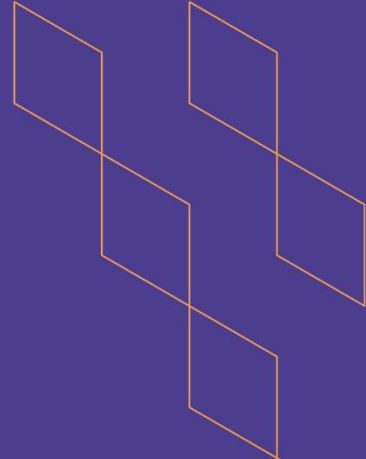




T-104  
2022

## Course Specification



Course Title: <b>Foundations of Cybersecurity</b>
Course Code: <b>IT10602</b>
Program: <b>Information Technology</b>
Department: <b>Information Technology</b>
College: <b>Computer Science and information technology</b>
Institution: <b>Al-Baha University</b>
Version: : <b>T104 – V1</b>
Last Revision Date: <b>March, 2023</b>



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## A. General information about the course:

### Course Identification

1. Credit hours: 3

#### 2. Course type

a. University  College  Department  Track  Others

b. Required  Elective

3. Level/year at which this course is offered: Level 7 / 3<sup>rd</sup> Year

#### 4. Course general Description

This course aims to provide an overview of cyber security. The course will equip students with a clear view of the current cyber security landscape considering not only technical measures and defenses, but also the other subject areas that apply, including legal, management, crime, risk, social and human factors.

5. Pre-requirements for this course (if any): none

6. Co- requirements for this course (if any): none

#### 7. Course Main Objective(s)

Students should be able to demonstrate an understanding of information and cyber security foundations. Upon successful completion of the course, the student will develop fundamental understanding and competency in the following topics:

- Explaining the importance of cyber security and basic concepts including harm, identity, confidentiality, integrity, availability, threat, risk and hazard, trust and assurance and the 'insider threat'.
- Explaining how the concept relate to each other and the significance of risk to a business.
- Understanding and proposing appropriate responses to current and new attack techniques, hazards and vulnerabilities relevant to the network and business environment.
- Understanding and proposing how to deal with emerging attack techniques, hazards and vulnerabilities relevant to the network and business environment.



### 1. Teaching mode (mark all that apply)

No	Mode of Instruction	Contact Hours	Percentage
1.	Traditional classroom	22	50%
2.	E-learning		
3.	Hybrid <ul style="list-style-type: none"> <li>• Traditional classroom</li> <li>• E-learning</li> </ul>		
4.	Distance learning		
5.	Other (Lab)	22	50%

### 2. Contact Hours (based on the academic semester)

No	Activity	Contact Hours
1.	Lectures	22
2.	Laboratory/Studio	22
3.	Field	-
4.	Tutorial	-
5.	Others (specify)	-
Total		44

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

Code	Course Learning Outcomes	Code of CLOs aligned with program	Teaching Strategies	Assessment Methods
1.0	Knowledge and understanding			
1.1	Describe why cyber security is important to organizations.	K1	<ul style="list-style-type: none"> <li>• Lectures</li> <li>• Lab session</li> </ul>	<ul style="list-style-type: none"> <li>• Midterm exam</li> <li>• Quiz</li> <li>• Final exam</li> <li>• Homework</li> </ul>
1.2	Explain how risk assessment and management can benefit an organization	K2	<ul style="list-style-type: none"> <li>• Lectures</li> <li>• Lab sessions</li> </ul>	<ul style="list-style-type: none"> <li>• Midterm exam</li> <li>• Lab exam</li> <li>• Final exam</li> <li>• Homework</li> <li>• Quiz</li> </ul>
1.3				
2.0	Skills			
2.1	Discover the main stages and principles of network, systems, applications and data security.	S.1	<ul style="list-style-type: none"> <li>• Lectures</li> <li>• Lab sessions</li> </ul>	<ul style="list-style-type: none"> <li>• Midterm exam</li> <li>• Lab exam</li> <li>• Final exam</li> <li>• Homework</li> <li>• Quiz</li> </ul>





Code	Course Learning Outcomes	Code of CLOs aligned with program	Teaching Strategies	Assessment Methods
2.2	Analyze various methods of securing computer, mobile and internet shopping.	S.1	<ul style="list-style-type: none"> <li>Lectures</li> <li>Lab sessions</li> </ul>	<ul style="list-style-type: none"> <li>Midterm exam</li> <li>Lab exam</li> <li>Final exam</li> <li>Homework</li> <li>Quiz</li> </ul>
2.3	Discuss the ability to meet deadlines on assignments and projects.	S.1	<ul style="list-style-type: none"> <li>Give prompt and frequent feedback to students' work.</li> </ul>	Homework
2.4	Use communication concepts and techniques in oral presentations.	S.6	<ul style="list-style-type: none"> <li>Small groups</li> <li>Lab sessions</li> </ul>	Homework
3.0	Values, autonomy, and responsibility			
3.1	Adapt to work independently and collaboratively	V.1	<ul style="list-style-type: none"> <li>Small groups</li> <li>Lab sessions</li> </ul>	Homework

