



جامعة التقنية والعلوم التطبيقية
 University of Technology and Applied Sciences
 الكلية التقنية العليا
 Higher College of Technology

Specialization	Information Security				
Brief description of the Specialization	Information Security Specialization aims to equipped the future a cyber security specialists with both academic and industr				
Sl.No.	Course Code	Course Name	Prerequisite		Brief description of the Course
			Course Code	Course Name	
1	ITSY301	Introduction to Cryptography	None	None	The course should enable the students to: <ol style="list-style-type: none"> 1. Understand basic principles and concepts of modern cryptography. 2. Understand the functionality of various classical and modern cryptographic ciphers. 3. Appreciate the core techniques of cryptography and how they can be applied to meet various security goals. 4. Use various cryptographic tools/utilities.
2	ITSY302	Network Security Assessment	ITSY201	Fundamentals of Computer Security	The course should enable the students to: <ol style="list-style-type: none"> 1. Understand fundamental concepts involved in assessing the security of a network. 2. Exhibit understanding of common threats, vulnerabilities and various types of attacks against network security, along with appropriate countermeasures. 3. Conduct vulnerability assessment in a network and generate adequate audit reports. 4. Understand the security risk assessment process.

3	ITSY303	Web Application Security	ITDB201 or ITSY201	Web Application Development I or Fundamentals of Computer Security	<p>The course should enable the students to:</p> <ol style="list-style-type: none"> 1. Understand fundamental concepts of Web Application Technology. 2. Exhibit understanding of common threats, vulnerabilities and various types of attacks against web application security, along with appropriate countermeasures.
4	ITSY304	Network Perimeter Security	ITSY201 & ITNT201	Fundamentals of Computer Security and Routing and Switching Essentials	<p>The course should enable the students to:</p> <ol style="list-style-type: none"> 1. Understand fundamental concepts related to network security and firewalls. 2. Design appropriate firewall rule-set in accordance with security requirements of an organization 3. Secure organizational networks by configuring a suitable network-based firewall.
5	ITSY305	Ethical Hacking	ITSY302	Network Security Assessment	<p>The course should enable the students to:</p> <ol style="list-style-type: none"> 1. Understand ethical and legal issues that must be taken into consideration before carrying out ethical hacking activities. 2. Conduct vulnerability assessments and penetration testing. 3. Conform to the guidelines, provisions and conditions specified in an ethical hacking agreement/plan.
6	ITSY306	Secure Application Development	ITSE203	Object-Oriented Programming	<p>The course should enable the students to:</p> <ol style="list-style-type: none"> 1. Understand the essential concepts pertaining to secure application development. 2. Apply their knowledge and skills to develop applications securely. 3. Assess the security of different applications

7	ITSY308	E-Commerce Security	ITSY301	Introduction to Cryptography	<p>The course should enable the students to:</p> <ol style="list-style-type: none"> 1. Understand e-commerce within the domain of information systems. 2. Illustrate the elements of the infrastructure, technologies and applications of electronic commerce. 3. Understand e-commerce security concepts and the usage of cryptographic tools and audit controls to secure e-commerce data and transactions. 4. Understand different legal agreements to support e-commerce.
8	ITSY402	Introduction to Digital Forensics	ITSY302	Network Security Assessment	<p>The course should enable the students to:</p> <ol style="list-style-type: none"> 1. Discuss the fundamental concepts pertaining to digital forensics. 2. Demonstrate the usage of the required skills, tools and techniques used in digital forensics. 3. Adopt an organized approach to ensure a successful investigation.
9	ITSY403	Database Security	ITDB202	Structured Query Language	<p>The course should enable the students to:</p> <ol style="list-style-type: none"> 1. Understand fundamental concepts related to database security. 2. Discuss common threats, vulnerabilities and various types of attacks against database security, along with appropriate countermeasures. 3. Apply their knowledge and skills to secure DBMS.

10	ITSY405	Network Security Management	ITSY304	Network Perimeter Security	<p>The course should enable the students to:</p> <ol style="list-style-type: none"> 1. Understand the network management functions, along with the tools and technologies currently available to support these functions. 2. Managing TCP/IP based networks by integrating appropriate security mechanisms into the existing network systems. 3. Use technology-based practices and a systematic approach to perform network troubleshooting. 4. Apply appropriate risk management strategy and mitigating the risks to critical data, systems, and applications.
11	ITSY406	Distributed Systems Technology	ITSY202	Network OS Administration & Security	<p>The course should enable the students to</p> <ol style="list-style-type: none"> 1. Understand fundamental concepts, principles, technical challenges and the requirements underlying modern distributed systems. 2. Appreciate distributed system technologies and their applications in solving highly computation extensive problems. 3. Apply the knowledge and skills learnt to design a distributed
12	ITSY407	Mobile Application Security	ITSE301	Mobile Application Development	

13	ITSY408	Python for Penetration Testing	ITSY305	Ethical Hacking	<p>The course should enable the students to:</p> <ol style="list-style-type: none"> 1. Become familiar with Python programming language. 2. Develop custom scripts and tools for performing penetration testing. 3. Understand how Python could be used at each layer of TCP/IP protocol suite from security perspective. 3. Write scripts to demonstrate Python efficiency in accomplishing offensive/defensive tasks involved in a Pen test.
14	ITSY409	Incident Response and disaster Recovery	ITSY402	Introduction to Digital Forensics	<p>The course should enable the students to:</p> <ol style="list-style-type: none"> 1. Understand the concepts of effective incident response planning and implementation. 2. Apply their knowledge and skills to perform incident detection and reaction. 3. Obtain adequate knowledge and skills of disaster recovery 4. Gain basic knowledge and skills of business continuity
15	ITSY410	Biometric Systems	None	None	<p>The course should enable the students to:</p> <ol style="list-style-type: none"> 1. Understand fundamental concepts, principles, components and practices pertaining to modern biometric systems. 2. Develop ability to build biometric systems that conform to international standards.
16	ITSY412	Malware Analysis	ITSY305	Ethical Hacking	<p>The course should enable the students to:</p> <ol style="list-style-type: none"> 1. Identify modern malware types 2. Understand malware analysis techniques 3. Perform malware analysis using appropriate tools and techniques.