NEW DEGREE PROPOSAL   (Human-readable format)
Bachelor of Science in Information Technology

Requestor Name: Ray Trygstad   E-mail: trygstad@iit.edu

Origination Date: 2018-1-18

Is this an interdisciplinary program? No

Academic Unit: Information Technology & Management   College: School of Applied Technology

Program Title: Bachelor of Science in Information Technology

Effective Academic Year: 2019 - 2020   Effective Term: Fall 2019

Academic Level: Undergraduate   Program Type : Degree

Degree Type: Bachelor of Science (BS)

CIP Code: 11.0103 - Information Technology.

Is there more than one Academic Unit proposer? No

Program Code: BSIT

Total Program Credit Hours: 130

Program Narrative and Justification

Narrative description of how the institution determined the need for the program.

Computers and networks are core infrastructure that are essential to our way of life. The need for information technology professionals in all job roles continues to be one of the strongest sectors in our economy; the top two job roles in the fastest growing jobs that require a bachelor's degree are in information technology. (BLS) The hiring of research faculty in the Department of Information Technology and Management and the expansion of graduate programs in information technology nationally and internationally have led to a clear need for a degree to prepare undergraduates to conduct graduate academic and industry research in the field. Respected institutions such as George Mason University and Rutgers University currently offer Ph.D. degrees in information technology and we need to prepare students to compete for these degrees. Additionally, an an established pipeline for research students in the ITM Department is essential in support of tenure-track/tenured faculty research, and is a key component of a degree progression that will ultimately lead to the establishment of a Ph.D. program in the department. This degree will lead directly to our existing Master of Science in Applied Cybersecurity and Digital Forensics, as well as a new Master of Science in Information Technology and Management which we are proposing at the same time as this.

Narrative description of how the program was designed to meet local market needs, or for an online program, regional or national market needs.

Employment of computer and information technology occupations is projected to grow 13 percent from 2016 to 2026, faster than the average for all occupations. These occupations are projected to add about 557,100 new jobs. Demand for these workers will stem from greater emphasis on cloud computing, the collection and storage of big data, and information security. (BLS) All of these topics are areas of study covered in the proposed degree. The median annual wage for computer and information technology occupations was $84,580 in May 2017, which was higher than the median annual wage for all occupations of $37,690. (BLS) Because analysis and experience has shown us that a major employment market for graduates of our department is the financial services sector, the expanded mathematics in this program will further enhance the employability off these graduates.

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.

> The median annual wage for computer and information technology occupations was $84,580 in May 2017, which was higher than the median annual wage for all occupations of $37,690. (BLS) According to Robert Half Technologies, 2019 starting salaries for jobs our degree would prepare students for, in the Chicago market specifically, include Web Developers at $103,123; System Administrators at $83,980; Mobile Application Developers at $147,582; Database Managers at $133,380; and Systems Security Administrator at $115,781.

Narrative description of how the program was reviewed or approved by businesses that would likely employ graduates of the program.

> Conversations of our Dean with business partners who employ graduates of our existing undergraduate degree revealed a need in certain areas, particularly application development, for stronger computing theoretical foundations and mathematics. Consequently the program was designed to strengthen these areas in the degree considerably.

What are the enrollment estimates?
Year 1: 5   Year 2: 20   Year 3: 50

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?

> Advising resources and procedures and career resources are already in place.
> For examples see ITM Undergraduate Advising Best Practices
> (http://www.itm.iit.edu/faculty/ITMUndergraduateAdvisingBestPractices.pdf)
> and Spring 2019 ITM Undergraduate Advising Notes
> (http://www.itm.iit.edu/data/Spring2019ITMUndergraduateAdvisingNotes.pdf).

Program Resources: Which program resources are necessary to offer this program?

> None. All resources are currently in place, although as the program grows more faculty will be necessary.

Proposed Bulletin Entry

Please see the attached draft bulletin pages.

