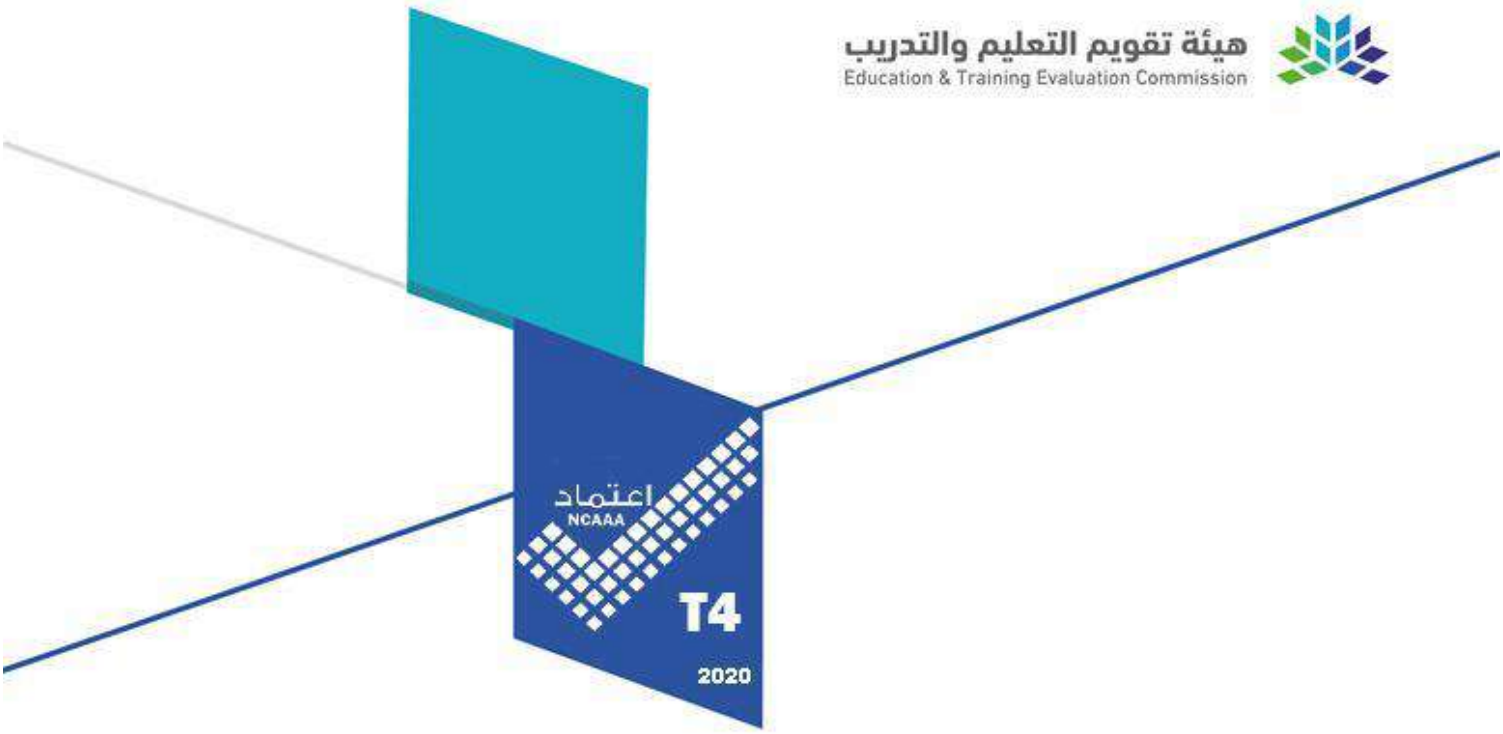
هيئة تقويم التعليم والتدريب
Education & Training Evaluation Commission



Course Specifications

Course Title:	Introduction to Programming
Course Code:	ACCS 102
Program:	Diploma
Department:	Computer and Information Technology
College:	The Applied College
Institution:	King Abdulaziz University

Table of Contents

A. Course Identification

1. Credit hours: 3 Credits
2. Course type **a.** University ☐ College ☐ Department ☑ Others ☐ **b.** Required ☑ Elective ☐
3. Level/year at which this course is offered: 1st level / 1st year
4. Pre-requisites for this course (if any)**:** **N/A**
5. Co-requisites for this course (if any)**:** **N/A**

6. Mode of Instruction (mark all that apply)

No	Mode of Instruction	Contact Hours	Percentage
1	**Traditional classroom**		
2	**Blended**		
3	**E-learning**	15	100%
4	**Distance learning**		
5	**Other**		

7. Contact Hours (based on academic semester)

No	Activity	Contact Hours
1	**Lecture**	7
2	**Laboratory/Studio**	8
3	**Tutorial**	
4	**Others** (specify)	
	Total	15

B. Course Objectives and Learning Outcomes

1. Course Description

The problem-solving process starts with the problem specifications and ends with a correct program. Topics include algorithms, building blocks of algorithms (statements, state, control flow, functions), notation (pseudo code, flow chart, programming language), algorithmic problem solving, simple strategies for developing algorithms, flowchart, primitive data type, short hand operators, cast value of one type to another type, selection statements, break and continue statements, relational operators, logical operators, logical expressions, Boolean variable, Boolean expressions, repetition statements and nested loops.

2. Course Main Objective

The main objective of this course is to teach the students the basics of constructing algorithms and programming languages. The student at the end of this course are expected to learn the basic skills of algorithmic problem solving, the systematic approach to define the problem and

creating number of solutions, and the basic programing skills which include syntax, commands, methods, selection statements, loops, variables etc.

3. Course Learning Outcomes

	CLOs	Aligned PLOs
1	**Knowledge and Understanding**	
1.1	Construct algorithms for solving simple problems.	K3
1.2	Write a programing code that implements algorithms for solving simple problems.	K4
	A Analyze and explain the behavior of simple programs involving the fundamental programming constructs.	K2
1...		
2	**Skills :**	
2.1	Identify and describe uses of Python built-in data types and functions.	S1
2.2	Write programs that use Python built-in data types and functions.	S2, S4
2...	Apply appropriate conditional and iteration constructs for a given programming task.	S3
3	**Values:**	
3.1	Apply a variety of strategies to the testing and debugging of simple programs.	C1, C2
3.2	Use of an appropriate IDE (Integrated Development Environment) to create, compile and run a program developed by the selected programing language.	C3
3.3	Develop and implement secure and reliable software taking into account the characteristics of operating systems and environments.	C2
3...		

C. Course Content

No	List of Topics	Contact Hours
1	Introduction to Problem-Solving: Problem-solving & computer science, program design & problem-solving techniques, steps in program development, algorithms, pseudocode, & flowcharts, and decision structures.	**1.4**
2	Introduction to Computers, Programs, and Python: What is a computer? , programming languages, operating systems, the history of python, getting started with python, writing simple python programs, anatomy of a python program, programming style and documentation, and programming errors.	**1.4**
3	Elementary Programming: Writing a simple program, reading input from the console, identifiers, variables, assignment statements, and expressions, simultaneous assignments, named constants, numeric data types and operators, evaluating expressions and operator precedence, augmented assignment operators, type conversions and rounding, and software development process.	1.4
4	Mathematical Functions, and Strings: Common Python functions, strings and characters, and formatting numbers and strings.	**1.4**

5	Selections: Boolean types, values, and expressions, generating random numbers, if statements, two-way if-else statements, nested if and multi-way if-elif-else statements, common errors in selection statements, logical operators, conditional expressions, operator precedence and associativity, and debugging.	**3.2**
6	Loops: The while loop, the for loop, nested loops, minimizing numerical errors, keywords break and continue.	**3.2**
7	Basic concepts of secure programming: permissions, bounds checking, input validation, data type checking and module input validation, error handling.	1.4
Total		15

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	Define programming concepts and terminology to facilitate communication with software developers.	Discussions Online lecture View tutorials Laboratory exercise	Forum Final exam Assignment Quiz 1 - 5
1.2	Demonstrate an understanding of the basic building blocks of structure programming.		
…		Discussions	Forum Final exam
2.0	**Skills**		
2.1	Critical thinking, analysis and synthesis, including the ability to identify and describe the evolution of common characteristics.	Discussions Online lecture Laboratory exercise Online lecture View tutorials Laboratory exercise	Quiz 1 - 5 Assignment Forum Final exam Quiz 1 - 5 Assignment Final exam
2.2	Show problem that requires a programmed solution. Use common abstract methods to describe the solution concept.		
…		Discussions Online lecture Laboratory exercise	Quiz 1 - 5 Assignment Forum Final exam
3.0	**Values**		
3.1	Develop professional practical skills to demonstrate the ability to apply Programming knowledge	Laboratory exercise Forum Online lecture Tutorials	Quiz 1 - 5 Assignment Final exam Quiz 1 - 5 Assignment Forum Final exam
3.2	Describe the architectural aspects of a software application		
…		Laboratory exercise	Quiz 1 - 5 Assignment

Code	Course Learning Outcomes	Teaching Strategies	Assessment Methods
			Final exam

2. Assessment Tasks for Students

#	Assessment task*	Week Due	Percentage of Total Assessment Score
1	Quizzes	2, 3, 5, 7, 9	20%
2	Assignment	7	6%
3	Forum	8	4%
4	Final Exam	10	70%
5			

***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:

- The faculty members are required to display at the front of their office a schedule dividing into lecture hours and office hours.
- The office hours are available for individual student's consultation and counselling, which is on average 30-45 minutes per course per day.
- Beside each faculty member provides counseling to their students, there are also other sources of counseling to students. These are college admission office and counsel and alumni office.

F. Learning Resources and Facilities

1.Learning Resources

Required Textbooks	Introduction to Programming Using Python, Y. Daniel Liang ISBN 13: 978-0-13-274718-9 ISBN 10: 0-13-274718-9
Essential References Materials	• paython.org • pearsonmylabandmastering.com/myprogramminglab
Electronic Materials	
Other Learning Materials	lms.kau.edu.sa

2. Facilities Required

Item	Resources
Accommodation (Classrooms, laboratories, demonstration rooms/labs, etc.)	• Blackboard system

Item	Resources
Technology Resources (AV, data show, Smart Board, software, etc.)	• Personal computers for the instructor and students • Internet connection • Python IDE
Other Resources (Specify, e.g. if specific laboratory equipment is required, list requirements or attach a list)	Not applicable

G. Course Quality Evaluation

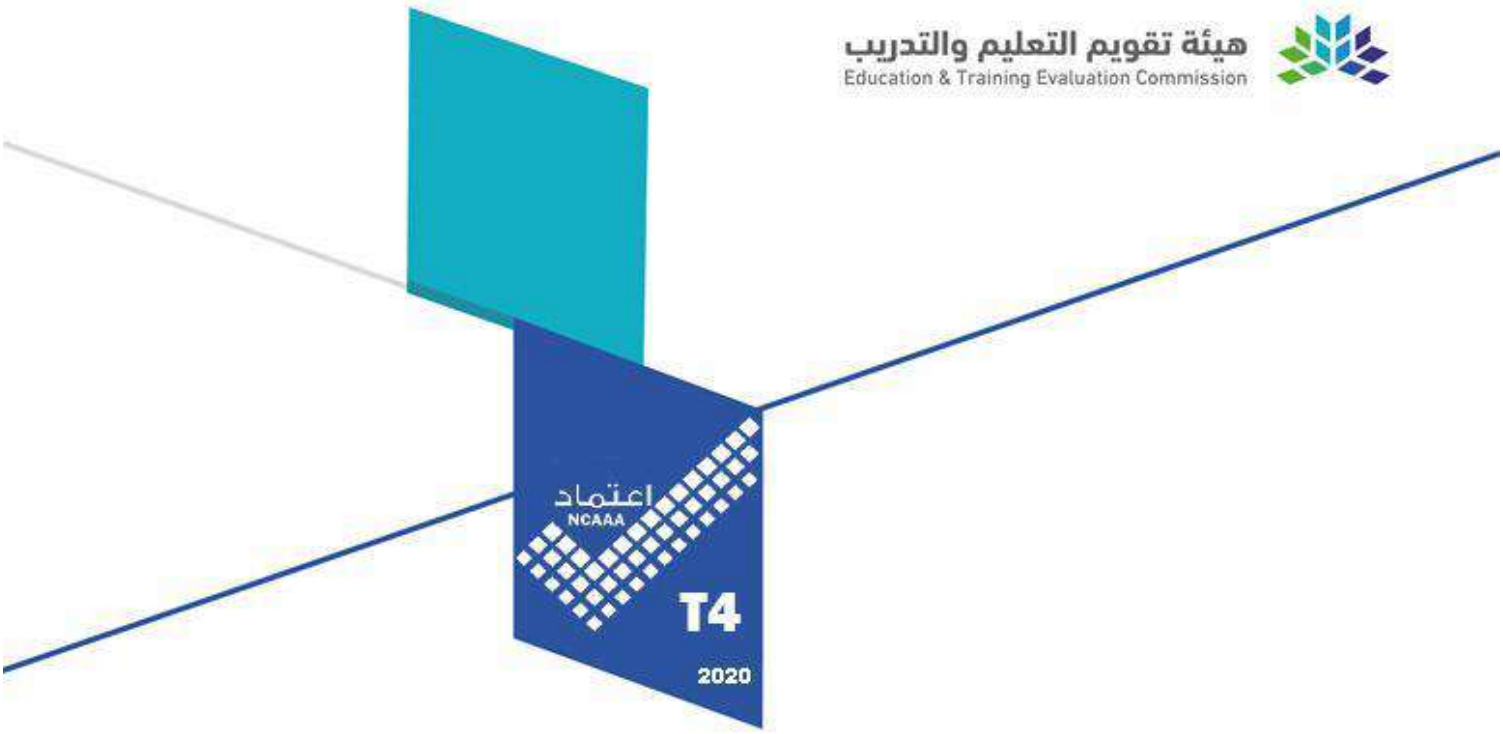
Evaluation Areas/Issues	Evaluators	Evaluation Methods
Teaching and assessment	Students, Coordinator	Professional certification
Achievement of course learning outcomes	Students	University Survey
Quality of learning resources	Students, faculty	University Survey
Teaching and assessment	Students, Coordinator	Professional certification

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:	Introduction to Computing Concepts
Course Code:	ACCS 120
Program:	General Intermediate Diploma in Cybersecurity
Department:	Computer and Information Technology
College:	The Applied College
Institution:	King Abdulaziz University

Table of Contents

A. Course Identification

1. Credit hours:	3 Credit hours
2. Course type	
a.	University ☐ College ☐ Department ☑ Others ☐
b.	Required ☑ Elective ☐
3. Level/year at which this course is offered:	1st level / 1st Year
4. Pre-requisites for this course (if any)**:**	Not Applicable
5. Co-requisites for this course (if any)**:**	Not Applicable

6. Mode of Instruction (mark all that apply)

No	Mode of Instruction	Contact Hours	Percentage
1	**Traditional classroom**		
2	**Blended**		
3	**E-learning**	15	100%
4	**Distance learning**		
5	**Other**		

7. Contact Hours (based on academic semester)

No	Activity	Contact Hours
1	**Lecture**	8
2	**Laboratory/Studio**	7
3	**Tutorial**	
4	**Others** (specify)	
	Total	15

B. Course Objectives and Learning Outcomes

1. Course Description

The objective of this course is to explain why it is essential to learn about computers today and discuss several ways computers are integrated into our business and personal live also present computer science subject areas and applications in ways that serve to motivate the study of computer science and to put into context the various subjects that a student encounter later in their studies. Topics include an introduction to the discipline of computing, computer systems, number systems, data representation, logical operations of AND, OR, NOT, NAND and NOR gates, Boolean expression, computer organization, operating system functionality, principles of networking and internet protocols

2. Course Main Objective

- Understand structure and behavior of the various functional modules of the computer; and how they interact to provide the processing needs of the user.

- Show understanding of computer number systems and digital logic concepts.
- Understand the basic concept of current and future computing technologies
- Define the role and purpose of an operating system. And to identify different types and characteristics of operating system.
- To understand network architecture and networking protocols

3. Course Learning Outcomes

CLOs		Aligned PLOs
1	**Knowledge and Understanding**	
1.1	Understand different functional modules of the computer; and how they interact to provide the processing needs of the user.	K3
1.2	Define the basic concept of current and future computing technologies	K2
1.3	List the numbering system exists in computer technology.	K3
1.4	Helps students to learn the role and purpose of an operating system	K1
1.5	Design a simple circuit using the fundamental building blocks.	K4
1.6	Explain the basic network architecture and networking protocols	K2
2	**Skills:**	
2.1	Convert a number in binary, octal or hexadecimal to a number in the decimal system and vice versa	S1
2.2	Addition, subtraction, multiplication, and division of integers.	S2, S3
2.3	Design and analyze basic digital circuits.	S2, S3
2.5	Compare different operating systems	S1
3	**Values:**	
3.1	Demonstrate professional practical skills and ability to solve problem by following instructions.	C1
3.2	Apply a variety of strategies to the converting and representing of simple number system	C1, C2
3.3	Appraise to use computer such as internet facility, Learning Management System (Blackboard) etc.	C2

C. Course Content (Up to 9 topics)

No	List of Topics	Contact Hours
1	Introduction to the Personal Computer	**3**
2	Number Systems	**3**
3	Basic Logic Gates	**3**
4	Computer Organization	2
5	Operating Systems	2
6	Networks	2
Total		15

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 different functional modules of the computer; and how they interact to provide the processing needs of the user.	Online lecture Discussions	Quiz 1
1.2	Define the basic concept of current and future computing technologies	Online lecture View tutorials Exercise	Quiz 1 Final exam
1.3	List the numbering system exists in computer technology	Online lecture View tutorials Exercise	Assignment Quiz 2 Final exam
1.4	Learn the role and purpose of an operating system	Online lecture	Forum Quiz 5 Final exam
2.0	**Skills**		
2.1	Convert a number in binary, octal or hexadecimal to a number in the decimal system and vice versa	Online lecture View tutorials Exercise	Assignment Quiz 2 Final exam
2.2	Addition, subtraction, multiplication, and division of integers.	Online lecture View tutorials Exercise	Assignment Quiz 2 Final exam
2.3	Show understanding of digital logic concepts and selected combinational logic and sequential logic circuits.	Online lecture View tutorials Exercise	Assignment Quiz 3 Final exam
2.4	Describe the basic structures and functional components of computer hardware and how the computer communicates with peripherals.	Online lecture View tutorials Exercise	Final exam Quiz 4
2.5	Compare different operating systems	Online lecture View tutorials	Forum Quiz 5 Final exam
2.6	Describe constructions and operation of computer networks, applications of networks, Internet and	Online lecture Tutorials	Final Exam
3.0	**Values**		

2. Assessment Tasks for Students

#	Assessment task*	Week Due	Percentage of Total Assessment Score
1	Quizzes	2, 3, 5, 7, 9	20%
2	Assignment	7	6%
3	Forum	8	4%

#	Assessment task*	Week Due	Percentage of Total Assessment Score
4	Final Exam	10	70%
5			

***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:

- The faculty members are required to display at the front of their office a schedule dividing into lecture hours and office hours.
- The office hours are available for individual student's consultation and counselling, which is on average 30-45 minutes per course per day.
- Beside each faculty member provides counseling to their students, there are also other sources of counseling to students. These are college admission office and counsel and alumni office.

F. Learning Resources and Facilities

1.Learning Resources

Required Textbooks	Gilberg, Richard F., Forouzan, Behrouz A., "Foundations of Computer Science, Second Edition", Course Technology; 2nd editions ISBN 13: 9781418836092 ISBN 10: 1418836095
Essential References Materials	Recorded Lectures
Electronic Materials	e-Textbooks YouTube Tutorials
Other Learning Materials	lms.kau.edu.sa

2. Facilities Required

Item	Resources
Accommodation (Classrooms, laboratories, demonstration rooms/labs, etc.)	Blackboard system
Technology Resources (AV, data show, Smart Board, software, etc.)	• Personal computers for the instructor and students • Internet connection • Microsoft Office applications
Other Resources	Not applicable

Item	Resources
(Specify, e.g. if specific laboratory equipment is required, list requirements or attach a list)	

G. Course Quality Evaluation

Evaluation Areas/Issues	Evaluators	Evaluation Methods
Teaching and assessment	Students, Coordinator	Course report form, university survey
Achievement of course learning outcomes	Students	University survey
Quality of learning resources	Students, faculty	University 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

اعتماد NCAAA T4 2020

Course Specifications

Course Title:	Basic Networking
Course Code:	ACCS 121
Program:	General Intermediate Diploma in Cybersecurity
Department:	Computer and Information Technology
College:	The Applied College
Institution:	King Abdulaziz University

Table of Contents

A. Course Identification

1. Credit hours:	4 Credit hours
2. Course type	
a.	University ☐ College ☐ Department ☑ Others ☐
b.	Required ☑ Elective ☐
3. Level/year at which this course is offered:	**1st level / 1st Year**
4. Pre-requisites for this course (if any)**:**	Not Applicable
5. Co-requisites for this course (if any)**:**	Not Applicable

6. Mode of Instruction (mark all that apply)

No	Mode of Instruction	Contact Hours	Percentage
1	**Traditional classroom**		
2	**Blended**		
3	**E-learning**	15	100%
4	**Distance learning**		
5	**Other**		

7. Contact Hours (based on academic semester)

No	Activity	Contact Hours
1	**Lecture**	8
2	**Laboratory/Studio**	7
3	**Tutorial**	
4	**Others** (specify)	
	Total	15

B. Course Objectives and Learning Outcomes

1. Course Description

This course introduces networking from processes, components, layers, protocols, services, applications, and network security.

