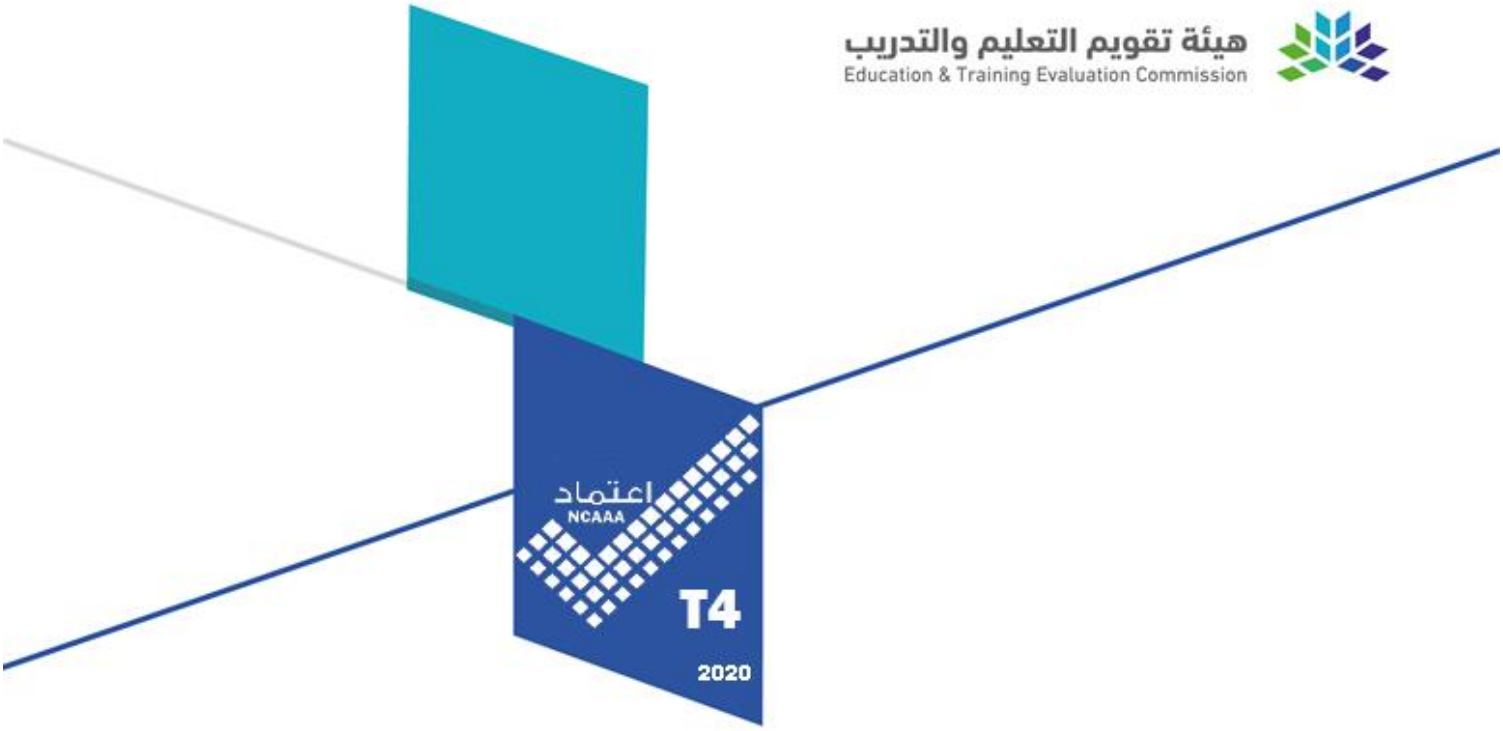
هيئة تقويم التعليم والتدريب
Education & Training Evaluation Commission



Course Specifications

Course Title:	Cyber Threats
Course Code:	CYB 0202
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: 3
2. Course type **a.** University ☐ College ☐ Department ☑ Others ☐ **b.** Required ☑ Elective ☐
3. Level/year at which this course is offered: Third Semester
4. Pre-requisites for this course (if any)**:** Cyber102
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**	22
2	**Laboratory/Studio**	
3	**Tutorial**	11
4	**Others** (specify)	
	Total	33

B. Course Objectives and Learning Outcomes

1. Course Description

This course is designed to introduce students to the concepts of cybercrime including prevention, detection, investigation and incident management processes, policies, procedures and cybercrime governance activities. It therefore focuses on cybercrime management standards, guidelines and procedures. In addition, the course provides students with an understanding of digital investigation techniques for machines, systems and networks.

