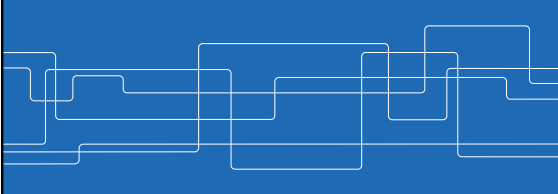





## Systems, Control and Robotics Program information meeting

2017-08-23  
Petter Ögren



## Welcome meeting 23 August 2017

- **Reminder of Important dates**
- Who is who
- Program overview
- Courses
  - Academic year with periods
  - Curriculum and requirements
  - Course selection
- Thesis Project work
- Mixed Information
  - Plagiarism, Grading ...
- SCR selfie-challenge 2017


## Reminder of Important Dates

- **After this meeting**
  - **Register** (including access card, IT account)
  - (even if you are an "old" KTH student)
- **No later than August 29**
  - **hand in**, to Cristina,
  - Study plan (selected courses)
  - Contact info In Case of Emergency
  - (course selection for P1 and registration by 31<sup>st</sup>)

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## Master Program Director: Petter Ögren



- Centre for Autonomous Systems
- Department of Robotics Perception and Learning (RPL)
- School of Computer Science and Communication
- petter@kth.se
- Teknikringen 14, floor 7
- Email to make appointment







## Co-Program director

- Elling Jacobsen
- Professor in Automatic Control
- <https://www.kth.se/profile/jacobsen/>
- [jacobsen@kth.se](mailto:jacobsen@kth.se)
- Osquidas väg 10, floor 6
- Email for appointment

 **Master Coordinator for SCR**

- Cristina La Verde
- OSQULDAS VÄG 10
- [clv@kth.se](mailto:clv@kth.se)
- Ask all questions to Cristina!




 **Who are you?**

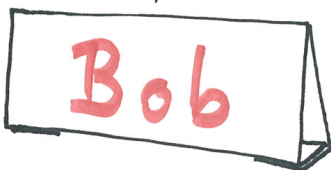
Quick round of presentations


- Your name
- Where you come from (Country / University)
- Your education (Elect. Eng, Comp. Sci, Physics, Math, ...)




 **Make a Nametag...**

Ya y!



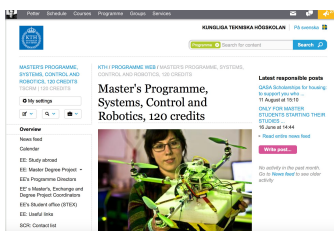
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 **Program web page**

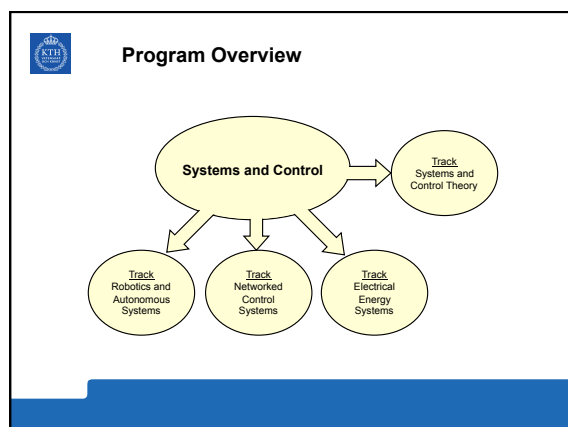
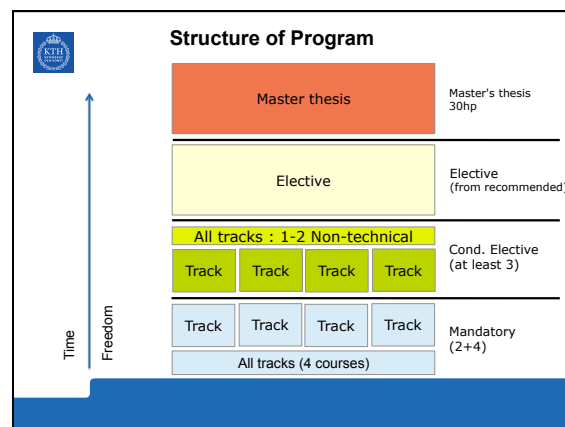
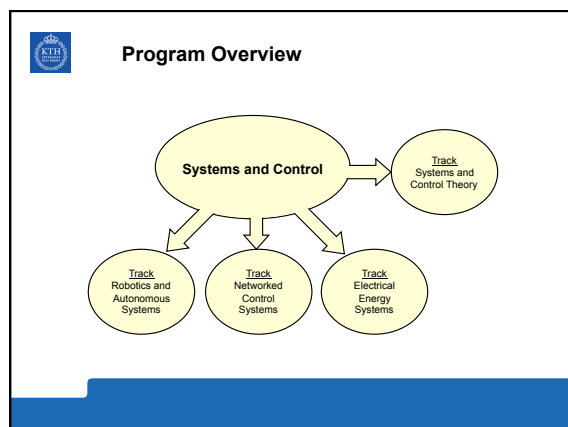
Go to [kth.se](http://kth.se)  
 Log in (top right corner)  
 Click on Programme  
 You will see (or will see when you are registered)

