APPLIED INFORMATION TECHNOLOGY M.S.

Degree: Master of Science
https://www.towson.edu/fcsm/departments/computerinfosci/grad/applied-information-technology/

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Applied Information Technology is the study, design, development, implementation and support of computer-based information systems to address real-world problems. This program provides graduate-level education in IT for students preparing to enter the high-tech work force and those already in the work force who need to update and enhance their skills. We offer courses in areas such as systems development, IT project management, Internet application development, and IT and business analysis. Graduate certificates in Computer Forensics, Health Information Technology, Internet application development, Information security and assurance, Information systems management, Networking technologies, Software engineering and Database management systems are integrated with the M.S. degree program.

Requirements

Admission Requirements

Application deadlines and a full listing of materials required for admission can be found on the website.

When deciding on a graduate certificate, please note that many can be completed fully online, but some certificates require in-person course work as outlined on the Course Schedule.

These programs are intended for students who have a bachelor's degree in information technology, computer science, computer information systems or a related field who will enter the program for advanced studies; students who have a bachelor's degree in a field not listed above who are already employed in the IT field and are seeking additional academic studies for professional growth or career advancement; and students who have a bachelor's degree in disciplines other than IT who are seeking preparation for careers in this field.

Prerequisites for Admission

Code	Title	Units
AIT 500	FUNDAMENTALS OF COMPUTER PROGRAMMING AND DATA STRUCTURES	6

AIT 500 is an additional graduation requirement for students that have not completed 6 units of undergraduate course work (or the equivalent) in programming, scripting, and data structures. It does not count towards the MS degree.

AIT 500 is not a prerequisite for any specific course; however, it must be completed within the first year of the program.

A grade of 'S' (Satisfactory) is required for the successful completion of the prerequisite course.

Students may repeat this prerequisite course no more than two times.

Degree Requirements

- Completion of any assigned preparatory courses. (Credit from preparatory courses do not count toward the M.S. degree.)
- Completion of 30 graduate units as follows:

Code	Title	Units
Required Courses		
Students must complete the requirements for a graduate certificate in applied information technology. Currently, the following graduate certificates in information technology are available. Additional graduate certificates may be added to this list in the future.		15
Computer Forensics		
AIT 600	INFORMATION TECHNOLOGY INFRASTRUCTURE	
AIT 610	SYSTEMS DEVELOPMENT PROCESS	
AIT 650	COMPUTER & NETWORK FORENSICS AND INCIDENT RESPONSE	
AIT 660	MOBILE DEVICE FORENSICS	
AIT 745	CASE STUDIES IN COMPUTER FORENSICS	
Database Management Systems		
AIT 600	INFORMATION TECHNOLOGY INFRASTRUCTURE	
AIT 610	SYSTEMS DEVELOPMENT PROCESS	
AIT 632	DATABASE MANAGEMENT SYSTEMS	
AIT 732	ADVANCED DATABASE MANAGEMENT SYSTEMS	
AIT 735	CASE STUDIES IN DATABASE MANAGEMENT SYSTEMS	
Health Information Technology		
AIT 600	INFORMATION TECHNOLOGY INFRASTRUCTURE	
AIT 610	SYSTEMS DEVELOPMENT PROCESS	
AIT 644	HEALTH INFORMATION TECHNOLOGY	
or AIT 645	HEALTHCARE DATA ANALYTICS	
AIT 740	CASE STUDIES ON HEALTHCARE INFORMATION TECHNOLOGIES	
HCMN 535	HEALTH INFORMATION AND QUALITY MANAGEMENT [1]	
or HLTH 633	HEALTH CARE SYSTEMS	
Information Security and Assurance		
AIT 600	INFORMATION TECHNOLOGY INFRASTRUCTURE	
AIT 610	SYSTEMS DEVELOPMENT PROCESS	
AIT 612	INFORMATION SYSTEMS VULNERABILITY AND RISK ANALYSIS	
AIT 614	NETWORK SECURITY	
AIT 710	CASE STUDIES IN INFORMATION SECURITY	
Information Systems Management		