2. Course Main Objective

- Knowing the fundamental concepts of computer network.
- Define key components and types of networks.

3. Course Learning Outcomes

	CLOs
	Knowledge and Understanding
1	Explain the basic concepts of data networks, including components and layers protocols, services, applications, and tools.
2	Suggest the design and architecture of the network based on a specific settings scenario.

CLOs	
3	Specify the route of data packets for simple links.
4	Clarify common network vulnerabilities and threats.

C. Course Content

No	List of Topics	Contact Hours
1	OSI, TCP/IP models in Networks.	**3**
2	Wired, optical and wireless networking media.	**2**
3	Network architectures and structures.	**2**
4	Network types: PAN, LAN, WAN, DMZ, VLAN and NAT.	**2**
5	Common Networking Devices: Routers, Switches, Switches and Firewall.	**2**
6	Network protocols, services, and applications: IP, TCP, UDP, ICMP DNS, NTP, VLAN, SMTP, HTTP, VoIP, SSH, and so on.	**2**
7	Essentials network management tools.	**1**
8	Overview of network security issues.	**1**
Total		**15**

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	Explain the basic concepts of data networks, including components and layers protocols, services, applications, and tools.	Online lecture Discussions	Quiz 1-5
2	Suggest the design and architecture of the network based on a specific settings scenario.	Online lecture View tutorials Exercise	Quiz 1-5 Assignment
3	Specify the route of data packets for simple links.	Online lecture View tutorials Exercise	Quiz 1-5 Assignment Forum
4	Clarify common network vulnerabilities and threats.	Online lecture	Quiz 1-5 Final Exam
5	Explain the basic concepts of data networks, including components of layers protocols, services, applications, and tools.	Online lecture Discussions	Quiz 1-5 Final Exam

2. Assessment Tasks for Students

#	Assessment task*	Week Due	Percentage of Total Assessment Score
1	Quizzes	2, 3, 5, 7, 9	20%
2	Assignment	7	6%
3	Forum	8	4%
4	Final Exam	10	70%
5			

***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 :

- The faculty members are required to display at the front of their office a schedule divided into lecture hours and office hours.
- The office hours are available for individual student consultation and counseling, which is on average 30-45 minutes per course per day.

- Besides each faculty member providing counseling to their students, there are also other sources of counseling to students. These are the college admission office and counsel and alumni office.

F. Learning Resources and Facilities

1. Learning Resources

Required Textbooks	Data Communication and networking (Global Edition)", Tata McGraw-Hill Education; 5 edition (2013-06-01) ISBN-13 9781259064753 ISBN-10 1259064751
Essential References Materials	Recorded Lectures
Electronic Materials	e-Textbooks YouTube Tutorials
Other Learning Materials	lms.kau.edu.sa

2. Facilities Required

Item	Resources
Accommodation (Classrooms, laboratories, demonstration rooms/labs, etc.)	Blackboard system
Technology Resources (AV, data show, Smart Board, software, etc.)	• Personal computers for the instructor and students • Internet connection • Microsoft Office applications
Other Resources	

Item	Resources
(Specify, e.g. if specific laboratory equipment is required, list requirements or attach a list)	

G. Course Quality Evaluation

Evaluation Areas/Issues	Evaluators	Evaluation Methods
Teaching and assessment	Students, Coordinator	Course report form, university survey
Achievement, of course, learning outcomes	Students	University survey
Quality of learning resources	Students, faculty	University 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	

Course Specifications

Course Title:	Intensive English 1 (A1)
Course Code:	ACE 101
Program:	Diploma Program
Unit:	English Language Unit (ELU)
College:	The Applied College (KAU-AC)
Institution:	King Abdulaziz University, Jeddah

Table of Contents

A. Course Identification

1. Credit hours: 4
2. Course type **a.** University [X] College [ ] Department [ ] Others [ ] **b.** Required [X] Elective [ ]
3. Level/year at which this course is offered: First Level / First Year Students
4. Prerequisites for this course (if any)**:** N/A
5. Co-requisites for this course (if any)**: N/A**

6. Mode of Instruction (mark all that apply)

No	Mode of Instruction	Contact Hours	Percentage
1	**Traditional classroom**	15	100%
2	**Blended**		
3	**E-learning**		
4	**Correspondence**		

No	Mode of Instruction	Contact Hours	Percentage
5	**Other**		

7. Actual Learning Hours (based on academic semester)

No	Activity	Learning Hours
Contact Hours: 15 hours/ week		
1	**Lecture**	12 hrs/week
2	**Laboratory/Studio**	2/week
3	**Tutorial**	1 hr/week
4	**Others** (specify)	
	Total	15 hrs/week
Other Learning Hours*		
1	**Study**	N/A
2	**Assignments**	N/A
3	**Library**	N/A
4	**Projects/Research Essays/Theses**	N/A
5	**Others** (specify)	N/A
	Total	N/A

* The length of time that a learner takes to complete learning activities that lead to achievement of course learning outcomes, such as study time, homework assignments, projects, preparing presentations, library times

B. Course Objectives and Learning Outcomes

1. Course Description

This course has been designed to expose students to use English for everyday purposes related to work, school and social life. It provides students with opportunities to combine both meaning and effectiveness of learning in authentic environments. The course also takes an approach to broaden students' horizon by personalizing the target language. Then, students become able toexpress themselves with their opinions and ideas using enjoyable and useful topics, communicative functions, and grammar as a means to achieve proficiency in the use of English.

2. Course Main Objective

1. Read an article/paragraph and indicate comprehension by answering questions in different ways such as: completing a true or false, MCQs, matching, short answers (whichever applicable), and finally writing a similar paragraph on some topics

2. Learn vocabulary and develop skills to use those target words. The learners learn such items through word maps and collocation exercises so they can make use of the context

3. Listen to model conversations that include listening for gist, details, structures and inferring meaning from context.

4. Prepare presentations individually and in groups. This will be part of the learning tasks likely to enable their skills and facilitate them to communicate with others in different situations.

3. Course Learning Outcomes

	CLOs	Aligned PLOs
1	**Knowledge:**	
1.1	By the end of the course, the student will be able to: Introduce himself using the target language,	
1.2	Know words and their multiple meanings as nouns, verbs etc.	
1.3	Develop cognitive skills following different sources, material and examples	
2	**Skills :**	
2.1	Teaching strategies to be used to develop these cognitive skills	
2.2	Teaching comprehension through classroom instruction as well as demonstration and role playing.	
2.3	The resources used for knowledge development can be used for cognitive development of skills as well.	
2...		
3	**Competence:**	
3.1	Be able to describe people, objects, places etc…	
3.2	Categorize things with reasons	

C. Course Content

No	List of Topics	Contact Hours
1	Hello	15
2	Holidays	15
3	Family & Friends - Cities	30
4	My things - we love it!	30
5	Daily Life - Work and Study	30
6	Travel -	15
7	Famous people	15
8	True stories	15
9	The Weekend - IELTS Practice Test	15
Total		180

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**		

Code	Course Learning Outcomes	Teaching Strategies	Assessment Methods
1.1	**By the end of the course, the students will be able to:** Demonstrate basic grammar, vocabulary and skills usages.	**Teaching strategies to be used to develop that knowledge:** E-Learning resources i.e. Blackboard, lecturing, using whiteboard, pictures, charts, videos, data show, PowerPoint presentations, class discussions, pair work, group work, students projects, internet exercises, homework assignments, class presentations, and more. .	**Methods of assessment of knowledge acquired:** Class participation and discussion, assignments, students' presentations of course topics, quizzes, mid-term and final exams.
1.2	Demonstrate Practicing the knowledge gained through the learning material in the classrooms	Teaching strategies to be used to develop these cognitive skills Teaching comprehension through classroom instruction as well as demonstration and role playing.	Methods of assessment of students cognitive skills Class participation and discussion, assignments, students' presentations of course topics, quizzes, mid-term and final exams.
1.3	Develop their understanding of the systematic relationship between lexical structures and producing them through guided writing or speaking activities. In short, the target learners will be able to learn and practice as to how to use language in both the written and spoken mode of communication.	The resources used for knowledge development can be used for cognitive development of skills as well.	Methods of assessment of students' cognitive skills Class participation and discussion, assignments, students' presentations of course topic, quizzes, mid-term and final exams.
2.0	**Skills**		
2.1	Description of the interpersonal skills and capacity to carry responsibility to be developed	Teaching strategies to be used to develop these skills and abilities will be the main mode of the teaching.	Methods of assessment of students' interpersonal skills and capacity to carry responsibility
2.2	Using language among the peers, with the teacher, in the classroom, at important public places. Learning	Demonstration, actual role playing, contextual use and over all expression	Class participation and discussion, assignments, students' presentations of course

Code	Course Learning Outcomes	Teaching Strategies	Assessment Methods
	polite manners and specific ways to use the language in a given context		topics, quizzes, mid-term and final exam.
3.0	**Competence**		
3.1	Description of the skills to be developed in this domain. Telling the relevance of the modern and sophisticated information technology and learning to use them in appropriate manner for educational development.	Teaching strategies to be used to develop these skills Using technology in general and media (internet.. etc) in particular that help learners to acquire a foreign language like English.	Methods of assessment of students' interpersonal skills and capacity to carry responsibility
3.2	Description of the psychomotor skills to be developed and the level of performance required Active use of language labs, computers and other media technology that JCC has already provided for better output.	Teaching strategies to be used to develop these skills Media use, role playing, lecturing, using board, data show, PowerPoint presentations, class discussions, group work, students projects, internet exercises, homework assignments, class presentations, and more.	Class participation and discussion, assignments, students' presentations of course topics, quizzes, mid-term and final exam.

2. Assessment Tasks for Students

#	Assessment task*	Week Due	Percentage of Total Assessment Score
1	Assignment	TBA	6
2	Assessment (1)	TBA	4
3	Assessment (2)	TBA	4
4	Assessment (3)	TBA	4
5	Assessment (4)	TBA	4
6	Assessment (5)	TBA	4
7	Forum	TBA	4
8	Final	TBA	70

***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:

Counseling Services are available to support all the students. All Instructors are within reach of the students (via Zoom, by phone, WhatsApp, Blackboard, Google classroom or through email).

Instructors are available during the normal hours (8:00 a.m. to 2:00 p.m.) Sunday through Thursday on campus.

F. Learning Resources and Facilities

1. Learning Resources

Required Textbooks	Life A1 Beginner: **National Geographic Learning (NGL)** AUTHORS: **John Hughes; Paul Dummett; Helen Stephenson**
Essential References Materials	N/A
Electronic Materials	Blackboard, BB Ultra Virtual Classroom, online learning resources through YouTube and other social media are utilized
Other Learning Materials	https://www.ngllife.com/student-zone https://www.ngllife.com/content/test-centre

2. Facilities Required

Item	Resources
Accommodation (Classrooms, laboratories, demonstration rooms/labs, etc.)	More Language Labs are required. E-classrooms need to be set up
Technology Resources (AV, data show, Smart Board, software, etc.)	Use of smart board and sophisticated software for learning a language
Other Resources (Specify, e.g. if specific laboratory equipment is required, list requirements or attach a list)	-

G. Course Quality Evaluation

Evaluation Areas/Issues	Evaluators	Evaluation Methods
Extent of achieving learning outcomes	Assessment by teachers using students' oral, written and presentation	Marking oral, written and presentation of work by teachers directly

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	English Language Unit (ELU)
Reference No.	
Date	17-4-2022

Course Specifications

Course Title:	Intensive English 2
Course Code:	ACE 102
Program:	General Intermediate Diploma in Cybersecurity
Unit:	English Language Unit (ELU)
College:	The Applied College
Institution:	King Abdulaziz University, Jeddah

Table of Contents

A. Course Identification

1. Credit hours: **4**
2. Course type **a.** University [X] College [ ] Department [ ] Others [ ] **b.** Required [X] Elective [ ]
3. Level/year at which this course is offered: Second level / First Year Students
4. Pre-requisites for this course (if any)**:** Intensive English Course 1 (**ACE 101**).
5. Co-requisites for this course (if any)**: N/A**

6. Mode of Instruction (mark all that apply)

No	Mode of Instruction	Contact Hours	Percentage
1	**Traditional classroom**		
2	**Blended**		
3	**E-learning**	9	100%
4	**Correspondence**		
5	**Other**		

7. Actual Learning Hours (based on academic semester)

No	Activity	Learning Hours
Contact Hours: 1 hour/ week		
1	**Lecture**	1h/ per week
2	**Laboratory/Studio**	N/A
3	**Tutorial**	N/A
4	**Others** (specify)	
	Total	1 hour per week
Other Learning Hours*		
1	**Study**	N/A
2	**Assignments**	1
3	**Library**	N/A
4	**Projects/Research Essays/Theses**	N/A
5	**Others** (specify)	N/A
	Total	N/A

***** The length of time that a learner takes to complete learning activities that lead to achievement of course learning outcomes, such as study time, homework assignments, projects, preparing presentations, library times

B. Course Objectives and Learning Outcomes

1. Course Description

This course is intensive in nature which follows the multi-skills syllabus in which components of the course are linked. It covers the four skills of listening, speaking, reading, and writing as well as improving pronunciations and vocabulary building.

This course has been designed to expose students to use more advanced English for everyday communicative purposes related to workplace and social life. It provides students with an opportunity to combine both meaning and effectiveness of learning in an authentic and interactive learning environment. This approach broadens their horizon making them personalize the target language. They also express themselves with their opinions and ideas using enjoyable and useful topics for communicative functions, and grammar as a means to achieve accuracy and later proficiency in the target language

Upon finishing the English B1-coursework, students must be able to develop language proficiency by which he can be an independent user. In addition, in order to train them for workplace English, the selection of materials need to be done in accordance with the intended goal(s).

2. Course Main Objectives

By the end of the course, the learners will be able to be good at :

* **Language and Vocabulary**

- demonstrate a sufficient vocabulary to express him/herself with some circumlocutions on most topics pertinent to his/her everyday life such as family, hobbies and interests, work, travel, and current events;
- communicates with reasonable accuracy in familiar contexts; generally good control though with noticeable mother tongue influence;
- use reasonably accurately a repertoire of frequently used 'routines' and patterns associated with more predictable situations.

* **Listening:**

- understand straightforward factual information about common everyday or job related topics, identifying both general messages and specific details, provided speech is clearly articulated in a generally familiar accent;

* **Reading:**

- read straightforward factual texts on subjects related to his/her interests and professional field with a satisfactory level of comprehension;

* **Speaking:**

- enter unprepared into conversations on familiar topics;
- reasonably fluently sustain a straightforward description of one of a variety of subjects within his/ her field of interest, presenting it as a linear sequence of points;

* **Writing**

- write notes conveying simple information of immediate relevance to friends, service people, teachers and others who feature in his/her everyday life, getting across comprehensibly the points he/she feels are important;
- write straightforward connected texts on a range of familiar subjects within his/her field of interest, by linking a series of shorter discrete elements into a linear sequence;
- write very brief, reports to a standard conventionalised format, which pass on routine factual information and state reasons for actions.

3. Course Learning Outcomes

CLOs		Aligned PLOs
1	**Knowledge:**	
1.1	*By the end of the course, the student will be able to:* understand the main points of clear standard speech on familiar matters regularly encountered in work, school, leisure etc., including short narratives;	
1.2	understand the information content of the majority of recorded or broadcast audio material on topics of personal interest delivered in clear standard speech;	
1.3	understand the main points of radio news bulletins and simpler recorded material about familiar subjects delivered relatively slowly and clearly;	

CLOs		Aligned PLOs
1.4	catch the main points in TV programmes on familiar topics when the delivery is relatively slow and clear;	
1.5	understand basic types of standard routine letters and faxes on familiar topics;	
1.6	appreciate the processes and institutions of socialization in his or her own culture and in his or her interlocutor's culture;	
1.7	understand the institutions, and perceptions of them, which affect daily life within one's own and in one's interlocutor's culture and which conduct and influence relationships between them;	
1.8	interpret and understand other's perspectives;	
1.9	interpret and relate a document or event from another culture;	
1.10	manage successfully across cultures.	
2	**Skills :**	
2.1	*By the end of the course, the student will be able to:* find and understand relevant information in everyday material, such as letters, brochures and short official documents;	
2.2	identify the main conclusions in clearly signalled argumentative texts;	
2.3	recognise the line of argument in the treatment of the issue presented, though not necessarily in detail;	
2.4	enter unprepared into conversation of familiar topics, express personal opinions and exchange information on topics that are familiar, of personal interest or pertinent to everyday life (e.g. family, hobbies, work, travel and current events);	
2.5	communicate with some confidence on familiar routine and non-routine matters related to his/her interests and professional field;	
2.6	exchange, check and confirm information, deal with less routine situations and explain why something is a problem;	
2.7	express thoughts on more abstract, cultural topics such as films, books, music etc.;	
2.8	find out and pass on straightforward factual information;	
2.9	exchange, check and confirm accumulated factual information on familiar routine and non-routine matters within his/her field with some confidence;	
2.10	describe how to do something, giving detailed instructions;	
2.11	ask for and follow detailed directions;	
2.13	carry out a prepared interview, checking and confirming information, though he/she may occasionally have to ask for repetition if the other person's response is rapid or extended;	
2.14	scan longer texts in order to locate desired information, and gather information from different parts of a text, or from different texts in order to fulfil a specific task;	
2.15	reasonably fluently relate a straightforward narrative or description as a linear sequence of points;	
2.16	give detailed accounts of experiences, describing feelings and reactions;	
2.17	describe events, real or imagined.	
2.18	give straightforward descriptions on a variety of familiar subjects within his/her field of interest;	
2.19	describe dreams, hopes and ambitions;	
2.20	narrate a story;	
2.21	briefly give reasons and explanations for opinions, plans and actions;	
2.22	give a prepared straightforward presentation on a familiar topic within his/her field which is clear enough to be followed without difficulty most of the time, and in which the main points are explained with reasonable precision;	
2.23	write straightforward, detailed descriptions on a range of familiar subjects within his/her field of interest;	
2.24	write a description of an event, a recent trip – real or imagined;	
2.25	write short, simple essays on topics of interest;	
2.26	summarise, report and give his/her opinion about accumulated factual information on familiar routine and non-routine matters within his/her field with some confidence;	

CLOs		Aligned PLOs
2.27	show good control of elementary vocabulary but major errors still occur when expressing more complex thoughts or handling unfamiliar topics and situations;	
2.28	show a clearly intelligible pronunciation even if a foreign accent is sometimes evident and occasional mispronunciations occur;	
2.29	produce continuous writing, which is generally intelligible throughout;	
2.30	use accurate spelling, punctuation and layout;	
2.31	perform and respond to a wide range of language functions, using their most common exponents in a neutral register;	
2.32	use a prepared questionnaire to carry out a structured interview, with some spontaneous follow up questions;	
2.33	maintain a conversation or discussion but may sometimes be difficult to follow when trying to say exactly what he/she would like to.	
3	**Attitudes:**	
3.1	*By the end of the course, the student will be able to:* express and respond adequately to feelings such as surprise, happiness, sadness, interest and indifference;	
3.2	follow much of what is said around him/her on general topics, and give or seek personal views and opinions in discussing topics of interest;	
3.3	express his/her thoughts about abstract or cultural topics such as music, films;	
3.4	make his/her opinions and reactions understood as regards solutions to problems or practical questions of where to go, what to do, how to organise an event;	
3.5	express belief, opinion, agreement and disagreement politely;	
3.6	explain why something is a problem, discuss what to do next, compare and contrast alternatives, and give brief comments on the views of others;	
3.7	make his/her opinions and reactions understood as regards possible solutions or the question of what to do next, giving brief reasons and explanations, and invite others to give their views on how to proceed;	
3.8	cope with diverse feelings (e.g., uneasiness, uncertainty, ambiguity, frustration, anger, ethnocentrism,) triggered by unknown cultural settings and preventing them from automatically determining one's actions or interpretations of behaviour or events;	
3.9	willing to seek out or take up opportunities to engage with otherness in a relationship of equality, distinct from seeking out the exotic or to profit from others;	
3.10	show interest in discovering other perspectives on interpretation of familiar and unfamiliar phenomena both in one's own and in other cultures and cultural practices.	