2. Course Main Objective

- Understand the concept of cybercrime and distinguish between the different types of cybercrimes
- Understand The Saudi Anti-Cyber Crime law to secure the safe exchange of data, protect the rights of users of the computers and the internet
- Identify and describe the challenges faced nationally and internationally at combating cybercrime
- Identify different types of attackers and describe their motivations
- Analyze the concept of digital forensics including identifying, acquiring, processing and analyzing

3. Course Learning Outcomes

	CLOs	Aligned PLOs
1	**Knowledge and Understanding**	
1.1	Understand the concept of cybercrime and distinguish between the different types of cybercrimes	ع2
1.2	Understand The Saudi Anti-Cyber Crime law to secure the safe exchange of data, protect the rights of users of the computers and the internet	ع4
2	**Skills :**	
2.1	Identify and describe the challenges faced nationally and internationally at combating cybercrime	م1
2.2	Identify different types of attackers and describe their motivations	م2
2.3	Analyze the concept of digital forensics including identifying, acquiring, processing and analyzing	م7
3	**Values:**	
3.1		
3.2		
3.3		
3...		

C. Course Content

No	List of Topics	Contact Hours
1	Introduction to Cybercrime	6
2	Hackers, Attackers and Motivations	6
3	Types of Cybercrime	6
4	Digital Forensics	6
5	The Saudi Anti-Cyber Crime law	9
Total		33

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	Understand the concept of cybercrime and distinguish between the different types of cybercrimes	Class Discussion Questions/Answers sessions in class Case studies and analysis. Project and students	Quizzes, Exams, Project, Presentation
1.2	Understand The Saudi Anti-Cyber Crime law to secure the safe exchange of data, protect the rights of users of the computers and the internet	Class Discussion Questions/Answers sessions in class Case studies and analysis. Project and students	Quizzes, Exams, Project, Presentation
2.0	**Skills**		
2.1	Identify and describe the challenges faced nationally and internationally at combating cybercrime	Class Discussion Questions/Answers sessions in class	Quizzes, Exams, Project, Presentation

Code	Course Learning Outcomes	Teaching Strategies	Assessment Methods
		Case studies and analysis. Project and students	
2.2	Identify different types of attackers and describe their motivations	Class Discussion Questions/Answers sessions in class Case studies and analysis. Project and students	Quizzes, Exams, Project, Presentation
2.3	Analyze the concept of digital forensics including identifying, acquiring, processing and analyzing	Class Discussion Questions/Answers sessions in class Case studies and analysis. Project and students	Quizzes, Exams, Project, Presentation
3.0	**Values**		
3.1			
3.2			
…			

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	20%
6	Final	Week12	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 :

F. Learning Resources and Facilities

1.Learning Resources

Required Textbooks	Computer Forensics and Cyber Crime Book by Marjie T. Britz
Essential References Materials	نظـام مكـافحـة الجرائم المعلومـاتيـة، هيئـة الاتصـــالات وتقنيـة المعلومـات، https://www.citc.gov.sa/ar/mediacenter/publicationsandbrochures/Documents/PR_PRN_002A.pdf
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

