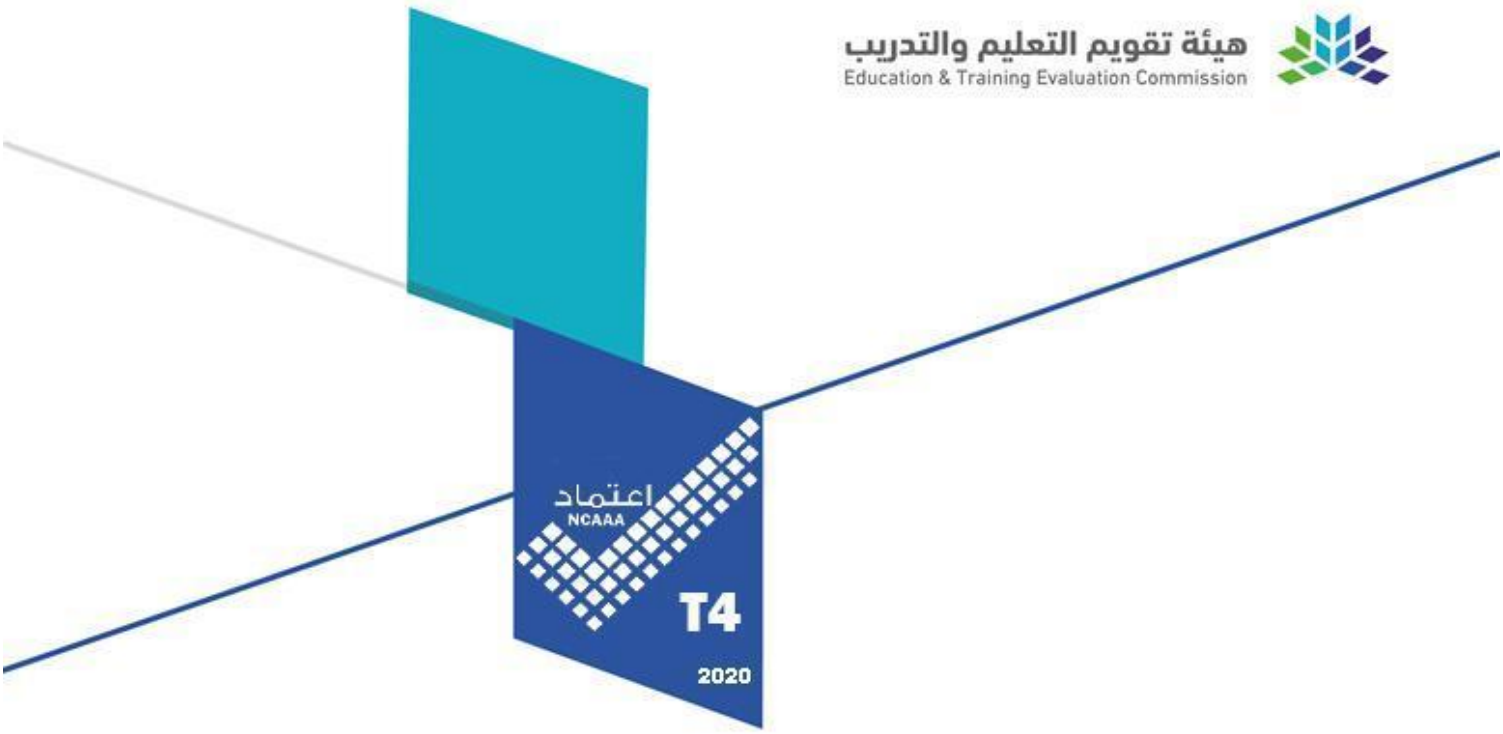
هيئة تقويم التعليم والتدريب
Education & Training Evaluation Commission



Course Specifications

Course Title:	**Advanced Topics in Network Security**
Course Code:	**502555-3**
Program:	**Bachelor in Information Technology**
Department:	**Department of Information Technology**
College:	**College of Computers and Information Technology**
Institution:	**Taif 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: 14/5 or 15/5
4. Pre-requisites for this course (if any)**:** Computer System security 502551-3 or 502552-3 or 502553-3
5. Co-requisites for this course (if any)**:** **NAN**

6. Mode of Instruction (mark all that apply)

No	Mode of Instruction	Contact Hours	Percentage
1	**Traditional classroom**	8	100%
2	**Blended**	0	0
3	**E-learning**	0	0
4	**Distance learning**	0	0
5	**Other**	0	0

7. Contact Hours (based on academic semester)

No	Activity	Contact Hours
1	**Lecture**	50
2	**Laboratory/Studio**	30
3	**Tutorial**	
4	**Others** (specify)	
	Total	80

B. Course Objectives and Learning Outcomes

1. Course Description

This course will introduce students to current state-of-the-art topics in security. Topics may vary from year to year. For example, this course may introduce IoT security, cloud networks security, Hacking techniques, etc.
Moreover, students will be asked to read and present some recent research papers in the field of security by their own.
Moreover, students will be asked to perform some practical projects related to the selected topics.