C. Course Content

No	List of Topics	Contact Hours
1	**People**	1
2	**Possession**	1
3	**Places + Free time**	1
4	**Food**	1
5	**Past live + Journeys**	1
6	**Appearance**	1
7	**Entertainment + Learning**	1
8	**Tourism**	1
9	**The Earth**	1
Total		09

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**		
1.1	**By the end of the course, the students will be able to:** Demonstrate using basic grammar, vocabulary and skills based on the material available in the prescribed text.	**Teaching strategies to be used to develop that knowledge:** E-Learning resources i.e. Blackboard, lecturing, using board, pictures, charts, videos, data show, PowerPoint presentations, class discussions, pair work, group work, students projects, internet exercises, homework assignments, class presentations, and more. Presently using virtual classrooms through Blackboard Ultra in pandemic environment. Zoom and Google Classrooms were also utilized.	**Methods of assessment of knowledge acquired:** Class participation and discussion, assignments, students' presentations of course topics, quizzses, mid-term and final exams.
1.2	Demonstrate the practicing knowledge gained through the learning material in the classrooms	Teaching strategies to be used to develop these cognitive skills Teaching comprehension through classroom instruction as well as demonstration and role playing.	Methods of assessment of students cognitive skills Class participation and discussion, assignments, students' presentations of course topics, quizzes, mid-term and final exams.
1.3	Develop their understanding of the systematic relationship between lexical structures and producing them through guided writing or speaking activities. In short, the target learners will be able to learn and practice as to how to use language in both the written and spoken mode of communication.	The resources used for knowledge development can be used for cognitive development of skills as well.	Methods of assessment of students' cognitive skills Class participation and discussion, assignments, students' presentations of course topic, quizzes, mid-term and final exams.
2.0	**Skills**		
2.1	Description of the interpersonal skills and capacity to carry responsibility to be developed	Teaching strategies to be used to develop these skills and abilities will be the main mode of the teaching.	Methods of assessment of students' interpersonal skills and capacity to carry responsibility

Code	Course Learning Outcomes	Teaching Strategies	Assessment Methods
2.2	Using language among the peers, with the teacher, in the classroom, at important public places. Learning polite manners and specific ways to use the language in a given context	Demonstration, actual role playing, contextual use and over all expression	Class participation and discussion, assignments, students' presentations of course topics, quizzes, mid-term and final exams.
3.0	**Competence**		
3.1	Description of the skills to be developed in this domain. Telling the relevance of the modern and sophisticated information technology and learning to use them in appropriate manner for educational development.	Teaching strategies to be used to develop these skills Using technology in general and media (internet.. etc) in particular that help learners to acquire a foreign language like English.	Methods of assessment of students' interpersonal skills and capacity to carry responsibility
3.2	Description of the psychomotor skills to be developed and the level of performance required Active use of language labs, computers and other media technology that JCC has already provided for better output.	Teaching strategies to be used to develop these skills Media use, role playing, lecturing, using board, data show, PowerPoint presentations, class discussions, group work, students projects, internet exercises, homework assignments, class presentations, and more.	Class participation and discussion, assignments, students' presentations of course topics, quizzes, mid-term and final exam.

2. Assessment Tasks for Students

#	Assessment task*	Week Due	Percentage of Total Assessment Score
1	Assignment	TBA	6
2	Assessment (1)	TBA	4
3	Assessment (2)	TBA	4
4	Assessment (3)	TBA	4
5	Assessment (4)	TBA	4
6	Assessment (5)	TBA	4
7	Forum	TBA	4
8	Final	TBA	70

***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:

Counseling Services are available to support all the students. All Instructors are within reach of the students (via Zoom, by phone, WhatsApp, Blackboard, Google classroom or through email).

Instructors are available during the normal hours (8:00 a.m. to 2:00 p.m.) Sunday through Thursday on campus.

F. Learning Resources and Facilities

1. Learning Resources

Required Textbooks	Life 2 (British English): Low-Intermediate A2 National Geographic Learning (NGL) AUTHORS: John Hughes; Paul Dummett; Helen Stephenson
Essential References Materials	N/A
Electronic Materials	Blackboard, BB Ultra Virtual Classroom, online learning resources through YouTube and other social media are utilized
Other Learning Materials	https://www.ngllife.com/student-zone https://www.ngllife.com/content/test-centre

2. Facilities Required

Item	Resources
Accommodation (Classrooms, laboratories, demonstration rooms/labs, etc.)	More Language Labs are required. E-classrooms need to be set up
Technology Resources (AV, data show, Smart Board, software, etc.)	Use of smart board and sophisticated software for learning a language
Other Resources (Specify, e.g. if specific laboratory equipment is required, list requirements or attach a list)	-

G. Course Quality Evaluation

Evaluation Areas/Issues	Evaluators	Evaluation Methods
Extent of achieving learning outcomes	Assessment by teachers using students' Quizzes, Assignment, Forum, Exam	Quizzes, Assignment, Forum, Exam

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	English Language Unit (ELU)
Reference No.	
Date	17-4-2022

Course Specifications

Course Title:	English for the Workplace
Course Code:	ACE 212
Program:	General Intermediate Diploma in Cybersecurity
Unit:	English Language Unit (ELU)
College:	The Applied College
Institution:	King Abdul-Aziz University, Jeddah

Table of Contents

A. Course Identification

1. Credit hours: 3
2. Course type **a.** University [X] College [ ] Department [ ] Others [ ] **b.** Required [X] Elective [ ]
3. Level/year at which this course is offered: Level 3 / SECOND Year Students
4. Pre-requisites for this course (if any: INTENSIVE ENGLISH **A1**; INTENSIVE ENGLISH **A2)**
5. Co-requisites for this course (if any)**: N/A**

6. Mode of Instruction (mark all that apply)

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

7. Actual Learning Hours (based on academic semester)

No	Activity	Learning Hours
Contact Hours: 4 hours/ week		
1	**Lecture**	1 hr/week
2	**Laboratory/Studio**	
3	**Tutorial**	
4	**Others** (specify)	
	Total	9 weeks
Other Learning Hours*		
1	**Study**	
2	**Assignments**	As per need
3	**Library**	
4	**Projects/Research Essays/Theses**	
5	**Others**(specify)	
	Total	

***The length of time that a learner takes to complete learning activities that lead to achievement of course learning outcomes, such as study time, homework assignments, projects, preparing presentations, library times

B. Course Objectives and Learning Outcomes

This course is compatible with B1 level in CEFR. This course has been designed to expose students at B1 level to use English needed specifically in the workplace. It equips students with the necessarily structures and lexical chunks primarily existent in the English used in the workplace environment. Upon finishing this course, students are expected to communicate with ease with peers, students, managers, stakeholders, and various parties engaged in the workplace.

2. Course Main Objective

1. Read an article/paragraph/text, comprehend and answer questions in different ways such as: completing a true or false, MCQs, matching, short answers (whichever applicable), and finally writing a similar paragraph on some topics.

2. Learn vocabulary and develop skills to use those target words. The learners learn such items through word maps and collocation exercises so they can make use them in the context

3. Listen to model conversations that include listening comprehension for gist, details, structures and inferring meaning from context.

4. Prepare presentations individually and in groups. This will be part of the learning tasks likely to enable their skills and facilitate them to communicate with others in different situations.

3. Course Learning Outcomes

	CLOs	Aligned PLOs
1	**Knowledge:**	
1.1	By the end of the course, the student will be able to: Know word and their multiple meanings as nouns, verbs etc.	
1.2	Define words and give examples	
1.3	Learn lexical and grammatical structures/items.	
1.4	Develop cognition following different sources, material, and examples.	
2	**Skills :**	
2.1	Be able to use knowledge,	
2.2	Develop cognitive skills to comprehend and practice	
2.3	be able to explain the difference between two objects.	
2.4	use adequate range of vocabulary tasks.	
2.5	use a mixture of simple and complex sentence types	
2.6	Participate in group discussion in classroom and writing activities	
3	**Competence:**	
3.1	Be able to describe objects	
3.2	Categorize things with reasons	
4	**Application:**	
4.1	Be able to demonstrate their learning by writing and speaking	

C. Course Content

No	List of Topics	Contact Hours
1	Career Choices	1
2	Business Sectors	1
3	Projects	1
4	Global Markets	1
5	Design and Innovation	1
6	Safety and Security	1
7	Customer Service	1
8	Communication	1
9	Review & Final Assessment	1
Total		9

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**		
1.1	**By the end of the course, the students will be able to:** Demonstrate language skills using basic grammar, vocabulary and other skills based on the material available in the prescribed text.	**Teaching strategies to be used to develop that knowledge:** E-Learning resources i.e., Blackboard Learn, audio/video input, Power Point presentations, online forum discussions, students' projects, homework assignments. Blackboard Ultra, Zoom and Google Classrooms, WhatsApp, YouTube	**Methods of assessment of knowledge acquired:** Online assignments, quizzes, mid-term and final exams.
1.2	Demonstrate Practicing the knowledge gained through the learning material in the classrooms	Teaching strategies to be used to develop these cognitive skills Teaching comprehension through online mode	Methods of assessment of students' cognitive skills Online assignments, quizzes, mid-term and final exams.
1.3	Develop their understanding of the systematic relationship between lexical structures and producing them through guided writing or speaking activities. In short, the target learners	The resources used for knowledge development can be used for cognitive development of skills as well.	Methods of assessment of students' cognitive skills

	will be able to learn and practice as to how to use language in both the written and spoken mode of communication.		Online assignments, quizzes, mid-term and final exams.
2.0	**Skills**		
2.1	Description of the interpersonal skills and capacity to carry responsibility to be developed	Teaching strategies to be used to develop these skills and abilities will be the main mode of teaching.	Methods of assessment of students' interpersonal skills and capacity to carry responsibility
2.2	Learning to use language in a given context	Language functions and language in context	Online assignments, quizzes, mid-term and final exams.
…			
3.0	**Competence**		
3.1	Be able to describe objects	Strategies to be employed to facilitate the learners to notice the difference between two or more things.	Teaching with digital tools
3.2.	Categorize things with reasons	Students will be assisted to categorize objects based on features and types.	Reasoning development will be target and they will be asked questions related to the target.
3.3	Description of the skills to be developed in this domain. Telling the relevance of the modern and sophisticated information technology and learning to use them in appropriate manner for educational development.	Teaching strategies to be used to develop these skills Using Blackboard and other online media resources	Methods of assessment of students' interpersonal skills and capacity to carry responsibility
3.4	Description of the psychomotor skills to be developed and the level of performance required Active use of Blackboard and other media resources.	Teaching strategies to be used to develop these skills Media use, online lecturing, PowerPoint presentations, students' projects, homework assignments	Online assignments, quizzes, mid-term, and final exam.

…			

2. Assessment Tasks for Students

#	Assessment task*	Week Due	Percentage of Total Assessment Score
1	Assignment	TBA	6
2	Assessment (1)	TBA	4
3	Assessment (2)	TBA	4
4	Assessment (3)	TBA	4
5	Assessment (4)	TBA	4
6	Assessment (5)	TBA	4
7	Forum	TBA	4
8	Final	TBA	70

***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:

Counseling Services are available to support all the students. All Instructors are within reach of the students (via Zoom, by phone, WhatsApp, Blackboard, Google classroom or through email). Instructors are available during the normal hours (8:00 a.m. to 2:00 p.m.) Sunday through Thursday on campus.

F. Learning Resources and Facilities

1. Learning Resources

Required Textbooks	**Business Partner B1, Pearson Publishing** AUTHORS: Margaret O'Keeffe Lewis Lansford Evan Frendo Lizzie Wright
Essential References Materials	N/A
Electronic Materials	Blackboard, BB Ultra Virtual Classroom

2. Facilities Required

Item	Resources
Accommodation (Classrooms, laboratories, demonstration rooms/labs, etc.)	Virtual Learning Environment (VLA)

Technology Resources (AV, data show, Smart Board, software, etc.)	Blackboard Learn, audio/video, PDF, PPT
Other Resources (Specify, e.g., if specific laboratory equipment is required, list requirements or attach a list)	WhatsApp, Zoom

G. Course Quality Evaluation

Evaluation Areas/Issues	Evaluators	Evaluation Methods
Extent of achieving learning outcomes	Assessment by teachers of students' oral, written and presentation tasks	Marking oral, written and presentation of work through Blackboard and by teachers

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	English Language Unit (ELU)	
Reference No.		
Date	17-4-2022	

Course Specifications

Course Title:	General Mathematics
Course Code:	ACG111
Program:	General Intermediate Diploma in Cybersecurity
Department:	General Required Courses (GRC)
College:	Applied College
Institution:	King AbdulAziz 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:	First level/ first year students
4. Pre-requisites for this course (if any)**:**	No
5. Co-requisites for this course (if any)**:**	No

6. Mode of Instruction (mark all that apply)

No	Mode of Instruction	Contact Hours	Percentage
1	**Traditional classroom**	23 Hours	100 %
2	**Blended**	N/A	N/A
3	**E-learning**	N/A	N/A
4	**Correspondence**	N.A	N/A
5	**Other**	N/A	N/A

7. Actual Learning Hours (based on academic semester)

No	Activity	Learning Hours
Contact Hours		
1	**Lecture**	23 Hours
2	**Laboratory/Studio**	N/A
3	**Tutorial**	N/A
4	**Others** (specify)	N/A
	Total	23 Hours
Other Learning Hours*		
1	**Study**	Blackboard
2	**Assignments**	Blackboard
3	**Library**	
4	**Projects/Research Essays/Theses**	
5	**Others**(specify)	Oral Discussion
	Total	

***The length of time that a learner takes to complete learning activities that lead to achievement of course learning outcomes, such as study time, homework assignments, projects, preparing presentations, library times

B. Course Objectives and Learning Outcomes

1. Course Description

1. Sets, The sets of real numbers, Set builder notation, Union & intersection of sets, Absolute value and distance, Interval notation, Order of operations, Simplifying variable expression, Properties of real numbers, Properties of equality, Properties of exponents, Simplifying exponential expressions, Rational exponents and radicals, Properties of radicals, Simplifying radical expressions, Operations on polynomials, Special product formulas, Greatest common factor, Factoring a trinomial, Special factoring, Linear equations and Quadratic equations.
2. Cartesian co-ordinate system, The distance and mid-point formulas, Graph of an equation, x- and y-intercepts, Relations, functions and functional notation, Domain and range of functions, Graphs of functions, Definition of linear function, Slopes of lines, Graph of a linear function, Finding the equation of a straight line, Parallel & perpendicular lines, Definition of a quadratic function, The standard form of the quadratic function.
3. Exponential and Logarithmic Functions: Introduction to inverse functions, graphs of inverse functions, compositions of s functions and its inverse and find an inverse function, exponential functions, graphs of exponential functions and the natural exponential functions, logarithmic functions, graphs of logarithmic functions , domains of logarithmic functions and common and natural logarithms, properties of logarithms, exponential and logarithmic equations.
4. Matrices and Determinants: Graph an inequality, systems of inequalities in two variables and nonlinear systems, Finding the inverse of a matrix and solving systems of equations using inverse matrices, Determinant of a 2×2 matrix , minors & cofactors , evaluate a determinant using expanding by cofactors , evaluate a determinant using elementary row operations and condition for a square matrix to have a multiplicative inverse, Solving a system of equations using cramer's rule.

2. Course Main Objectives

1. Deal with real number system as well as integers and rational number exponents.
2. Deal with polynomials, factoring, linear and quadratic equations.
3. Deal with two-dimensional coordinate system such as finding distance, midpoint, x- and y-intercepts and graphs.
4. Identify function and determining its range and domain.
5. Solve linear functions to find slopes of the lines, equation of the straight line as well as parallel and perpendicular lines.
6. Deal with quadratic functions and some properties of graphs.
7. Identify the properties of functions and their inverses.
8. Compute composition of functions and their inverses.
9. Deal with exponential and logarithmic functions.
10. Solve exponential and logarithmic equations.
11. Deal with matrices and determinants.
12. Use matrices and determinants to solve system of linear algebraic equations.

3. Course Learning Outcomes

	CLOs	AlignedPLOs
1	**Knowledge:**	
1.1	The course is designed to strengthen the essential skills in mathematics including the essential knowledge about the real number system, integers and rational number exponents, polynomials, procedures of finding greatest common factor, factoring of trinomial including difference of squares, perfect square trinomials, sum or difference of cubes, linear and quadratic equations.	

	CLOs	AlignedPLOs
1.2	The students get knowledge about cartesian coordinate system; the distance and mid-point formulas, graph of an equation; x- and y-intercepts, relations, functions, domain and range of functions, graphs of functions, definition of linear function, slopes of lines, the equation and graph of a linear function, finding the equation of a straight line, parallel & perpendicular lines, definition of a quadratic function, the standard form of the quadratic function, symmetry, even and odd functions.	
1.3	The course is designed to strengthen the essential skills in mathematics including the essential knowledge about inverse functions, exponential functions and logarithmic functions. This includes the mentioned functions properties, graphs and usages. Procedures of solving logarithmic and exponential equations are acquired. Within this subject, students should know how to write logarithmic equation in exponential form and vice versa.	
1.4	The students get knowledge about algebra of matrices, inverse of matrices, determinants and their properties as well as solving the system of equations using Cramer's rule.	
2	**Skills :**	
2.1	Knowing the real number system, integers and rational numbers exponent, Familiarity of polynomials and operations on them, Skill of factoring polynomials.	
2.2	Familiarity of two-dimensional coordinate system and ability to find distance between points, midpoint of a line segment, x- and y-intercepts as well as skill of producing graphs, Familiarity of relations, functions and skill of finding domain, range and producing graphs, Knowing linear functions and ability to find slope, equation of straight, parallel and perpendicular lines, Knowing quadratic functions and properties of graphs, namely, symmetry, even and odd.	
2.3	Familiarity with functions, inverse functions, exponential and logarithmic functions. Skill of producing graphs, particularly in logarithmic scale, and extracting information from the graphs. Capability to solve exponential and logarithmic equations, also the capability of writing logarithmic equation in exponential form and vice versa.	
2.4	Familiarity with matrices, algebra of matrices, their properties and operations on them. Knowing determinates and how to evaluate 2x2 and 3x3 determinates. Definition of inverse matrix and how to evaluate it. Skill of solving system of equations by Cramer's rule.	
3	**Competence:**	
3.1	Will be competent with the numbers, mathematical expressions and their operations	
3.2	Will be competent to use electronic calculator correctly and perfectly and to solve exercises in the class using calculator.	
3.3	Will be competent to solve exercises on the board during the class time, and receiving comments from other students and instructor. This helps them in facing the audience, exchanging experience, besides refining their knowledge.	