AIT 600	INFORMATION TECHNOLOGY INFRASTRUCTURE	
AIT 610	SYSTEMS DEVELOPMENT PROCESS	
AIT 628	INFORMATION TECHNOLOGY AND BUSINESS STRATEGY	
AIT 630	INFORMATION TECHNOLOGY PROJECT MANAGEMENT	
AIT 730	CASE STUDIES IN INFORMATION SYSTEMS	
Internet Application Development		
AIT 600	INFORMATION TECHNOLOGY INFRASTRUCTURE	
AIT 616	FUNDAMENTALS OF WEB TECHNOLOGIES AND DEVELOPMENT	
AIT 610	SYSTEMS DEVELOPMENT PROCESS	
AIT 618	CLIENT/SERVER-SIDE PROGRAMMING ON THE WEB	
AIT 715	CASE STUDIES IN INTERNET APPLICATIONS	
Networking Technologies		
AIT 600	INFORMATION TECHNOLOGY INFRASTRUCTURE	
AIT 610	SYSTEMS DEVELOPMENT PROCESS	
AIT 620	BUSINESS DATA COMMUNICATIONS	
AIT 622	NETWORKS ARCHITECTURE AND PROTOCOLS	
AIT 720	CASE STUDIES IN NETWORKING TECHNOLOGY	
Software Engineering		
AIT 600	INFORMATION TECHNOLOGY INFRASTRUCTURE	
AIT 624	SOFTWARE ENGINEERING FUNDAMENTALS	
AIT 725	CASE STUDIES IN SOFTWARE ENGINEERING	
Select at least two of the following courses:		
AIT 641	SOFTWARE REQUIREMENTS ENGINEERING	
AIT 642	SOFTWARE TESTING AND MAINTENANCE	
AIT 643	ENTERPRISE ARCHITECTURE	
Electives		
Students must complete five graduate-level elective courses. A maximum of one elective course may be in any of the following disciplines: accounting, computer science, human resource development, management, mathematics and technical writing. Those who want to take an elective course from a discipline other than AIT must get the AIT program director's approval before enrolling in the course. At least four of the elective courses must be graduate-level AIT courses from the following list:		15
AIT 612	INFORMATION SYSTEMS VULNERABILITY AND RISK ANALYSIS	
AIT 613	INTRODUCTION TO SOFTWARE SECURITY	
AIT 614	NETWORK SECURITY	
AIT 616	FUNDAMENTALS OF WEB TECHNOLOGIES AND DEVELOPMENT	
AIT 618	CLIENT/SERVER-SIDE PROGRAMMING ON THE WEB	
AIT 620	BUSINESS DATA COMMUNICATIONS	
AIT 622	NETWORKS ARCHITECTURE AND PROTOCOLS	
AIT 624	SOFTWARE ENGINEERING FUNDAMENTALS	
AIT 628	INFORMATION TECHNOLOGY AND BUSINESS STRATEGY	
AIT 630	INFORMATION TECHNOLOGY PROJECT MANAGEMENT	
AIT 632	DATABASE MANAGEMENT SYSTEMS	
AIT 641	SOFTWARE REQUIREMENTS ENGINEERING	
AIT 642	SOFTWARE TESTING AND MAINTENANCE	
AIT 643	ENTERPRISE ARCHITECTURE	
AIT 644	HEALTH INFORMATION TECHNOLOGY	
AIT 645	HEALTHCARE DATA ANALYTICS	
AIT 650	COMPUTER & NETWORK FORENSICS AND INCIDENT RESPONSE	
AIT 652	ETHICS, LAW AND POLICY IN CYBERSPACE	
AIT 655	MANAGING INFORMATION SECURITY	
AIT 660	MOBILE DEVICE FORENSICS	
AIT 665	CLOUD COMPUTING	
AIT 670	SPECIAL TOPICS IN APPLIED INFORMATION TECHNOLOGY	
AIT 695	INDEPENDENT STUDY IN APPLIED INFORMATION TECHNOLOGY	
AIT 697	GRADUATE INTERNSHIP	
AIT 732	ADVANCED DATABASE MANAGEMENT SYSTEMS	
Total Units		**30**

[1] The program recommendation is to take HLTH 633.

All non-AIT courses (such as HLTH 633, HCMN 535, or an approved elective in another discipline) follow the regular in-state or out-of-state graduate tuition and not the Applied Information Technology rate structure.

Learning Outcomes

1. Understand the information technology infrastructure and its place/value in today's business.
2. Work effectively in teams and communicate effectively, both orally and in writing.
3. Use their proficiency in at least one of the following IT-related concentrations to solve a variety of problems:
   - Computer Forensics
   - Database Management Systems
   - Health Information Technology
   - Information Security and Assurance
   - Information Systems Management
   - Internet Application Development
   - Networking Technologies
   - Software Engineering

4. Prepare, present and develop proposals and solutions for today's governmental and industrial needs.