ILLINOIS TECH | College of Computing

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From: Department of Information Technology and Management
To: University Faculty Council
Via: Undergraduate Studies Committee

Subj: Minor Revisions to Information Technology and Management Undergraduate Degrees

The following revisions to the Bachelor of Information Technology and Management and the Bachelor of Science in Applied Cybersecurity and Information Technology degrees are submitted as information items. All issues are minor changes internal to the department and have no impact on any other degree or department, nor do they affect the hours required to complete either degree.

1. The following are changes to the **Program Educational Objectives** for the Bachelor of Information Technology and Management and the Bachelor of Science in Applied Cybersecurity and Information Technology degrees. Revised text is indicated in red and constitutes an expansion of the existing text. These changes have been reviewed and approved by the department and the Information Technology and Management Executive Advisory Board.

   The **Bachelor of Information Technology and Management** degree at Illinois Institute of Technology produces graduates who are able to:

   - Problem solve and create 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 **secure** 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 **industry,** technical**,** and mathematical concepts and practices in the core information technologies and recognize the need to engage in continuing professional development.

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

   - Problem solve and create 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 **secure** 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 **industry,** technical**,** and mathematical concepts and practices in the core information technologies and recognize the need to engage in continuing professional development.
   - Design and implement an enterprise security program using **policy, technology, and awareness** to implement **appropriate controls and 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 **usable for fault analysis and, when applicable,** admissible in a court of law.

2. Change the **language describing program curriculum** in the *Undergraduate Bulletin* immediately following the Bachelor of Information Technology and Management Program Educational Outcomes as follows:

Current: To meet these goals, graduates must demonstrate knowledge and proficiency in these areas:	**Changed:** 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	• Fundamentals including hardware and operating systems • Principles and practices for secure computing • Application development and programming • Human-computer interaction • Databases and information management • Networking • Web systems and technologies • System administration and maintenance • System integration and system architecture • Professionalism and the local and global impacts of computing

This will better align this program description with current ABET Curriculum Criteria but is also more complete than that, and more accurately discribes the Bachelor of Information Technology and Management curriculum.

3. To align the Systems Security specialization in our Bachelor of Information Technology and Management properly with the requirements to be designated as a National Center of Academic Excellence in Cyber Defense Education, **add ITMS 428 Database Security as a required course for the specialization**. It will look like this in the Bulletin:

Systems Security

Focuses on application, data, and network security and the management of information technology security.

Code	Title		Credit Hours
ITMS 428	Database Security		3
ITMS 478	Cyber Security Management		3
Select one course from the following			3
ITMO 433	Enterprise Server Admin	3	
ITMO 441	Network Admin & Operations	3	
ITMO 450	Enterprise End-User Sys Admin	3	
ITMO 453	Open Source Server Admin	3	
Select one ITMS elective			3
Total Credit Hours			12

This will ensure every student completing this specialization would have taken at least four ITMS courses and a minimum of one system administration course beyond ITMO 356, and will meet NSA CAE requirements.

4. Add a **minor in Cyber Defense**, which will then be submitted for designation as a National Center of Academic Excellence in Cyber Defense Education.

Minor in Cyber Defense

Required Courses

ITMD 321	Data Modeling and Applications	3
ITMD 411	Intermediate Software Development	3
ITMO 340	Introduction to Data Networks and the Internet	3
ITMO 356	Introduction to Open Source Operating Systems	3
ITMS 428	Database Security	3
ITMS 448	Cyber Security Technologies	3
ITMS 478	Cyber Security Management	3
Total Credit Hours		**21**

ITMD 411 requires prerequisites: (ITM 311 or CS 116 or CS 201) and (ITM 312 or ITM 313 or CS 331).

Following our designation by the National Security Agency, students in the **Minor in Cyber Defense** completing all courses in the minor will have completed a **National Center of Academic Excellence in Cyber Defense Education Curriculum** and will be awarded a certificate from the **College of Computing** in recognition of this accomplishment. This aligns with College of Computing initiatives to expand computing across the curriculum. The minor has more hours than most minors because it aligns with requirements external to the university, not unlike Pre-Med.