C. Course Content

No	List of Topics	Contact Hours
1	The real numbers system, integers and rational exponent	2
2	Polynomials and factoring	2
3	Linear and quadratic equations	2
4	Two-dimensional coordinate system and graphs	1
5	Introduction to functions	1
6	Linear and quadratic functions	2
7	Inverse Functions	1
8	Exponential Functions and Their Applications	2
9	Logarithmic Functions and Their Properties	2
10	Exponential and Logarithmic Equations	2

11	The Algebra of Matrices	1
12	The Inverse of a Matrix	2
13	Determinants	2
14	Cramer's Rule	1
Total		23

D. Teaching and Assessment

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

Code	Course Learning Outcomes	Teaching Strategies	AssessmentMethods
1.0	**Knowledge**		
1.1	Acquiring deep knowledge about real numbers, polynomials, factoring, two-dimensional coordinate system and graphs, quadratic equations, exponential and logarithmic functions, matrices and determinants.	Lecturing using board, data show, power point presentations, classroom discussions, assignments, class presentations	Classroom discussion, assignments, quizzes, and final exams
2.0	**Skills**		
2.1	Knowing the real number system, integers and rational numbers exponent, familiarity of polynomials and operations on them, skill of factoring polynomials, solving linear and quadratic equations	Lecturing using board, data show, power point presentations, classroom discussions, assignments, class presentations.	Classroom discussion, assignments, quizzes, and final exams
2.2	Familiarity of two-dimensional coordinate system and ability to find distance between points, midpoint of a line segment, x- and y-intercepts as well as skill of producing graphs, Familiarity of relations, functions and skill of finding domain, range and producing graphs, Knowing linear functions and ability to find slope, equation of straight, parallel and perpendicular lines, Knowing quadratic functions and properties of graphs, namely, symmetry, even and odd.	Lecturing using board, data show, power point presentations, classroom discussions, assignments, class presentations.	Classroom discussion, assignments, quizzes, and final exams
2.3	Familiarity with functions, inverse functions, exponential and logarithmic functions. Skill of producing graphs, particularly in logarithmic scale, and extracting information from the graphs. Capability to solve exponential and logarithmic equations, also the capability of writing logarithmic equation in exponential form and vice versa.	Lecturing using board, data show, power point presentations, classroom discussions, assignments, class presentations.	Classroom discussion, assignments, quizzes, and final exams
2.4	Familiarity with matrices, algebra of matrices, their properties and operations on them. Knowing determinates and how to evaluate 2x2 and 3x3 determinates. Definition of inverse matrix, how to evaluate it and their application in solving systems of equations with a view of Cramer's rule.	Lecturing using board, data show, power point presentations, classroom discussions, assignments, class presentations,	Classroom discussion, assignments, quizzes, and final exams

Code	Course Learning Outcomes	Teaching Strategies	AssessmentMethods
3.0	**Competence**		
3.1	At the end of the course, the students will be competent with the numbers, mathematical expressions and their operations	Lecturing using board, data show, power point presentations, classroom discussions, assignments, class presentations,	Classroom discussion, assignments, quizzes, and final exams
3.2	At the end of the course, the students will be competent to use electronic calculator correctly and perfectly and to solve their exercises using calculator.	Lecturing using board, data show, power point presentations, classroom discussions, assignments, class presentations,	Classroom discussion, assignments, quizzes, and final exams
3.3	At the end of the course, the students will be competent to understand and solve exercises as well as able to hit new mathematical problems.	Lecturing using board, data show, power point presentations, classroom discussions, assignments, class presentations,	Classroom discussion, assignments, quizzes, and final exams

2. Assessment Tasks for Students

#	Assessment task*	Week Due	Percentage of Total Assessment Score
1	Assignment	TBA	6
2	Assessment (1)	TBA	4
3	Assessment (2)	TBA	4
4	Assessment (3)	TBA	4
5	Assessment (4)	TBA	4
6	Assessment (5)	TBA	4
7	Forum	TBA	4
8	Final	TBA	70

***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:

Office hours are dedicated for academic counseling for the students to help them in solving their assignments, extra exercise and moral support for week students etc.

F. Learning Resources and Facilities

1.Learning Resources

Required Textbooks	R.N. Rufmann, V.C.Barker and R.D.Nation "College Algebra and Trigonometry", 7th. Edition, Houghton Mifflin Company, 2011.
Essential References Materials	N/A

Electronic Materials	www.classzone.com/algebra_1 www.coolmath.com/algebra
Other Learning Materials	M. L. Lial, J. Hornby and D. I. Schneider, "College Algebra and Trigonometry", (Third edition), Pearson EducationInc.,2005. M. Dugopolski, "College Algebra", (Third edition), Pearson Education Inc., 2003.

2. Facilities Required

Item	Resources
Accommodation (Classrooms, laboratories, demonstration rooms/labs, etc.)	Blckboard, Internet based computers
Technology Resources (AV, data show, Smart Board, software, etc.)	
Other Resources (Specify, e.g. if specific laboratory equipment is required, list requirements or attach a list)	Uploaded teaching materials on Blackboard

G. Course Quality Evaluation

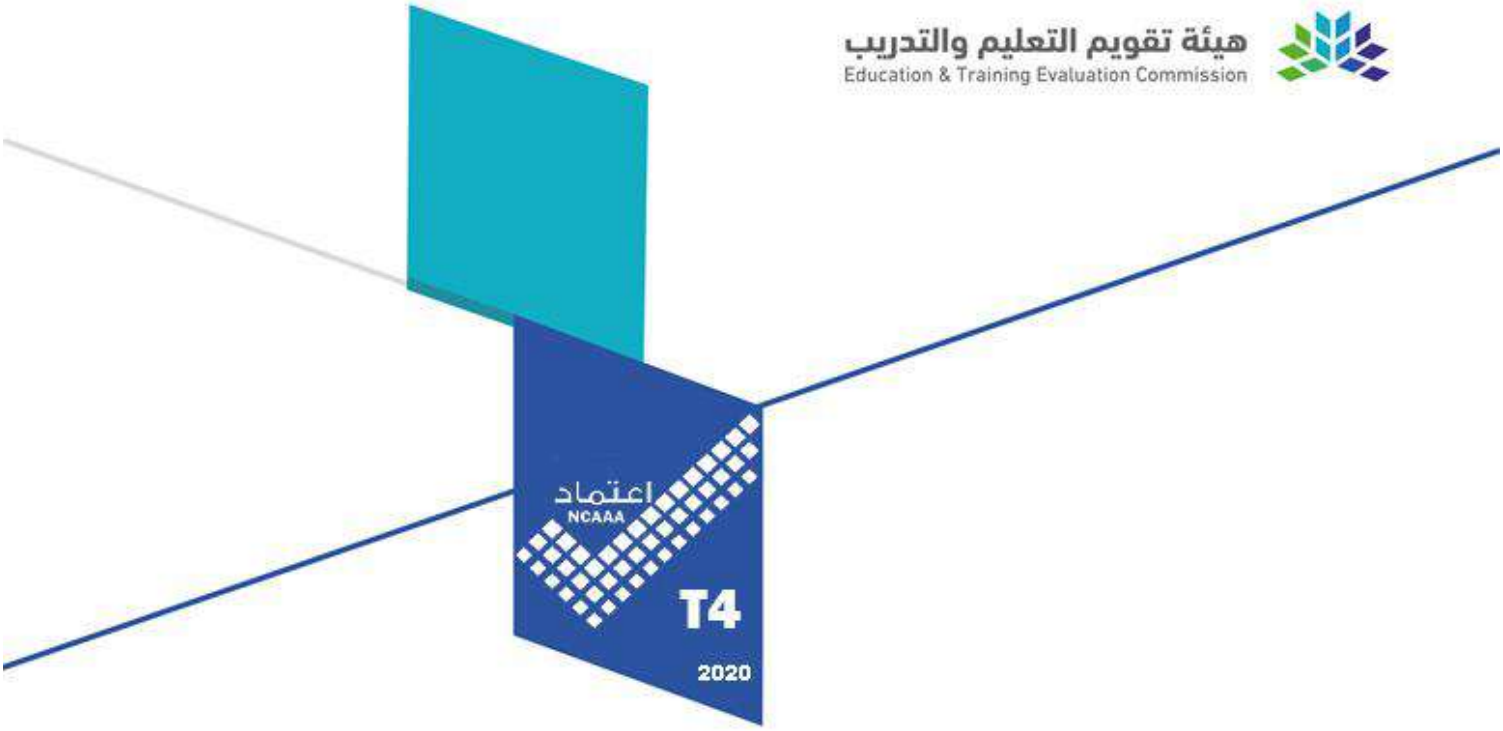
Evaluation Areas/Issues	Evaluators	Evaluation Methods
Regular feedbacks are taken from the students about the course contents, effectiveness of teaching and learning through Staff Student Liaison committee (SSLC)	Administration	Through questionnaires about the teaching materials
Processes for Verifying Standards of Student Achievement (e.g. check marking by an independent member teaching staff of a sample of student work, periodic exchange and remarking of tests or a sample of assignments with staff at another institution)	Administration	Evaluation and assessments of faculty members are done by chairman and dean of the college twice a year

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

H. Specification Approval Data

Council / Committee	Dr. Ahmed Ramady Ghanem Nasr
Reference No.	00056892
Date	

هيئة تقويم التعليم والتدريب
Education & Training Evaluation Commission



Course Specifications

Course Title:	**Operating Systems Concepts (OSC)**
Course Code:	**CYB 122**
Program:	**Diploma in Cybersecurity**
Department:	**Department of Information Systems**
College:	**Faculty of Computing and Information Technology**
Institution:	**King Abdulaziz University**

Table of Contents

A. Course Identification

1. Credit hours:	3 Credit hours
2. Course type	
a.	University ☐ College ☐ Department ☑ Others ☐
b.	Required ☑ Elective ☐
3. Level/year at which this course is offered:	1st Year, semester 3
4. Pre-requisites for this course (if any)**:**	Not Applicable
5. Co-requisites for this course (if any)**:**	Not Applicable

6. Mode of Instruction (mark all that apply)

No	Mode of Instruction	Contact Hours	Percentage
1	**Traditional classroom**		
2	**Blended**		
3	**E-learning**	50	100%
4	**Distance learning**		
5	**Other**		

7. Contact Hours (based on academic semester)

No	Activity	Contact Hours
1	**Lecture**	30
2	**Laboratory/Studio**	20
3	**Tutorial**	
4	**Others** (specify)	
	Total	50

B. Course Objectives and Learning Outcomes

1. Course Description

This course provides the knowledge and skills needed to perform basic operations for operating systems. It covers the basic concepts of recent operating systems, how they are designed and the way they work in terms of their efficiency and reliability. Also, it compares the techniques used inside the operating systems in terms of their speed and use of space. Topics include an overview of operating systems, operating system principles, CPU scheduling and dispatch, concurrency, memory management, and virtual memory.

2. Course Main Objective

- Understand the basic concepts of operating systems and how a typical operating system works.

3. Course Learning Outcomes

CLOs		Aligned PLOs
1	**Knowledge and Understanding:**	
1.1	Explain the objectives and functions of a modern operating system	K1
1.2	Explain how a modern computer works: operating system control of the computer hardware and software such as interrupts, timer and dual mode, the different techniques used for doing input/output	K2
2	**Skills:**	
2.1	Compare and contrast between operating system types (such as multiprogramming, timesharing and real time systems), and operating system structures (such as object-oriented, modular, micro-kernel, layered and virtual systems)	S1
2.2	Compare the various architectures of multiple processor systems such as SMP, ASMP, MPP, Clustered and Grid computing.	S2
2.3	Discuss the types of processor scheduling such as short-term, medium-term, and long-term	S3
2.4	Compare between the different inter process communication models in terms of speed, convenience and implementation	S4
2.5	Construct the static/dynamic access matrix of a system to protect system resources.	S5
3	**Values:**	
3.1	Apply scheduling algorithms (FCFS, SJF, priority, Round Robin, Multilevel queue and multilevel feedback queue) and calculate their evaluation criteria (turnaround time, waiting time,...) for a given a list of processes and their arrival and burst time.	V1
3.2	Apply memory allocation algorithms (First fit, best fit, or Least recent used LRU,..) to a sequence of coming processes (or memory references), under different restrictions and memory arrangements (including virtual memory), to calculate evaluation criteria (percentage of memory usage, Number of page faults,..etc.).	V2

C. Course Content (Up to 9 topics)

No	List of Topics	Contact Hours
1	Operating system and computer system overview.	6
2	Processes and Schedulers.	6
3	CPU Scheduling.	6
4	Synchronization Tools..	5
5	Memory Management.	6
6	I/O Systems.	5
7	File Systems.	6
8	Virtual Machines.	5
9	Security and Protection.	5
Total		50

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 the objectives and functions of a modern operating system	Online Lecture Online Quiz	Quiz Assignment Final

Code	Course Learning Outcomes	Teaching Strategies	Assessment Methods
1.2	Explain how a modern computer works: operating system control of the computer hardware and software such as interrupts, timer and dual mode, the different techniques used for doing input/output	Online Lecture Online Quiz	Quiz Assignment Final
2.0	**Skills**		
2.1	Compare and contrast between operating system types (such as multiprogramming, timesharing and real time systems), and operating system structures (such as object-oriented, modular, micro-kernel, layered and virtual systems)	Online Lecture Online Quiz	Quiz Assignment Final
2.2	Compare the various architectures of multiple processor systems such as SMP, ASMP, MPP, Clustered and Grid computing.	Online Lecture Online Quiz	Quiz Assignment Final
2.3	Discuss the types of processor scheduling such as short-term, medium-term, and long-term	Online Lecture Online Quiz	Quiz Assignment Final
2.4	Compare between the different inter process communication models in terms of speed, convenience and implementation	Online Lecture Online Quiz	Quiz Assignment Final
2.5	Construct the static/dynamic access matrix of a system to protect system resources.	Online Lecture Online Quiz	Quiz Assignment Final
3.0	**Values**		
3.1	Apply scheduling algorithms (FCFS, SJF, priority, Round Robin, Multilevel queue and multilevel feedback queue) and calculate their evaluation criteria (turnaround time, waiting time,...) for a given a list of processes and their arrival and burst time.	Online Lecture Online Quiz	Quiz Assignment Final
3.2	Apply memory allocation algorithms (First fit, best fit, or Least recent used LRU,..) to a sequence of coming processes (or memory references), under different restrictions and memory arrangements (including virtual memory), to calculate evaluation criteria (percentage of memory usage, Number of page faults,..etc.).	Online Lecture Online Quiz	Quiz Assignment Final

2. Assessment Tasks for Students

#	Assessment task*	Week Due	Percentage of Total Assessment Score
1	Quiz #1	2	15%
2	Assignment #1	3	25%
3	Quiz #2	5	15%
4	Assignment #2	6	20%
5	Final Exam	10	25%

***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 :

- Dr. x, male campus' instructor(s), e-mail

- Dr. Y, female campus' instructor(s), e-mail
- Program Director, male campus, e-mail
- Program Director, female campus, e-mail
- The faculty members are required to display at the front of their office a schedule dividing into lecture hours and office hours.
- The office hours are available for individual student's consultation and counselling, which is on average 30-45 minutes per course per day.
- Beside each faculty member provides counseling to their students, there are also other sources of counseling to students. These are college admission office and counsel and alumni office.

F. Learning Resources and Facilities

1.Learning Resources

Required Textbooks	Operating System Concepts, 10th Edition ISBN 978-1-119-32091-3
Essential References Materials	Recorded Lectures Assignments
Electronic Materials	e-Textbooks
Other Learning Materials	lms.kau.edu.sa

2. Facilities Required

Item	Resources
Accommodation (Classrooms, laboratories, demonstration rooms/labs, etc.)	Blackboard system
Technology Resources (AV, data show, Smart Board, software, etc.)	• Personal computers for the instructor and students • Internet connection • Microsoft Office applications
Other Resources (Specify, e.g. if specific laboratory equipment is required, list requirements or attach a list)	Not applicable

G. Course Quality Evaluation

Evaluation Areas/Issues	Evaluators	Evaluation Methods
Teaching and assessment	Students, Coordinator	Course report form, university survey
Achievement of course learning outcomes	Students	University survey

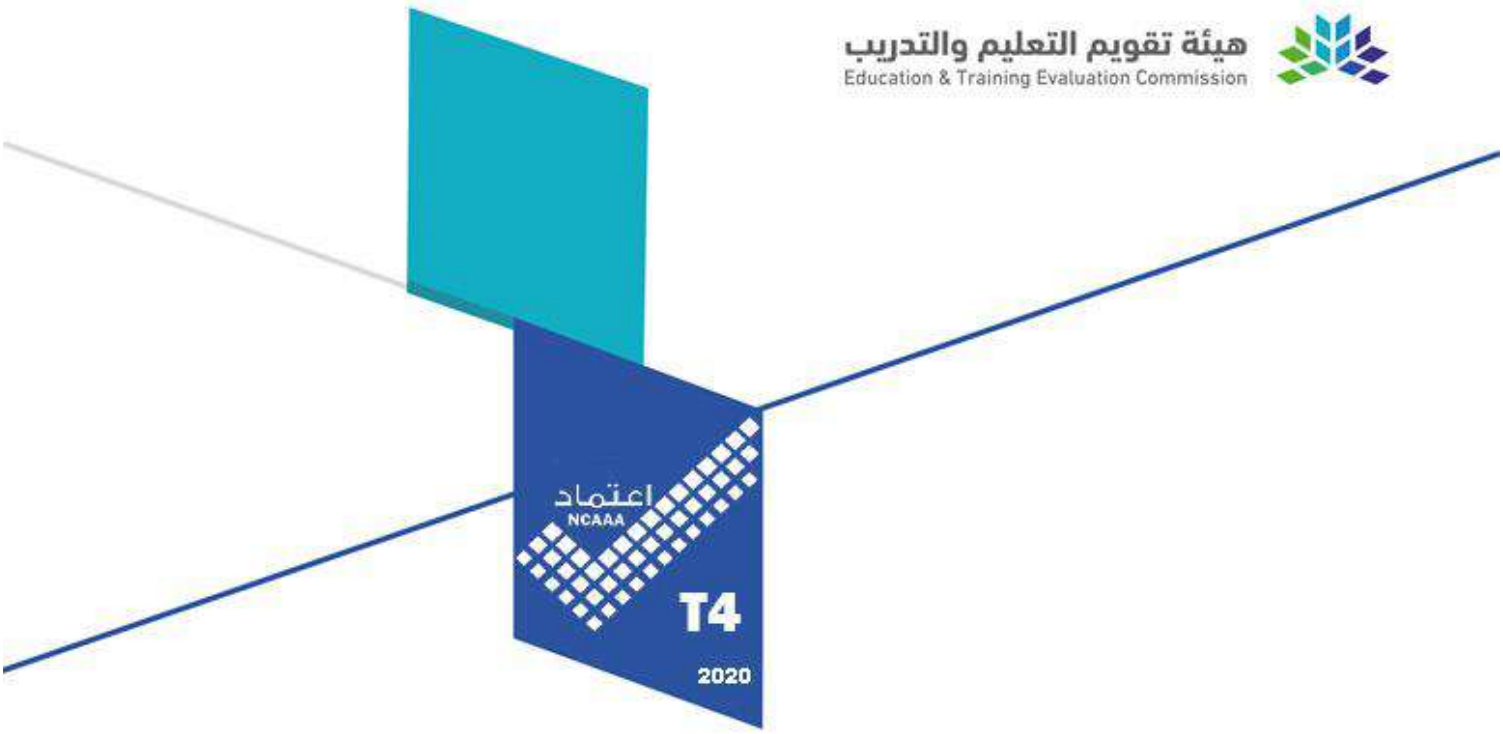
Evaluation Areas/Issues	Evaluators	Evaluation Methods
Quality of learning resources	Students, faculty	University survey

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:	**Cybersecurity Foundations (CSF)**
Course Code:	**CYB 130**
Program:	**Diploma in Cybersecurity**
Department:	**Department of Information Systems**
College:	**Faculty of Computing and Information Technology**
Institution:	**King Abdulaziz University**

Table of Contents

A. Course Identification

1. Credit hours:	3 Credit hours
2. Course type	
a.	University ☐ College ☐ Department ☑ Others ☐
b.	Required ☑ Elective ☐
3. Level/year at which this course is offered:	1st Year, semester 1
4. Pre-requisites for this course (if any)**:**	Not Applicable
5. Co-requisites for this course (if any)**:**	Not Applicable

6. Mode of Instruction (mark all that apply)

No	Mode of Instruction	Contact Hours	Percentage
1	**Traditional classroom**		
2	**Blended**		
3	**E-learning**	36	100%
4	**Distance learning**		
5	**Other**		

7. Contact Hours (based on academic semester)

No	Activity	Contact Hours
1	**Lecture**	36
2	**Laboratory/Studio**	
3	**Tutorial**	
4	**Others** (specify)	
	Total	36

B. Course Objectives and Learning Outcomes

1. Course Description

This course provides general knowledge about the fundamental of cybersecurity. It covers common cybersecurity threats, vulnerabilities, and attacks. It also covers the cybersecurity cube: confidentiality, integrity, and availability.

2. Course Main Objective

- Exploring the fundamental understanding of cybersecurity and the cyber world.
- Explaining the cybersecurity cube: confidentiality, integrity, and availability.
- Study of cybersecurity threats, vulnerabilities, attacks, and countermeasures.
- Study of cryptography, access control, and obscuring data.
- To investigate how to defend a system from cyberattacks.