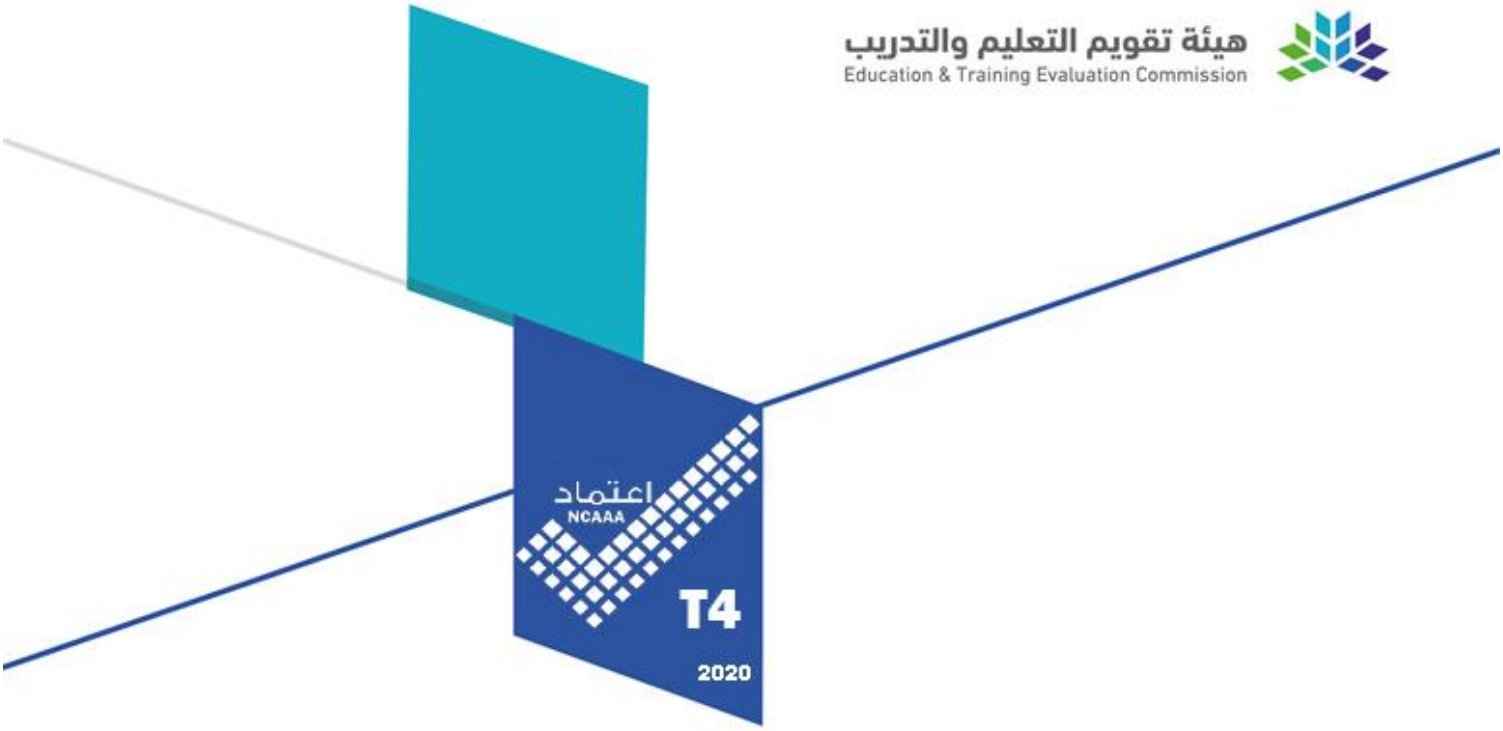
Evaluation Areas/Issues	Evaluators	Evaluation Methods
Effectiveness of teaching and assessment	Student	Indirect using course evaluation survey
Quality of learning resources	Student and Faculty	Indirect using course evaluation and faculty survey

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	

هيئة تقويم التعليم والتدريب
Education & Training Evaluation Commission



Course Specifications

Course Title:	Operating System Security
Course Code:	CYB 0209
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: 3
2. Course type **a.** University ☐ College ☐ Department ☑ Others ☐ **b.** Required ☑ Elective ☐
3. Level/year at which this course is offered: Third semester
4. Pre-requisites for this course (if any)**:** Cyber102
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**	3 hours\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**	22
2	**Laboratory/Studio**	11
3	**Tutorial**	
4	**Others** (specify)	
	Total	33

B. Course Objectives and Learning Outcomes

1. Course Description

This course presents basic principles of operating system. It covers access control as a mean of a security control in OSes. Basic OS security techniques such as logging, system call auditing will be discussed. This course discusses the security of Linux, Windows and VM systems. It concludes with common attacks on OS such as buffer overflow, remote access Trojan, self-propagating worms, etc.

2. Course Main Objective

- Demonstrate an understanding of basic OS concepts
- Demonstrate an understanding of security requirements and implementations of Linux and Windows systems
- Identify and evaluate weaknesses and threats on OSes
- Evaluate tools and technologies that can be used in protecting OSes
- Explain and analyze possible security attacks on various OSes

3. Course Learning Outcomes

CLOs		Aligned PLOs
1	**Knowledge and Understanding**	
1.1	Demonstrate an understanding of basic OS concepts	1ع
1.2	Demonstrate an understanding of security requirements and implementations of Linux and Windows systems	5ع
2	**Skills :**	
2.1	Identify and evaluate weaknesses and threats on OSes	2م
2.2	Evaluate tools and technologies that can be used in protecting OSes	4م
2.3	Explain and analyze possible security attacks on various OSes	3م
3	**Values:**	
3.1		
3.2		
3.3		
3...		

C. Course Content

No	List of Topics	Contact Hours
1	Fundamentals of OS	3
2	OS Security Goals	3
3	Access Control	3
4	Unix Security	6
5	Windows Security	6
6	Secure VM systems	6
7	OS Attacks	6
Total		33

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	Demonstrate an understanding of basic OS concepts	Class Discussion Questions/Answers sessions in class Case studies and analysis. Project and students	Quizzes, Exams, Project, Presentation
1.2	Demonstrate an understanding of security requirements and implementations of Linux and Windows systems	Class Discussion Questions/Answers sessions in class Case studies and analysis. Project and students	Quizzes, Exams, Project, Presentation
2.0	**Skills**		
2.1	Identify and evaluate weaknesses and threats on OSes	Class Discussion Questions/Answers sessions in class	Quizzes, Exams, Project, Presentation

