Course Specifications

Program(s) on which this course is given:	Electronics & Electrical Communications Engineering
Major or Minor element of programs:	Major
Department offering the program:	Electronics and Electrical Communications
Department offering the course:	Electronics and Electrical Communications
Academic year / Level:	Fourth
Date of original/modified specification approval:	2003
Semester of course offering:	First

A- Basic Information

1.a. Title:	Mobile Communications			**1.b. Code:**	ELC 446			
2. Units/Credit hours per week:	2.a. Lectures	2	2.b. Tutorial	2 (included in lectures)	2.c. Practical	0	2.d. Total	4

B- Professional Information

1. Overall Aims of the Course:

The course aim is to introduce the Student to mobile systems by studying as the GSM system an example. The course introduces the Lee propagation model. The student will be familiar with the wireless channel characteristics. Problems related to wireless channels as well as cellular systems are introduced: Fading, ISI, co-channel interference & adjacent channel interference. The student will study few ways to combat these problems.

2. Intended Learning Outcomes of Course (ILOs):

a) Knowledge and Understanding

1. Identify basic information and concepts related to GSM system (1.2).

b) Intellectual Skills

1. Analyze the effect of the channel characteristics on the mobile system (3.1, 3.4).
2. Prepare an oral presentation (3.8).

c) Professional and Practical Skills

1. Choose a proper way to decrease the co-channel and adjacent channel interference (2.1).

d) General and Transferable Skills

1. Write reports (4.9).
2. Simulate a wireless channel (4.2).

3. Contents

Topic	Total hours	Lectures	Tutorial/ Practical
GSM system	14	14	
Propagation model (Lee)	8	8	
Wireless Channel characteristics	14	14	
Equalizers	16	16	
Co-channel and adjacent channel interferences	4	4	

4. Teaching and Learning Methods	Lectures (Y)	Practical Training/ Laboratory (N)	Seminar/Workshop (Y)

	Class Activity (N)	Case Study (N)	Projects (N)
	E-learning (N)	Assignments /Homework (Y)	Other:

5. Student Assessment Methods	
5.a. Method	**To assess (with reference to the ILOs)**
-presentation and reports	b2, d1, d2
-Mid-term and final exam	a1, b1,c1
5.b. Assessment Schedule	**Week**
- Assessment 1: Reports and presentations	12
-Assessment 2; Mid-term exam	8
-Assessment 3; Final exam	15
5.c. Weighting of Assessments	
-Mid-Term Examination	20%
-Final-term Examination	70%
- Reports and presentations	10%
-Total	100 %

6. List of References

6.a. Course Notes : A part of the course is available with the students in electronic form and hard copy.

6.b. Essential Books (Text Books)

- Mobile Cellular Telecommunications (Lee).
- Wireless Com., Principles & Practice T.S. Rappaport
- The GSM System for Mobile Communications. TELECOM. M. Mouly

6.c. Recommended Books.

6.d. Periodicals, Web Sites, … etc

7. Facilities Required for Teaching and Learning

White/black board – Data show

Course Coordinator:	**Prof. Dr. Emad K. Al-Hussaini**
Head of Department:	**Prof. Dr. Mahmoud T. Al-Hadidi**
Date:	**2010-2011**