Program Outcomes and Assessment Process

Please see attached *Information Technology and Management Assessment Plan for Undergraduate Degrees, 2019-2021*

Reports of assessment are shared with all faculty members on the ITM Faculty website (http://itm.iit.edu/faculty/) and more directly by consideration of assessment reports as issues for the ITM Curriculum Committee.

Undergraduate Program Requirements

Undergraduate Degree Requirements
Minimum credit hours: 130   Specialization required? No   Minor required?   No

Proposed General Curriculum

Please see the attached draft bulletin pages.

BACHELOR OF SCIENCE IN INFORMATION TECHNOLOGY

Required Courses

Code	Title	Credit Hours
Information Technology and Management Core Requirements		**(42)**
ITM 100	Intro to IT as a Profession	3
ITM 301	Intro OS and Hardware I	3
ITM 311	Intro to Software Development	3
ITMD 361	Fund of Web Development	3
ITMD 362	Human-Computer Interaction	3
ITMD 411	Intermediate Software Devlpmnt	3
ITMD 421	Data Modeling and Applications	3
ITMM 471	Project Management for ITM	3
ITMO 440	Intro Data Networks & Internet	3
ITMO 456	Intro Open Source OS	3
ITMM 485 or ITMS 478	Legal and Ethical Issues in IT Cyber Security Management	3
ITMS 448	Cyber Security Technologies	3
ITMT 430	System Integration	3
ITMT 491 or ITM 497	Undergraduate Research Independent Study	3
Information Technology Theoretical Foundations Requirements		**(10)**
CS 331	Data Structures & Algorithms	3
ECE 218	Digital Systems	4
And select one of the following:		
Any 300 or 400 level CS course except CS 330		3
ECE 242	Digital Computers & Computing	3
Information Technology and Management Electives		**(15)**
Select fifteen credit hours from BUS, CS, ECE, ITM, ITMD, ITMM, ITMO, ITMS, ITMT, MATH, or TECH courses		15
Mathematics Requirements		**(20-23)**
MATH 151	Calculus I	5
MATH 152	Calculus II	5
MATH 230 or CS 330	Introduction to Discrete Math Discrete Structures	3
MATH 251	Multivariate & Vector Calculus	4

MATH 474
    or MATH 475
    and
    MATH 476
	Probability and Statistics
	Probability
	
	Statistics
		3-6

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		**(3-6)**
Select three to six credit hours		3-6
Total Credit Hours		130

Bachelor of Science in Information Technology

		Year 1	
Semester 1	**Credit Hours**	**Semester 2**	**Credit Hours**
ITM 301	3	ITM 311	3
ITMD 421	3	ITMO 440	3
MATH 151	5	MATH 152	5
Humanities 200-level Elective	3	Social Sciences Elective	3
		Natural Science or Engineering Elective	3
	14		17

		Year 2	
Semester 1	**Credit Hours**	**Semester 2**	**Credit Hours**
ITM 100	3	ITMD 362	3
ITMD 361	3	ITMD 411	3
CS 331	3	ITMO 456	3
MATH 251	4	ECE 218	4
Natural Science or Engineering Elective	4	MATH 230 or CS 330	3
	17		16

		Year 3	
Semester 1	**Credit Hours**	**Semester 2**	**Credit Hours**
ITMM 471	3	ITMM 485	3
ITMS 448	3	ITM Elective	3
CS 3XX/4XX elective or ECE 242	3	ITM Elective	3
Humanities Elective (300+)	3	MATH 474 or MATH 475	3
Social Sciences Elective (300+)	3	IPRO Elective I	3
Free Elective	3	Natural Science or Engineering Elective	3
	18		18

		Year 4	
Semester 1	**Credit Hours**	**Semester 2**	**Credit Hours**
ITM 497	3	ITMT 430	3
ITM Elective	3	ITM Elective	3
ITM Elective	3	IPRO Elective II	3
Humanities Elective (300+)	3	Social Sciences Elective (300+)	3
Free Elective or MATH 476	3	Humanities or Social Sciences Elective	3
	15		15