Code	Course Learning Outcomes	Teaching Strategies	Assessment Methods
		Case studies and analysis. Project and students	
2.2	Evaluate tools and technologies that can be used in protecting OSes	Class Discussion Questions/Answers sessions in class Case studies and analysis. Project and students	Quizzes, Exams, Project, Presentation
2.3	Explain and analyze possible security attacks on various OSes	Class Discussion Questions/Answers sessions in class Case studies and analysis. Project and students	Quizzes, Exams, Project, Presentation
3.0	**Values**		
3.1			
3.2			
…			

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	Lab Assignments group or individual /Class Assignments group or individual	Week4,7,9	15%
4	Lab Evaluations	All Semester	25%
5	Final	12Week	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	Trent Jaeger, "Operating System Security" (Synthesis Lectures on Information Security, Privacy, and Trust), 2008 Abraham Silberschatz, Peter B. Galvi, Greg Gagne, "Operating System Concepts", 10th Ed, 2018
Essential References Materials	Wenliang Du, "Computer & Internet Security: A Hands-on Approach", 2019, 2nd edition Michael Palmer, "Guide to Operating Systems Security", THOMPSON/Course Technology, 2004

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	

هيئة تقويم التعليم والتدريب
Education & Training Evaluation Commission

T-240
2023

Course Specification

هيئة تقويم التعليم والتدريب
Education & Training Evaluation Commission

T-240
2023

Course Specification

Course Title:	Programming in Python
Course Code:	CS 0133
Program:	
Department:	Applied Sciences
College:	Applied College
Institution:	Imam Mohammad Ibn Saud Islamic University
Version:	2023
Last Revision Date:	August 1st, 2023

Table of Contents:

A. General information about the course:

Course Identification					
1. Credit hours:	3(2 theory, 2 lab)				
2. Course type					
a.	University ☐	College ☒	Department☐	Track☐	Others☐

b. Required ☒ Elective ☐	
3. Level/year at which this course is offered:	Third
4. Course general Description:	
The Python programming course offers a comprehensive introduction to the Python programming language, catering to both beginners and those with prior programming experience. Throughout the course, participants delve into Python's syntax, data structures, and key concepts, enabling them to develop a strong grasp of the language.Students gain practical experience in implementing Python solutions for diverse scenarios, including data manipulation and analysis	
5. Pre-requirements for this course (if any):	
6. Co- requirements for this course (if any): None	
7. Course Main Objective(s):	
The main objectives of a Python programming course typically include: **1. Providing a comprehensive understanding of the Python programming language, including its syntax, data structures, and core concepts.** **2. Equipping students with proficiency in object-oriented programming and best practices for writing efficient and maintainable code in Python.** **3. Familiarizing students with popular Python libraries and frameworks for tasks such as data analysis, web development, and automation.** **4. Cultivating the ability to solve real-world problems using Python, and encouraging creativity and critical thinking in designing and implementing Python solutions.** ○	

1. Teaching mode (mark all that apply)

No	Mode of Instruction	Contact Hours	Percentage
1.	Traditional classroom		
2.	E-learning		
3.	Hybrid • Traditional classroom • E-learning	3 hours\week	100%
4.	Distance learning		

2. Contact Hours (based on the academic semester)

No	Activity	Contact Hours
1.	Lectures	18
2.	Laboratory/Studio	18
3.	Field	
4.	Tutorial	
5.	Others (Specify)	
	Total	36

B. Course Learning Outcomes (CLOs), Teaching Strategies and Assessment Methods

Code	Course Learning Outcomes	Code of CLOs aligned with program	Teaching Strategies	Assessment Methods
1.0	Knowledge and understanding			
1.1	Understand the fundamentals of Python programming language, including data types, variables, control structures, and functions.	ع1، ع5	- Lecture. - Discussion. - Survey. - Discovery learning. - Self-education. - Developed lecture. - Brainstorming. - Web survey. - KWL chart. - Mind maps. - Concept maps.	- Traditional and online achievement tests. - Questions. - Assignments and assessments. - Presentations. - Discussion and debates. - Cognitive performance tests. - Achievement file.
1.2	Apply object-oriented programming concepts in Python, including classes, objects, inheritance, and polymorphism	ع1، ع5		
1.3	Utilize Python libraries and modules for data manipulation, analysis, and visualization.	ع1، ع5		
2.0	Skills			
2.1	Implement error handling and exceptions in Python to write robust and reliable code.	م1، م2، م7	- Demonstration. - Developed lecture. - Discovery learning. - Peer learning. - Self-education. - Discussion. - Web survey. - Brainstorming. - Co-learning. - Problem Solving. - Project. - Online discussion.	- Presentations. - Rating ladders. - Performance tests. - Production metrics. - Observation. - Projects. - Achievement file. - Peer assessment. - Self-calendar.
2.2	Develop and deploy Python applications for various real-world scenarios.	م1، م2، م7		
2.3	Demonstrate proficiency in using Python for tasks such as web scraping, automation, and working with APIs	م1، م2، م7		
2.4	Collaborate and work effectively in a team using Python for cooperative programming and project development.	م1، م2، م7		
3.0	Values, autonomy, and responsibility			
3.1	Cooperation, teamwork, and professional ethics.	ق1	- Demonstration. - Developed lecture. - Discovery learning. - Peer learning. - Self-education.	- Presentations. - Rating ladders. - Performance tests. - Production metrics.
3.2	Take responsibility for continuous learning and	ق٢		

