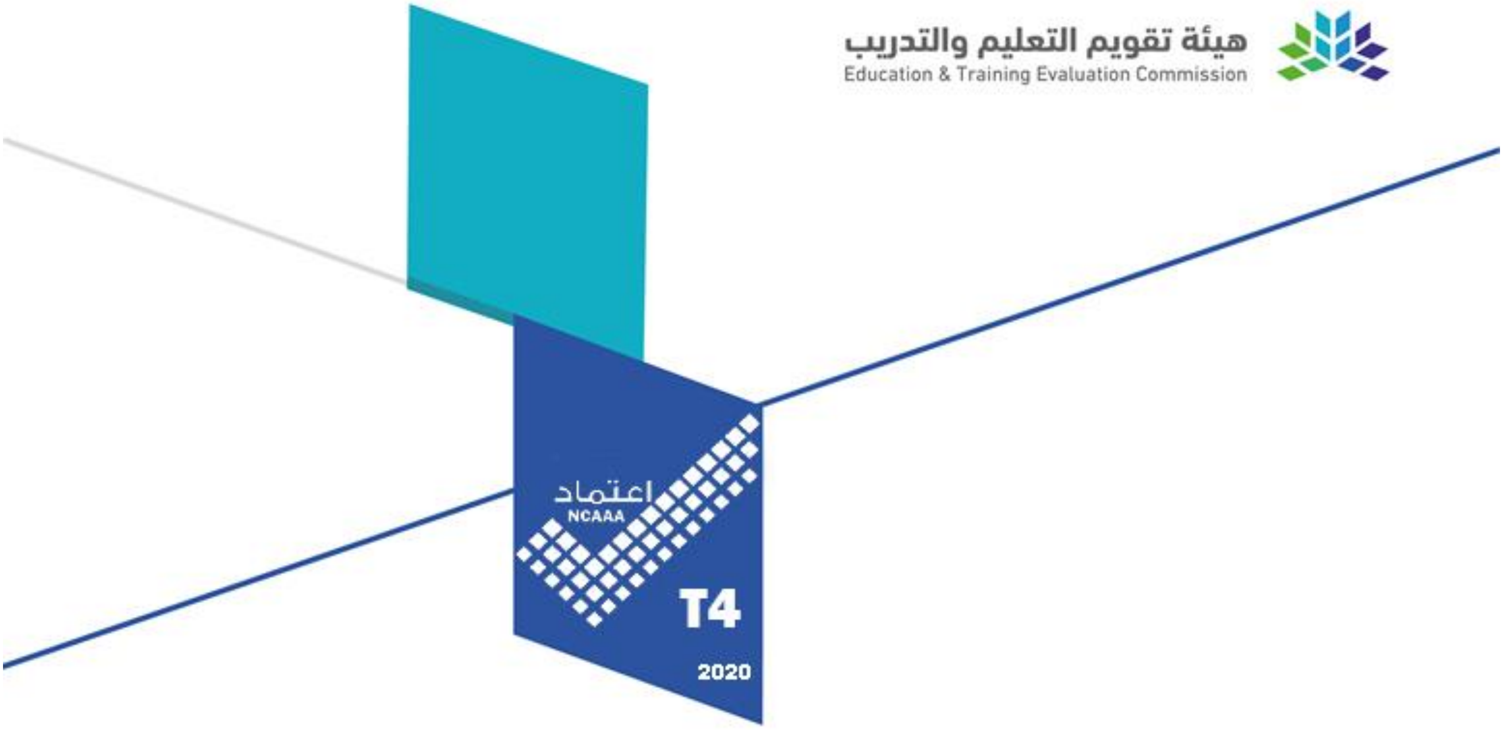

Course Specifications

Course Title:	Information Security Fundamentals
Course Code:	CYB 0101
Program:	Computer Science (Cybersecurity)
Department:	Applied Sciences
College:	Applied College
Institution:	Imam Muhammad Bin Saud Islamic University

