

Syrian Arab Republic	 الجامعة الافتراضية السورية SYRIAN VIRTUAL UNIVERSITY	الجمهورية العربية السورية
Ministry of Higher Education		وزارة التعليم العالي
Syrian Virtual University		الجامعة الافتراضية السورية

"Wireless Networks" Course Definition File

1- Basic Information:

Course Name	Wireless Networks
Course ID	BAIT_INT203

2- Pre-Requisites:

Course	ID
Introduction to networks	INT 101

3- Course General Objectives:

The objective of this course is to provide an overview of wireless networks and systems and their technologies, and key wireless services. It describes the basic knowledge necessary to understand wireless data communication, also describes how wireless devices share the frequency band. In this context this course describes key types of wireless networks and systems, and describes its functional parts.

The student gets introduced to the most widespread wireless services and to the new trends in wireless industry market.

4- Intended Learning Outcomes (ILO):

Code	Intended Learning Outcomes
ILO1	Overview of various wireless networks, and of network layering model. Understanding spectrum sharing principle.
ILO2	Describing functional parts of wireless networks and system.
ILO3	Describing local wireless networks Wi-Fi and broadband WiMax networks.
ILO4	Describing personal networks Bluetooth
ILO5	Describing mobile networks.
ILO6	Describing satellite networks.
ILO7	Knowing different wireless service types.

5- Course Syllabus

- SS: Synchronized hours

ILO	Course Syllabus	Sh	Type	Additional Notes
ILO2	Overview: <ul style="list-style-type: none"> • Wireless networks and network 	3	<input type="checkbox"/> Exercises	Discussion about spectrum and its

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	reference model Spectrum sharing: <ul style="list-style-type: none"> • Licensed and non licensed bands • Multiple access • Spread spectrum • Random access 		<input type="checkbox"/> Assignments <input checked="" type="checkbox"/> Seminars <input type="checkbox"/> Projects <input type="checkbox"/> Practices <input type="checkbox"/> Others	allocation and sharing.
ILO1	Description of wireless local area networks: <ul style="list-style-type: none"> • Applications • Network structure • MAC frame • Standards 	3	<input type="checkbox"/> Exercises <input type="checkbox"/> Assignments <input checked="" type="checkbox"/> Seminars <input type="checkbox"/> Projects <input type="checkbox"/> Practices <input type="checkbox"/> Others	Discussion of evolution of standards of WiFi
ILO3	Description of wideband wireless networks WiMAX: <ul style="list-style-type: none"> • Applications and services • Network structure • Standards • Quality of service 	3	<input type="checkbox"/> Exercises <input type="checkbox"/> Assignments <input checked="" type="checkbox"/> Seminars <input type="checkbox"/> Projects <input type="checkbox"/> Practices <input type="checkbox"/> Others	Discussion of evolution of standards of WiMAX
ILO1 ILO2	Wireless personal networks Bluetooth: <ul style="list-style-type: none"> • Characteristics • Network structure • MAC frame • Network initialization 	3	<input type="checkbox"/> Exercises <input type="checkbox"/> Assignments <input checked="" type="checkbox"/> Seminars <input type="checkbox"/> Projects <input type="checkbox"/> Practices <input type="checkbox"/> Others	Discussion of various applications of Bluetooth
ILO1 ILO4 ILO5	Mobile networks: <ul style="list-style-type: none"> • Second generation network structure • Data frames structure • Call establishment • Structure of 2.5 generation • Structure of third generation • Structure of forth generation 	4.5	<input type="checkbox"/> Exercises <input type="checkbox"/> Assignments <input checked="" type="checkbox"/> Seminars <input type="checkbox"/> Projects <input type="checkbox"/> Practices <input type="checkbox"/> Others	Discussion of various trends in mobile networks
ILO6	Satellite communication: <ul style="list-style-type: none"> • Classification of satellite communications • Satellites orbits • Satellites configurations • Bandwidth allocation • Services 	1.5	<input type="checkbox"/> Exercises <input type="checkbox"/> Assignments <input checked="" type="checkbox"/> Seminars <input type="checkbox"/> Projects <input type="checkbox"/> Practices <input type="checkbox"/> Others	Discussion of various satellites systems

6- Assessment Criteria (Related to ILOs)

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ISC	Interactive Synchronized Collaboration	Ex	Exams	Rpt	Reports
PF2F	Presentations and Face-to-Face Assessments	PW	Practice Work		

ILO Code	ILO	Intended Results	Assessment Type				
			ISC	PW	Ex	PF2F	Rpt
ILO1	Overview of various wireless networks, and of network layering model. Understanding spectrum sharing principle.		X		X		X
ILO2	Describing functional parts of wireless networks and system.		X		X		X
ILO3	Describing local wireless networks Wi-Fi and broadband WiMax networks.		X		X		X
ILO4	Describing personal networks Bluetooth.		X		X		X
ILO5	Describing mobile networks.		X		X		X
ILO6	Describing satellite networks.		X		X		X
ILO7	Knowing different wireless service types.		X		X		X

7- Practice Tools:

Tool Name	Description
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8- Main References

1- Broadband Wireless Access and Local Networks-Mobile WiFi and WiMax_Lee_Choi, 2008 2- Wireless Communications and Networks, 2e, WilliamStallings, 2002

9- Additional References

Wireless Communications and Networking, Garg, 2007
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