اعتماد
NCAAA

T4

2020

Course Specifications

Course Title:	Cybersecurity Design Principles
Course Code:	CYB 0103
Program:	Computer Science (Cybersecurity)
Department:	Applied Sciences
College:	Applied College
Institution:	Imam Muhammad Bin Saud Islamic University

Table of Contents

A. Course Identification

1. Credit hours: 4(3 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)**:**
CYB0101

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**	4hours\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**	33
2	**Laboratory/Studio**	22
3	**Tutorial**	
4	**Others** (specify)	
	Total	55

B. Course Objectives and Learning Outcomes

1. Course Description

This unit includes knowledge and skills related to the basics of design Security To design secure and reliable cyber systems.

2. Course Main Objective

This course will concentrates on improving the skills related to design security systems, where the system should be designed in a protected level of it implementing Separation of duties and Insulation. Furthermore, the designing should combine elements together into one component And it must be simple. In addition, the design should reduce implementation with Multi-layer security defense design and open design and Full settlement. However, the system must concentrates on access permissions, safety and security mode in case of malfunctions and, minimize surprises in device performance. The design should be easy to use and all programming patterns used are secured.

3. Course Learning Outcomes

	CLOs	Aligned PLOs
1	**Knowledge and Understanding**	
1.1	Expressing the principles of safe design.	ع1
1.2	Understand the importance of cybersecurity design principles and the impact of each principle on design trusted systems.	ع2،ع5
2	**Skills :**	
2.1	Distinguish the design principle that has been violated for each of the weaknesses common security in systems.	م1
2.2	Analyze the cybersecurity design principles that are required in specific settings.	م6
3	**Values:**	
3.1	Apply cybersecurity design principles to uncomplicated programs and/or systems	ق2

C. Course Content

No	List of Topics	Contact Hours
1	The basics and importance of the safe design of programs and systems	5
2	Separation of duties and Insulation	5
3	Combine elements together into one component	5
4	Modular design and Simplicity in design with Full settlement	10
5	Reduce implementation with Multi-layer security defense design	5
6	Models of systems security levels and access permissions	5
7	Safety and security mode in case of malfunctions	5
8	Minimize surprises in device performance	5
9	Reducing the level of trust with ease of use and safe programming patterns	10
Total		55

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	Expressing the principles of safe design.	Class lectures Class Discussion Questions/Answers sessions in class Home work assignments Quizzes Case studies and Analysis.	Quizzes Homework and Assignments. Written exams (Midterm and final). Writing reports.
1.2	Understand the importance of cybersecurity design principles and the impact of each principle on design trusted systems.	Class lectures Class Discussion Questions/Answers sessions in class Home work	Quizzes Homework and Assignments. Written exams (Midterm and final).

Code	Course Learning Outcomes	Teaching Strategies	Assessment Methods
		assignments Quizzes Case studies and Analysis.	Writing reports. Study cases.
2.0	**Skills**		
2.1	Distinguish the design principle that has been violated for each of the weaknesses common security in systems.	Class lectures Class Discussion Questions/Answers sessions in class Home work assignments Quizzes Case studies and Analysis.	Quizzes Homework and Assignments. Written exams (Midterm and final). Writing reports. Study cases.
2.2	Analyze the cybersecurity design principles that are required in specific settings.	Class lectures Class Discussion Questions/Answers sessions in class Home work assignments Quizzes Case studies and Analysis.	Quizzes Homework and Assignments. Written exams (Midterm and final). Writing reports. Study cases.
3.0	**Values**		
3.1	Apply cybersecurity design principles to uncomplicated programs and/or systems	Class lectures Class Discussion Questions/Answers sessions in class Home work assignments Quizzes Case studies and Analysis.	Quizzes Homework and Assignments. Written exams (Midterm and final). Writing reports. Study cases.

2. Assessment Tasks for Students

#	Assessment task*	Week Due	Percentage of Total Assessment Score
1	Quizzes	Week3,5	10%
2	Midterm1	Week 6	15%
3	Midterm2	Week8	15%
4	Lab Assignments group or individual /Class Assignments group or individual	Week4,7,9	10%
5	Lab Evaluations	All Semester	10%
6	Final	Week13	40%

*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	Secure By Design 1st Edition,Danial Deogun, Dan Bergh Johnsson (Author), Daniel Sawano (Author), ISBN-13: 978-1617294358 ISBN-10: 1617294357
Essential References Materials	N/A
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

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	