Total Credit Hours: 130

INFORMATION TECHNOLOGY AND MANAGEMENT

Perlstein Hall, Room 223
10 W. 33rd St.
Chicago IL 60616
312.567.5290
appliedtech.iit.edu/information-technology-and-management

Daniel F. and Ada L. Rice Campus
201 E. Loop Rd.
Wheaton, IL 60189
630.682.6000

Dean and Chair
C. Robert Carlson

Associate Chair and Director of Undergraduate Advising
Ray Trygstad

Faculty with Research Interests
For information regarding faculty visit the Department of Information Technology and Management website.

The objective of the Bachelor of Information Technology and Management degree is to produce graduates prepared for a career in the information technology field, while equipping them with the critical thinking skills necessary to cope with the emergence of new technologies and with management principles needed to advance in their careers. While the program was originally designed for students who have achieved an associate's degree and would like to complete a bachelor's degree, students may also enter the program as first-year students. The Bachelor of Information Technology and Management degree is accredited by the Computing Accreditation Commission of ABET (abet.org). Bachelor of science degrees give students the mathematical grounding necessary to prepare them for further research-focused graduate studies.

Government studies such as Free and Aspray: **The Supply of Information Technology Workers in the United States**, show that technology positions will be the fastest growing segment in the United States for the next 30 years. Organizations of all kinds have become dependent on networked computing infrastructure as the key element to enabling modern business processes, and our graduates are prepared to select, manage, and maintain that infrastructure, ensuring that it meets organizational needs. Information technology professionals assume responsibility for selecting hardware and software products appropriate for an organization, integrating those products with organizational needs and infrastructure, and installing, customizing, and maintaining those applications for the organization's computer users. Planning and managing an organization's technology infrastructure is a difficult and complex job that requires a solid foundation in applied computing as well as management and people skills. Professionals in this discipline require special skills, such as understanding how networked systems are composed and structured and what their strengths and weaknesses are, and being prepared to deal with important software systems concerns such as reliability, security, usability, and effectiveness and efficiency for their intended purpose. These topics are difficult and intellectually demanding.

The Bachelor of Information Technology and Management degree and the Bachelor of Science in Information Technology degree produces graduates who are able to:

- Problem solve, create, and effectively communicate innovative answers to provide technology solutions for the problems of business, industry, government, non-profit organizations, and individuals.
- Perform requirements analysis, design and administration of computer and network-based systems conforming to policy and best practices, and monitor and support continuing development of relevant policy and best practices as appropriate.
- Apply current technical and mathematical concepts and practices in the core information technologies and recognize the need to engage in continuing professional development.

In addition to the objectives listed above, the Bachelor of Science in Information Technology produces graduates who are able to:

- Apply mathematics and technical skills to research and innovation in the field.

To meet these goals, graduates must demonstrate knowledge and proficiency in these areas:

- Information technology basics including hardware and operating systems
- Application development and programming
- Human-computer interaction
- Databases and data management
- Networking and communications
- Websystems
- Cybersecurity
- Professionalism

Bachelor of Information Technology and Management students are required to complete a minor. The minor may be in a field which will complement information technology such as business or professional and technical communication, or may be chosen from a field very different such as history or sociology to provide a more widely rounded educational experience.

The Bachelor of Science in Applied Cybersecurity and Information Technology degree produces graduates who are able to:

- Problem solve, create, and effectively communicate innovative answers to provide technology solutions for the problems of business, industry, government, non-profit organizations, and individuals.
- Perform requirements analysis, design and administration of computer and network-based systems conforming to policy and best practices, and monitor and support continuing development of relevant policy and best practices as appropriate.
- Design and implement an enterprise security program using both policy and technology to implement technical, operational, and managerial controls, which will technically secure enterprise information assets and resources to deter, detect, and prevent the success of attacks and intrusions.
- Investigate information security incidents and violation of law using computer resources in a manner such that all evidence is admissible in a court of law.
- Apply current technical and mathematical concepts and practices in the core information technologies and recognize the need to engage in continuing professional development.