Code	Course Learning Outcomes	Code of CLOs aligned with program	Teaching Strategies	Assessment Methods
	continuing personal development.		- Discussion. - Web survey. - Brainstorming. - Co-learning. - Problem Solving. - Project. - Online discussion.	- Observation. - Projects. - Achievement file. - Peer assessment. - Self-calendar.
3.3	Efficient and effective time management when applying acquired knowledge and skills.	ق٣		

C. Course Content

No	List of Topics	Contact Hours
1.	• Module 1 - Introduction to Python and computer programming	4
2.	• Module 2 - Data types, variables, basic input-output operations, basic operators	6
3.	• Module 3 - Boolean values, conditional execution, loops, lists and list processing, logical and bitwise operations	8
4.	• Module 4 - Functions, tuples, dictionaries, and data processing	6
5.	• Module 5 - Modules, Packages and PIP	6
6.	• Module 6 - Strings, String and List Methods, Exceptions	6
7.	• Module 7 - Object-Oriented Programming	6
Total		36

D. Students Assessment Activities

No	Assessment Activities *	Assessment timing (In week no)	Percentage of Total Assessment Score
1.	Quizzes	Continuous	15%
2.	Homework	Continuous	5%
3.	Midterm Exam	Week7	20%
4.	Practical Assessment and project	Continuous	30%
5.	Final Exam	Week12	30%

*Assessment Activities (i.e., Written test, oral test, oral presentation, group project, essay, etc.)

E. Learning Resources and Facilities

1. References and Learning Resources

Essential References	PCAP - Programming Essentials in Python by Cisco Networking Academy. http://www.netacad.com
Supportive References	1- "Python Crash Course" by Eric Matthes 2- "Automate the Boring Stuff with Python" by Al Sweigart 3- Official Python Documentation and Tutorial 4- Online resources such as Python.org, RealPython, and Stack Overflow
Electronic Materials	○ Online resources will be provided during class lectures.
Other Learning Materials	N/A

2. Required Facilities and equipment

Items	Resources
Facilities (Classrooms, laboratories, exhibition rooms, simulation rooms, etc.)	Classroom included: 1. A projector connected to a PC, preferably with Internet access. 2. A vertical sliding board. 3. An equipped computer lab with at least 25 seats.
Technology equipment (Projector, smart board, software, etc.)	Computing resources (Projector, data show, Smart Board, software: Win Dos- Win Server- Linux - Ubuntu, etc.).
Other equipment (Depending on the nature of the specialty)	N/A

F. Assessment of Course Quality

Assessment Areas/Issues	Assessor	Assessment Methods
Effectiveness of teaching	Student	1. Students feedback (collected through surveys) as per university policy/procedure. 2. Teacher's Course report.
Effectiveness of student's assessment	Faculty	1. Review of Course Reports.

Assessment Areas/Issues	Assessor	Assessment Methods
		2. Review of Student feedback.
Quality of learning resources	Student and Faculty	Indirect using course evaluation and faculty survey.
The extent to which CLOs have been achieved	Program Leaders	Continuous review of the course contents, teaching strategies and utilizing the best practices.
Other	N/A	N/A

Assessor (Students, Faculty, Program Leaders, Peer Reviewer, Others (specify)
Assessment Methods (Direct, Indirect)

G. Specification Approval Data

COUNCIL /COMMITTEE	
REFERENCE NO.	
DATE	

هيئة تقويم التعليم والتدريب
Education & Training Evaluation Commission

T-104
2022

Course Specification

هيئة تقويم التعليم والتدريب
Education & Training Evaluation Commission

T-104
2022

Course Specification

Course Title:	**Web Design**
Course Code:	**CS 134**
Program:	**Computer Science (Programming)**
Department:	**Applied Sciences**
College:	**Applied Collage**
Institution:	**Al Imam Muhammad bin Saud Islamic University**
Version:	**2**
Last Revision Date:	**20/06/2023**

Table of Contents:

A. General information about the course:

Course Identification					
1. Credit hours:	3 hours (2 hours Lecture, 2 hours Lab)				
2. Course type:					
a.	University ☐	College ☐	Department☒	Track☐	Others☐
b.	Required ☒	Elective☐			
3. Level/year at which this course is offered: Three/ One					
4. Course general Description: This course covers several topics that equip students with the necessary skills and knowledge to create visually appealing and functional websites. Throughout the course, students will learn the essential tools and techniques required to design, develop, and manage websites effectively. This includes the study of design principles and learning the required tools that will help students to build web pages such as HTML and CSS.					
5. Pre-requirements for this course (if any): CS115					
6. Co- requirements for this course (if any): None					
7. Course Main Objective(s) In this course, you will gain a foundational knowledge of website creation and be able apply it to the planning, design and development of your own portfolio website over the course of the semester.					