3. Course Learning Outcomes

CLOs		Aligned PLOs
1	**Knowledge and Understanding**	
1.1	Explain basic terms and concepts in the field of cybersecurity.	K1
1.2	Review of cyber risks, threats, and vulnerabilities.	K3
2	**Skills :**	
2.1	Explain the methodologies and techniques used to protect data, systems, and networks.	S1
2.2		
2.3		
3	**Values:**	
3.1	Discuss appropriate procedures for managing cyber risks and responding to cyber incidents	V1
3.2		

C. Course Content (Up to 9 topics)

No	List of Topics	Contact Hours
1	Cyber importance, risks, threats, and vulnerabilities.	4
2	Maintain confidentiality, integrity, and availability.	4
3	Control of access, documentation, authorization, and non-denial.	4
4	Cryptography and its uses.	4
5	Governance and cyber risk management.	4
6	Protection of data, systems, and networks.	4
7	Security realization and monitoring of cyber threats.	4
8	Detecting and responding to cyber incidents. Technologies and solutions used in cybersecurity.	4
9	Social engineering and the role of human in cybersecurity.	4
Total		36

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 cybersecurity.	Online Lecture Online Quiz	Quiz Assignment Final
1.2	Review of cyber risks, threats, and vulnerabilities.	Online Lecture Online Quiz	Quiz Assignment Final
2.0	**Skills**		
2.1	Explain the methodologies and techniques used to protect data, systems, and networks	Online Lecture Online Quiz	Quiz Assignment Final
2.2			
2.3			

Code	Course Learning Outcomes	Teaching Strategies	Assessment Methods
3.0	**Values**		
3.1	Discuss appropriate procedures for managing cyber risks and responding to cyber incidents	Online Lecture Online Quiz	Quiz Assignment Final
3.2			

2. Assessment Tasks for Students

#	Assessment task*	Week Due	Percentage of Total Assessment Score
1	Quiz #1	2	15%
2	Assignment #1	3	25%
3	Quiz #2	5	15%
4	Assignment #2	6	20%
5	Final Exam	10	25%

***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 :

- Dr. x, male campus' instructor(s), e-mail
- Dr. Y, female campus' instructor(s), e-mail
- Program Director, male campus, e-mail
- Program Director, female campus, e-mail
- The faculty members are required to display at the front of their office a schedule dividing into lecture hours and office hours.
- The office hours are available for individual student's consultation and counselling, which is on average 30-45 minutes per course per day.
- Beside each faculty member provides counseling to their students, there are also other sources of counseling to students. These are college admission office and counsel and alumni office.

F. Learning Resources and Facilities

1.Learning Resources

Required Textbooks	Charles P. Pfleeger, Shari Lawrence Pfleeger, Jonathan Margulies, , "Security in Computing", Pearson College Division; 5 edition (2015-01-26) ISBN 13: 9780134085043, ISBN 10: 0134085043
Essential References Materials	Recorded Lectures Assignments
Electronic Materials	e-Textbooks

Other Learning Materials	lms.kau.edu.sa

2. Facilities Required

Item	Resources
Accommodation (Classrooms, laboratories, demonstration rooms/labs, etc.)	Blackboard system
Technology Resources (AV, data show, Smart Board, software, etc.)	• Personal computers for the instructor and students • Internet connection • Microsoft Office applications
Other Resources (Specify, e.g. if specific laboratory equipment is required, list requirements or attach a list)	Not applicable

G. Course Quality Evaluation

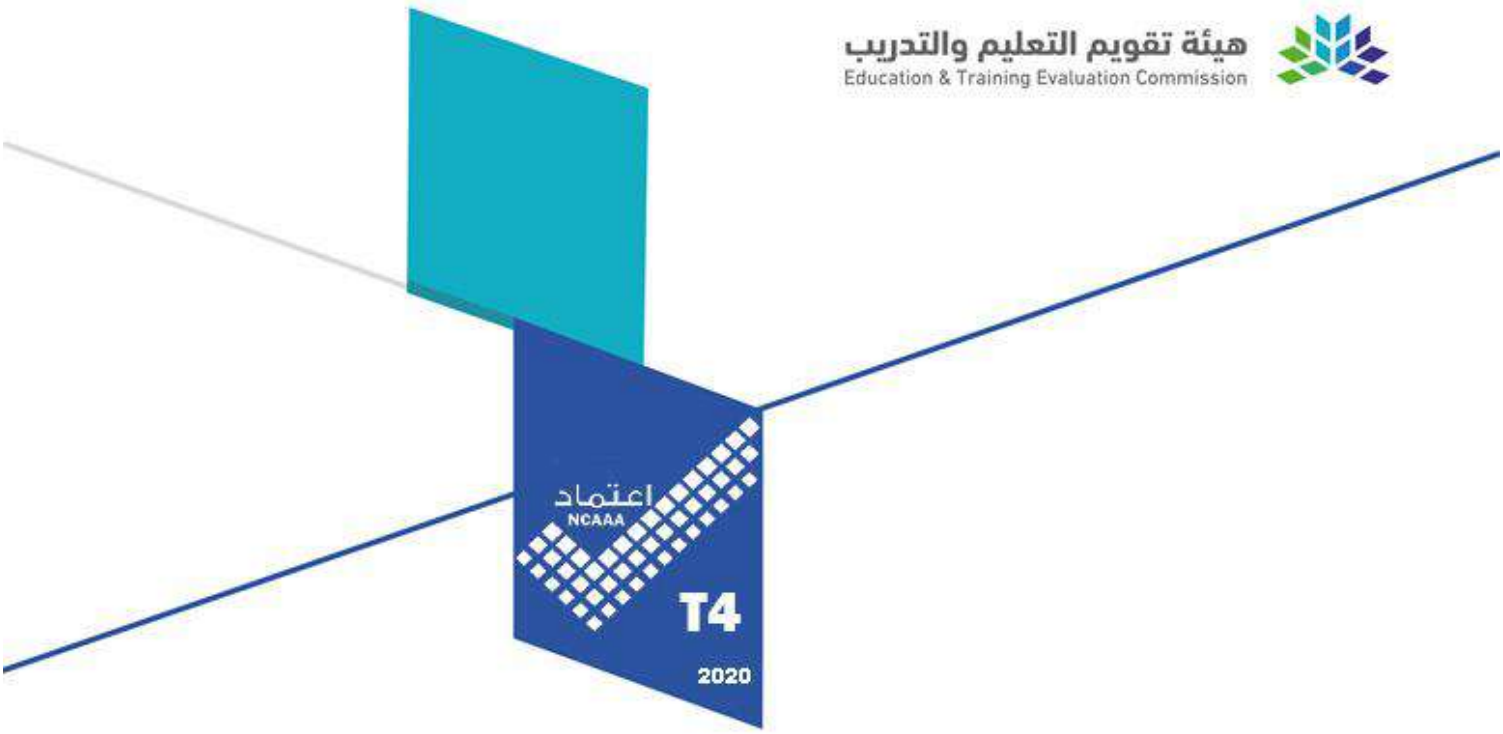
Evaluation Areas/Issues	Evaluators	Evaluation Methods
Teaching and assessment	Students, Coordinator	Course report form, university survey
Achievement of course learning outcomes	Students	University survey
Quality of learning resources	Students, faculty	University survey

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:	**Cybersecurity Foundations (CSF)**
Course Code:	**CYB 131**
Program:	**Diploma in Cybersecurity**
Department:	**Department of Information Systems**
College:	**Faculty of Computing and Information Technology**
Institution:	**King Abdulaziz University**

Table of Contents

A. Course Identification

1. Credit hours:	3 Credit hours
2. Course type	
a.	University ☐ College ☐ Department ☑ Others ☐
b.	Required ☑ Elective ☐
3. Level/year at which this course is offered:	1st Year, semester 1
4. Pre-requisites for this course (if any)**:**	CYB 130 (added as new point)
5. Co-requisites for this course (if any)**:**	Not Applicable

6. Mode of Instruction (mark all that apply)

No	Mode of Instruction	Contact Hours	Percentage
1	**Traditional classroom**		
2	**Blended**		
3	**E-learning**	36	100%
4	**Distance learning**		
5	**Other**		

7. Contact Hours (based on academic semester)

No	Activity	Contact Hours
1	**Lecture**	36
2	**Laboratory/Studio**	
3	**Tutorial**	
4	**Others** (specify)	
	Total	36

B. Course Objectives and Learning Outcomes

1. Course Description

This course provides fundamentals of secure design to develop secure and reliable cyber systems.

2. Course Main Objective

- Explores the fundamental understanding of information and data security.
- Discuss the basics and importance of secure design for programs and systems.
- Investigate and assess some security threats to organizations.

3. Course Learning Outcomes

CLOs		Aligned PLOs
1	**Knowledge and Understanding**	
1.1	Expressing secure design principles.	K1,K2

CLOs		Aligned PLOs
2	**Skills :**	
2.1	Explain the importance of cybersecurity design principles and the impact of each principle on the design of trusted systems.	S3
2.2	Analyze the cybersecurity design principles required in a specific configuration.	S3
3	**Values:**	
3.1	Identify a design principle that has violated the common security vulnerabilities in the systems.	V2
3.2	Apply cybersecurity design principles to uncomplicated programs and/or systems.	V2

C. Course Content (Up to 9 topics)

No	List of Topics	Contact Hours
1	Basics and importance of secure design for programs and systems.	4
2	Missions separation and insulation.	4
3	Combination of elements into one component.	4
4	Simplicity in designing models and Reducing implementation	4
5	Opened design and Full settlement.	4
6	Multi-layers security defense design.	4
7	Systems security levels models and permission access and Safety and security mode in case of failure.	4
8	Reduce sudden accidents in hardware performance and reduce the surface of trust	4
9	Safe design and simplicity of use. Relationships of trust and Safe Programming skills.	4
Total		36

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 secure design principles.	Online Lecture Online Quiz	Quiz Assignment Group project
2.0	**Skills**		
2.1	Explain the importance of cybersecurity design principles and the impact of each principle on the design of trusted systems.	Online Lecture Online Quiz	Quiz Assignment Group project
2.2	Analyze the cybersecurity design principles required in a specific configuration.	Online Lecture	Group project

Code	Course Learning Outcomes	Teaching Strategies	Assessment Methods
3.0	**Values**		
3.1	Identify a design principle that has violated the common security vulnerabilities in the systems.	Online Lecture Online Quiz	Quiz Assignment
3.2	Apply cybersecurity design principles to uncomplicated programs and/or systems.	Online Lecture	Group project

2. Assessment Tasks for Students

#	Assessment task*	Week Due	Percentage of Total Assessment Score
1	Quiz #1	2	10%
2	Assignment #1	3	25%
3	Quiz #2	5	10%
4	Assignment #2	6	25%
5	Final Exam	10	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 :

- Dr. x, male campus' instructor(s), e-mail
- Dr. Y, female campus' instructor(s), e-mail
- Program Director, male campus, e-mail
- Program Director, female campus, e-mail
- The faculty members are required to display at the front of their office a schedule dividing into lecture hours and office hours.
- The office hours are available for individual student's consultation and counselling, which is on average 30-45 minutes per course per day.
- Beside each faculty member provides counseling to their students, there are also other sources of counseling to students. These are college admission office and counsel and alumni office.

F. Learning Resources and Facilities

1.Learning Resources

Required Textbooks	Computer Security: Principles and Practice, 4th edition Published by Pearson (August 4th 2017) - Copyright © 2018 William StallingsLawrie Brown
Essential References Materials	Recorded Lectures Assignments

Electronic Materials	e-Textbooks
Other Learning Materials	lms.kau.edu.sa

2. Facilities Required

Item	Resources
Accommodation (Classrooms, laboratories, demonstration rooms/labs, etc.)	Blackboard system
Technology Resources (AV, data show, Smart Board, software, etc.)	• Personal computers for the instructor and students • Internet connection • Microsoft Office applications
Other Resources (Specify, e.g. if specific laboratory equipment is required, list requirements or attach a list)	Not applicable

G. Course Quality Evaluation

Evaluation Areas/Issues	Evaluators	Evaluation Methods
Teaching and assessment	Students, Coordinator	Course report form, university survey
Achievement of course learning outcomes	Students	University survey
Quality of learning resources	Students, faculty	University 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:	**Practical Training 1**
Course Code:	**CYB 190**
Program:	**Diploma in Cybersecurity**
Department:	**Information Systems**
College:	**Faculty of Computing and Information Technology**
Institution:	**King Abdulaziz 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: 1st year
4. Pre-requisites for this course (if any)**:** N/A
5. Co-requisites for this course (if any)**:** N/A

6. Mode of Instruction (mark all that apply)

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

7. Contact Hours (based on academic semester)

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

B. Course Objectives and Learning Outcomes

1. Course Description

Applied Training 1 is an opportunity for students to gain knowledge and skills from a planned work experience not available in a classroom setting. It provides entry-level, career-related experience, and workplace competencies that employers value when hiring. A list of proposed training courses is provided to them to attend. A continuous period of 100 hours spent during the period.

2. Course Main Objective

The objective of this course is to build up the student's disciplinary, ability and personality to communicate effectively through teams with the most updated various industries and technologies. Also, to evaluate the training experience in terms of personal, educational, communication skills, and career needs.

3. Course Learning Outcomes

CLOs		Aligned PLOs
1	**Knowledge and Understanding**	
1.1	Understanding of professional and ethical responsibilities.	v2
1.2	Acquire a good understanding of work organization in a real-life environment.	k2
1.3	Understand the guidelines to prepare documents for job correspondence and job interviews.	v3
2	**Skills :**	
2.1	Apply the guidelines for preparation and delivery of a presentation and presentation graphics.	s1
2.2	Be able to integrate themselves in the work environment and develop professional relationships.	v1
2.3	The ability to make a professional CV and prepare a good presentation in the end of the course.	s1
2...		
3	**Values:**	
3.1	Work independently and in a team.	s2
3.2	Communicate effectively within the working environment.	v1
3.3	Develop professional skills.	k1

C. Course Content

No	List of Topics	Contact Hours
1	Orientation Meeting	
2	motivate employees	10
3	The art of public speaking	10
4	How to write a successful CV	15
5	Professional personal interview	15
6	communication skills	10
7	How to prepare a good presentation	15
8	Digital skills in a work environment	10
9	Reporting skills for non-managers	15
Total		100

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	Understanding of professional and ethical responsibilities.	e-learning	Writing a report

Code	Course Learning Outcomes	Teaching Strategies	Assessment Methods
1.2	Acquire a good understanding of work organization in a real-life environment.	e-learning	Writing a report Presentation
1.3	Understand the guidelines to prepare documents for job correspondence and job interviews.		Writing a report Presentation
2.0	**Skills**		
2.1	Apply the guidelines for preparation and delivery of a presentation and presentation graphics.	e-learning	Writing a report Presentation
2.2	Be able to integrate themselves in the work environment and develop professional relationships.	e-learning	Writing a report Presentation
2.3	ability to make a professional CV and prepare a good presentation in the end of the course.	e-learning	Homework Presentation
3.0	**Values**		
3.1	Work independently and in a team.	e-learning	Writing a report Presentation
3.2	Communicate effectively within the working environment.	e-learning	Writing a report Presentation
3.3	Develop professional skills.	e-learning	Writing a report Presentation
3.4			

2. Assessment Tasks for Students

#	Assessment task*	Week Due	Percentage of Total Assessment Score
1	Training Plan	1	
2	Writing a CV	3	5
	First report + certificate (any training course)	5	20
	Second report + certificate (any training course)	7	20
	Third report + certificate (any training course)	9	20
3	Final Report	11	25
4	Formal Presentation	12	10

***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 :

- ● Applied training academic advisors are assigned to students to provide academic guidance and help the students to arrange their study plan.
- ● A total of 5 office hours per week are announced to provide additional individual assistance.
- ● Other communication channels such as email and office phone, are also provided to schedule official meetings on demand.

F. Learning Resources and Facilities

1.Learning Resources

Required Textbooks	No required text book.
Essential References Materials	Not required.
Electronic Materials	Not required.
Other Learning Materials	Microsoft Word, Power Point forms are uploaded on BlackBoard.

2. Facilities Required

Item	Resources
Accommodation (Classrooms, laboratories, demonstration rooms/labs, etc.)	Not required.
Technology Resources (AV, data show, Smart Board, software, etc.)	Not required.
Other Resources (Specify, e.g. if specific laboratory equipment is required, list requirements or attach a list)	Not required.

G. Course Quality Evaluation

Evaluation Areas/Issues	Evaluators	Evaluation Methods
Course Performance – Attainment of Learning Outcomes	Course Instructor	Course Assessments (Direct)
Effectiveness of teaching and assessments	Students	Course Quality Evaluation Centralized survey from Estibanah (Indirect)

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	Information Systems/ Department Council
Reference No.	
Date	

هيئة تقويم التعليم والتدريب
Education & Training Evaluation Commission

Course Specifications

Course Title:	**Basic Cryptography (BCY)**
Course Code:	**CYB 232**
Program:	**Diploma in Cybersecurity**
Department:	**Department of Information Systems**
College:	**Faculty of Computing and Information Technology**
Institution:	**King Abdulaziz University**

Table of Contents

A. Course Identification

1. Credit hours:	3 Credit hours
2. Course type	
a.	University ☐ College ☐ Department ☑ Others ☐
b.	Required ☑ Elective ☐
3. Level/year at which this course is offered:	1st Year, semester 3
4. Pre-requisites for this course (if any)**:**	Not Applicable
5. Co-requisites for this course (if any)**:**	Not Applicable

6. Mode of Instruction (mark all that apply)

No	Mode of Instruction	Contact Hours	Percentage
1	**Traditional classroom**		
2	**Blended**		
3	**E-learning**	50	100%
4	**Distance learning**		
5	**Other**		

7. Contact Hours (based on academic semester)

No	Activity	Contact Hours
1	**Lecture**	30
2	**Laboratory/Studio**	20
3	**Tutorial**	
4	**Others** (specify)	
	Total	50

B. Course Objectives and Learning Outcomes

1. Course Description

This course provides the knowledge and skills needed to perform basic cryptography. It covers an introduction to basic cryptographic algorithms and applications, the different types of encryption algorithms, key management, integrity and authentication, and challenges.

2. Course Main Objective

- Understand the concept of encryption.
- Learn about encryption types.
- Learn how to use encryption.
- Understand the importance of encryption

3. Course Learning Outcomes

CLOs		Aligned PLOs
1	**Knowledge and Understanding**	
1.1	Understand the main components of any encryption system.	K1
1.2	Demonstrate the uses and power of each encryption mechanism and issues related to its implementation.	K2
1.3	Suggest an appropriate encryption mechanism for specific requirements and settings.	K3
2	**Skills :**	
2.1	Distinguish between symmetric and asymmetric encryption algorithms.	S1
2.2	Clarify the use of public keys for digital signatures and encrypted data.	S1
2.3	Explain the main security functions in the cyber security plan that can be achieved using encryption	S2
2.4	Apply all possibilities attack, dictionary word attack, and calculate the frequency attack to crack the encrypted data.	S3
3	**Values:**	
3.1	Understand the value of teamwork in performing assessments and reporting vulnerabilities.	V1
3.2	Understand the value of protecting confidential information and the threats associated with unauthorized dissemination or access to organizations and nations.	V2
3.3	Understand the value of confidentiality in the digital world	V3

C. Course Content (Up to 9 topics)

No	List of Topics	Contact Hours
1	Basic Cryptography Concepts and Classical Encryption	6
2	Symmetric encryption algorithm with Block Ciphers	6
3	Asymmetric encryption algorithms	6
4	Cryptographic Hash Functions	6
5	Message Authentication Codes	6
6	Create, manage, exchange, and distribute keys.	5
7	Digital certificates and Digital signatures.	5
8	User Authentication	5
9	Cryptography for Web Security	5
Total		50

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 the main components of any encryption system.	Online Lecture Online Discussion	Quiz Assignment Final
1.2	Distinguish between symmetric and asymmetric encryption algorithms.	Online Lecture Online Discussion OnlineLab	Quiz Assignment Final
2.0	**Skills**		
2.1	Suggest an appropriate encryption mechanism for specific requirements and settings.	Online Lecture Online Discussion	Quiz Assignment Final

Code	Course Learning Outcomes	Teaching Strategies	Assessment Methods
2.2	Demonstrate the uses and power of each encryption mechanism and issues related to its implementation.	Online Lecture Online Discussion	Quiz Assignment Final
2.3	Explain the main security functions that can be achieved using encryption.	Online Lecture Online Discussion Online Lab	Quiz Assignment Final
2.4	Clarify the use of public keys for digital signatures and encrypted data.	Online Lecture Online Discussion Online Lab	Quiz Assignment Final
2.5	Apply all possibilities attack, dictionary word attack, and calculate the frequency attack to crack the encrypted data.	Online Lecture Online Discussion Online Lab	Quiz Assignment Final
3.0	**Values**		
3.1	Prepare an assessment team to crack encrypted data.	Online Lecture Online Discussion	Quiz Assignment Final
3.2	Understand the value of protecting confidential information and the threats associated with unauthorized dissemination or access to organizations and nations.	Online Lecture Online Discussion	Quiz Assignment Final
3.3	Understand the value of confidentiality in the digital world	Online Lecture Online Discussion	Quiz Assignment Final

2. Assessment Tasks for Students

#	Assessment task*	Week Due	Percentage of Total Assessment Score
1	Quiz #1	2	15%
2	Assignment #1	3	25%
3	Quiz #2	5	15%
4	Assignment #2	6	20%
5	Final Exam	10	25%

***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 :

- Dr. x, male campus' instructor(s), e-mail
- Dr. Y, female campus' instructor(s), e-mail
- Program Director, male campus, e-mail
- Program Director, female campus, e-mail
- The faculty members are required to display at the front of their office a schedule dividing into lecture hours and office hours.
- The office hours are available for individual student's consultation and counselling, which is on average 30-45 minutes per course per day.
- Beside each faculty member provides counseling to their students, there are also other sources of counseling to students. These are college admission office and counsel and alumni office.

