
(please ignore or delete below "curriculum" including 500-level courses)

Course Requirements

Curriculum

~~CS 401~~	~~Introduction to Advanced Studies I~~	~~3~~
CS 331	Data Structures and Algorithms	3
or CS 401	Introduction to Advanced Studies I	
CS 425	Database Organization	3
CS 430	Introduction to Algorithms	3
CS Elective - Any 400 level CS course except for CS 401, CS 402, 425 and CS 430.		3

Total Credit Hours	12

Sample Curriculum/Program Requirements

Year 1

Semester 1	Credit Hours	Semester 2	Credit Hours
CS 331 or 401	3	CS 425	3
	3		3

Year 2

Semester 1	Credit Hours	Semester 2	Credit Hours
CS 430	3	CS4xx Elective	3
	3		3

Total Credit Hours: 12

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?

Certificate

Is at least 50% of the requested certificate program made up of existing courses, or is the program a subset of an existing degree program?

No

Yes, one or both of these conditions apply.
No, neither of these apply.

Minimum credit hours 12

Is the certificate program a competency-based education (CBE) program? This would include credit-based, direct assessment or hybrid CBE programs.

No

How will the certificate program be offered? Select all that apply. (See HLC's Glossary for definitions of distance and correspondence education.)

Distance education
On-ground instruction

Has the institution outsourced a portion of the program to an entity not accredited by an agency recognized by the U.S. Department of Education?

No

List Certificate Course Requirements

~~CS 401~~	~~Introduction to Advanced Studies I~~	~~3~~
CS 331	Data Structures and Algorithms [1]	3
or CS 401	Introduction to Advanced Studies I	
CS 425	Database Organization	3

CS 430	Introduction to Algorithms	3
CS Elective - Any 400-level CS course other than CS401, CS402, CS425, and CS430		3
Total Credit Hours		12

Reviewer
Comments

Key: 517