

Market-driven Systems, FRTN20, spring 2014

2015-03-17

Administration

Responsible for the course is professor Charlotta Johnsson (046-222 8789) at the Department of Automatic Control. Teaching assistants are Josefin Berner (046-222 97 45) and Olof Troeng (046-222 97 43). Administrator at the department is Eva Westin (046-222 87 87). The offices are on the 2nd and 5th floor of the Mechanical Engineering building.

Prerequisites

Automatic Control, Basic Course, (FRT010)

Course Material

The course material consists of a set of articles and chapters from various books. The material is collected in a binder that is distributed during the first week of the course.

Lectures

The lectures are given as follows:

Tuesdays 10.15-12.00 in M:E
Thursdays 10.15-12.00 in M:D

Exceptions: Lectures on 15/4, 13/5 and 22/2 will be held at the Seminar room at the Department of Automatic Control, 2nd floor M-building (M:2112B).

The lectures are given by Charlotta Johnsson (046-2228789), Anders Rantzer (046-2228778), Bo Bernhardsson (046-2228786), and guest lecturers.

Exercise sessions

The exercise sessions are given as follows:

Wednesdays 08.15-10.00 in M:X2a
Fridays 08.15-10.00 in M:L1

Teaching assistants are Josefin Berner (046-222 97 45) and Olof Troeng (046-222 97 43), M-building 2nd floor.

Laboratory sessions

The two laboratory sessions are mandatory and are given in connection to different parts of the course. Booking lists are posted on the web page. Before the lab sessions some home assignments have to be completed. No reports are required after the labs.

<i>Lab</i>	<i>week</i>	<i>date</i>	<i>Room</i>	<i>Responsible</i>	<i>Content</i>
1	15	7/4-10/4 (Half day)	Lab B	Josefin Berner	Batch Control
2	20-21	12/5-22/5 Half day	Lab B	Olof Troeng	Distributed Systems

Project

The project will be made in groups of appr. four students. The projects will be introduced in the exercise session on Friday April 17, 2015. The project report (approx 10-20 pages, written in English or Swedish) should be handed in on Monday May 28. The project presentations will be held on the lecture sessions on Thursday May 21 and Friday May 22. Each group should prepare to make a 10 minutes presentation.

Exam

The exam is given Monday June 1, 2015 at 14:00-19:00 in MA-MA10-D-E. A second occasion is given on Wednesday August 19, 8:00 – 13:00 in MA10-E (registration necessary). No lecture handouts, exercise materials or hand-written notes are allowed.

Weekly plan

<i>Week</i>	<i>Date</i>	<i>Lecture/Exercise</i>	<i>Content</i>	<i>Who</i>
Week 13	24/3	Lecture	--	
	25/3	Exercise	--	
	26/3	Lecture1	Intro Continuous systems	Karl-Erik Årzen
	27/3	Exercise1	Continuous systems	Josefin Berner
Week 14	31/3	Lecture2	Discrete Systems	Charlotta Johnsson
	1/4	Exercise2	Discrete Systems	Josefin Berner
	2/4	-- (Easter)	--	
	3/4	-- (Easter)	--	
Week 15	7/4	Lecture3	Batch Systems	Charlotta Johnsson
	8/4	Exercise3	Batch Systems	Josefin Berner
	9/4	Lecture4	Manufacturing Operation Systems (MOS)	Charlotta Johnsson
	10/4	Exercise4	Manufacturing Operation Systems (MOS)	Josefin Berner
	7/4 -10/4	Lab 1	LAB1: Batch Control	Josefin Berner
Week 16	14/4	Lecture5	Key performance Indicators (KPI)	Charlotta Johnsson
	15/4	Lecture6	Key Performance Indicators for Production	Guest lecture: Krister Forsman, Perstorp
	16/4	Project-info (exercise6)	Project information (start- up)	Charlotta Johnsson
	17/4	Exercise 5	Key performance Indicators (KPI)	Josefin Berner
Week 17	21/4	Lecture7	Utility Disturbance Management (UDM)	Guest lecture: Anna Lindholm, ÅF Consulting
	22/4	Exercise7	Utility Disturbance Management (UDM)	Josefin Berner / Olof Troeng
	23/4	Lecture8	Model Predictive Control	Anders Rantzer
	24/4	Exercise8	Model Predictive Control	Olof Troeng
Week 18	28/4	Lecture9	Distributed control with prices	Anders Rantzer
	29/4	Exercise9	Distributed control with prices	Olof Troeng
	30/4	-- (holliday)	--	
	1/5	-- (holliday)	--	

Week 19	5/5	-- (exams)	--	
	6/5	-- (exams)	--	
	7/5	-- (exams)	--	
	8/5	-- (exams)	--	
Week 20	12/5	Lecture10	Game theory 1	Bo Bernhardsson
	13/5	Lecture11	Game theory 2	Bo Bernhardsson
	14/5	-- (holliday)		
	15/5	-- (holliday)		
		Lab2	LAB2: Distributed systems	Olof Troeng
Week 21	19/5	Lecture12	Energy control	Kurt Jörnsten, Norwegian School of Economics
	20/5	Exercise10	Game Theory	Olof Troeng
	21/5	Project-presentations	Project presentations	Charlotta Johnsson
	22/5	Project-presentations	Project presentations (if needed)	Charlotta Johnsson
		Lab2	LAB2: Distributed systems	Olof Troeng
Week 22	25/5	-- (not used)	--	
	26/5	-- (not used)	--	
	27/5		--	
	28/5		--	
Week 23	1/6	Examination	Course examination	Course examination Time: 14:00-19.00 Place: MA:MA10-D-E