Course Specifications

Course Title:	**Digital Forensic and Cyber Security**
Course Code:	**564CIS-3**
Program:	**Bachelor of Information System**
Department:	**Department of IS**
College:	**College of Computer Science and Information Systems**
Institution:	**Najran University**

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A. Course Identification

1. Credit hours:	3 (2, 2, 1)
2. Course type	
a.	University [ ] College [ ] Department [√] Others [ ]
b.	Required [√] Elective [ ]
3. Level/year at which this course is offered:	Level 10/Year 5
4. Pre-requisites for this course (if any)**:**	**463CIS-3**
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**	75	100%
2	**Blended**		
3	**E-learning**		
4	**Correspondence**		
5	**Other**		

7. Actual Learning Hours (based on academic semester)

No	Activity	Learning Hours
Contact Hours		
1	**Lecture**	30
2	**Laboratory/Studio**	30
3	**Tutorial**	15
4	**Others** (specify)	
	Total	**75**
Other Learning Hours*		
1	**Study**	30
2	**Assignments**	7
3	**Library**	8
4	**Projects/Research Essays/Theses**	
5	**Others** (specify)	
	Total	**45**

* 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 designed to introduce students to the major discipline of digital forensics and cyber security. It describes describe the role computer forensics and cybersecurity play in deterring and detecting computer crime and in identifying weaknesses and vulnerabilities in computer systems.

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The course also introduces the principles of computer forensics, develops the digital forensic analysis knowledge and skills. Students will learn how to respond to cyber breaches, including the recovery, preservation, analysis of digital evidence, and proper incident response. It also discusses prevention, detection, correction and conviction of digital crimes and enhance student of essential knowledge of computing principles such as communication networks and information systems security.

2. Course Main Objective

To provide students with insight to cybersecurity and system forensics investigation and response.

3. Course Learning Outcomes

	CLOs	Aligned PLOs
1	**Knowledge:**	
1.1	Discuss types of computer crime, intellectual property, and codes of ethics in information technology professions.	K1
1.2	Explain major forensic methodologies.	K1,K2
1.3		
2	**Skills :**	
2.1	Compare varying forensic approaches to different crimes	S1,S2
2.2	Analyze potential enterprise security vulnerabilities at various business sectors.	S2,S3
2.3	Analyze varying forensic approaches to different crimes	S1,S2,S4
2.3		
3	**Competence:**	
3.1	Develop leadership and teamwork skills in the implementation of the Digital Forensic investigations works.	C1,C2
3.2	Appraise the self-learning and judgement skills regarding professional behavior and immoral practices.	C3
3.3		
3...		

C. Course Content

No	List of Topics	Contact Hours
1	Introduction to Digital Forensics and Investigations	8
2	Overview of Computer Crime	5
3	Forensic Methods and Labs	4
4	Collecting, Seizing, and Protecting Evidence	9
5	Techniques for Hiding and Scrambling Information	4
6	Intrusion Detection Strategies	10
7	Enterprise Architecture Security Threats	4
8	Prevention, and Recovery	10
9	Security Awareness	10
10	Policies, and Digital Crime	5
11	Future Trends	6
	Total	75

