CIT GRADUATE COURSE DESCRIPTIONS

INFORMATION ASSURANCE & SECURITY

TECH 51600 Database Security
Official Title Abbreviation: DATABASE SECURITY
P: CIT 21400 or Basic database background and SQL language

This is an advanced database security course, which provides a strong foundation in database security and auditing. It will cover topics on security, profiles, password policies, privileges and roles, Virtual Private Databases, and auditing. The course also covers advanced topics such as SQL injection, database management security issues such as securing the DBMS, enforcing access controls, and related issues.

CIT 52800 Information Security Risk Management
Official Title Abbreviation: INFO SEC RISK ASSESS
P: Graduate Status

This course examines the field of security risk assessment and management. Topics include steps in performing information security risk assessment; threats to information security; technical, managerial and operational vulnerabilities; methods for analyzing controls, impact of information security breach, and determining risk. Emphasizes the development and utilization of security metrics in the risk assessment process. Students will apply security risk assessment principles by conducting a risk assessment in a real world setting.

TECH 53200 Wireless Security and Technology
Official Title Abbreviation: WIRELESS SEC AND TECH
P: Graduate Standing

This course will provide in-depth coverage of wireless communications and security. Fundamentals and state of the art developments in the wireless security area will be covered, including advances in cellular, personal communications systems (PCS), wireless LANs, and fixed wireless networks. Significant details of wireless devices and corresponding security issues will be addressed. Emerging challenges and solutions in wireless vulnerabilities, attacks, and solutions at various layers of the protocol stack, spanning the stack from aspects of physical communication to application and service security issues, will also be covered.

TECH 55510 Network Security
Official Title Abbreviation: NETWORK SECURITY
P: Graduate Standing

This course focuses on advanced conceptual and technological aspects of network security for voice and data networks. The students will deal with the advanced analysis, design, implementation, and management issues surrounding effective network security. Technology research and presentation of results, as well as security technology implementation, are required course outcomes. Graduate standing.

TECH 56200 Mobile and Network Forensics
Official Title Abbreviation: MOBILE NETWORK FORENSICS
P: Graduate Standing

This course deals with the process of mobile and network forensics and cyber-crime scene analysis. This course will examine mobile and network forensics in the legal, health, and corporate environments. The role of mobile and network forensics investigations in the overall security of the environments will be discussed as well as the procedures of investigations. Students will analyze and synthesize the collection, preservation, analysis, and presentation of mobile and network evidence. Students will learn to analyze evidence to the emerging international standards for

computer forensic analysis, as well as a formal methodology for conducting mobile and digital forensic investigations.

APPLIED DATA MANAGEMENT AND ANALYTICS

TECH 58100 Applied Data Analytics
Official Title Abbreviation: APPLIED DATA ANALYTICS
P: Knowledge in data structures, algorithms, and basic statistics or consent of instructor

Presents and applies the advanced techniques for data wrangling, cleaning, sampling, management, exploratory analysis, regression and classification, and prediction. The class project involves hands-on practice of applied data analytics from various data sets. It is also designed for students from different disciplines who need to analyze large amounts of data.

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TECH 58100 Database Management and Design Techniques
Official Title Abbreviation: DBMS TECHNIQUES
P: Graduate Standing

This course will introduce the fundamental and advanced topics of the database systems, including data models, database languages, database design, relational algebra, SQL, indexing, and transactions. Special focuses on the entity relationship data model and conceptual schema design, schema normalization and integrity constraints, SQL, query processing and optimization, storage and indexing, concurrency control, and database recovery. Other advanced topics in big data such as key-value stores, object-relational mappings, and streaming databases will be also discussed.

TECH 58100 Advanced Topics in Database
Official Title Abbreviation: ADV TOPICS IN DB
P: Basic database background and SQL language

This is an advanced database course, which covers several emerging topics for database systems and explores cutting-edge technologies for "big data" movement. Topics to be discussed may include database techniques to store large-scale data sets, data mining tools for analyzing large-scale data collections, and information retrieval over large-scale data collections. Special coverage will be provided on NoSQL, NewSQL, HadoopDB, column-stores, Row-Stores, NoDB, and others. The class will focus on several real-world application domains, such as those for biomedical imaging, health care, and social network analysis.

TECH 58100 Management of Information Technology Resources
Official Title Abbreviation: MGMT OF IT RESOURCES
P: Graduate Status

This course will examine the role of IT management in organizations. Integration of IT to enable the strategic mission of corporations will be discussed. Topics include the role of the IT manager, managing the IT team, IT staffing issues, compliance, and risk management. A final paper will be produced. Additionally, the intersection of technology and the business, when to hire vs contract, the role of internships in a staffing strategy, finding a balanced service offering and designing an adaptive infrastructure. Graduate standing.

TECH 58100 Entrepreneurship in Information Technology
Official Title Abbreviation: ENTREPRENUERSHIP IN INFO TECH
P: Graduate Status

This course introduces the fundamentals of entrepreneurship with emphasize on Information Technology. Entrepreneurship is a spirited approach to business leadership that involves identifying high-potential, commercial opportunities, gathering resources such as talent and capital, and managing rapid growth and significant risks using principled decision-making skills. An entrepreneurial perspective is also a critical approach of thinking in order to tackle new opportunities in government, social ventures, and life.

TECH 58100 Technology from a Global Perspective
Official Title Abbreviation: TECH GLOBAL PERSPECTIVE
P: Graduate Status

The course will examine technology from a global perspective. By looking at historical events and breakthroughs, analyzing current uses and scope, and determining future trends. Technology will include the use of information technology/systems, hardware, software, business applications, manufacturing equipment and more. Exploring the Internet and its use in business, education and at home and it implications, including but not limited to social networking, open courseware, e-commerce and communications. Topical areas that may be discussed: Globalization, Technological advances, Green Technology, Social media, Business technology practices, and Leading businesses in technology.

CIT 55000 Organizational Impact of Information Technology
Official Title Abbreviation: ORGANIZATIONAL IMPACT: OF IT
P: Graduate Status

An enterprise view of the organizational impact of information technology as the most effective means for achieving "better, faster, cheaper operations" in today's highly competitive business environment. Examines how information technology has enabled new organizational forms and changes in business processes, products, markets, delivery systems, ways of working, and people management issues and challenges.

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TECH 58100 Advanced Topics in Wireless Technologies
Official Title Abbreviation: ADV TOPICS IN WIRELESS TECH
P: CIT 32700 or equivalent

Students will learn about new developments in wireless technologies and their applications, as well as the latest research in wireless communication networks. These types of networks have been growing exponentially in the past several years. The class will build understanding of different layers of wireless networking and the interactions between them. The topics of security, energy efficiency, mobility, reliability, and their unique characteristics in wireless networks will be discussed.

CIT 6XX00 Special Topics in IT
Official Title Abbreviation: SPECIAL TOPICS IN IT
This seminar course discusses new information technology (IT) and its emerging applications.