To meet these goals, in addition to the knowledge and proficiency expected of graduates in Information Technology and Management, cybersecurity graduates must complete 33 hours of coursework in computing and cybersecurity that must cover application of the crosscutting concepts of confidentiality, integrity, availability, risk, and adversarial thinking, as well as fundamental topics from the following areas:

- Information Security
- Software Security
- System Security
- Human Security
- Organizational Security
- Societal Security

Admission for transfer students is based on a review of college transcripts and documentation of work experience. Applicants must submit an application for admission as a degree-seeking student. Transfer applicants must hold an associate's degree (A.A.) from an accredited college or the equivalent (completion of at least 55 credit hours). Only courses in which the student has earned a grade of "C" or better may be accepted for transfer. Supporting documentation to be included with the application includes official transcripts of all college-level work.

Illinois Tech/College of DuPage and Illinois Tech/Joliet Junior College Dual Admissions Programs

Students who meet the requirements of the Dual Admissions Program (DAP) may enroll simultaneously at the College of DuPage (COD) or Joliet Junior College (JJC) and Illinois Institute of Technology. Students accepted into the DAP will have access to advising and other services from both institutions. Students who successfully complete the institutional course requirements of both institutions under the DAP will be awarded an associate's degree from COD or JJC and a Bachelor of Information Technology and Management from Illinois Institute of Technology.

Eligibility for the Program

Students applying to the DAP must be enrolled in one of the following programs:

At COD: Associate of Applied Science in Computer Information Systems or Associate of Applied Science in Computer Internetworking Technologies

At JJC: Associate of Applied Science in Computer Information Systems; Network Specialist, Programming, or Web Design and Administration options

Students must have and maintain a cumulative GPA of at least 3.00 at COD or JJC to be eligible for admission to Illinois Tech. Students must make satisfactory academic progress at COD, as defined by COD, or at JJC, as defined by JJC.

Application Process

Applicants must complete a Statement of Intent Form, which permits the exchange of academic admission and advising information between Illinois Tech and COD or JJC. Applicants must also complete the application process at both COD or JJC and Illinois Tech in order to be admitted to both institutions. The Illinois Tech application may be submitted only for a Bachelor in Information Technology and Management. Admission to other Illinois Tech programs may have additional requirements that are outside the scope of the program.

Academic Program Requirements

Students must follow each institution's policies regarding admission, course enrollment, transfer hours, probation, dismissal, and reinstatement. Transcripts must be sent to the Illinois Tech Office of Undergraduate Academic Affairs each semester for each student attending COD or JJC and enrolled in the DAP. Illinois Tech will provide COD and JJC with major and course updates, course prerequisites, and program requirements for the information technology and management bachelor's degree completion program.

Graduation Requirements

Students enrolled in the DAP must follow the COD or JJC catalog to satisfy requirements for the associate's degree and the requirements set out in the Illinois Tech Undergraduate Bulletin in effect at the time of admission into the DAP for the bachelor's degree.

The Center for Cyber Security and Forensics Education

The Center for Cyber Security and Forensics Education (C2SAFE) is a multi-disciplinary center within the School of Applied Technology. The objectives of the Center for Cyber Security and Forensics Education are to:

- Develop, promote, and support education and research in cybersecurity technologies and management, information assurance, and digital forensics across all academic disciplines at Illinois Institute of Technology.
- Engage with business and industry, government, professional associations, and community colleges to enhance knowledge, awareness, and education in cybersecurity and digital forensics and improve practices in information assurance.
- Coordinate the designation of Illinois Institute of Technology as a National Center of Academic Excellence in Cyber Defense Education.
- Maintain resources for education and research in cybersecurity and digital forensics, publish student and faculty research in the field, and sponsor, organize, and conduct conferences and other events to promote and advance cyber security and forensics education.
- Support the university's academic departments in the delivery of the highest caliber of cyber security and digital forensics education.

