



Course Specifications

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|----------------------|--|
| Course Title: | Wireless Systems Security |
| Course Code: | 502553-3 |
| Program: | Bachelor in Information Technology |
| Department: | Department of Information Technology |
| College: | College of Computers and Information Technology |
| Institution: | Taif University |

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A. Course Identification

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|--|
| 1. Credit hours: 3 |
| 2. Course type a. University <input type="checkbox"/> College <input type="checkbox"/> Department <input checked="" type="checkbox"/> Others <input type="checkbox"/> b. Required <input type="checkbox"/> Elective <input checked="" type="checkbox"/> |
| 3. Level/year at which this course is offered: 13/5 |
| 4. Pre-requisites for this course (if any): Computer System security 502459-3 |
| 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 | | |
| 3 | E-learning | | |
| 4 | Distance learning | | |
| 5 | Other | | |

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 introduces students to secure programming fundamentals. Topics to be covered include but not limited to: Software Security Problems, Static Analysis, Buffer Overflow |
| 2. Course Main Objective The main objective of this course is to provide an in-depth understanding of integer security, formatted output, file I/O and secure practices |



3. Course Learning Outcomes

| CLOs | | Aligned PLOs |
|----------|---|--------------|
| 1 | Knowledge and Understanding | |
| 1.1 | Understand wireless systems fundamental concepts and principles | K1 |
| 1.2 | Describe unique aspects and risks of wireless systems | K1 |
| 2 | Skills : | |
| 2.1 | Master security techniques in wireless systems | S1, S2 |
| 2.2 | Apply intrusion detection in wireless systems | S1, S2 |
| 3 | Values: | |
| | | |

C. Course Content

| No | List of Topics | Contact Hours |
|--------------|---|---------------|
| 1 | Introduction to Wireless System Security (Relation of the course with other courses and modern life). | 10 |
| 2 | Unique aspects and wireless systems and challenges of their security. | 10 |
| 3 | Typical Wireless Systems (Cellular systems, WLAN, Bluetooth, Wireless sensor networks, RFID networks) | 10 |
| 4 | Security in WLAN. | 10 |
| 5 | Security in wireless sensor networks. | 10 |
| 6 | Security in IoT networks | 10 |
| 7 | Security in RFID networks. | 10 |
| 8 | Intrusion detection in wireless systems | 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 | Understand wireless systems fundamental concepts and principles | Lecture Discussion | Written Exams Assignments |
| 1.2 | Describe unique aspects and risks of wireless systems | Lecture Discussion | Written Exams Assignments |
| 2.0 | Skills | | |
| 2.1 | Master security techniques in wireless systems | Lecture Discussion Lab work | Written Exams Assignments Practical Exam |
| 2.2 | Apply intrusion detection in wireless systems | Lecture Discussion Lab work | Written Exams Assignments Practical Exam |



| Code | Course Learning Outcomes | Teaching Strategies | Assessment Methods |
|------|--------------------------|---------------------|--------------------|
| 3.0 | Values | | |

2. Assessment Tasks for Students

| # | Assessment task* | Week Due | Percentage of Total Assessment Score |
|---|------------------------------|----------|--------------------------------------|
| 1 | Assignments (4 assignments) | 10 | 10% |
| 2 | Mid Exam | 6 | 20% |
| 3 | Attendance/ class activities | 12 | 10% |
| 4 | Labs | 10 | 10% |
| 5 | Final Exam | 12 | 50% |

*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 | Lei Chen, Jiahuang Ji, and Zihong Zhang; Wireless Network Security: Theories and Applications, Springer, 2012. |
| Essential References Materials | R. K. Nichols and P. C. Lekkas; Wireless Security: Models, Threats, and Solutions, The McGraw-Hill Companies, Inc., 2002. |
| Electronic Materials | Presentations |



| | |
|---------------------------------|---|
| Other Learning Materials | - |
|---------------------------------|---|

2. Facilities Required

| Item | Resources |
|--|--|
| Accommodation (Classrooms, laboratories, demonstration rooms/labs, etc.) | <ul style="list-style-type: none"> • 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 | <ul style="list-style-type: none"> • 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 |



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