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Table of Contents

A. Course Identification

1. Credit hours: **3(2 theory , 2 lab)**

2. Course type

a. University □ College □ Department ☑ Others □

b. Required ☑ Elective □

3. Level/year at which this course is offered: First Semester

4. Pre-requisites for this course (if any)**:**
None

5. Co-requisites for this course (if any)**:**
None

6. Mode of Instruction (mark all that apply)

No	Mode of Instruction	Contact Hours	Percentage
1	**Traditional classroom**	3hours\week	100%
2	**Blended**		
3	**E-learning**		
4	**Distance learning**		
5	**Other**		

7. Contact Hours (based on academic semester)

No	Activity	Contact Hours
1	**Lecture**	20
2	**Laboratory/Studio**	20
3	**Tutorial**	
4	**Others** (specify)	
	Total	40

B. Course Objectives and Learning Outcomes

1. Course Description

This course provides general knowledge of basic concepts in cyber-security, where the student will learn cyber security models, including achieving physical security of information, security of procedures and operations, control of access to information and methods of defense against various risks, including piracy and unauthorized access to electronic systems and others. This course also covers tools for protecting the confidentiality of information such as encryption, securing networks and the Internet, reducing the risks of virus attacks, and firewalls to reduce attacks. It also covers methods of protection to ensure the availability and integrity of information. Furthermore, this course will mention the risk management and the legal and ethical issues. In summary, this course provides general knowledge of basic concepts in cyber security.

2. Course Main Objective

1. Explain basic terms and concepts in the field of cyber-security.
2. Review cyber risks, threats and vulnerabilities.
3. Explain the methodologies and techniques used to protect data, systems and networks.
4. Discuss appropriate procedures for managing cyber risks and responding to cyber incidents
5. Understand the concepts of cyber-security.

3. Course Learning Outcomes

CLOs		Aligned PLOs
1	**Knowledge and Understanding**	
1.1	Explain basic terms and concepts in the field of cyber security.	K1
1.2	Review cyber risks, threats and vulnerabilities.	K2
1.3	Explain the methodologies and techniques used to protect data, systems and networks.	K1
1.4	Discuss appropriate procedures for managing cyber risks and responding to cyber incidents.	K1
2	**Skills :**	
2.1	Analyze and evaluate various cryptographic system and a complex information in the field of cyber- security.	S1
2.2	Select and use cyber security techniques, methodologies and tools to solve problems, reduce risks and perform cyber security work.	S2
2.3	Perform tasks and procedures using cyber security tools in various operations.	S1
3	**Values:**	
3.1	Manage cyber-security related tasks with autonomy.	V3

C. Course Content

No	List of Topics	Contact Hours
1	Introduction to information Security -Maintaining Confidentiality, Integrity and Availability	3
2	The need for cyber security - The Importance of Cyber security - Security Know-How and Cyber Threats Monitoring - Social Engineering and the Role of the Human Element in Cyber security	3
3	Cyber Security threats and attacks -Threats and Vulnerabilities	3
4	Security Technology: Access controls, firewalls and VPNs, -Control Access, Authentication, Authorization and Non-Repudiation	6
5	Risk Management, Cyber Risks	3
6	Cryptography -Encryption and Its Uses	4
7	Security Technology: IDS and prevention systems and other cyber security tools	3
8	Cyber security and personnel (Protecting Data, Systems and Networks)	3
9	Incident Response and contingency planning	3

	-Detecting and Responding to Cyber Incidents	
10	Cyber security using artificial intelligence -Technologies and Solutions Used in Cyber security	3
11	Security of modern networks and its challenges -Technologies and Solutions Used in Cyber security	3
12	Cyber Security policy, standards, and Practices -Governance and Cyber Risk Management	3
Total		40