The center plans, organizes, and conducts the annual ForenSecure conference in the spring of each year, as well as additional activities and student competitions that advance the mission of the center.

The center actively cooperates and coordinates activities with agencies of the federal government and with professional organizations and programs such as the Information Systems Security Association (ISSA), the Information Systems Audit and Control Association (ISACA), the Association of Information Technology Professionals (AITP), the Association for Computing Machinery (ACM), the Institute of Electrical and Electronic Engineers (IEEE), UNIFORUM, CompTIA, Infragard, and others. The center makes every effort to engage in joint activities with these organizations and to encourage them to engage with the center whenever possible.

Illinois Institute of Technology has been designated as a National Center of Academic Excellence in Cyber Defense Education by the National Security Agency and the U.S. Department of Homeland Security. This designation results from meeting stringent Center of Academic Excellence criteria and mapping of information technology and management curricula to a core set of cyber defense knowledge units. Students attending Center of Academic Excellence in Cyber Defense Education institutions are eligible to apply for scholarships and grants through the Department of Defense Information Assurance Scholarship Program and the Federal Cyber Service Scholarship for Service Program. This designation reflects Illinois Institute of Technology's commitment to producing professionals with cyber defense expertise for the nation.

Resources for education and research as well as published student and faculty research in the form of technical reports and white papers are available on the center's website (appliedtech.iit.edu/c2safe).

Degree Programs

- Bachelor of Information Technology and Management
- Bachelor of Information Technology and Management: Transfer Program
- Bachelor of Science in Information Technology
- Bachelor of Science in Applied Cybersecurity and Information Technology

Co-Terminal Options

The Department of Information Technology and Management also offers the following co-terminal degrees, which enables a student to simultaneously complete both an undergraduate and graduate degree in as few as five years:

- Bachelor of Information Technology and Management/Master of Cyber Forensics and Security
- Bachelor of Information Technology and Management/Master of Information Technology and Management
- Bachelor of Science in Information Technology/Master of Science in Information Technology and Management
- Bachelor of Science in Information Technology/Master of Science in Cybersecurity and Digital Forensics
- Bachelor of Science in Cybersecurity and Information Technology/Master of Science in Information Technology and Management
- Bachelor of Science in Cybersecurity and Information Technology/Master of Science in Cybersecurity and Digital Forensics

These co-terminal degrees allow students to gain greater knowledge in specialized areas while, in most cases, completing a smaller number of credit hours with increased scheduling flexibility. For more information, please visit the Department of Information Technology and Management website (appliedtech.iit.edu/information-technology-and-management).

Information Technology and Management Assessment Plan for Undergraduate Degrees, 2019-2021

Assessment plans for 2019-2021 will adhere to the rubric as defined by the IIT Assessment Report Evaluation Rubric. Two or three program educational objectives and three to five student outcomes will be assessed each term, and all objectives and outcomes will be assessed twice in each three-year cycle. The full list of objectives and outcomes follows beginning on page 3 below. In addition to the objectives and outcomes listed below, course objectives for each course will be assessed. Separate plans will be used for the undergraduate and graduate programs. This document addresses the courses in the Undergraduate Program.

