Course Syllabus

Course ID	0902502
Course Title	Automatic Control
Prerequisite	0902401 Digital Communication
Time & Date	
Coordinator	-
Instructor	**Assistant. Prof. Dr. Takialddin Al-Smadi** Faculty of Engineering E-mail: dsmadi@rambler.ru Telephone: ext.
Office hours	
Course Description	Introduction to Feedback System. Review of System Equations. Block Diagram and Signal Flow Graphs. Time Response of Systems and Closed Loop Performance. Routh's Stability Criterion. The Root Locus Method. Frequency-Methods. Compensation Techniques. Introduction to Sampled Control System. **Pre :0902401**
Course Objectives	1. An understanding of open loop and closed loop control systems and their physical meaning. 2 A knowledge of constructing a mathematical model of physical system, via transfer function and state variable method. 3. The ability to analyze the system behavior and stability using mathematical model and evaluating the system performance, in time domain. 3. The understanding of analysis and design of systems in frequency domain. 4. A knowledge to implement controller design techniques to make the system behaviour satisfy design objectives.
Course Outcomes	(a) An ability to apply knowledge of mathematics, science, and (b) An ability to design and conduct experiments, to analyze and interpret data (c) An ability to design a system, component, or process to meet desired needs (d) An ability to function on multi-disciplinary teams

	program outcomes (e) An ability to identify, formulate, and solve engineering problems (f) An understanding of professional and ethical responsibility (g) An ability to communicate effectively (h) The broad education necessary to understand the impact of engineering solutions in a global and societal context
Course Topics	1.Introduction To Control Systems 2 Hours 2. Mathematical Modeling of Systems 6 Hours 3. State Variable Methods 6 Hours 4. Feed Back Control System characteristics 3 Hours 5. The Performance of Feed Back Control systems 6 Hours 6. The Stability of Linear Feed Back systems 3 Hours 7. The Root Locus Method 6 Hours 8. Frequency Response Method 4 Hours 9. Stability in Frequency Response 3 Hours 10. The Design of Feedback Control 6 Hours Computer Usage :Matlab
Course Text Book	R.C. Dorf & R.H. Bishop :"Modern Control Systems", 10th Edition, Prentice Hall, 2005.
Course References	R.C. Dorf & R.H. Bishop:"Modern Control Systems", 10th Edition, Prentice Hall, 2005.
Course delivery	Lectures Tutorial Lab Homework Project Computer Internet Industrial Visit
Course Assessment	First Exam : 20% Second Exam: 20% Quizzes : 10% Final Exam : 50% **Total 100%**

Updated	Dr. Takialddin 2009

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO12
CO1											
CO2											
CO3											
CO4											
CO5											
CO6											
CO7											
CO8											
CO9											

	A	b	C	D	e	f	g	h	i	j	K
CO1											
CO2											
CO3											
CO4											
CO5											
CO6											
CO7											
CO8											
CO9											

ABET a-k Engineering and Technology program outcome

(a) An ability to apply knowledge of mathematics, science, and engineering
(b) An ability to design and conduct experiments, to analyze and interpret data
(c) An ability to design a system, component, or process to meet desired needs
(d) An ability to function on multi-disciplinary teams
(e) An ability to identify, formulate, and solve engineering problems
(f) An understanding of professional and ethical responsibility
(g) An ability to communicate effectively
(h) The broad education necessary to understand the impact of engineering solutions in a global and societal context
(i) A recognition of the need for, and an ability to engage in life-long learning
(j) A knowledge of contemporary issues
(k) An ability to use the techniques, skills, and modern engineering tools necessary for engineering practice

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(a) word-for-word copying of sentences or whole paragraphs or presenting of substantial extracts from either paper-based or electronic sources the work or data of others that are published or unpublished (such as books, internal reports, and lecture notes or tapes) without clearly indicating their origin;
(b) using very close paraphrasing of sentences or whole paragraphs without due acknowledgement in the form of reference to the original work;
(c) submitting another student's work in whole or in part;
(d) using of another person's ideas, work or research data without acknowledgement;

(e) copying computer files, algorithms or computer code without clearly indicating their origin;
(f) submitting work that has been written by someone else on the student's behalf; and
(g) submitting work that has been derived, in whole or in part, from another student's work by a process of mechanical transformation (e.g., changing variable names in computer programs).