Date Submitted: 12/19/25 12:26 pm

Viewing: BS-ACIT-1 : Bachelor of Science in Applied Cybersecurity and Information Technology

Last approved: 03/15/23 4:31 pm

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Changes proposed by: gopal

Catalog Pages Using this Program

Bachelor of Science in Applied Cybersecurity and Information Technology

Program Status	Active			
Requestor	Name	Gurram Gopal ~~Raymond Trygstad~~	E-mail	gopal@iit.edu ~~trygstad@iit.edu~~
Origination Date	2025-12-19 ~~2023-2-1~~			
Is this an interdisciplinary program?	No			
Is this stem-eligible?	Yes			
Available for direct application?	Yes			
Academic Unit	Information Technology & Mgmt		College	College of Computing
Program Title	Bachelor of Science in Applied Cybersecurity and Information Technology			
Effective Academic Year	2026 ~~2023~~ - 2027 ~~2024~~		Effective Term	Summer 2026
Academic Level	Undergraduate			

In Workflow

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

History

1. May 24, 2018 by Sarah Pariseau (sparisea)
2. May 25, 2018 by Raymond Trygstad (trygstad)
3. Apr 3, 2019 by Raymond Trygstad (trygstad)
4. Jun 10, 2021 by Raymond Trygstad (trygstad)
5. Mar 15, 2023 by Raymond Trygstad (trygstad)

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
11.1003 - Computer and Information Systems Security/Auditing/Information Assurance.

Is there more than one Academic Unit proposer?

No

Program Code BS-ACIT-1

Program Attribute

Total Program Credit Hours 121 ~~129~~

Rationale for change in program credit hours.
1. Feedback from employers has allowed us to change the math requirements, decreasing the number of credits required.
2. Illinois Tech has reduced the minimum number of credit hours required for a BS degree to 120
3. By reducing the minimum number of credits required for graduation to 121 (from 129), students can graduate sooner with the skills required for appropriate jobs or further study post graduation.

Please provide a summary and rationale for the requested program revision.
12/18/2025- There are three proposed changes:

1. ~~1/31/2-23 = Add an additional required course, ITM 303 Introduction to Contemporary Hardware and Operating Systems II, to reflect changes in necessary levels of introductory material in the discipline, and to replace ITM 100 Introduction to Information Technology as a Profession with ITMT 330 Introduction to Information Systems and IT as a Profession as the department's Introduction to the Profession (ITP)course.~~Change ~~There is also a re-arranging of~~ the math requirements to align with the needs of the curriculum ~~Plan of Study accommodate the newly added course~~ and the academic preparation desired by employers of our

cybersecurity and IT students. ~~to better reflect current advising practice in the department.~~
2. Increase ~~This change removes three hours of free elective, bringing~~ the number of free ~~free~~ electives to enable students to pursue a minor, which we highly recommend. ~~three hours for the degree.~~
3. As a consequence of #1 above, reduce the minimum number of credits required for graduation to 121 (from 129), enabling students to graduate sooner. ~~This does not change the number of hours in the degree, nor will this along with changes made over the last 5 years exceed the 25% level.Consequently, this is a MINORCHANGE to the degree.~~

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.

The Bachelor of Science in Applied Cybersecurity and Information Technology (BSCIT) lays down a solid base of 36 hours of required courses in information technology as a foundation for the 27 ~~21~~ hours of dedicated courses in cybersecurity, including ~~along with~~ a 3 hour capstone course. It includes a mathematics track which includes courses ~~culminating~~ in Discrete Mathematics, Finite Mathematics, ~~a calculus-based probability~~ and Statistics. ~~statistics course, properly equipping students for advanced study and research in the field.~~ The Bulletin pages for the program follow this form and provide more complete details. This program prepares students to enter the workforce in cybersecurity roles, particularly entry-level security analyst positions, or to continue on to advanced studies ~~and research~~ in the field.

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.