1. Teaching mode (mark all that apply)

No	Mode of Instruction	Contact Hours	Percentage
1.	Traditional classroom		
2.	E-learning		
3.	Hybrid • Traditional classroom • E-learning	44	100%
4.	Distance learning		

2. Contact Hours (based on the academic semester)

No	Activity	Contact Hours
1.	Lectures	22
2.	Laboratory/Studio	22
3.	Field	
4.	Tutorial	
5.	Others (specify)	165

	Total	209

B. Course Learning Outcomes (CLOs), Teaching Strategies and Assessment Methods

Code	Course Learning Outcomes	Code of CLOs aligned with program	Teaching Strategies	Assessment Methods
1.0	Knowledge and understanding			
1.1	Knowledge of the essential and general concepts of world wide web.	ع1، ع2، ع4، ع5	- Lectures. -Discussions. -Surveys. -Experimental Learning. -Self-Learning. -Development Lectures. -Brainstorming - Web Survey. -KWL - Learning Schedule. - Mind Maps. -Concept Maps.	-In-person and Online Exams. -Classroom Questions. -Assignments. -Participations. -Discussions. -Debates. -Cognitive Tests. -Student Activity File.
1.2	Knowledge of web design principles.	ع1، ع4، ع5		
2.0	Skills			
2.1	Using HTML to build web pages	م1، م2، م3، م4، م5، م7	-Labs. -Discussions. -Peers Learning. -Experimental Learning. -Self-Learning. -Development Lecture. -Brainstorming - Web Survey. -Teamwork. - Project. -Online Discussions.	-Presentations. -Rubrics. -Auditions. -Projects. -Observations. -Labs -Peer Assessments. -Self Assessment. -Student Activity File.
2.2	Formatting web pages using CSS	م1، م2، م3، م4، م5، م7		
2.3	Publishing a website on the internet.	م1، م2، م4، م7		
2.4	Building a website using one of the applications and applying the skills and knowledge that were equipped in the course.	م1، م2، م3، م4، م7		
2.5	The use of information and communication technology in communication, exchanging ideas, scientific research, and tasks accomplishments.	م1، م2، م7		
2.6	Practicing critical thinking and solving problems that the learner faces in the course in creative ways.	م1، م2، م7		
3.0	Values, autonomy, and responsibility			

Code	Course Learning Outcomes	Code of CLOs aligned with program	Teaching Strategies	Assessment Methods
3.1	Cooperation, teamwork, and professional ethics.	ق1	-Labs. -Discussions. -Peers Learning. -Experimental Learning. -Self- Learning. -Development Lecture. -Brainstorming - Web Survey. -Teamwork. - Project. -Online Discussions.	-Presentations. -Rubrics. -Auditions. -Projects. -Observations. -Labs -Peer Assessments. -Self Assessment. -Student Activity File.
3.2	Take responsibility for continuous learning and continuing personal development.	ق2		
3.3	Efficient and effective time management when applying acquired knowledge and skills.	ق3		

C. Course Content

No	List of Topics	Contact Hours

1.	Web Design:
	• Frontend Versus Backend
	• Design
	  ○ Interaction Design
	  ○ User Interface Design
	  ○ User Experience Design
	• Development
	  ○ Authoring
	  ○ Styling
	  ○ Scripting and Programming
	• Content Strategy
	• Multimedia
	• HTML
	• CSS
	• JavaScript
	• Server-Side Programming and Database Management
		2 Hours

2.	How is The Web Work:
	• The Internet Versus the Web
	  ○ Internet
	  ○ Web
	• A Brief History of the Web
	• How You Reach a Website?
	• Browsers
	• HTTP
		2 Hours

	• DNS • Web Page Addresses (URLs) • Website Types • Website Components • The Anatomy of a Web Page	

3.	Hypertext Markup Language (HTML):
	• HTML Editing Tools
	• Creating a Simple Page
	• Basic HTML Document Structure P88
	• HTML Components
	  ○ Tags
	  ▪ Containers
	  ▪ Standalone Tags
	  ▪ Nesting HTML Tags
	  ○ Attributes
	• Information Browsers Ignores
	  ○ Line Breaks
	  ○ Tabs and Multiple Spaces
	  ○ Multiple <P> Tags
	  ○ Unrecognized Tags
	  ○ Text in Comments
	• Paragraphs and Headings (Block-Level Elements)
		4 Hours

