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 & Electrical Communications
Department offering the course:	Electronics & Electrical Communications
Academic year / Level:	Fourth year
Date of original/modified specification approval:	2003/
Semester of course offering:	Second Semester

A- Basic Information

1.a. Title:	Control 1			**1.b. Code:**	ELC 327			
2. Units/Credit hours per week:	2.a. Lectures	4	2.b. Tutorial	2	2.c. Practical	-	2.d. Total	6

B- Professional Information

1. Overall Aims of the Course:	To understand, analyze and design control systems.
2. Intended Learning Outcomes of Course (ILOs):	**a) Knowledge and Understanding**
	1. Identify the methods of analysis and design of control system (1.2)
	b) Intellectual Skills
	1. Apply state space methods to represent and analyze linear control systems (3.1) 2. Analyze control systems performance regarding transient response and stability (3.1) 3. Apply the taught material in practical engineering problem (3.1)
	c) Professional and Practical Skills
	1. Build control systems (2.4) 2. Design controllers (2.4)
	d) General and Transferable Skills
	1. Get familiar with existing control methods (4.4)

3. Contents

Topic	Total hours	Lectures	Tutorial/ Practical
Steady state analysis	13	9	4
Transient analysis	13	9	4
PID controller	13	9	4
Root Locus	13	9	4
Bode Plot	13	9	4
Nyquist plot	10	6	4
MIMO control	9	5	4

4. Teaching and Learning Methods	Lectures (Y)	Practical Training/ Laboratory (N)	Seminar/Workshop (N)
	Class Activity (N)	Case Study (Y)	Projects (Y)

	E-learning (N)	Assignments /Homework (Y)	Other:

5. Student Assessment Methods	
5.a. Method	**To assess (with reference to the ILOs)**
- Class quizzes	a1, b1, b2, b3, c1, c2, d1
- Mid-term exam	a1, b1, b2, b3, c1, c2, d1
- MATLAB Assignments	c1, c2
- Final Exam	a1, b1, b2, b3, c1, c2, d1
5.b. Assessment Schedule	**Week**
- Assessment 1; Class quizzes	Week 4 and week 10
- Assessment 2; Mid-term exam	8
- Assessment 3; MATLAB Assignments.	10
- Assessment 3; Final Exam	15
5.c. Weighting of Assessments	
- Mid-Term Examination	15 %
- Final-term Examination	70 %
- Class quizzes and MATLAB assignments.	15 %
- Total	100 %
6. List of References	
6.a. Course Notes	
6.b. Essential Books (Text Books)	
• K.,Ogata, "Modern Control Engineering".	
6.c. Recommended Books: N/A	
6.d. Periodicals, Web Sites, … etc: N/A	
7. Facilities Required for Teaching and Learning: N/A	
Course Coordinator:	**Dr Hanan Ahmed Kamal**
Head of Department:	**Prof. Mahmud El Hadidi**
Date:	**June, 2011**