Cybersecurity is one of the fastest growing fields in the world. “ISACA, a non-profit information security advocacy group, predicts there will be a global shortage of two million cyber security professionals by 2019. Every year in the U.S., 40,000 jobs for information security analysts go unfilled, and employers are struggling to fill 200,000 other cyber-security related roles, according to cyber security data tool CyberSeek.” (Forbes, “The Fast-Growing Job With A Huge Skills Gap: Cyber Security” by Jeff Kauflin, March 16, 2017) According to the U.S. Bureau of Labor Statistics, between 2012 and 2022, the rate of growth for information security analysts is expected to be 36.5 percent. With this huge gap in supply and demand, there is a clear need for educated cybersecurity professionals in the job market, and an even bigger need for researchers in the field. ABET is expected to begin accrediting programs in cybersecurity possibly as early as 2018. Additional workforce demand details can be seen at the National Initiative for Cybersecurity Education (NICE) website at https://www.nist.gov/sites/default/files/documents/2017/01/30/nice_workforce_demand.pdf

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.

This degree encompasses existing requirements for the Bachelor of Information Technology and Management as a foundation and builds on this base to develop cybersecurity knowledge, skills, and abilities. When ABET finalizes the Program Criteria for Cybersecurity and Similarly Named Computing programs, this program as drafted will meet requirements for accreditation in both Information Technology and Cybersecurity.

Significant Federal scholarship opportunities are open to students in this curriculum including the CyberCorps® Scholarship for Service Scholarships, Department of Defense Information Assurance Scholarships, and the State Department Foreign Affairs Information Technology (IT) Fellowship Program. These programs not only cover two to three years of fully funded study, but also award stipends to students
ranging from $22,000 to $37,500 per year. In addition more limited scholarships are available nongovernment organizations such as the Cybersecurity Scholarships from the International Information System Security Certification Consortium's Center for Cyber Safety and Education. These opportunities already exist due to our designation by the National Security Agency and the Department of Homeland Security as a National Center of Academic Excellence in Cyber Defense Education.

Admission Entry Details

What are the enrollment estimates?

Year 1	45	Year 2	60	Year 3	75

Attach Additional Program Justification Document(s) UGSC_3-26-2019_minutes.pdf

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 and mentored by existing advisers who are cybersecurity faculty members. No new advisers will be required for this program.

Program Resources

Which program resources are necessary to offer this program?

Proposed Catalog Entry

Admission Requirements

Course Requirements

Required Courses

Information Technology Core Requirements		**(36)**
ITM 301	Introduction to Contemporary Operating Systems and Hardware I	3
ITM 303	Introduction to Contemporary Operating Systems and Hardware II	3
ITM 311	Introduction to Software Development	3
ITM 313	Introduction to Open Source Application Development	3
ITMD 321	Data Modeling and Applications	3
ITMD 361	Fundamentals of Web Development	3
ITMD 362	Human-Computer Interaction and Web Design	3
ITMD 411	Intermediate Software Development	3
ITMM 471	Project Management for Information Technology and Management	3
ITMO 340	Introduction to Data Networks and the Internet	3
ITMO 356	Introduction to Open Source Operating Systems	3
ITMT 330	Introduction to Information Systems and the IT Profession	3
Cybersecurity Core Requirements		**(27)**
ITMM 485	Legal and Ethical Issues in Information Technology	3
ITMS 418	Coding Security	3
ITMS 438	Cyber Forensics	3
ITMS 443	Vulnerability Analysis and Control	3
ITMS 448	Cyber Security Technologies	3

