Al-Imam Muhammad Ibn Saud Islamic University

College of Computer and Information Sciences

Course Syllabus [Wireless and Mobile Computing]

Course Code	*Course Name.*	*Credit Hours*	*Lec.*	*Lab*	*Prerequisites*
IT342	*Wireless and Mobile Computing*	*3*	*2*	*2*	*IT340*

Course Description:

This course will examine the area of wireless networking and mobile computing, looking at the unique network protocol challenges and opportunities by wireless communications and host or router mobility. The course will give a brief overview of fundamentals concepts in mobile wireless and mobile computing, it will then cover system and standards issues including wireless LAN, Mobile IP, ad-hoc networks, sensor networks, as well as issues associated with small handheld portable devices and new applications that can exploit mobility and location information.

Course Topics:

Week	Tentative Schedule
Week 01	Overview of Wireless Networks Fundamentals of Cellular Networks
Week 02	An overview of fundamentals concepts in mobile wireless and mobile computing
Week 03	Next Generation Cellular Networks (GPRS, UMTS, 3G, 4G, Femto-cell)
Week 04	Next Generation Cellular Networks (GPRS, UMTS, 3G, 4G, Femto-cell) **+ assignment**
Week 05	Host and network mobility protocol challenges
Week 06	Wireless Local Area Networks (WLANs) [First Exam]
Week 07	Mobile IP MIP based mobility protocols such as MIP, HMIP, FMIP, PMIP
Week 08	Mobile IP MIP based mobility protocols such as MIP, HMIP, FMIP, PMIP + **Mid-term exam**
Week 09	Ad Hoc Networking
Week 10	Ad Hoc Networking [Second Exam]
Week 11	Wireless Mesh Networks
Week 12	Wireless Mesh Networks
Week 13	New applications that can exploit mobility and location information.
Week 14	Other mobility technologies such as Host Identity Protocols (HIP)
Week 15	
Week 16	**[Final Exam]**

Textbook and Resources:

Main Textbook:

D. P. Agrawal and Q.-A. Zeng, Introduction to Wireless and Mobile Systems, Second Edition, Thomson, 2005.

Introduction to Wireless and Mobile Systems, by Dharma P. Agrawal and Qing-An Zeng, Publisher, Cengage Learning; 3 edition (June 10, 2010)

Other Resources

T. S. Rappaport, Wireless Communications, Second Edition, Prentice Hall, 2002.

Y. B. Lin and I. Chlamtac, Wireless and Mobile Network Architecture, John Wiley & Sons, 2000

Project and Assignments

Will be provided during the last weeks.

Grade Distribution

Quizzes	10 %
Midterm Exam	20 %
Assignments	10 %
Lab contribution and Exams	20 %
Final Exam	40 %