2. Course Main Objective

The main objective of this course is to understand advanced concepts in designing, developing, managing and analyzing security systems; review inter-dependencies between system components and point out major vulnerabilities; design security mechanisms; reflect requirements and demands that have to be addressed when solving problems and security issues in common computer systems and create both written project report and (oral) presentation of the project.
Argue for their solution or analysis in the ways implied above.

3. Course Learning Outcomes

CLOs		Aligned PLOs
1	**Knowledge and Understanding**	
2	**Skills :**	
2.1	Define the recent directions in data and network security	S1
2.2	Describe the security and privacy issues for the selected topics	S2
2.3	Apply practical projects related to the selected topic	S3
3	**Values:**	
3.2	Present and evaluate some basic research papers related to the selected topics	V1

C. Course Content

No	List of Topics	Contact Hours
1	Lecture 1 - Introduction	5
2	Lecture 2 - IoT Architectures	5
3	Lecture 3 - Hardware Platforms and Sensors	5
4	Lecture 4 - IoT Device Programming and Debugging	10
5	Lecture 5 - Hardware and Software Optimisation	10
6	Lecture 6 - Wireless Connectivity	10
8	Lecture 7 - Addressing, Routing, E2E communication	10
9	Lecture 10 - IoT Security & Privacy	10
10	Lecture 11 - IoT Security (part 2). The Cloud	10
Total		80

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 the recent directions in data and network security	Lecture Discussion	Assignments Written exams
1.2	Describe the security and privacy issues for the selected topics	Lecture Discussion	Assignments Written exams
2.0	**Skills**		

Code	Course Learning Outcomes	Teaching Strategies	Assessment Methods
2.1	Apply practical projects related to the selected topic	Lecture Discussion Lab work	Assignments Practical Exam Written exams
3.0	**Values**		
3.1	Read and present basic research papers related to the selected topics	Project presentation Writing summary of research paper	Project

2. Assessment Tasks for Students

#	Assessment task*	Week Due	Percentage of Total Assessment Score
1	Assignments (4 assignments)	3 - 10	10%
2	Mid Exam	6	20%
3	Attendance/ class activities	10	10%
4	Labs	11	10%
5	Minor project	11	10%
6	Final Exam	12	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:

Academic advising and counseling of students is an important component of teaching; student academic advising is a mandatory requirement of College of Computers and Information Technology (CCIT). Appropriate student advising provides support needed for the student during times of difficulty. In addition, it helps the student to build a close relationship with his/her advisor and to provide student motivation and involvement with the institution.

In addition, since faculty are usually the first to recognize that a student is having difficulty, faculty members play a key role in developing solutions for the students or referring them to appropriate services. Faculty members also participate in the formal student-mentoring program.

Additional counseling is provided by course directors, who provide students with academic reinforcement and assistance and refer “at risk” students to the Vice Dean for Academic Affairs and the Vice Dean for female section.

F. Learning Resources and Facilities

1.Learning Resources

Required Textbooks	Shancang Li, Li Da Xu; Securing the Internet of Things, sciencedirect, 2017.
Essential References Materials	Journal web site and readings papers from ACM, IEEE, springer, Sciencedirect.
Electronic Materials	Presentations and recorded lectures http://www.inf.ed.ac.uk/teaching/courses/iotssc/#lecture-notes
Other Learning Materials	-

2. Facilities Required

Item	Resources
Accommodation (Classrooms, laboratories, demonstration rooms/labs, etc.)	• A Lecture room appropriate for maximum 25 students with a personal computer, a data show and a smart board. • A Lab room appropriate for maximum 15 students with a personal computer, a data show and a smart board.
Technology Resources (AV, data show, Smart Board, software, etc.)	Lab materials and required software
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
Effectiveness of Teaching	Students	Students' surveys and Students course evaluation
Improvement of Teaching	Course Coordinator	deficiencies based on the student Evaluation, faculty input, course file, and program assessment
Verifying Standards of Student Achievement	Curriculum Committee	• Review CAF (Course assessment file) • Alumni surveys. • Periodic exchange and remarking of tests or a sample of assignments with staff at another

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	IT Department Council/ Executive program committee
Reference No.	11
Date	23/10/21443