ITMS 458	Operating System Security	3
ITMS 478	Cyber Security Management	3
ITMS 483	Digital Evidence	3
ITMT 430	System Integration	3
~~Cybersecurity and Information Technology Electives~~		
~~Select six credit hours from ITM, ITMD, ITMM, ITMO, ITMS, ITMT, or TECH courses~~		~~6~~
Mathematics Requirements		(9)
~~MATH 151~~	~~Calculus I~~	~~5~~
~~MATH 152~~	~~Calculus II~~	~~5~~
~~MATH 230~~	~~Introduction to Discrete Math~~	~~3~~
~~MATH 251~~	~~Multivariate and Vector Calculus~~	~~4~~
~~MATH 474~~	~~Probability and Statistics~~	~~3~~
MATH 180	Fundamentals of Discrete Mathematics (Select one course from the following:)	3
or MATH 230	Introduction to Discrete Math	
MATH 192	Finite Mathematics	3
Select one course from the following:		3
STAT 225	Introductory Statistics (Select one course from the following:)	3
BUS 221	Business Statistics (Select one course from the following:)	3
PSYC 203	Undergraduate Statistics for the Behavioral Sciences	4
Natural Science and Engineering Requirements		(10)
EG 225 and PHYS 200 are recommended		
See Illinois Tech Core Curriculum, section D		10
Humanities and Social Sciences Requirements		(21)
PSYC 301 is recommended		
See Illinois Tech Core Curriculum, sections B and C		21
Interprofessional Projects (IPRO)		(6)
See Illinois Tech Core Curriculum, section E		6
Free Electives		(12)
Select twelve credit hours		12
Total Credit Hours		121

Sample Curriculum/Program

Requirements

Bachelor of Science in Applied Cybersecurity and Information Technology

Year 1

Semester 1	Credit Hours	Semester 2	Credit Hours
ITM 301	3	ITM 303	3
~~ITM 311~~	~~3~~	~~ITM 313~~	~~3~~
~~MATH 151~~	~~5~~	~~MATH 152~~	~~5~~
ITMT 330	3	~~Social Sciences Elective~~	~~3~~
Natural Science or Engineering Elective	4	ITMO 340	3
Humanities 200-level Elective	3	ITMO 356	3
		MATH 180 or 230	3
		Natural Science or Engineering Elective	3
	13		15

Year 2

Semester 1	Credit Hours	Semester 2	Credit Hours
ITMD 361	3	ITMD 362	3
~~ITMD 411~~	~~3~~	~~ITMO 356~~	~~3~~
~~ITMT 330~~	~~3~~	~~ITMO 340~~	~~3~~
~~MATH 251~~	~~4~~	~~ITMS 478~~	~~3~~
ITMD 321	3	~~MATH 230~~	~~3~~
ITM 311	3	ITMS 448	3
MATH 192	3	ITM 313	3
Natural Science or Engineering Elective	3	Statistics Elective (STAT 225, BUS 221, PSYC 203)	3
		Social Science Elective	3
		Minor, Technical, or Free Elective	3
	15		18

Year 3

Semester 1	Credit Hours	Semester 2	Credit Hours
~~ITMD 321~~	~~3~~	ITMS 483	3
~~ITMM 471~~	~~3~~	ITMS 418	3
~~ITMS 443~~	~~3~~	~~ITMS 438~~	~~3~~
~~ITMS 448~~	~~3~~	~~ITMM 485~~	~~3~~
ITMD 411	3	~~MATH 474~~	~~3~~
ITMM 485	3	ITMS 443	3
ITMS 438	3	Social Sciences Elective (300+)	3
Humanities Elective (300+)	3	Minor, Technical, or Free Elective	3
Minor, Technical, or Free Elective	3		
	15		15

Year 4

Semester 1	Credit Hours	Semester 2	Credit Hours
~~ITMS 483~~	~~3~~	ITMT 430	3
ITMM 471	3	IPRO Elective II	3
ITMS 478	3	Minor, Technical, or Free Elective	3
ITMS 458	3	Social Sciences Elective (300+)	3
Humanities Elective (300+)	3	Humanities or Social Sciences Elective	3
~~Free Elective~~	~~3~~		
IPRO ELECTIVE 1	3		
	15		15

Total Credit Hours: 121

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: 121 ~~129~~

Specialization required?
No

Minor required?
No

Proposed General Curriculum

List Major Course Requirements
See required courses above

List Mathematics Requirements
No change

List Science Requirements
No change

List Computer Science Requirements
No change

List Humanities and Social Sciences Requirements
No change

List Interprofessional Project (IPRO) Requirements
No change

List Technical Elective Course Options	
No change	
List Free Elective Credit Hours (if applicable)	3
Semester-by-semester plan of study for the degree program	
See Sample Curriculum/Program Requirements above	

Reviewer Comments	

Key: 443