F. Learning Resources and Facilities

1.Learning Resources

Required Textbooks	W. Stallings, "Cryptography and Network Security-Principles and Practice", Fifth Edition, Pearson Education, 2017. ISBN-13. 978-0134444284, ISBN 10:1-292-15858
Essential References Materials	Recorded Lectures Assignments
Electronic Materials	e-Textbooks
Other Learning Materials	Blackboard

2. Facilities Required

Item	Resources
Accommodation (Classrooms, laboratories, demonstration rooms/labs, etc.)	Blackboard system
Technology Resources (AV, data show, Smart Board, software, etc.)	• Personal computers for the instructor and students • Internet connection • Microsoft Office applications
Other Resources (Specify, e.g. if specific laboratory equipment is required, list requirements or attach a list)	Not applicable

G. Course Quality Evaluation

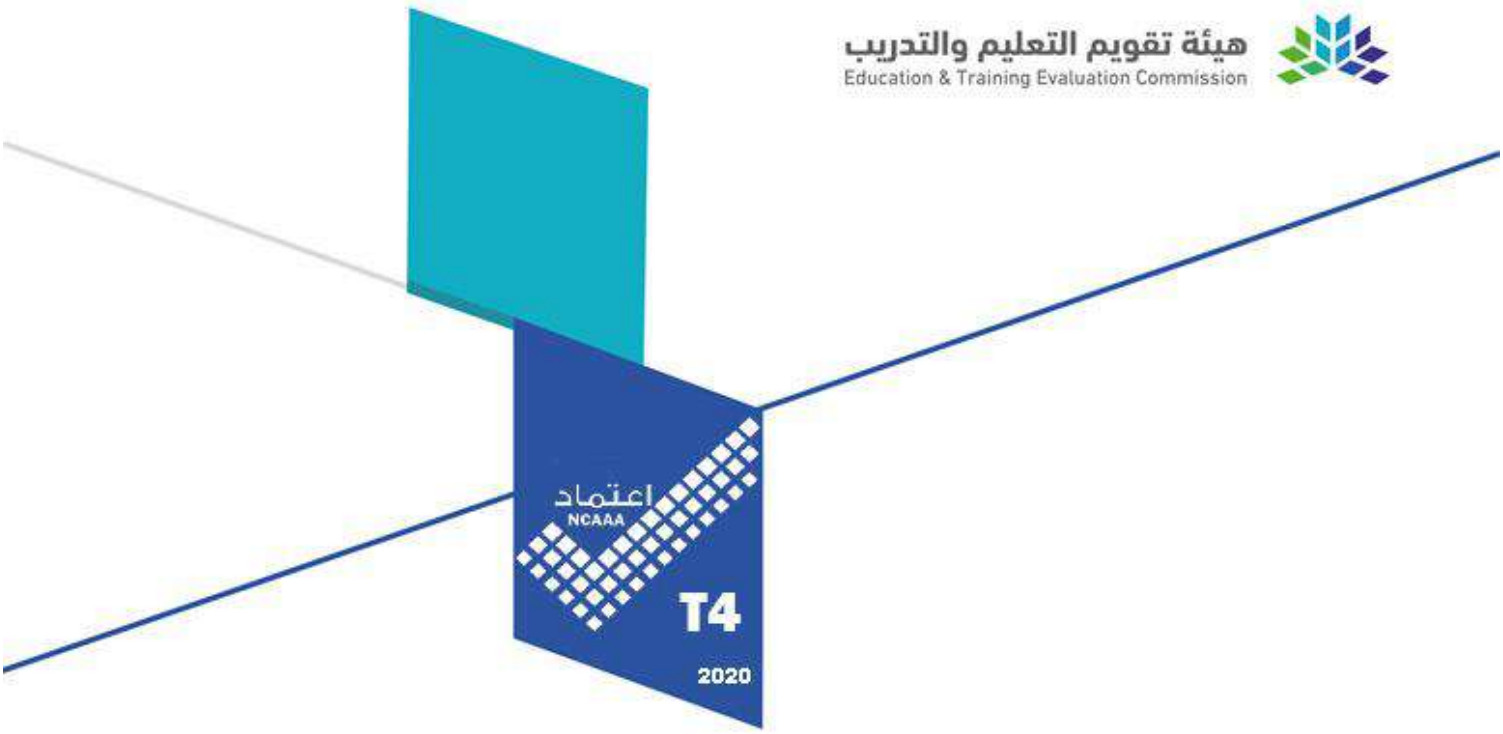
Evaluation Areas/Issues	Evaluators	Evaluation Methods
Teaching and assessment	Students, Coordinator	Course report form, university survey
Achievement of course learning outcomes	Students	University survey
Quality of learning resources	Students, faculty	University survey

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:	**Network Defense (NDF)**
Course Code:	**CYB 233**
Program:	**Diploma in Cybersecurity**
Department:	**Department of Information Systems**
College:	**Faculty of Computing and Information Technology**
Institution:	**King Abdulaziz University**

Table of Contents

A. Course Identification

1. Credit hours:	3 Credit hours
2. Course type	
a.	University ☐ College ☐ Department ☑ Others ☐
b.	Required ☑ Elective ☐
3. Level/year at which this course is offered:	1st Year, semester 1
4. Pre-requisites for this course (if any)**:**	Not Applicable
5. Co-requisites for this course (if any)**:**	Not Applicable

6. Mode of Instruction (mark all that apply)

No	Mode of Instruction	Contact Hours	Percentage
1	**Traditional classroom**		
2	**Blended**		
3	**E-learning**	45	100%
4	**Distance learning**		
5	**Other**		

7. Contact Hours (based on academic semester)

No	Activity	Contact Hours
1	**Lecture**	27
2	**Laboratory/Studio**	18
3	**Tutorial**	
4	**Others** (specify)	
	Total	45

B. Course Objectives and Learning Outcomes

1. Course Description

This course provides necessary concepts, skills, knowledge and tools to defend and protect a network against cyber threats

2. Course Main Objective

- To explore the fundamental concepts of network defense
- To study the tools needed to protect a network from vulnerabilities, threats, and attacks.
- To investigates, explores, and assess network attacks through policy implementation, traffic analysis, and attack pattern detection.

3. Course Learning Outcomes

CLOs		Aligned PLOs
1	**Knowledge and Understanding**	
1.1	Illustrate main network defense concepts.	K1,K2
1.2	Understand common techniques used to secure a network	K2,K3
2	**Skills :**	
2.1	Demonstrate the use of network defense tools to protect a network from vulnerabilities, threats and attacks and respond to incident	S1
2.2	Analyze the security policies implementations to protect a network.	S2
2.3	Examine network operations relevant to network defense.	S3
3	**Values:**	
3.1	Discuss appropriate network defense measures for different threat models	V1, V2
3.2		

C. Course Content (Up to 9 topics)

No	List of Topics	Contact Hours
1	Introduction to Network Security	4
2	Network Attacks (Session Hijacking, Man-in-the-Middle, DNS Attacks)	4
3	Cryptography	4
4	Security Services (C.I.A)	4
5	Network Defense Principles	4
6	Network Hardening	5
7	Network Security Controls	5
8	Security Protocols	5
9	Network Operations	4
10	Network Policy Development and Enforcement	3
11	Network Operational Procedures	3
Total		45

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	Illustrate main network defense concepts.	Classroom Lecture Class Discussion	Quiz Assignment Final
1.2	Understand common techniques used to secure a network	Classroom Lecture Class Discussion	Quiz Assignment Final
2.0	**Skills**		
2.1	Demonstrate the use of network defense tools to protect a network	Classroom Lecture Class Discussion	Lab Assignment Final

Code	Course Learning Outcomes	Teaching Strategies	Assessment Methods
	from vulnerabilities, threats and attacks and respond to incident		
2.2	Analyze the security policies implementations to protect a network.	Classroom Lecture Lab	Lab Assignment Final
2.3	Examine network operations relevant to network defense.	Classroom Lecture Lab	Lab Assignment Final
3.0	**Values**		
3.1	Discuss appropriate network defense measures for different threat models	Classroom Lecture Class Discussion	Assignment Final
3.2			

2. Assessment Tasks for Students

#	Assessment task*	Week Due	Percentage of Total Assessment Score
1	Lab #1	2	10%
2	Assignment #1	3	25%
3	Lab #2	4	10%
4	Assignment #2	6	20%
5	Lab #3	7	10%
6	Final Exam	10	25%

***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 :

- Dr. x, male campus' instructor(s), e-mail
- Dr. Y, female campus' instructor(s), e-mail
- Program Director, male campus, e-mail
- Program Director, female campus, e-mail
- The faculty members are required to display at the front of their office a schedule dividing into lecture hours and office hours.
- The office hours are available for individual student's consultation and counselling, which is on average 30-45 minutes per course per day.
- Beside each faculty member provides counseling to their students, there are also other sources of counseling to students. These are college admission office and counsel and alumni office.

F. Learning Resources and Facilities

1.Learning Resources

Required Textbooks	Network Defense and Countermeasures: Principles and Practices (Pearson It Cybersecurity Curriculum (Itcc)) 3rd Edition ISBN 13: 978-0789759962, ISBN 10: 0789759969
Essential References Materials	Recorded Lectures Assignments
Electronic Materials	e-Textbooks
Other Learning Materials	lms.kau.edu.sa

2. Facilities Required

Item	Resources
Accommodation (Classrooms, laboratories, demonstration rooms/labs, etc.)	Blackboard system
Technology Resources (AV, data show, Smart Board, software, etc.)	• Personal computers for the instructor and students • Internet connection • Microsoft Office applications
Other Resources (Specify, e.g. if specific laboratory equipment is required, list requirements or attach a list)	Not applicable

G. Course Quality Evaluation

Evaluation Areas/Issues	Evaluators	Evaluation Methods
Teaching and assessment	Students, Coordinator	Course report form, university survey
Achievement of course learning outcomes	Students	University survey
Quality of learning resources	Students, faculty	University 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:	**Penetration Testing & Ethical Hacking**
Course Code:	**CYB 234**
Program:	**Cybersecurity Diploma**
Department:	**Information Systems**
College:	**Faculty of Computing and Information Technology**
Institution:	**King Abdulaziz University**

Table of Contents

A. Course Identification

1. Credit hours:	3 Credit hours
2. Course type	
a.	University ☐ College ☐ Department ☑ Others ☐
b.	Required ☑ Elective ☐
3. Level/year at which this course is offered:	2nd Year, semester 2
4. Pre-requisites for this course (if any)**:**	
5. Co-requisites for this course (if any)**:**	

6. Mode of Instruction (mark all that apply)

No	Mode of Instruction	Contact Hours	Percentage
1	**Traditional classroom**		
2	**Blended**		
3	**E-learning**	45	100%
4	**Distance learning**		
5	**Other**		

7. Contact Hours (based on academic semester)

No	Activity	Contact Hours
1	**Lecture**	20
2	**Laboratory/Studio**	25
3	**Tutorial**	
4	**Others** (specify)	
	Total	45

B. Course Objectives and Learning Outcomes

1. Course Description

This course teaches students the underlying principles and many of the techniques associated with the cybersecurity practice known as *penetration testing* or *ethical hacking*. Students will learn about the entire penetration testing process including planning, reconnaissance, scanning, exploitation, post-exploitation, and result reporting. The course will provide the fundamental information associated with each of the methods employed and insecurities identified. In all cases, remedial techniques will be explored. Students will develop an excellent understanding of current cybersecurity issues and ways that user, administrator, and programmer errors can lead to exploitable insecurities.

2. Course Main Objective

- Identify the main stages of penetration testing and its difference from vulnerability assessment

- Master active and passive reconnaissance tools and techniques.
- Perform network scanning for open, close, and filtered ports

3. Course Learning Outcomes

CLOs		Aligned PLOs
1	**Knowledge and Understanding**	
1.1	Describe the concepts of penetration testing.	K2
1.2	Describe and compare various types of cyber-attacks.	K3
1.3	Explain different types of vulnerabilities.	K3
1...		
2	**Skills :**	
2.1	Perform penetration testing stages in order to compromise a target system or a network	S3
2.2	Apply active and passive reconnaissance techniques and tools to gather information about targets through automated scanning or manual testing	S2
2.3	Scan a network and assess its vulnerabilities	S2
2.4	Exploit system / network vulnerabilities by using a different tools.	S2
3	**Values:**	
3.1	Understand ethical and legal considerations of hacking.	V2 , V3
3.2		
3.3		
3...		

C. Course Content

No	List of Topics	Contact Hours
1	Introduction to Penetration Testing and Set the Hacking lab	5
2	Reconnaissance and Intelligence Gathering tools	5
3	Network Scanning	10
4	Vulnerability Assessment and Exploitation	10
5	Post Exploitation – Persistence	10
6	Reporting and Communicating	5
Total		45

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 concepts of penetration testing.	Lecture and Practical Exercises	Quiz Final Exam
1.2	Describe and compare various types of cyber-attacks.	Lecture and Practical Exercises	Quiz Final Exam
1.3	Explain different types of vulnerabilities.	Lecture and Practical Exercises	Quiz Final Exam

Code	Course Learning Outcomes	Teaching Strategies	Assessment Methods
2.0	**Skills**		
2.1	Perform penetration testing stages in order to compromise a target system or a network	Lecture and Practical Exercises	Final Exam Final project
2.2	Apply active and passive reconnaissance techniques and tools to gather information about targets through automated scanning or manual testing	Lecture and Practical Exercises	Assignments Final project
2.3	Scan a network and assess its vulnerabilities	Lecture and Practical Exercises	Assignments Final project
2.4	Exploit system / network vulnerabilities by using a different tools.	Lecture and Practical Exercises	Assignments Final project
3.0	**Values**		
3.1	Understand ethical and legal considerations of hacking.	Lecture and Practical Exercises	Quiz Final Exam
3.2			
…			

2. Assessment Tasks for Students

#	Assessment task*	Week Due	Percentage of Total Assessment Score
1	Assignments (individual)	8	6
2	Regular assessment (4 quizzes)	3 ,5, 7, 9	20
3	Forum participation	-	4
4	Final Exam	13	70
5			
6			
7			
8			

***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 :

- Dr. x, male campus' instructor(s), e-mail
- Dr. Y, female campus' instructor(s), e-mail
- Program Director, male campus, e-mail
- Program Director, female campus, e-mail
- The faculty members are required to display at the front of their office a schedule dividing into lecture hours and office hours.
- The office hours are available for individual student's consultation and counselling, which is on average 30-45 minutes per course per day.
- Beside each faculty member provides counseling to their students, there are also other sources of counseling to students. These are college admission office and counsel and alumni office.

F. Learning Resources and Facilities

1.Learning Resources

Required Textbooks	Oriyano, S. P. (2016). Penetration testing essentials. John Wiley & Sons. Print ISBN:9781119235309 |Online ISBN:9781119419358 |DOI:10.1002/9781119419358
Essential References Materials	CEH V10 Certified Ethical Hacker Study Guide, Messier, R. (2019). John Wiley & Sons. ISBN-13: 978-1119533191
Electronic Materials	Blackboard, Virtual Box, KALI OS, Windows OS, OWASP WebServer
Other Learning Materials	Black board, KAU library website

2. Facilities Required

Item	Resources
Accommodation (Classrooms, laboratories, demonstration rooms/labs, etc.)	Blackboard system
Technology Resources (AV, data show, Smart Board, software, etc.)	• Personal computers for the instructor and students • Internet connection • Microsoft Office applications
Other Resources (Specify, e.g. if specific laboratory equipment is required, list requirements or attach a list)	Not applicable

G. Course Quality Evaluation

Evaluation Areas/Issues	Evaluators	Evaluation Methods
Teaching and assessment	Students, Coordinator	Course report form, university survey
Achievement of course learning outcomes	Students	University survey
Quality of learning resources	Students, faculty	University 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:	**Security Risk Analysis (SRA)**
Course Code:	**CYB 235**
Program:	**Diploma in Cybersecurity**
Department:	**Department of Information Systems**
College:	**Faculty of Computing and Information Technology**
Institution:	**King Abdulaziz University**

Table of Contents

A. Course Identification

1. Credit hours:	4 Credit hours
2. Course type	
a.	University ☐ College ☐ Department ☑ Others ☐
b.	Required ☑ Elective ☐
3. Level/year at which this course is offered:	1st Year, Second Semester
4. Pre-requisites for this course (if any)**:**	
Not Applicable	
5. Co-requisites for this course (if any)**:**	
Not Applicable	

6. Mode of Instruction (mark all that apply)

No	Mode of Instruction	Contact Hours	Percentage
1	**Traditional classroom**		
2	**Blended**		
3	**E-learning**	36	100%
4	**Distance learning**		
5	**Other**		

7. Contact Hours (based on academic semester)

No	Activity	Contact Hours
1	**Lecture**	36
2	**Laboratory/Studio**	
3	**Tutorial**	
4	**Others** (specify)	
	Total	36

B. Course Objectives and Learning Outcomes

1. Course Description

This course covers knowledge and skills of models, methodologies, and processes for assessing, managing, and responding to cyber risks.

2. Course Main Objective

- Learn about the importance of risk management, analysis, and assessment.
- Learn some risk management analysis techniques and models to prioritize the risks.

3. Course Learning Outcomes

	CLOs	Aligned PLOs
1	**Knowledge and Understanding**	
1.1		

CLOs		Aligned PLOs
1.2		
2	**Skills:**	
2.1	Explain the main methodologies for managing cyber risks.	S1
2.2	Assess cyber risks.	S1
2.3	Classify the risks.	S1
2.4	Apply the appropriate methodology for dealing with cyber risks, taking into account the advantages and disadvantages.	S2
3	**Values:**	
3.1		
3.2		

C. Course Content (Up to 9 topics)

No	List of Topics	Contact Hours
1	Principles and concepts of cybersecurity risk analysis and management.	4
2	Cycle and steps of risk management	4
3	Quantitative and qualitative analysis of cyber risk assessment	8
4	Methodologies to measure and evaluate cyber risks	4
5	Standards and frameworks for cyber risk management	4
6	Processes of Cyber risk management at multiple levels in the organization	4
7	Economics of mitigating and reducing cyber risks, and transferring, accepting, and dealing with cyber risks	4
8	Policies for dealing with cyber risks for technologies, individuals, and entities.	4
Total		36

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			
2.0	**Skills**		
2.1	Explain the main methodologies for managing cyber risks.	Online Lecture + Discussion	Quiz + Assignment + Final
2.2	Assess cyber risks.	Online Lecture + Discussion	Quiz + Assignment + Final
2.3	Classify the risks.	Online Lecture + Discussion	Quiz + Assignment + Final
2.4	Apply the appropriate methodology for dealing with cyber risks, taking	Online Lecture + Discussion	Quiz + Assignment + Final

Code	Course Learning Outcomes	Teaching Strategies	Assessment Methods
	into account the advantages and disadvantages.		
3.0	**Values**		
3.1			

2. Assessment Tasks for Students

#	Assessment task*	Week Due	Percentage of Total Assessment Score
1	Quiz #1	3	15%
2	Assignment #1	4	20%
3	Quiz #2	5	15%
4	Assignment #2	6	25%
5	Final Exam	10	25%

***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:

- Dr. x, male campus' instructor(s), e-mail
- Dr. Y, female campus' instructor(s), e-mail
- Program Director, male campus, e-mail
- Program Director, female campus, e-mail
- The faculty members are required to display at the front of their office a schedule dividing into lecture hours and office hours.
- The office hours are available for individual student's consultation and counselling, which is on average 30-45 minutes per course per day.
- Beside each faculty member provides counseling to their students, there are also other sources of counseling to students. These are college admission office and counsel and alumni office.