D. Teaching and Assessment

1. Alignment of Course Learning Outcomes with Teaching Strategies and Assessment Methods

Code	Course Learning Outcomes	Teaching Strategies	Assessment Methods
1.0	**Knowledge and Understanding**		
1.1	Explain basic terms and concepts in the field of cyber security.	Lectures Discussions Analyzing Interactive Lecture Flipped Classroom Worked Examples	Quizzes Homework and Assignments. Written exams (Midterm and final).
1.2	Review cyber risks, threats and vulnerabilities.	Lectures Discussions Analyzing Interactive Lecture Flipped Classroom Worked Examples	Quizzes Homework and Assignments. Written exams (Midterm and final).
1.3	Explain the methodologies and techniques used to protect data, systems and networks.	Lectures Discussions Analyzing Interactive Lecture Flipped Classroom Worked Examples	Quizzes Homework and Assignments. Written exams (Midterm and final).
1.4	Discuss appropriate procedures for managing cyber risks and responding to cyber incidents.	Lectures Discussions Analyzing Interactive Lecture Flipped Classroom Worked Examples	Quizzes Homework and Assignments. Written exams (Midterm and final).
2.0	**Skills**		
2.1	Analyze and evaluate various cryptographic system and a complex information in the field of cyber-security.	Lectures Discussions Analyzing Interactive Lecture Flipped Classroom	Quizzes Homework and Assignments. Written exams (Midterm and final).

Code	Course Learning Outcomes	Teaching Strategies	Assessment Methods
		Worked Examples	Lab work
2.2	Select and use cyber security techniques, methodologies and tools to solve problems, reduce risks and perform cyber security work.	Lectures Discussions Analyzing Interactive Lecture Flipped Classroom Worked Examples	Quizzes Homework and Assignments. Written exams (Midterm and final). Lab work
2.3	Perform tasks and procedures using cyber security tools in various operations.	Lectures Discussions Analyzing Interactive Lecture Flipped Classroom Worked Examples	Quizzes Homework and Assignments. Written exams (Midterm and final). Lab work
3.0	**Values**		
3.1	Manage cyber-security related tasks with autonomy.	Lectures Discussions Analyzing Interactive Lecture Flipped Classroom Worked Examples	Quizzes Homework and Assignments. Written exams (Midterm and final). Lab work

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2. Assessment Tasks for Students

#	Assessment task*	Week Due	Percentage of Total Assessment Score
1	Quizzes	Week3,5	10%
2	Midterm	Week 7	20%
3	Practical Project	Week9	15%
4	Pass CISCO Networking Academy course	Week10	10%
5	Lab Evaluations	All Semester	15%
6	Final	Week13	30%

***Assessment task** (i.e., written test, oral test, oral presentation, group project, essay, etc.)

E. Student Academic Counseling and Support

Arrangements for availability of faculty and teaching staff for individual student consultations and academic advice :

6 office hours per week.

3 hours of weekly meetings

Contact through the LMS

Communication/interact via e-mails with students

F. Learning Resources and Facilities

1.Learning Resources

Required Textbooks	Principles of Information Security, Michael E. Whitman, Herbert J. Mattord · 2021

	Cyber Security Using Modern Technologies, Edited ByOm Pal, Vinod Kumar, Rijwan Khan, Bashir Alam, Mansaf Alam. 1st Edition, 2023.
Essential References Materials	Information Security principles and practice, marks stamp, 2d Edition, 2011. Information Security and IT Risk Management , Manish Agrawal, Wiley. CompTIA Security+ All-in-One Exam Guide, Authors: WM. Arthur Conklin, Gregory White, Chuck Cothren, Roger L.Davis, Dwayne Williams. 6th Edition.
Electronic Materials	Online resources will be provided during class lectures.
Other Learning Materials	N/A

2. Facilities Required

Item	Resources
Accommodation (Classrooms, laboratories, demonstration rooms/labs, etc.)	Lecture room with Smart board Lab with 25 Pcs
Technology Resources (AV, data show, Smart Board, software, etc.)	PC and WiFi Internet access within the class room
Other Resources (Specify, e.g. if specific laboratory equipment is required, list requirements or attach a list)	N\A جامعة الإمام محمد بن سعود الإسلامية ١٤٠٥هـ ١٤٠٦هـ الكلية التطبيقية

G. Course Quality Evaluation

Evaluation Areas/Issues	Evaluators	Evaluation Methods
Effectiveness of teaching and assessment	Student	Indirect using course evaluation survey
Quality of learning resources	Student and Faculty	Indirect using course evaluation and faculty survey

Evaluation areas (e.g., Effectiveness of teaching and assessment, Extent of achievement of course learning outcomes, Quality of learning resources, etc.)
Evaluators (Students, Faculty, Program Leaders, Peer Reviewer, Others (specify)
Assessment Methods (Direct, Indirect)

H. Specification Approval Data

Council / Committee	
Reference No.	
Date	