Spring 2019:
Program Educational Objectives Assessed: 2, 5
Student Outcomes Assessed: (a), (e), (f), (h)
Student Artifacts: Survey / April 2019 / Evaluation by ITM Curriculum Committee members
                    Assignments / May 2019/ Evaluator(s) TBD
Courses assessed:

Curricular Area	*Course*
Software Development	ITM 313 Intro to Open Source Software Development
Web Design and HCI	ITMD 362 Human Computer Interaction & Web Design
System Integration & Architecture	ITMT 430 System Integration
Societal & Human Security	ITMS 483 Digital Evidence (BSACIT only)

Fall 2019:
Program Educational Objectives Assessed: 3, 4, 6
Student Outcomes Assessed: (b), (f), (h)
Student Artifacts: Survey / November 2019 / Evaluation by ITM Curriculum Committee
                    Assignments / December 2019 / Evaluators: Evaluator(s) TBD
Courses assessed:

Curricular Area	*Course*
Data Management	ITMD 421 Data Modeling and Applications
Networking and Communications	ITMO 440 Introduction to Data Networks & the Internet
Data, Component, Connection, & System Security / Secure Computing	ITMS 448 Cyber Security Technologies
Research	ITMT 491 Undergraduate Research (BSIT draft only)

Spring 2020:
Program Educational Objectives Assessed: 1, 2, 5
Student Outcomes Assessed: (a), (c), (g), (h)
Student Artifacts: Survey / April 2020 / Evaluation by ITM Curriculum Committee
                    Assignments / May 2020 / Evaluator(s) TBD
Courses assessed:

Curricular Area	*Course*
Web Design and HCI	ITMD 362 Human Computer Interaction & Web Design
Software Development	ITMD 411 Intermediate Software Development
System Integration & Architecture	ITMT 430 System Integration
System & Organizational Security	ITMS 438 Digital Forensics (BSACIT only)

Fall 2020:
Program Educational Objectives Assessed: 3, 4, 6
Student Outcomes Assessed: (b), (c), (g), (h)
Student Artifacts: Survey / November 2020 / Evaluation by ITM Curriculum Committee
                    Assignments / December 2020 / Evaluator(s) TBD
Courses assessed:

Curricular Area	*Course*
System Admin and Maintenance	ITM 301 Operating Systems & Hardware I
Software Development	ITM 311 Introduction to Software Development
IT Management	ITMM 471 Project Management for ITM
Research	ITM 497 Independent Study (BSIT draft only)
Human, Organizational and Societal Security	ITMS 478 Cybersecurity Management (BSACIT only)

Spring 2021:
Program Educational Objectives Assessed: 1, 3, 5
Student Outcomes Assessed: (d), (f), (h)
Student Artifacts: Survey / April 2021 / Evaluation by ITM Curriculum Committee
                    Assignments / May 2021 / Evaluator(s) TBD
Courses assessed:

Curricular Area	*Course*
System Integration, Local and Global Impacts of Computing	ITM 100 Intro to Information Technology as a Profession
Data Management	ITMD 421 Data Modeling and Applications
System Admin and Maintenance	ITMO 456 Intro to Open Source Operating Systems
Software Security	ITMS 418 Coding Security (BSACIT only)

Fall 2021:
Program Educational Objectives Assessed: 2, 4
Student Outcomes Assessed: (a), (b), (h)
Student Artifacts: Survey / November 2021 / Evaluation by ITM Curriculum Committee
                    Assignments / December 2021 / Evaluator(s) TBD
Courses assessed:

Curricular Area	*Course*
Software Development	ITMD 411 Intermediate Software Development
Networking and Communications	ITMO 440 Introduction to Data Networks & the Internet
Data, Component, Connection, & and System Security / Secure Computing	ITMS 448 Cyber Security Technologies
Component & System Security	ITMS 458 Operating System Security (BSACIT only)

Degrees Assessed and Program Accreditation Criteria Applied:
Bachelor of Information Technology and Management – BITM
        ABET CAC 2019-2020 Information Technology Criteria
Bachelor of Science in Applied Cybersecurity and Information Technology – BSACIT
        ABET CAC 2019-2020 Cybersecurity Criteria and
        ABET CAC 2019-2020 Information Technology Criteria
Bachelor of Science in Information Technology – BSIT (draft)
        Degree is in draft; will be ABET CAC 2019-2020 Information Technology Criteria