F. Learning Resources and Facilities

1.Learning Resources

Required Textbooks	Information Security Risk Assessment Toolkit: Practical Assessments through Data Collection and Data Analysis 1st Edition ISBN 13: 978-1597497350, ISBN 10: 1597497355 CompTIA Security+ SY0-401 Cert Guide, Deluxe Edition 3rd Edition ISBN 13: 978-0789753335, ISBN 10: 9780789753335
Essential References Materials	Recorded Lectures Assignments
Electronic Materials	e-Textbooks

Other Learning Materials	lms.kau.edu.sa

2. Facilities Required

Item	Resources
Accommodation (Classrooms, laboratories, demonstration rooms/labs, etc.)	Blackboard system
Technology Resources (AV, data show, Smart Board, software, etc.)	• Personal computers for the instructor and students • Internet connection • Microsoft Office applications
Other Resources (Specify, e.g. if specific laboratory equipment is required, list requirements or attach a list)	Not applicable

G. Course Quality Evaluation

Evaluation Areas/Issues	Evaluators	Evaluation Methods
Teaching and assessment	Students, Coordinator	Course report form, university survey
Achievement of course learning outcomes	Students	University survey
Quality of learning resources	Students, faculty	University 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	

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Education & Training Evaluation Commission

Course Specifications

Course Title:	**Web Application Security (WAS)**
Course Code:	**CYB 236**
Program:	**Diploma in Cybersecurity**
Department:	**Information Systems**
College:	**Faculty of Computing and Information Technology**
Institution:	**King Abdulaziz 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: 2nd Year, semester 1
4. Pre-requisites for this course (if any)**:** Not Applicable
5. Co-requisites for this course (if any)**:** Not Applicable

6. Mode of Instruction (mark all that apply)

No	Mode of Instruction	Contact Hours	Percentage
1	**Traditional classroom**		
2	**Blended**		
3	**E-learning**	50	100%
4	**Distance learning**		
5	**Other**		

7. Contact Hours (based on academic semester)

No	Activity	Contact Hours
1	**Lecture**	30
2	**Laboratory/Studio**	20
3	**Tutorial**	
4	**Others** (specify)	
	Total	50

B. Course Objectives and Learning Outcomes

1. Course Description

The course focuses to understand web application concept and techniques for managing, controlling, and improving security. It describes the concept of Web Application Security (WAS) applied in different organizations to develop and deploy secure web applications. This course exposes the students to contemporary knowledge and techniques of WAS. This would in turn enable them to apply these tools and practices to develop and deploy secure web applications. In addition, it enables them to identify and handle various type of vulnerabilities and attacks that threaten the web applications.

2. Course Main Objective

To comprehend the following knowledge:

- Web technologies: HTTP protocol, coding designs, architectures, Web applications, AJAX, XML, JSON technologies/languages.
- Principles of securing common areas of functionality of web applications.

- Defend the integrity of your databases, file systems, user accounts, and many other important resources from various type of vulnerabilities and attacks.
- Identify and handle various type of vulnerabilities and attacks that threaten the web applications.
- Applied learned concepts using some secure development and deployment methodologies.

3. Course Learning Outcomes

CLOs		Aligned PLOs
1	**Knowledge and Understanding**	
1.1	Identifying basic web technologies concept, techniques and communications.	K1, K2, K3
1.2	Defining various type of vulnerabilities on web applications.	K1, K3
1.3	Listing various type of attacks on web applications.	K1, K3
1.4	Identifying various type techniques and methodologies to secure the development and deployment of web applications.	K1, K2, K3
2	**Skills :**	
2.1	Estimating various type of vulnerabilities on web applications.	S1, S3
2.2	Detecting various type of attacks on web applications.	S1, S3
2.3	Executing various type of techniques and methodologies to secure the development and deployment of web applications.	S1, S2, S3
3	**Values:**	
3.1	Building and managing secure web applications.	V1, V3
3.2	Facilitating a secure communication using web application by minimizing the threats.	V1, V3

C. Course Content (Up to 9 topics)

No	List of Topics	Contact Hours
1	Web applications technologies: HTTP protocol, coding designs, architectures, Web applications.	5
2	Web applications technologies: AJAX, XML, JSON technologies/languages.	5
3	Web Application Security Fundamentals: server firewall, Network Security, Application Security, Injection, Cross-Site Scripting, Cross-Site Scripting, Cross-Site Request Forgery, Security Misconfiguration,	5
4	Web Application Security Fundamentals: Validation, Defense-in-Depth Approach, Classifying and Prioritizing Threats, Vulnerability Scoring System	5
5	Web Application Security Principles: Authentication, Access Control, Authorization.	5
6	Web Application Security Principles: Browser Security, Database Security, File Security.	5
7	Secure Development Methodologies: Penetrate-and-Patch, Holistic Approach, Threat Modeling, Secure Coding Libraries, Security Testing.	5
8	Secure Development Methodologies: Secure Application Architecture, Vulnerability Management,	5
9	Secure Development Methodologies: Defending Against XSS, CSRF, XXE.	5

10	Secure Development Methodologies: Defending Against Injection, Dos, Securing Third-Party Dependencies.	5
Total		50

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	**Knowledge and Understanding**		
1.1	Identifying basic web technologies concept, techniques and communications.	Online Lecture Online Quiz	Quiz Assignment Final
1.2	Defining various type of vulnerabilities on web applications.	Online Lecture Online Quiz	Quiz Assignment Final
1.3	Listing various type of attacks on web applications.	Online Lecture Online Quiz	Quiz Assignment Final
1.4	Identifying various type techniques and methodologies to secure the development and deployment of web applications.	Online Lecture Online Quiz	Quiz Assignment Final
2	**Skills :**		
2.1	Estimating various type of vulnerabilities on web applications.	Online Lecture Online Quiz	Quiz Assignment Final
2.2	Detecting various type of attacks on web applications.	Online Lecture Online Quiz	Quiz Assignment Final
2.3	Executing various type of techniques and methodologies to secure the development and deployment of web applications.	Online Lecture Online Quiz	Quiz Assignment Final
3	**Values:**		
3.1	Building and managing secure web applications.	Online Lecture Online Quiz	Quiz Assignment Final
3.2	Facilitating a secure communication using web application by minimizing the threats.	Online Lecture Online Quiz	Quiz Assignment Final

2. Assessment Tasks for Students

#	Assessment task*	Week Due	Percentage of Total Assessment Score
1	Quiz #1	2	15%
2	Assignment #1	3	25%
3	Quiz #2	5	15%
4	Assignment #2	6	20%
5	Final Exam	11	25%

***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 :

- Dr. x, male campus' instructor(s), e-mail
- Dr. Y, female campus' instructor(s), e-mail
- Program Director, male campus, e-mail
- Program Director, female campus, e-mail
- The faculty members are required to display at the front of their office a schedule dividing into lecture hours and office hours.
- The office hours are available for individual student's consultation and counselling, which is on average 30-45 minutes per course per day.
- Beside each faculty member provides counseling to their students, there are also other sources of counseling to students. These are college admission office and counsel and alumni office.

F. Learning Resources and Facilities

1.Learning Resources

Required Textbooks	Andrew Hoffman "Web Application Security Exploitation and Countermeasures for Modern Web Applications" O'Reilly Media, 2020, eText ISBN: 9781492053064
Essential References Materials	Bryan Sullivan; Vincent Liu "Web Application Security, A Beginner's Guide" McGraw-Hill, 2011 eText ISBN: 9780071776165
Electronic Materials	Recorded Lectures Assignments e-Textbooks
Other Learning Materials	lms.kau.edu.sa

2. Facilities Required

Item	Resources
Accommodation (Classrooms, laboratories, demonstration rooms/labs, etc.)	Blackboard system
Technology Resources (AV, data show, Smart Board, software, etc.)	• Personal computers for the instructor and students • Internet connection Microsoft Office applications
Other Resources (Specify, e.g. if specific laboratory equipment is required, list requirements or attach a list)	Not applicable

G. Course Quality Evaluation

Evaluation Areas/Issues	Evaluators	Evaluation Methods
Teaching and assessment	Students, Coordinator	Course report form, university survey
Achievement of course learning outcomes	Students	University survey
Quality of learning resources	Students, faculty	University 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	

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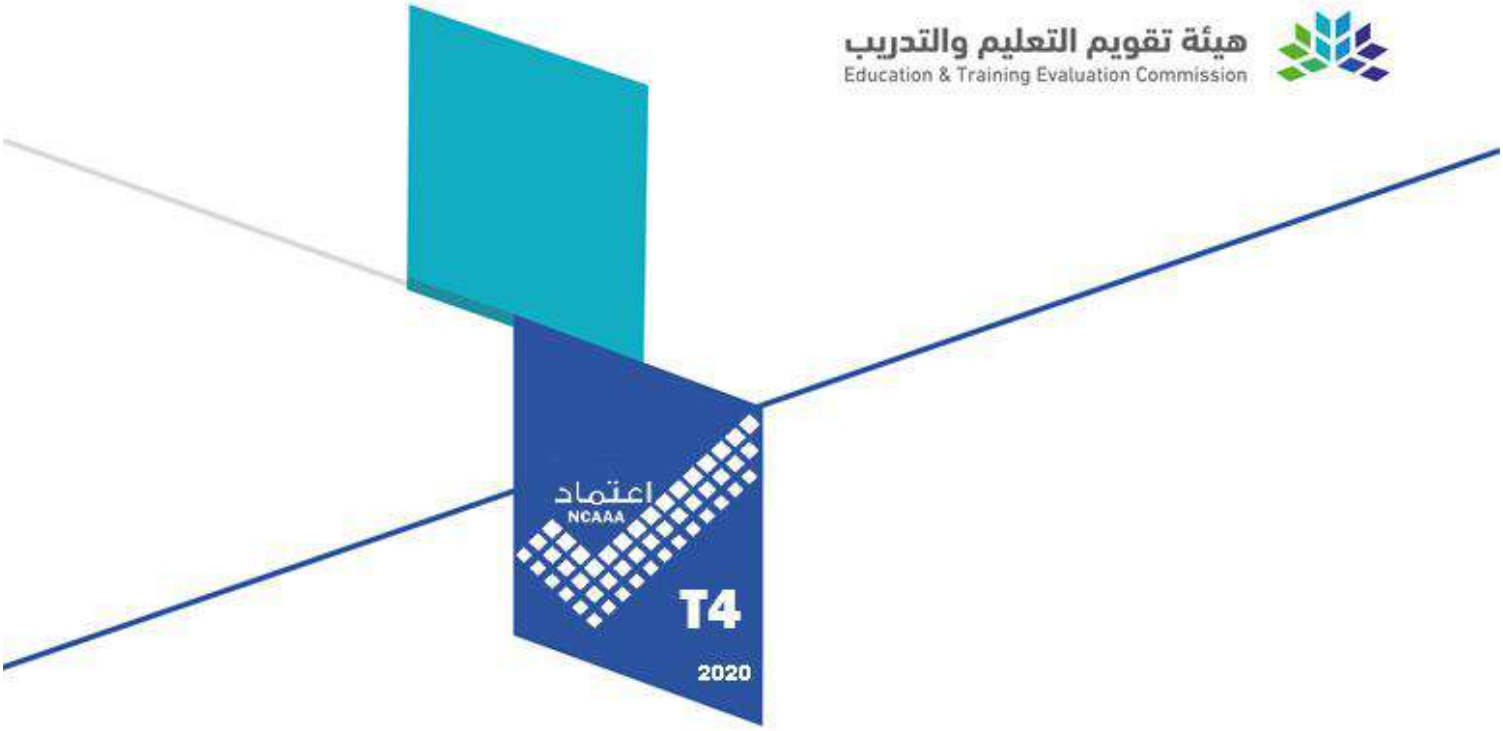
Education & Training Evaluation Commission



Course Specifications

Course Title:	**Cyber Threats.**
Course Code:	**CYB 237**
Program:	**Diploma in Cybersecurity**
Department:	**Department of Information Systems**
College:	**Faculty of Computing and Information Technology**
Institution:	**King Abdulaziz University**

Table of Contents

A. Course Identification

1. Credit hours: 4 Credit hours
2. Course type **a.** University ☐ College ☑ Department ☐ Others ☐ **b.** Required ☑ Elective ☐
3. Level/year at which this course is offered: 2st Year, semester 2
4. Pre-requisites for this course (if any)**:** Not Applicable
5. Co-requisites for this course (if any)**:** Not Applicable

6. Mode of Instruction (mark all that apply)

No	Mode of Instruction	Contact Hours	Percentage
1	**Traditional classroom**		
2	**Blended**		
3	**E-learning**	36	100%
4	**Distance learning**		
5	**Other**		

7. Contact Hours (based on academic semester)

No	Activity	Contact Hours
1	**Lecture**	16
2	**Laboratory/Studio**	20
3	**Tutorial**	
4	**Others** (specify)	
	Total	36

B. Course Objectives and Learning Outcomes

1. Course Description

This course provides knowledge and skills about cyber threats and attack.

2. Course Main Objective

- Understanding and analyze the system security and cyber threats.
- Exploring the idea digital forensics, digital evidences, and how to deal with it.
- Planning and developing system security framework for the organization.

3. Course Learning Outcomes

CLOs		Aligned PLOs
1	**Knowledge and Understanding**	
1.1	Classify the resources, capabilities, techniques, and motivations of the attackers.	K1
1.2	List, explain, and compare types of cyber-attacks.	K3
2	**Skills:**	
2.1	Use of cyber threat modeling tools.	S2
3	**Values:**	
3.1	Distinguish and identify the facts of the occurrence of cyber-attacks.	V1

C. Course Content (Up to 9 topics)

No	List of Topics	Contact Hours
1	An Overview of cyber threat and network security objective	4
2	The Threat Modelling.	4
3	Malware.	4
4	Social Engineering and Wireless Attacks.	4
5	Spoofing and Sniffing Attacks.	4
6	Digital Forensics and Digital Evidence.	4
7	Web Application and Cloud Computing threats.	4
8	Cryptosystems Threats.	4
9	Validating That Threats Are Addressed	4
Total		36

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	Classify the resources, capabilities, techniques, and motivations of the attackers.	Classroom Lecture Class Discussion	Quiz Lab Activities
1.2	List, explain, and compare types of cyber-attacks.	Classroom Lecture Class Discussion	Quiz Lab Activities
2.0	**Skills**		
2.1	Use of cyber threat modeling tools.	Classroom Lecture Class Discussion	Quiz Lab Activities
3.0	**Values**		
3.1	Distinguish and identify the facts of the occurrence of cyber-attacks.	Classroom Lecture Class Discussion	Practical Project - Case Study. Final

2. Assessment Tasks for Students

#	Assessment task*	Week Due	Percentage of Total Assessment Score
1	Quiz #1	2	10%
2	Practical Activities	3, 5, 6	15%
3	Quiz #2	5	10%
5	Practical Project - Case Study	6	30%
4	Quiz #3	7	10%
6	Final Exam	10	25%

***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 :

- Dr. Yousef Alsenani, male campus' instructor(s), e-mail yalsenani@kau.edu.sa
- Dr. Reemah Alhebshi, female campus' instructor(s), e-mail: ralhebshi@kau.edu.sa
- The faculty members are required to display at the front of their office a schedule dividing into lecture hours and office hours.
- The office hours are available for individual student's consultation and counselling, which is on average 30-45 minutes per course per day.
- Beside each faculty member provides counseling to their students, there are also other sources of counseling to students. These are college admission office and counsel and alumni office.

F. Learning Resources and Facilities

1.Learning Resources

Required Textbooks	1. Adam Shostack, “Threat Modeling: Designing for Security”. John Wiley & Sons, Inc.. 2014. 2. CEH Certified Ethical Hacker All-in-One Exam Guide, Fourth Edition by Matt Walker
Essential References Materials	1. Kali Linux 2018 Assuring Security by Penetration Testing 2. Linux Basics for Hackers Getting Started with Networking, Scripting, and Security in Kali 3. William Stallings, "Cryptography and Network Security", Prentice Hall; 6th edition. ISBN: 0133354695 4. "Practical Cloud Security_ A Guide for Secure Design and Deployment" by Chris Dotson, 2019 5. Amelia Phillips, Bill Nelson, and Christopher Steuart , “Guide to Computer Forensics and Investigations”, Sixth Edition
Electronic Materials	Blackboard, CyberBit, Virtual Box, KALI OS, Windows 10, OWASP WebServer
Other Learning Materials	Web, Faculty web site, Black board, KAU library website

2. Facilities Required

Item	Resources
Accommodation (Classrooms, laboratories, demonstration rooms/labs, etc.)	Classrooms and laboratories
Technology Resources (AV, data show, Smart Board, software, etc.)	• Blackboard • Personal computers for the instructor and students • Internet connection • Microsoft Office applications
Other Resources (Specify, e.g. if specific laboratory equipment is required, list requirements or attach a list)	Not applicable

G. Course Quality Evaluation

Evaluation Areas/Issues	Evaluators	Evaluation Methods
Teaching and assessment	Students, Coordinator	Course report form, university survey
Achievement of course learning outcomes	Students	University survey
Quality of learning resources	Students, faculty	University 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	

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Education & Training Evaluation Commission

Course Specifications

Course Title:	**Cybersecurity Policies & Issues**
Course Code:	**CYB 238**
Program:	**Diploma in Cybersecurity**
Department:	**Department of Information Systems**
College:	**Faculty of Computing and Information Technology**
Institution:	**King Abdulaziz University**

Table of Contents

A. Course Identification

1. Credit hours:	3 Credit hours
2. Course type	
a.	University ☐ College ☐ Department ☑ Others ☐
b.	Required ☑ Elective ☐
3. Level/year at which this course is offered:	1st Year, semester 1
4. Pre-requisites for this course (if any)**:**	Not Applicable
5. Co-requisites for this course (if any)**:**	Not Applicable

6. Mode of Instruction (mark all that apply)

No	Mode of Instruction	Contact Hours	Percentage
1	**Traditional classroom**		
2	**Blended**		
3	**E-learning**	36	100%
4	**Distance learning**		
5	**Other**		

7. Contact Hours (based on academic semester)

No	Activity	Contact Hours
1	**Lecture**	36
2	**Laboratory/Studio**	
3	**Tutorial**	
4	**Others** (specify)	
	Total	36

B. Course Objectives and Learning Outcomes

1. Course Description

This course provides knowledge related to cybersecurity legislation, standards, regulations, guidelines, policies and ethics.

2. Course Main Objective

The course provides the concept of cybersecurity from different contexts.