4.	Fonts, Colors, and General Formatting in HTML: • Formatting Text: Font's Type, Color, Size and Direction • Spacing and Positioning • Colors in HTML B3, Chapter 5 Page 75 • General Formatting of the Page B3, Chapter 6 Page 96 • Webpage Background	4 Hours
5.	Inserting Interactive Objects with HTML: • Insert images. • Insert an audio file. • Insert a video file.	4 Hours
6.	Insert Links with HTML: • Linking to Another Website or Another Page of The Same Website. • Linking into Another Position in The Same Web Page. • Linking A Site to an Email Address. • Linking A Media to Another Website or Another Page of The Same Website. • Linking A Media into Another Position in The Same Web Page. • Linking A Media to an E-Mail Address. • Affecting The Appearance of Links.	4 Hours
7.	Insert Lists and Tables with HTML: • Tables:	4 Hours

	○ Components of tables ○ Inserting tables ○ Properties of tables • Lists: ○ Inserting Ordered lists ○ Inserting Unordered lists ○ Definition Lists ○ Nesting Lists	
8.	Frames in HTML: • Concept of Frames • Frames Attributes • Types of Frames	4 Hours
9.	Forms in HTML: • Concepts of Forms • Forms Attributes • Forms Elements ○ Textboxes ○ Passwords ○ Checkboxes ○ Radio Buttons ○ Option Lists ○ Text Area ○ Submit and Reset Buttons ○ Select Menu ○ Other Elements: Label, Field Set, Legend	6 Hours
10.	Cascading Style Sheet CSS: • CSS • How CSS Work • CSS RULES: ○ Selector ○ Property ○ Value • Adding CSS to an HTML Document • Properties of CSS: ○ Test and Fonts ○ Comments ○ Colors ○ Background ○ Frame ○ Size ○ Box properties ○ Images ○ Others.	6 Hours
11.	Publishing and Managing the Website	4 Hours
Total		44

D. Students Assessment Activities

No	Assessment Activities *	Assessment timing (in week no)	Percentage of Total Assessment Score
1.	One Midterm Exam	Week 6	20
2.	Quizzes	The whole semester	10
3.	Project	Week 10	20
4.	Labs	The whole semester	15
5.	Attendance and Classroom Participation		5
6.	Final Exam	Week 12	30
7.	Total		100

*Assessment Activities (i.e., Written test, oral test, oral presentation, group project, essay, etc.)

E. Learning Resources and Facilities

1. References and Learning Resources

Essential References	Web Design in a Nutshell, By Jennifer Niederst, 1st Edition.
Supportive References	Learning Web Design a Beginner's Guide to HTML, CSS, JavaScript, and Web Graphics, By Jennifer Robbins, 4th Edition. Building Websites All in One for Dummies, By Doug Sahlin and Claudia Snell, 2nd Edition.
Electronic Materials	Course Lectures on the Blackboard.
Other Learning Materials	N/A

2. Required Facilities and equipment

Items	Resources
facilities (Classrooms, laboratories, exhibition rooms, simulation rooms, etc.)	Lecture room with Smart board Lab with 25 PCs.
Technology equipment (Projector, smart board, software)	PC and WIFI Internet access within the classroom Projector Visual Studio Code او Notepad++
Other equipment (Depending on the nature of the specialty)	N/A

F. Assessment of Course Quality

Assessment Areas/Issues	Assessor	Assessment Methods
Effectiveness of teaching strategies	Students – Peers	1. Questionnaires and surveys approved by the department. 2. Peers' assessments by faculties. 3. Reviewing the results of the students' evaluation.
Effectiveness of students' assessment	Peers, Program Leaders, Faculty, Students.	1. Questionnaires and surveys approved by the department. 2. Review course specifications and course reports periodically. 3. Peers assessments. 4. Review samples of students works.
Quality of learning resources	Program Leaders, Faculty.	1. Review course report. 2. Analyze exam models and students grade records.
The extent to which CLOs have been achieved		
Other		

Assessor (Students, Faculty, Program Leaders, Peer Reviewer, Others (specify)
Assessment Methods (Direct, Indirect)

G. Specification Approval Data

COUNCIL /COMMITTEE	COMPUTER PROGRAMS DEVELOPMENT COMMITTEE
REFERENCE NO.	SECOND - THE THIRD SEMESTER OF THE YEAR 1444
DATE	20 / 06 / 2023 G, 02/ 11 /1444 H

هيئة تقويم التعليم والتدريب
Education & Training Evaluation Commission

Course Specifications

Course Title:	Cloud Computing Essentials
Course Code:	0107 CS
Program:	Computer Science (Network technology and Programming technology)
Department:	Applied Sciences
College:	Applied College
Institution:	Imam Muhammad Bin Saud Islamic University

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**		
2	**Blended**	4hours\week	100%
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

The course aims to identify the ways in which clouds can be deployed as public, private, hybrid, and community clouds and describing the various service delivery models of a cloud computing architecture, and, followed by a much deeper review of the security and privacy issues related to cloud computing environments.