[Master's Programme, Systems, Control and Robotics, 120 credits \(TSCRM, 120 cr\)](#)



 **History of the program**

- 1996 Centre for Autonomous Systems started
  - Internationally recognized research centre
  - Difficult to find students with the right background
- 2007 Systems Control and Robotics Master Program launched
- 2011 Merge with Systems Theory Program
- Now 4 Tracks
  - Robotics and autonomous systems
  - Systems and Control Theory
  - Network control systems
  - Electrical energy systems




**Example: Robotics and Autonomous Systems**

Course ID	Name	When	Credits	Type
EL2220	The Sustainable Systems and Control Engineer	Y1-Y2	3	Mandatory
EL2820	Modelling of Dynamical Systems	Y1, P1	7,5	Mandatory
DD2431	Machine Learning	Y1, P1	6	Conditionally Elective
DD2423	Image Analysis and Computer Vision	Y1, P2	7,5	Track Mandatory
EL2320	Applied Estimation	Y1, P2	7,5	Track Mandatory
XXVYYY	Non-Technical Course	Y1, P3	6	Mandatory
EL2450	Hybrid and Embedded Control Sys.	Y1, P3	7,5	Recommended
DD2424	Deep Learning in Data Science	Y1, P4	7,5	Recommended
EL2520	Control Theory and Practice, adv.	Y1, P4	7,5	Mandatory
<b>Year 2</b>				
AK2036	Theory and Methodology of Science	Y2, P1	7,5	Mandatory
DD2380	Artificial Intelligence	Y2, P1	6	Conditionally Elective
DD2425	Robotics and Autonomous Systems	Y2, P1-P2	9	Conditionally Elective (and Project Course)
DD2434	Machine Learning, Adv. Course	Y2, P2	7,5	Conditionally Elective
XXVYYY	Master Thesis	Y2, P3-P4	30	Mandatory
	Sum		120	

**More details on courses on website**

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 **Academic year with periods**

**Year divided into 2 semesters**  
Autumn semester ("HT")  
Spring semester ("VT")

**Each semester has 2 periods/quarters**  
Periods 1 + 2 = Autumn semester  
Periods 3 + 4 = Spring semester

**Each period about 8-9 weeks**  
7-8 for studies + 1 week for exams


**Most courses only run one period**  
Lots of new material in short time. Need to be **alert** all the time!

 **Today**

**First Exams**

Week	Mo	Tu	We	Th	Fr	Sa	Su
Aug 33							
34							
Sep 35	1	1	1	1	1	S	
36	1	1	1	1	1	S	
37	1	1	1	1	1	S	
38	1	1	1	1	1	S	
39	1	1	1	1	1	S	
40	1	1	1	1	1	S	
41	1	1	1	1	1	S	
42	O	O	O	O	E	S	
43	E	E	E	E	E	S	
Nov 44	2	2	2	2	2	H	
45	2	2	2	2	2	S	
46	2	2	2	2	2	S	
47	2	2	2	2	2	S	
48	2	2	2	2	2	S	
49	2	2	2	2	2	S	
50	2	2	2	2	2	S	
51	O	O	O	O	O	S	
Jan 52	H	H	O	O	O	S	
1	H	O	O	O	O	H	
2	E	E	E	E	E	E	


Week	Mo	Tu	We	Th	Fr	Sa	Su
3	E	3	3	3	3	S	21 jan
4	3	3	3	3	3	S	28 jan
5	3	3	3	3	3	S	04 feb
6	3	3	3	3	3	S	11 feb
7	3	3	3	3	3	S	18 feb
8	3	3	3	3	3	S	25 feb
9	3	3	3	3	3	S	04 mar
10	3	O	O	O	O	E	11 mar
11	E	E	E	E	E	E	18 mar
12	4	4	4	4	4	S	25 mar
13	4	4	4	4	4	S	01 apr
14	H	O	O	O	O	S	08 apr
15	4	4	4	4	4	S	15 apr
16	4	4	4	4	4	S	22 apr
17	4	4	4	4	4	S	29 apr
18	O	H	4	4	4	S	06 may
19	4	4	4	4	H	O	13 may
20	4	4	4	4	4	S	20 may
21	O	O	O	O	O	S	27 may
22	E	E	E	E	E	E	03 june
23	E	O	H	O	O	O	10 june

 **Requirements for Degree**

**Your Responsibility**

The students must have completed

- all of the **mandatory courses** depending on track
- a sufficient **number of conditionally elective** technical courses depending on the chosen track
- one or two elective **non-technical** courses
- one **project course** in the subject area
- other **recommended** courses for a total of 90 higher education credits
- degree project** of 30 higher education credits.


 **Course selection**

- Step 1
  - Choose track
  - (Track = predefined "package")
- Step 2
  - Select courses for that track

**Only in your head**

**Hand in form to Christina**


- Can I Change Track?
  - Yes
- Important: After 2 years, **your courses must** satisfy requirements of at least 1 track

 **Course selection**

Remember that some courses have **limited number of places** and then registering is especially important.