## C. Course Content

No	List of Topics	Contact Hours
Lectures		
1.	Computers and Networks as a Cyberspace	2
2.	Cybersecurity Basics	4
3.	Types of Cyberattacks	3
4.	Recent Cyberattacks and Their Impact	2
5.	Types of Computer Malware	3
6.	Securing Your Computers	2
7.	Password Management	2
8.	Prevention from Cyberattacks	2
9.	Mobile Device Security	2
LAB		
1.	Securing Your Computers	2
2.	Mobile Device Security and Wireless Network Security	2
3.	Data and Disk Encryption, Security setting of File Sharing and Permissions	2
4.	Introduction to Kali Linux and Virtual Machines	4
5.	Phishing Cyberattack in Kali Linux	2
6.	SQL Injection Cyberattack in Kali Linux	2
7.	Man-in-the-middle Cyberattack in Kali Linux	2
8.	DDOS Cyberattack in Kali Linux	2

9.	Packet Sniffing and Wireshark in Kali Linux	2
10.	More cyberattacks in Kali Linux	2
Total		44

## D. Students Assessment Activities

No	Assessment Activities *	Assessment timing (in week no)	Percentage of Total Assessment Score
1.	Homework	Every Two Weeks	10%
2.	Midterm Exam	Week 6	20%
3.	Quiz	Week 10	10%
4.	Lab Exam	Week 12	20%
4.	Final Exam	Week 13	40%
6.	Total		100%

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

## E. Learning Resources and Facilities

### 1. References and Learning Resources

Essential References	Dr Kutub Thakur, Dr Al-Sakib Khan Pathan Cybersecurity Fundamentals A Real-World Perspective. CRC Press is an imprint of Taylor & Francis Group, LLC (2020)
Supportive References	<ul style="list-style-type: none"> <li>• Computer Science Curriculum 2013: <a href="http://cs2013.org">http://cs2013.org</a></li> <li>• ACM (Association for Computer Machinery) Curricula Recommendations: <a href="http://www.acm.org/education/curricula-recommendations">http://www.acm.org/education/curricula-recommendations</a></li> <li>• Communications of ACM (Association for Computer Machinery): <a href="http://cacm.acm.org/">http://cacm.acm.org/</a></li> <li>• ACM SIGCSE (Special Interest Group on Computer Science Education) bulletin: <a href="http://www.sigcse.org/Bulletin">http://www.sigcse.org/Bulletin</a></li> <li>• ACM Transactions on Computing Education (TOCE): <a href="http://toce.acm.org/">http://toce.acm.org/</a></li> </ul>
Electronic Materials	<ul style="list-style-type: none"> <li>• Access to the Saudi Digital Library (SDL)</li> <li>• ACM (Association for Computer Machinery) web site – <a href="http://www.acm.org/">http://www.acm.org/</a></li> <li>• ACM SIGCSE (Special Interest Group on Computer Science Education) resource web site: <a href="http://www.sigcse.org/SIGresources">http://www.sigcse.org/SIGresources</a></li> <li>• IEEE Computer Society web site: <a href="http://www.computer.org/portal/web/guest/home">http://www.computer.org/portal/web/guest/home</a></li> <li>• Intel <i>The Journey Inside</i> web site (has a collection of interactive, online lessons about technology, computers, and society): <a href="http://educate.intel.com/en/TheJourneyInside/">http://educate.intel.com/en/TheJourneyInside/</a></li> <li>• Google Code University Curriculum Resource web site: <a href="http://code.google.com/edu/resources/index.html">http://code.google.com/edu/resources/index.html</a></li> </ul>
Other Learning Materials	None



## 2. Required Facilities and equipment

Items	Resources
facilities (Classrooms, laboratories, exhibition rooms, simulation rooms, etc.)	<ul style="list-style-type: none"> <li>• A classroom or lecture hall with whiteboard for 25 students.</li> <li>• A laboratory with 25 computers.</li> </ul>
Technology equipment (projector, smart board, software)	<ul style="list-style-type: none"> <li>• An instructor computer station with Unix/Linux and Windows operating systems installed.</li> <li>• Desktop computers, for students, with Unix/Linux and Windows operating systems installed.</li> <li>• High speed Internet connections.</li> <li>• Power outlets for student's laptop plug-in</li> </ul>
Other equipment (depending on the nature of the specialty)	None

## F. Assessment of Course Quality

Assessment Areas/Issues	Assessor	Assessment Methods
Effectiveness of teaching	<ul style="list-style-type: none"> <li>• Students</li> <li>• Peer Reviewer</li> <li>• Program Leader</li> </ul>	<ul style="list-style-type: none"> <li>• Indirect: Survey</li> <li>• Direct: Peer Review</li> <li>• Direct: Class Visits</li> </ul>
Effectiveness of students assessment	Exams Evaluation <ul style="list-style-type: none"> <li>• Exams Committee</li> <li>• Students</li> </ul>	<ul style="list-style-type: none"> <li>• Direct: Exam Review</li> <li>• Indirect: Survey</li> </ul>
Quality of learning resources	<ul style="list-style-type: none"> <li>• Faculty</li> <li>• Students</li> </ul>	<ul style="list-style-type: none"> <li>• Indirect: Survey</li> <li>• Indirect: Survey</li> </ul>
The extent to which CLOs have been achieved	<ul style="list-style-type: none"> <li>• Faculty</li> </ul>	<ul style="list-style-type: none"> <li>• Direct: Exams</li> </ul>
Other	None	None

**Assessor** (Students, Faculty, Program Leaders, Peer Reviewer, Others (specify))

**Assessment Methods** (Direct, Indirect)

## G. Specification Approval Data

COUNCIL /COMMITTEE	
REFERENCE NO.	
DATE	

