

# Market-driven Systems, FRTN20, spring 2013

2013-05-10

## Administration

Responsible for the course is associate professor Charlotta Johnsson (046-222 8782) at the Department of Automatic Control. Teaching assistants are Alfred Theorin (046-222 32 70) and Vanessa Romero-Segovia (046-222 97 43). Secretary of the department is Eva Westin (046-222 87 87). Their offices are on the 2nd and 5th floor of the Mechanical Engineering building.

## Prerequisites

Automatic Control, Basic Course, (FRT010)

## Course Material

The course material consist of a set of articles and chapters from various books. The material is collected in a binder that can be bought at the Department of Automatic Control. The binder will also be sold at the lectures and exercise sessions during the first week of the course (price 100 SEK).

## Lectures

The lectures are given as follows:

Tuesdays 08.15-10.00

Thursdays 10.15-12.00

The lectures on Tuesdays are given in lecturehall M:D.

The lectures on Thursdays are given in lecturehall M:D.

The lectures are given by Charlotta Johnsson (046-2228782), 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

Fridays 08.15-10.00

The exercise sessions on Wednesdays are given in exerciseroom M:X2a, except from first week (March 20) when it is given in M:L2.

The exercise sessions on Fridays are given in exerciseroom M:X2a.

The teaching assistants are Alfred Theorin (046-222 32 70) and Vanessa Romero-Segovia (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	16	15/4-19/4 halfday	LabB	Vanessa R-Segovia	Batch Control
2	20	13/5-17/5 halfday	LabB	Marzia Cescon	Distributed Systems

## Project

The project will be made in groups of 2-5 students. The projects will be introduced in the exercise session on Friday May 12, 2013. The project report (approx 10 pages, written in English or Swedish) should be handed in on Monday May 20. The project presentations will be help on the lecture sessions on Tuesday May 21 and Thursday May 23. Each group should prepare a 10 minutes presentation.

## Exam

The exam is given Friday May 31st, 2013 at 08:00-13:00 in Sparta:A. A second occasion is given in August 2013. 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 12	19/3	L1	Intro Continuous systems	Charlotta Johnsson
	20/3	E1	Continuous systems	Alfred/Vanessa
	21/3	L2	Discrete Systems	Charlotta Johnsson
	22/3	E2	Discrete Systems	Alfred/Vanessa
Easter-holiday (weeks 13, 14)				
Week 15	9/4	L3	Batch Systems	Charlotta Johnsson
	10/4	E3	Batch Systems	Alfred/Vanessa
	11/4	L4	Manufacturing Operation Systems (MOS) Key Performance Indicators (KPI)	Charlotta Johnsson
	12/4	E4	MOS and KPI	Alfred/Vanessa
		Extra	Project information (start-up)	Charlotta Johnsson
Week 16	16/4	L5	--	
	17/4	E5	--	
	18/4	L6	Guest Lecture	Krister Forsman, Perstorp
	19/4	E6	--	
	15/4-19/4	Lab 1	LAB1: Batch Control	Alfred/Vanessa
Week 17	23/4	L7	Model Predictive Control	Anders Rantzer
	24/4	E7	Model Predictive Control	Alfred/Vanessa
	25/4	L8	Distributed control with prices	Anders Rantzer
	26/4	E8	Distributed control with prices	Alfred/Vanessa
Week 18	30/4	L9	--	
	1/5	E9	--	
	2/5	L10	Utility Disturbance	Charlotta Johnsson

			Management (UDM)	
	3/5	E10	UDM	Alfred/Vanessa
Week 19	7/5	L11	Game theory 1	Bo Bernhardsson
	8/5	L12	Game theory 2	Bo Bernhardsson
Week 20	14/5	L13	Guest Lecture	Magnus Perninge
	15/5	E11+12+13	Game theory	Alfred/Vanessa
	16/5	L14	--	
	17/5	E14	--	
		Lab2	LAB2: Distributed systems	Distributed systems
Week 21	20/5		Hand in of project reports (email)	
	21/5		Project presentations	Charlotta Johnsson
	22/5		--	
	23/5		Project presentations	Charlotta Johnsson
	24/5		--	
Week 22	31/5	tenta	Tentamen kl 8:00-13.00 Sparta:A	