2. Course Main Objective

This course should provide essential concepts, Technology & Architecture for students who want to learn and understand cloud computing, and who need to select or build cloud systems and solutions. It lays the foundation for cloud concepts, models, technologies, and mechanisms.

3. Course Learning Outcomes

	CLOs	Aligned PLOs
1	**Knowledge and Understanding**	

CLOs		Aligned PLOs
1.1	Describe the fundamental concepts of cloud computing	ع1,ع2
1.2	Recognize cloud security needs and implementation requirements	ع2
1.3	Describe the main cloud computing roles and skills required in the industry	ع1
2	**Skills :**	
2.1	Develop effective solutions using cloud technology	م1,م2
2.2	Implement could security techniques to provide required security services	م7
2.3	Communicate effectively with audience to deliver knowledge related to cloud computing	م1
3	**Values:**	
3.1	Cooperation, teamwork, and professional ethics.	ق1
3.2	Take responsibility for continuous learning and continuing personal development.	ق2
3.3	Efficient and effective time management when applying acquired knowledge and skills.	ق3

C. Course Content

No	List of Topics	Contact Hours
1	Module1:Introduction to cloud computing • History of cloud computers. • Architecture. • Why cloud computing • Cloud computing characteristics	4
2	Module2:Understanding Cloud Computing • Meaning of the cloud computing • Type of cloud computing services • Types of cloud storage services • Meaning of the cloud computing • Type of cloud computing services • Types of cloud storage services	4
3	Module3:Fundamental Concepts and Models • Roles and boundary • Cloud characteristics. • Cloud delivery model • Cloud deployment model	4
4	Module5:Cloud-Enabling Technology • Service Oriented Architecture (SOA) and Web Services • Virtualization technologies and components • Virtualization platforms like Xen, KVM, VMware, Virtual Box, Hyper -V • Virtual disk images • Network virtualization	4
5	Module6:Fundamental Cloud Security • Basic Terms and Concepts • Threat Agents	4

	• Cloud Security Threats • Additional Considerations • Case Study Example	
6	Module8:Cloud Infrastructure Mechanisms • Logical Network Perimeter • Virtual Server • Cloud Storage Device • Cloud Usage Monitor • Resource Replication	7
7	Module9:Cloud Management Mechanisms • Single Sign-On (SSO) • Cloud-Based Security Groups • Remote administration System. • Resource management system. Encryption • Hashing • Digital Signature • Public Key Infrastructure (PKI) • Identity and Access Management (IAM)	5
8	Module10:Cloud Security Mechanisms • Hardened Virtual Server Images	4
9	Module11:Cloud Architectures • Describe high availability monitoring options. • Describe switch supervisor redundancy Workload Distribution Architecture • Resource Pooling Architecture Dynamic Scalability Architecture • Elastic Resource Capacity Architecture • Service Load Balancing Architecture • Cloud Bursting Architecture • Elastic Disk Provisioning Architecture • Redundant Storage Architecture	5
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	Describe the fundamental concepts of cloud computing	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	Recognize cloud security needs and implementation requirements	Class lectures Class Discussion Questions/Answers	Quizzes Homework and Assignments.

Code	Course Learning Outcomes	Teaching Strategies	Assessment Methods
		sessions in class Home work assignments Quizzes Case studies and Analysis.	Written exams (Midterm and final). Writing reports. Study cases.
1.3	Describe the main cloud computing roles and skills required in the industry	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.
2.0	**Skills**		
2.1	Develop effective solutions using cloud technology	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	Implement could security techniques to provide required security services	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.
2.3	Communicate effectively with audience to deliver knowledge related to cloud computing	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	Cooperation, teamwork, and professional ethics.	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.
3.2	Take responsibility for continuous learning and continuing personal development.	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.
3.3	Efficient and effective time management when applying acquired knowledge and skills.	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	Week9	15%
4	Lab Assignments group or individual /Class Assignments group or individual	Week4,7,10	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 :

3 office hours per week.
Contact through the LMS
Communication/interact via e-mails with students

F. Learning Resources and Facilities

1.Learning Resources

Required Textbooks	Cloud computing :concepts, technology, & architecture By Thomas Erl, Zaigham Mahmood, Ricardo Puttini, 1st Edition, ISBN-13: 978-0133387520.
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	