Note that some courses only run **every second year** (accelerated graduate program)

Fill out the form you were given by Cristina  
(hand in to Cristina as soon as possible (Aug 29 latest date to hand in))

 **Understanding the course code**

The courses have codes like EL2520 or DD2380

The first character tells what school, second what department/group

- E = Electrical engineering (EL = control)
- D = Computer science and communication (DD = computer science)

The first digit tells what level it is

- 1 - basic ("bachelor")
- 2 - advanced ("master")**
- 3 - doctoral ("phd")





### Note on AK2036 (Theory of science...)

You can take it either the first or the second **year**. Pick the one that fits you best.

Also possible to take in any other period but some elements will be more adapted to other programs then.



### What Courses do I Choose?

- Fun
- Needed in Track
- makes Combined Schedule reasonable
- Is a prerequisite for future course



### Practical approach to courses

1. Check out 4 example choices of the tracks  
(<https://www.kth.se/social/program/tscrm/page/scr-curriculum/>)
2. Pick one track
3. Look though all conditionally elective and recommended courses
4. Try to swap IN the ones you like and REMOVE ones you do not like



### Stick to the curriculum

If you go outside please ask me first

Prio1: Make sure that you finish the mandatory courses.

KTH restrictive on taking extra courses



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### Have you finished writing your nametag?



## Master thesis

Typically started in the 3<sup>rd</sup> quarter of the second year

Need 60 credits in completed courses at least **to start**

This is where you **put everything you learned to use**

**Where?** in industry, at a KTH department or at other technical university or research institute

Your responsibility **to find one**

Need a **supervisor and examiner at KTH** and a local supervisor if you are outside KTH.



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## Reading/writing and Plagiarism

- Technical reading and writing skills very important
- **Word by word copying is a big NO-NO**
- **Use your own words or use quotes and references.**
- **Do not share your solutions with others**
- It might not be explicitly stated but these rules are assumed
- If you are caught you will be reported and **can get suspended**



## Code of honor

- When studying at this level you will be given a lot of freedom.
- With freedom comes responsibility
- Think about this when working on homework assignments, projects, etc
- Example of rules and code of honor
- <https://www.kth.se/en/csc/it-support-csc/rules/regler-och-hederskodex-1.35639>



## Grading



Grades A (excellent) – E (lowest passing grade)  
Grade Fx means you can get to E by some extra task(s)  
Goal oriented and absolute grading system at KTH (and not relative grades)

– All can fail, **All can get an A**

It is **not ECTS** but looks similar

Passing is often around 50% of the max score  
The full grading scale is used  
Failing an exam is not a total failure;  
re-exams are allowed



## Going abroad



If you go abroad you can swap courses at KTH for courses in the other university. This way you do not have to "lose time" toward the degree.

It is mandatory to talk to the director/coordinator **before** going abroad to work out a curriculum.

All courses in the curriculum can be exchanged for courses in other universities but the requirements for the match are higher for compulsory courses.



## Rules and values at KTH (my interpretation)

- Creativity and critical thinking a good quality
- Active participation instead of always silently listening
- Being able to work in groups
- Social skills and being able to presenting your ideas to others
- **Show us what you have learned using your own words**
- **Process often more important than product**
- **Quality and not quantity**
- Hard work itself is not a guarantee for a passing or getting a good grade



## Teacher student relation

- Ask for help if you need it.
- Teacher unlikely to see that you need help and will not want to intrude
- Can ask the teacher questions, he/she is not a untouchable demi-god
- Organize study groups etc on your own
- A teacher is often very busy and the lecture, seminar, exercise, etc is the time to ask the questions. Otherwise make appointment
- A teacher is not your father or mother, mostly a "business" relation



## Why do they keep referring to me as an "undergraduate student"???

At KTH

- Undergraduate = Bachelor + Master
- Graduate = PhD



## Did I tell you all you need to know?

NO!

If you want good answers to your questions ask the right person

- Other students: How are things done in practice (Meet them at the kick-off event!)
- Teachers: specifics about a course
- Cristina: Admin, course selection, etc
- Petter: Curriculum, program wide Q's
- Track responsables: Track stuff
- ...
- (contract info on Program website)



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## BSc Program Welcoming at KTH




 **The SCR Selfie-Challenge 2017**




Picture of you guys eating something together

 **The challenge**


- Find your teammates
- Visit 5 out of the 6 locations/objects (your choice)
- Take a selfie including whole team and object
  - Object needs to be at least as many pixels as the head of the person taking the picture (dot at horizon is not ok)
  - Selfie must be ok to display on public KTH website
  - By uploading you give us permission to use on KTH websites
- Upload to SCR or email ([better@kth.se](mailto:better@kth.se))
- Note **time** when you completed your challenge
- Every team completing the challenge gets **a prize!**


 **Challenge Objectives**

- Objectives (short term)
  - Get to know each other
  - See Stockholm
  - Have fun
  - Get the prizes
- Objectives (long term)
  - Time at KTH more fun
  - Contacts for future careers

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 **Questions?**