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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	Discuss types of computer crime, intellectual property, and codes of ethics in information technology professions.	- Showing videos about famous crime happened in the past and discuss the types of crime, intellectual property, and codes of ethics in information technology professions in the shown videos. - Showing and delivering PPT presentation in the class to explain major forensic methodologies. - Ask student to search the internet to discover intellectual property, and codes of ethics in information technology professions.	Following methods are used to assess student's knowledge acquired in this course. - Class Quizzes. - Assignment. - Midterm exam (Each exam consists of multiple choice questions, true/false, fill in the blanks, and theoretical questions.) - Final Exam
1.2	Explain major forensic methodologies.		
2.0	**Skills**		
2.1	Compare varying forensic approaches to different crimes	- Ask students search for the forensic approaches and compare between these approaches. - Solving and developing issues related to data conversion using forensic tools for students to make them more familiar with various forensic software. - Let students analyze problems related security vulnerabilities at various business sectors in small groups and giving correction on their solution during class. - Use tools to analyze forensic approaches to different crimes based on different requirements	Following methods are used to assess student's skills in this course. - Class Quizzes. - Assignment. - Midterm exam (Each exam consists of multiple choice questions, true/false, fill in the blanks, and theoretical questions. - Final Exam - Midterm lab exam - Final lab exam
2.2	Analyze potential enterprise security vulnerabilities at various business sectors.		
2.3	Analyze varying forensic approaches to different crimes		
3.0	**Competence**		
3.1	Develop leadership and teamwork skills in the implementation of the digital forensic works.	- Let students solve digital forensic problems in small groups and giving correction on their solution during class. - Motivating students to be active during class by asking questions regularly.	- Assignment - Homework - Presentation

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Code	Course Learning Outcomes	Teaching Strategies	Assessment Methods
		- Let students present their work after group discussion session.	
3.2	Appraise the self-learning and judgement skills regarding professional behavior and immoral practices.	- Motivating students to work in the home, to search from the internet, to read related reference books by giving them assignments related to digital forensic and cyber security. - Let students present their work after group discussion session.	- Assignment - Homework - Presentation
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2. Assessment Tasks for Students

#	Assessment task*	Week Due	Percentage of Total Assessment Score
1	Assignments\Honeworks	Every two weeks	10%
2	Mid Term Exam-I	TBA	15%
3	Mid Term Exam-II	TBA	15%
4	Makeup Mid Term Exam (*Only for exceptional cases*)	TBA	
5	Mid Lab Exam	TBA	10%
6	Final Lab Exam	TBA	10%
7	Final Exam	Week No.15	40%

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

E. Student Academic Counseling and Support

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

During the whole semester, 10 hours/week are reserved for students to guide them, to help them, to explain them topic which is not clear to them etc.
Student also visits his academic advisor at least two times during semester to get marks of exams and advisors consult student and discuss with him about any issues of the course.

F. Learning Resources and Facilities

1.Learning Resources

Required Textbooks	System Forensics, Investigation, and Response, Second Edition, Chuck Easttom: ISBN-13: 978-1-284-03105-8 Harwood, M. (2016). Internet Security: How to Defend Against Attackers on the Web (3rd ed.). Burlington, MA: Jones & Bartlett Learning.

Essential References Materials	Stallings, W., & Brown L. (2015). Computer security: Principles and practice (3rd ed.). Upper Saddle River, NJ: Pearson Education, Inc. ISBN-13: 9780133773927
Electronic Materials	• Electronic Crime Scene Investigation: A Guide for First Responders, Second Edition https://www.ncjrs.gov/pdffiles1/nij/219941.pdf
Other Learning Materials	N/A

2. Facilities Required

Item	Resources
Accommodation (Classrooms, laboratories, demonstration rooms/labs, etc.)	Lecture Rooms with 20 seats and a whiteboard or a smart board. Lab with 20 PCs and projector
Technology Resources (AV, data show, Smart Board, software, etc.)	Desktop/ Laptop computer Multimedia Projector
Other Resources (Specify, e.g. if specific laboratory equipment is required, list requirements or attach a list)	A File cabinet to keep Class Stuff, Markers, papers and students Files, and a printer to print program screenshots.

G. Course Quality Evaluation

Evaluation Areas/Issues	Evaluators	Evaluation Methods
Collecting students' questionnaire about the faculty and teaching methods.	Students	Questionnaire
Collecting students' suggestions to facilitate more during the class.	Students	Verbal discussion
Student's questioner once during semester about course learning outcomes.	Students	Questionnaire
Feedback once the student visit his advisor and take marks	Students	Verbal discussion
Extent of achievement of course learning outcomes	Quality Unit	Using CLO assessment sheet
Feedback from coordinator	Faculty	Verbal discussion

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	Department Council
Reference No.	Session No. 10 (441-38-43300)
Date	17/02/2020