الجامعة : التكنولوجية
الكلية :
القسـم : هندسة السيطرة والنظم
المرحلة :الرابعة ـ فرع هندسة السيطرة
اسم المحاضر الثلاثي :د محمد يوسف حسن
اللقب العلمي : أستاذ مساعد
المؤهل العلمي : دكتوراه
مكان العمل :فرع هندسة السيطرة

جدول الدروس الاسبوعي

الاسم	الدكتور محمد يوسف حسن
البريد الالكتروني	dr.m.hassan@uotechnology.edu.iq
اسم المادة	السيطرة المتكيفة
مقرر الفصل	
اهداف المادة	تهدف المادة الى دراسة الأفكار الأساسية والأنواع والتطبيقات الخاصة بالسيطرة المتكيفة . وكذلك تحتوي المادة على الفوائد والمساؤى لكل طريقة والعلاقة بين المنظومات المتكيفة مع التقنيات الخبيرة مثل الشبكات العصبيبة والمنطق المضبب .
التفاصيل الاساسية للمادة	• Introduction and General Aspects. • What is Adaptive Control? • Relationship between Non Adaptive, robust and Adaptive Control. Performance objectives and design constraints for the control engineers. • Types of Adaptive Control strategies. Gain Scheduling Regulators. Self-Tuning Regulators. Model Reference Adaptive Control. • Practical aspects and Implementation • Relation to other topics.
الكتب المنهجية	
المصادر الخارجية	• Adaptive Control By: K. J. Astrom and B. Wittenmark • Self Tuning Systems, Control and Signal processing By: P. E. Wellsted and M. B. Zarrrop

الامتحان النهائي	المشروع	الامتحانات اليومية	المختبر	الفصل الدراسي	تقديرات الفصل
70%	–	10%		20	

المادة فصلية وتدرس بالفصل الدراسي الأول	معلومات اضافية

جدول الدروس الاسبوعي

الملاحظات	المادة العلمية	المادة النظرية	التاريخ	الاسبوع
		• Introduction and General Aspects. What is Adaptive Control	22.9.2014	1
		• Relationship between Non Adaptive, robust and Adaptive Control. • Performance objectives and design constraints for the control engineers.	29.9.2014	2
		Types of Adaptive Control strategies: Gain Scheduling Regulators.	6.10.2014	3
		• Self-Tuning Regulators. Model Reference Adaptive Control.	13.10.2014	4
		Gain Scheduling Regulator	20.10.2014	5
		Gain Scheduling Regulator: Examples	27.10.2014	6
		Self Tuning Regulator: • Basic idea Advantages and Disadvantages.	3.11.2014	7
		Pole assignment control.	10.11.2014	8
		General Algorithm of pole assignment	17.11.2014	9
		Examples of Pole assignment Control.	24.11.2014	10
		Model Reference Adaptive Control Basic idea, Advantages.	1.12.2014	11
		The Gradient approach: MIT rule.	8.12.2014	12
		Design of MRAC using Laypunov Method.	15.12.2014	13
		Practical aspects and Implementation	22.12.2014	14
		Relation to other topics:	29.12.2014	15

		• **Expert Systems.** • **Neuro Control.** **Fuzzy Control.**		
		Final Examination	**8.1.2015**	**16**
عطلة نصف السنة				
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توقيع العميد :   توقيع الاستاذ :

Dr. Azad Raheem

Republic of Iraq
The Ministry of Higher Education
& Scientific Research

وزارة التعليم العالي
والبحث العلمي
Ministry of Higher Education & Scientific Research

University:Technology
College:
Department:Control and Systems Eng.
Stage:Forth-Control Branch
Lecturer name:Dr. Mohammed Y. Hassan
Academic Status:Asistant Prof.
Qualification:Ph. D.
Place of work:Control Eng. Branch

Course Weekly Outline

Course Instructor	Dr. Mohammed Y. Hassan
E_mail	dr.m.hassan@uotechnology.edu.iq
Title	Adaptive Control
Course Coordinator	
Course Objective	The aim is to study the main idea, schemes and applications of adaptive control. Also, the course includes the advantages and disadvantages of each scheme and the relationship of the adaptive control with the trends of expert techniques like neural network and fuzzy logic
Course Description	• Introduction and General Aspects. • What is Adaptive Control? • Relationship between Non Adaptive, robust and Adaptive Control. Performance objectives and design constraints for the control engineers. • Types of Adaptive Control strategies. Gain Scheduling Regulators. Self-Tuning Regulators. Model Reference Adaptive Control. • Practical aspects and Implementation • Relation to other topics.
Textbook	

References	• Adaptive Control
	      By: K. J. Astrom and B. Wittenmark
	
	• Self Tuning Systems, Control and Signal processing
	      By: P. E. Wellsted and M. B. Zarrrop

Course Assessment	Term Tests	Laboratory	Quizzes	Project	Final Exam
	20%		10%	----	70%

General Notes	This is a one semester course that is taught in the first semester

Republic of Iraq
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وزارة التعليم العالي
والبحث العلمي
Ministry of Higher Education & Scientific Research

University:Technology
College:
Department:Control and Systems Eng.
Stage:Forth-Control Branch
Lecturer name:Dr. Mohammed Y. Hassan
Academic Status:Asistant Prof.
Qualification:Ph. D.
Place of work:Control Eng. Branch

Course weekly Outline

Week	Date	Topics Covered	Lab. Experiment Assignments	Notes
1	22.9.2014	• Introduction and General Aspects. • What is Adaptive Control?		
2	29.9.2014	• Relationship between Non Adaptive, robust and Adaptive Control. • Performance objectives and design constraints for the control engineers.		
3	6.10.2014	Types of Adaptive Control strategies: Gain Scheduling Regulators.		
4	13.10.2014	• Self-Tuning Regulators. • Model Reference Adaptive Control.		
5	20.10.2014	Gain Scheduling Regulator		
6	27.10.2014	Gain Scheduling Regulator: Examples		
7	3.11.2014	Self Tuning Regulator: • Basic idea • Advantages and Disadvantages.		
8	10.11.2014	• Pole assignment control.		
9	17.11.2014	General Algorithm of pole assignment		
10	24.11.2014	Examples of Pole assignment Control.		
11	1.12.2014	Model Reference Adaptive Control Basic idea, Advantages.		
12	8.12.2014	The Gradient approach: MIT rule.		
13	15.12.2014	Design of MRAC using Laypunov Method.		
14	22.12.2014	Practical aspects and		

		Implementation		
15	29.12.2014	**Relation to other topics:** • **Expert Systems.** • **Neuro Control.** **Fuzzy Control.**		
16	8.1.2015	**Final Examination**		
		Half-year Break		
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Instructor Signature: **Dean Signature:**

Dr. Azad Raheem