The following program education objectives will be evaluated for all ITM Department degrees for HLC and ABET accreditation purposes:

Bachelors degrees from the Department of Information Technology and Management produces graduates who are able to:

Program Educational Objective	Required Courses Supporting the Objective
1. Problem solve and create innovative answers to provide technology solutions for the problems of business, industry, government, non-profit organizations, and individuals.	ITM 301 Intro to Contemporary Operating Systems & Hardware I ITMD 411 Intermediate Software Development ITMD 421 Data Modeling & Applications ITMT 430 Systems Integration IPRO 3/497 Interprofessional Project (Not assessed by ITM)
2. Perform requirements analysis, design and administration of computer and network-based systems conforming to policy and best practices, and monitor and support continuing development of relevant policy and best practices as appropriate.	ITM 311 Introduction to Software Development ITMD 362 Human-Computer Interaction and Web Design ITMO 440 Introduction to Data Networking & the Internet ITMO 456 Introduction to Open Source Operating Systems ITMS 448 Cyber Security Technologies ITMT 430 Systems Integration
3. Apply current technical and mathematical concepts and practices in the core information technologies and recognize the need to engage in continuing professional development.	ITM 100 Introduction to Information Technology as a Profession ITMD 411 Intermediate Software Development ITMD 421 Data Modeling & Applications ITMM 471 Project Management for ITM ITMO 440 Introduction to Data Networking & the Internet ITMT 430 Systems Integration

In addition, the following program education objectives will be evaluated for the Bachelor of Science in Applied Cybersecurity and Information Technology for HLC and ABET accreditation purposes:

In addition to the objectives listed above, the Bachelor of Science in Applied Cybersecurity and Information Technology degree produces graduates who are able to:

Program Educational Objective	Required Courses Supporting the Objective
4. Design and implement an enterprise security program using both policy and technology to implement technical, operational, and managerial controls, which will technically secure enterprise information assets and resources to deter, detect, and prevent the success of attacks and intrusions.	ITMS 443 Vulnerability Analysis and Control ITMS 448 Cyber Security Technologies ITMS 478 Cyber Security Management
5. Investigate information security incidents and violation of law using computer resources in a manner such that all evidence is admissible in a court of law.	ITMS 438 Digital Forensics ITMS 483 Digital Evidence

In addition, the following program education objectives will be evaluated for the Bachelor of Science in Information Technology (draft) for HLC and ABET accreditation purposes:

In addition to objectives 1. through 3. listed above, the Bachelor of Science in Information Technology degree (draft) produces graduates who are able to:

Program Educational Objective	Required Courses Supporting the Objective
6. Apply mathematics and technical skills to research and innovation in the field. (draft)	ITMT 491 Undergraduate Research ITM 497 Independent Study MATH 474 Probability & Statistics (Not assessed by ITM)

The following student outcomes will be evaluated in all ITM Department degrees for ABET accreditation purposes:

Student Outcomes & [Source]	Required Courses Supporting the Outcome
(a) Analyze a complex computing problem and to apply principles of computing and other relevant disciplines to identify solutions [ABET Computing 3.1]	ITM 311 Introduction to Software Development ITM 313 Introduction to Open Source Software Development ITMD 361 Fundamentals of Web Development ITMD 362 Human-Computer Interaction and Web Design ITMD 411 Intermediate Software Development ITMD 421 Data Modeling & Applications ITMO 440 Introduction to Data Networking & the Internet\ ITMS 448 Cyber Security Technologies ITMT 430 Systems Integration
(b) Design, implement, and evaluate a computing-based solution to meet a given set of computing requirements in the context of the program's discipline [ABET Computing 3.2]	ITM 301 Intro to Contemporary Operating Systems & Hardware I ITM 311 Introduction to Open Source Software Development ITM 313 Introduction to Systems Software Programming ITMD 361 Fundamentals of Web Development ITMD 362 Human-Computer Interaction and Web Design ITMD 411 Intermediate Software Development ITMD 421 Data Modeling & Applications ITMO 440 Introduction to Data Networking & the Internet ITMO 456 Introduction to Open Source Operating Systems ITMT 430 Systems Integration
(c) Communicate effectively in a variety of professional contexts [ABET Computing 3.3]	ITMD 361 Fundamentals of Web Development ITMD 362 Human-Computer Interaction and Web Design ITMM 471 Project Management for ITM ITMS 448 Cyber Security Technologies IPRO 397/497 Interprofessional Project (Not assessed by ITM)
(d) Recognize professional responsibilities and make informed judgments in computing practice based on legal and ethical principles [ABET Computing 3.4]	ITM 100 Introduction to Information Technology as a Profession ITM 301 Intro to Contemporary Operating Systems & Hardware I ITMM 471 Project Management for ITM ITMM 485 Legal and Ethical Issues in Information Technology (BSACIT only) ITMS 438 Digital Evidence (BSACIT only)
(e) Function effectively as a member or leader of a team engaged in activities appropriate to the program's discipline [ABET Computing 3.5]	ITM 100 Introduction to Information Technology as a Profession ITMM 471 Project Management for ITM ITMS 448 Cyber Security Technologies ITMT 430 Systems Integration
(f) Identify and analyze user needs and take them into account in the selection, creation, evaluation and administration of computer-based systems [ABET IT 3.6]	ITM 311 Introduction to Software Development ITMD 362 Human-Computer Interaction and Web Design ITMD 411 Intermediate Software Development ITMD 421 Data Modeling & Applications ITMM 471 Project Management for ITM ITMO 440 Introduction to Data Networking & the Internet ITMO 456 Introduction to Open Source Operating Systems ITMT 430 Systems Integration
(g) Assist in the creation of an effective project plan [IIT only]	ITMM 471 Project Management for ITM ITMS 448 Cyber Security Technologies ITMT 430 Systems Integration IPRO 397/497 Interprofessional Project (Not assessed by ITM)

The following additional student outcome will be evaluated in degrees in Applied Cybersecurity for ABET accreditation purposes:

Student Outcomes & [Source]	Required Courses Supporting the Outcome
(h) Apply security principles and practices to maintain operations in the presence of risks and threats [ABET CY 3.6]	ITMS 418 Coding Security ITMS 443 Vulnerability Analysis and Control ITMS 448 Cyber Security Technologies ITMS 458 Operating System Security ITMS 478 Cyber Security Management ITMT 430 Systems Integration

Survey drafting and data collection staff:
    Angela Jarka, ITM Department Manager
    Ryan Nelson, ITM Admissions and Recruitment Specialist

Assessment Evaluators:
ITM Curriculum Committee
Faculty members of the Curriculum Committee evaluate Survey Artifacts and make recommendations based on evaluations of all assessment artifacts. All full-time faculty members are voting members of the committee should they elect to participate.

Chair:	Ray Trygstad, ITM Associate Chair and Industry Professor
Members:	Jeremy Hajek, Industry Associate Professor
	Maurice E. Dawson, Director of the Center for Cyber Security and Forensics Education and Assistant Professor
	Louis F. McHugh IV, SAT Computer Systems Manager and Adjunct Industry Associate Professor
	Thomas "T.J." Johnson, Adjunct Industry Professor
	Dan Kahn, Adjunct Industry Professor
Faculty:	C. Robert Carlson, ITM Chair and Professor
	Karl Stolley, Associate Professor (joint appointment)
	Adarsh Arora, Coleman Entrepreneur-in-Residence and Industry Professor
	William Lidinsky, Industry Professor
	James Pappademas, Industry Professor
	Yong Zheng, Assistant Professor

All full-time faculty members may be appointed as assessment evaluators for Assignment Artifacts. Appointments will be made at the beginning of each term in which assignments will be assessed, and the Assessment Plan will be updated to reflect these appointments.