- It will also provide international guidelines and policies regarding cybersecurity.
- Privacy laws & regulations and data security standards are other concepts that will deliver in this

3. Course Learning Outcomes

	CLOs	Aligned PLOs
1	**Knowledge and Understanding**	

CLOs		Aligned PLOs
1.1	Discuss issues related to the ethics and practices of technology use and cybersecurity.	K1,K2
1.2	Discuss key legislation, regulations, guidelines, and policies in the field of cybersecurity.	K2,K3
2	**Skills :**	
2.1	Recognize important legislative and ethical issues when dealing with **data**.	S1
2.2	Explain the correct practices to align with cybersecurity legislation, controls, and standards.	
2.3		
3	**Values:**	
3.1		V1, V2
3.2		

C. Course Content (Up to 9 topics)

No	List of Topics	Contact Hours
1	Best practices of business ethics in cybersecurity for organizations and individuals.	4
2	Issues related to the ethics and practices of using social media platforms.	4
3	National and international legislation to combat cybercrime.	4
4	Judicial authorities, agreements, treaties, and international organizations related to cybersecurity	4
5	National and international cyber security standards and controls (for example, cyber security controls issued by the National Cyber Security Authority, HIPAA, ISO 27001, PCI DSS)	4
6	Privacy and data protection legislation and regulations (example: GDPR)	4
7	Intellectual property protection legislation and regulations.	4
8	Guidelines and best practices in recent trends (e.g., BYOD, Security Guidelines for the Internet of Things).	4
9	Best practices for alignment with cyber security legislation, controls, and standards.	4
Total		36

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	Discuss issues related to the ethics and practices of technology use and cybersecurity.	Online Lecture Discussion	Quiz Assignment Final

Code	Course Learning Outcomes	Teaching Strategies	Assessment Methods
1.2	Discuss key legislation, regulations, guidelines, and policies in the field of cybersecurity.	Online Lecture Discussion	Quiz Assignment Final
2.0	**Skills**		
2.1	Recognize important legislative and ethical issues when dealing with **data**.	Online Lecture Discussion	Quiz Assignment Final
2.2	Explain the correct practices to align with cybersecurity legislation, controls, and standards.	Online Lecture Discussion	Quiz Assignment Final Project
2.3			
3.0	**Values**		
3.2			

2. Assessment Tasks for Students

#	Assessment task*	Week Due	Percentage of Total Assessment Score
1	Homework Assignment - 1	2	15%
2	Homework Assignment – 2	3	15%
3	Practical activities (group discussions)	2-6	30%
4	Quizzes	2-6	10%
5	Practical project (presentation)	7	10%
6	Final Examination	7	20%

***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 :

- Dr. x, male campus' instructor(s), e-mail
- Dr. Y, female campus' instructor(s), e-mail
- Program Director, male campus, e-mail
- Program Director, female campus, e-mail
- The faculty members are required to display at the front of their office a schedule dividing into lecture hours and office hours.
- The office hours are available for individual student's consultation and counselling, which is on average 30-45 minutes per course per day.
- Beside each faculty member provides counseling to their students, there are also other sources of counseling to students. These are college admission office and counsel and alumni office.

F. Learning Resources and Facilities

1.Learning Resources

Required Textbooks	Information Assurance Handbook : Effective Computer Security and Risk Management Strategies McGraw-Hill Education Group, ISBN:978-0-07-182165-0
Essential References Materials	Information Assurance Handbook : Effective Computer Security and Risk Management Strategies
Electronic Materials	Available on Blackboard
Other Learning Materials	Lecture Slides and other class material

2. Facilities Required

Item	Resources
Accommodation (Classrooms, laboratories, demonstration rooms/labs, etc.)	Classrooms and laboratories
Technology Resources (AV, data show, Smart Board, software, etc.)	Data show
Other Resources (Specify, e.g. if specific laboratory equipment is required, list requirements or attach a list)	Not applicable

G. Course Quality Evaluation

Evaluation Areas/Issues	Evaluators	Evaluation Methods
Teaching and assessment	Students, Coordinator	Course report form, university survey
Achievement of course learning outcomes	Students	University survey
Quality of learning resources	Students, faculty	University 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	

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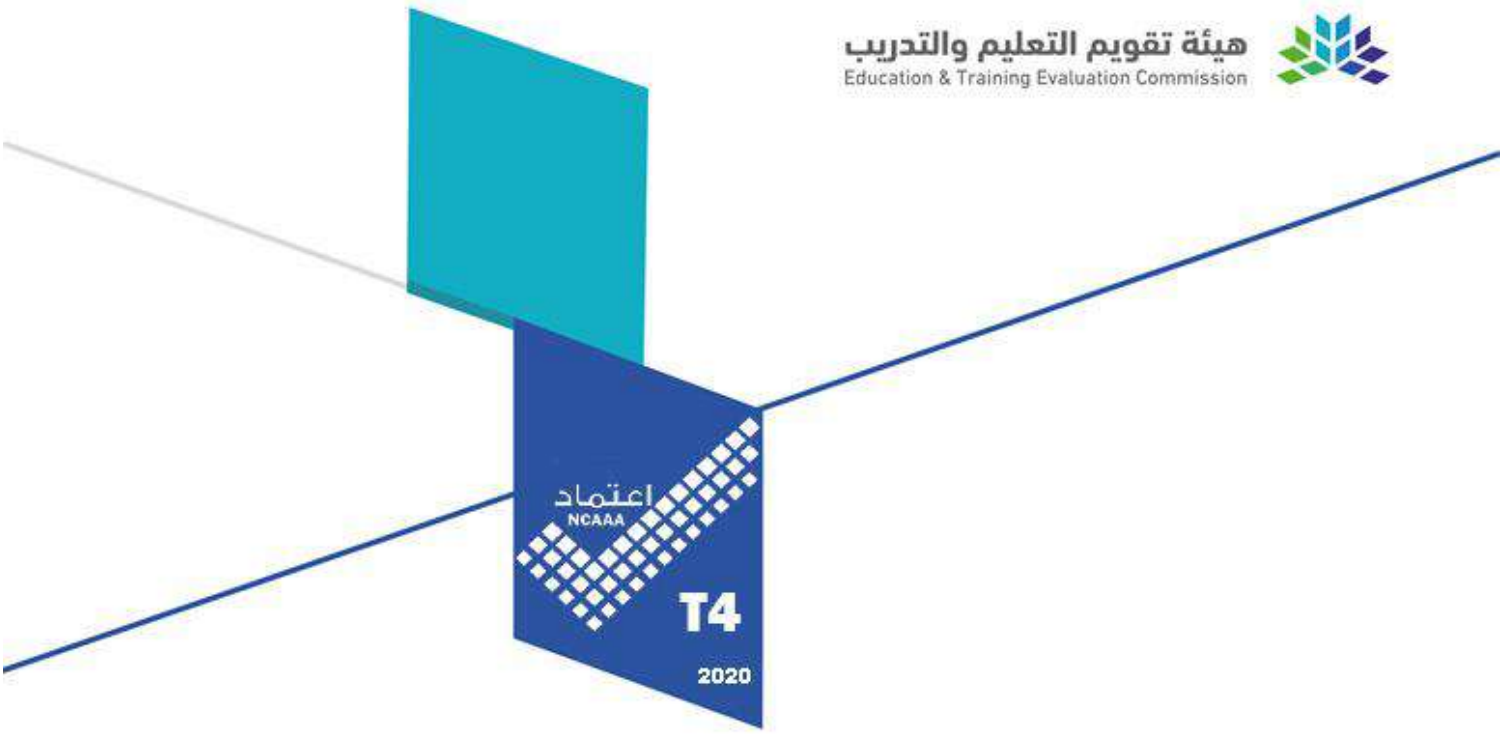
Education & Training Evaluation Commission



Course Specifications

Course Title:	**Digital Forensics (DFS)**
Course Code:	**CYB 260**
Program:	**Diploma in Cybersecurity**
Department:	**Department of Information Systems**
College:	**Faculty of Computing and Information Technology**
Institution:	**King Abdulaziz University**

Table of Contents

A. Course Identification

1. Credit hours:	3 Credit hours
2. Course type	
a.	University ☐ College ☐ Department ☑ Others ☐
b.	Required ☑ Elective ☐
3. Level/year at which this course is offered:	1st Year, semester 1
4. Pre-requisites for this course (if any)**:**	
Not Applicable	
5. Co-requisites for this course (if any)**:**	
Not Applicable	

6. Mode of Instruction (mark all that apply)

No	Mode of Instruction	Contact Hours	Percentage
1	**Traditional classroom**		
2	**Blended**		
3	**E-learning**	36	100%
4	**Distance learning**		
5	**Other**		

7. Contact Hours (based on academic semester)

No	Activity	Contact Hours
1	**Lecture**	20
2	**Laboratory/Studio**	16
3	**Tutorial**	
4	**Others** (specify)	
	Total	36

B. Course Objectives and Learning Outcomes

1. Course Description

This course provides knowledge of digital forensic techniques and skills to be applied in research and investigation work that takes into account legislative requirements.

2. Course Main Objective

- Understand digital forensics investigation terminologies.
- Analysis of evidence, recording and presenting results.

3. Course Learning Outcomes

	CLOs	Aligned PLOs
1	**Knowledge and Understanding**	
1.1	Solve a specific cyber investigation problem using digital forensic techniques and tools.	K2,K3

CLOs		Aligned PLOs
1.2		
2	**Skills :**	
2.1	Clarify legislative and regulatory issues related to digital forensic investigations.	S1,S2
3	**Values:**	
3.1	Search and investigation operations under the laws, regulations, instructions, and decisions of Saudi Arabia.	V2, V3
3.2		

C. Course Content (Up to 9 topics)

No	List of Topics	Contact Hours
1	Digital forensics investigation terminologies.	4
2	Legislative compliance: applicable legislation, declarations, testimonials, and prior cases.	4
3	Cyber research and investigation operations.	4
4	Current Digital Forensics Tools	4
5	Obtaining and preserving evidence: prohibition of writing, photography procedures, live digital forensic investigation, evidence analysis, and documentation.	4
6	Evidence analysis: root cause analysis, metadata, and file reassembly.	4
7	E-mail and mobile forensics Investigations	4
8	Windows forensics	4
9	Recording and presenting results: timeline and reasons.	4
Total		36

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	Solve a specific cyber investigation problem using digital forensic techniques and tools.	Online Lecture Online Discussion Online Lab Session	Quiz 1,2 Assignment Lab Activity-1 Mid Exam Final Exam
2.0	**Skills**		
2.1	Clarify legislative and regulatory issues related to digital forensic investigations.	Online Lecture Online Discussion Online Lab Session	Quiz 1,2 Assignment Lab Activity-2 Mid Exam Final Exam
3.0	**Values**		
3.1	Search and investigation operations under the laws, regulations, instructions, and decisions of Saudi Arabia.	Online Lecture Online Discussion Online Lab Session	Quiz 1,2 Assignment Mid Exam Final Exam

2. Assessment Tasks for Students

#	Assessment task*	Week Due	Percentage of Total Assessment Score
1	Quiz #1	2	5%
2	Lab Activity 1	4	10%
3	Assignment	5	10%
4	Lab Activity 2	6	10%
5	Mid Exam	7	30%
6	Quiz #2	8	5%
7	Final Exam	10	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 :

Instructor Name: Dr. Ahmad E. Alzahrani
Email: aalzahrani9@kau.edu.sa
Office: Building 31, FCIT, Office# 153.
Office Hours: Sunday and Tuesday 10:00 – 14:00 or by Appointment

- Dr. x, male campus' instructor(s), e-mail
- Dr. Y, female campus' instructor(s), e-mail
- Program Director, male campus, e-mail
- Program Director, female campus, e-mail
- The faculty members are required to display at the front of their office a schedule dividing into lecture hours and office hours.
- The office hours are available for individual student's consultation and counselling, which is on average 30-45 minutes per course per day.
- Beside each faculty member provides counseling to their students, there are also other sources of counseling to students. These are college admission office and counsel and alumni office.

F. Learning Resources and Facilities

1.Learning Resources

Required Textbooks	Guide to Computer Forensics and Investigations: Processing Digital Evidence by Bill Nelson, Amelia Phillips, Christopher Steuart, published by Cengage Learning, 2019.
Essential References Materials	Assignments
Electronic Materials	Blackboard

Other Learning Materials	i. Guide to Computer Forensics and Investigations, 5th Edition, Cengage, 2016. ii. Digital Forensic Education: An Experiential Learning Approach, Springer, 2020. iii. Digital Forensics Basics: A Practical Guide Using Windows OS, by Nihad A. Hassan, 2019.

2. Facilities Required

Item	Resources
Accommodation (Classrooms, laboratories, demonstration rooms/labs, etc.)	Blackboard
Technology Resources (AV, data show, Smart Board, software, etc.)	• Personal computers for the instructor and students • Internet connection • Microsoft Office applications
Other Resources (Specify, e.g. if specific laboratory equipment is required, list requirements or attach a list)	Not applicable

G. Course Quality Evaluation

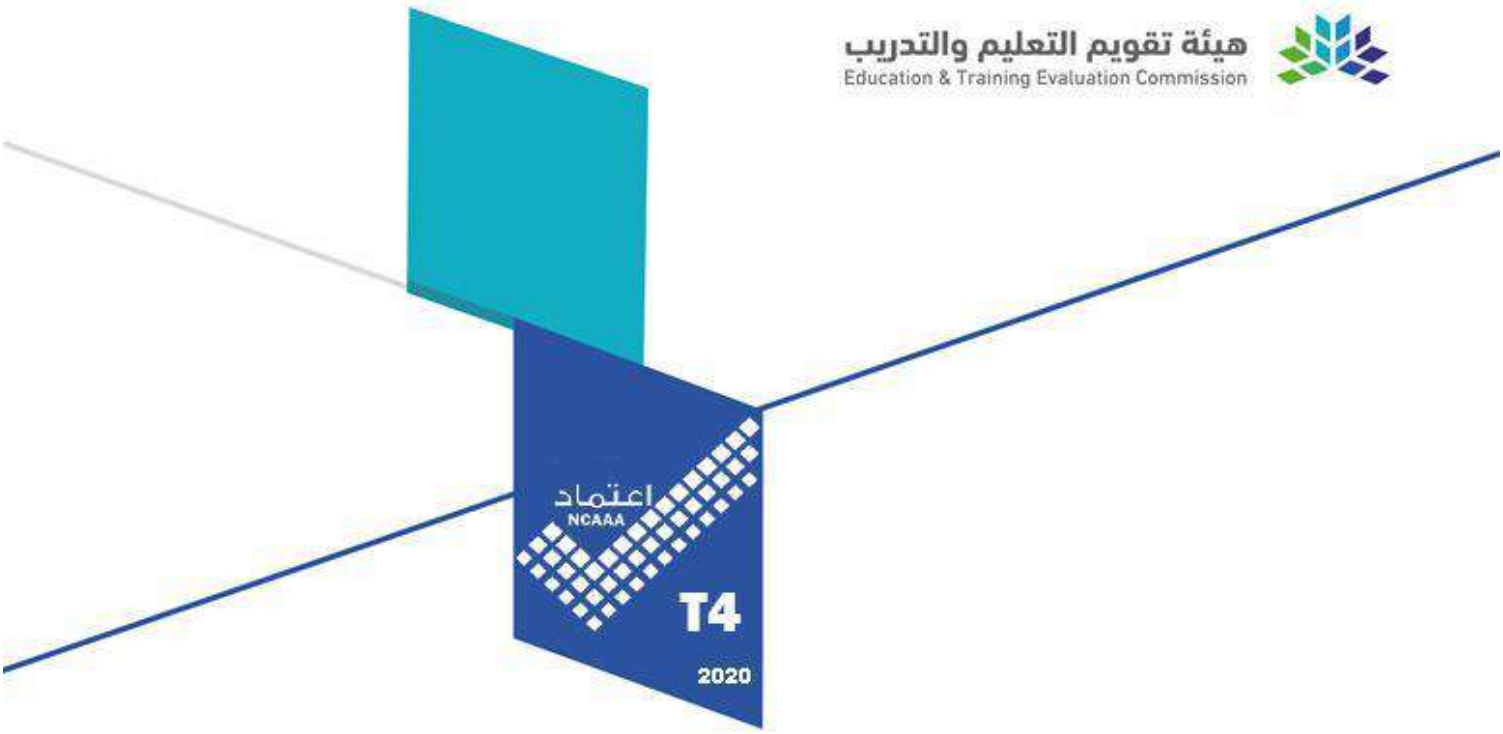
Evaluation Areas/Issues	Evaluators	Evaluation Methods
Teaching and assessment	Students, Coordinator	Course report form, university survey
Achievement of course learning outcomes	Students	University survey
Quality of learning resources	Students, faculty	University survey

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:	**Practical Training 2**
Course Code:	**CYB 290**
Program:	**Diploma in Cybersecurity**
Department:	**Information Systems**
College:	**Faculty of Computing and Information Technology**
Institution:	**King Abdulaziz 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: 1st year
4. Pre-requisites for this course (if any)**:** CYB 190
5. Co-requisites for this course (if any)**:** N/A

6. Mode of Instruction (mark all that apply)

No	Mode of Instruction	Contact Hours	Percentage
1	**Traditional classroom**		
2	**Blended**		
3	**E-learning**	4	100%
4	**Distance learning**		
5	**Other (Practical)**		

7. Contact Hours (based on academic semester)

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

B. Course Objectives and Learning Outcomes

1. Course Description

Applied Training 2 is a form of experiential learning that integrates classroom knowledge with practical on the-job experience to prepare students for the demands of today's job market. Students should seek for a training opportunity with help of the course coordinator that to map classroom learning to the real-world work environment, which contributes to their academic and career development. It is an opportunity for students to gain knowledge and skills from a planned work experience not available in a classroom setting. A continuous period of 100 hours spent during the period that will not exceed 13 hours per week.

2. Course Main Objective

The objective of this course is allow students to relate the classroom learning outcomes to the actual real-work environment in either governmental or private sectors. Also, to enhance the educational aspects of the career development process when they work with professionals that help them encourage professionalism.

3. Course Learning Outcomes

CLOs		Aligned PLOs
1	**Knowledge and Understanding**	
1.1	Recognize the nature and function of the organization in which the internship experience takes place.	k1
1.2	Learn new tools and technologies and understand of best practices and standards and their applications.	k1
1.3	Understanding of professional and ethical responsibilities.	v2
2	**Skills :**	
2.1	Apply the theoretical learning in practical situations by accomplishing the tasks assigned during the training period.	s3
2.2	Communicate and collaborate with colleagues and costumers utilizing efficient communication processes.	v1
2.3	Be able to assess the Strengths, Weaknesses, Opportunities and Threats in the organization.	k3
3	**Values:**	
3.1	Work independently and in a team.	s2
3.2	Develop positive working habits.	v1

C. Course Content

No	List of Topics	Contact Hours
1	Orientation Meeting	
2	Writing first progress report based on the learned skills in the first 2 weeks.	25
3	Writing second progress report based on the learned skills in the second 2 weeks.	25
4	Writing third progress report based on the learned skills in the third 2 weeks	25
5	Final Evaluation (Company)	10
6	Final Report	10
7	Presentation	5
Total		100

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	Recognize the nature and function of the organization in which the training experience takes place.	Meeting and discussions with supervisor of company.	Report writing Demonstration
1.2	Learn new tools and technologies and understand of best practices and standards and their applications.	Meeting and discussions with supervisor of company.	Presentation Report writing Demonstration
1.3	Understanding of professional and ethical responsibilities.	Meeting and discussions with	Report writing Demonstration

Code	Course Learning Outcomes	Teaching Strategies	Assessment Methods
		supervisor of company.	
2.0	**Skills**		
2.1	Apply the theoretical learning in practical situations by accomplishing the tasks assigned during the training period.	Meeting and discussions with supervisor of company.	Presentation Report writing Demonstration
2.2	Communicate and collaborate with colleagues and costumers utilizing efficient communication processes.	Meeting and discussions with supervisor of company.	Report writing Demonstration
2.3	Be able to assess the Strengths, Weaknesses, Opportunities and Threats in the organization.	Meeting and discussions with supervisor of company.	Demonstration
3.0	**Values**		
3.1	Work independently and in a team.	Meeting and discussions with supervisor of company.	Presentation Report writing Demonstration
3.2	Develop positive working habits.	Meeting and discussions with supervisor of company.	Presentation Report writing Demonstration
3.3	Develop professional skills.	Meeting and discussions with supervisor of company.	Presentation Report writing Demonstration

2. Assessment Tasks for Students

#	Assessment task*	Week Due	Percentage of Total Assessment Score
1	Training Plan	1	5
2	Progress report (4% each)	2, 4, 6	15
3	Final Evaluation (Company)	7	35
4	Final Report	8	35
5	Presentation	8	10

***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 :

- ● Applied training academic advisors are assigned to students to provide academic guidance and help the students to arrange their study plan.
- ● A total of 5 office hours per week are announced to provide additional individual assistance.
- ● Other communication channels such as email and office phone, are also provided to schedule official meetings on demand.
- ● 1 Site visit

F. Learning Resources and Facilities

1.Learning Resources

Required Textbooks	No required text book.
Essential References Materials	Not required.
Electronic Materials	Not required.
Other Learning Materials	Microsoft Word, Power Point forms are uploaded on BlackBoard.

2. Facilities Required

Item	Resources
Accommodation (Classrooms, laboratories, demonstration rooms/labs, etc.)	Not required.
Technology Resources (AV, data show, Smart Board, software, etc.)	Not required.
Other Resources (Specify, e.g. if specific laboratory equipment is required, list requirements or attach a list)	Not required.

G. Course Quality Evaluation

Evaluation Areas/Issues	Evaluators	Evaluation Methods
Course Performance – Attainment of Learning Outcomes	Course Instructor	Course Assessments (Direct)
Effectiveness of teaching and assessments	Students	Evaluation Forms (Direct)

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	Information Systems/ Department Council
Reference No.	
Date	