



DD143X/dkand11

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Degree Project in Computer Science  
First Level

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Examensarbete inom datalogi  
Grundnivå

Mads Dam

Professor, Teleinformatics

The theory group, CSC/Nada

# Basics

Two parts:

- MVK project – 9 hp, PRO1
- "Bachelor's essay", kandidatuppsats – 6 hp, UPP1



Todays subject !

# Practicalities

Registration:

- Use rapp
- Important to activate your registration in rapp

Mailing list:

- [Dkand-11@{kth.se,nada.kth.se,csc.kth.se}](mailto:Dkand-11@{kth.se,nada.kth.se,csc.kth.se})
- Needed? How to use?

Course committee?

# Objectives

To demonstrate that you possess the skills required of a professional engineer in the computer industry

# Things Like:

- Apply your acquired knowledge and skills
- Show your analytic + problem solving abilities
- Reflect on, and evaluate, own and others solutions
- Relate your work to the state of the art
- Acquire new knowledge as and when needed
- Document and present your results professionally
- Put your work in societal/economic/ethical context, where applicable

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**General + individual  
engineering skills**

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Tested in the essay project

# As Well As:

- Apply standard methods of practice in industry, administration and academic environments regarding planning, conducting, reporting and evaluating independent design and investigation projects
- Independently collect and systematize requirements and expectations on the project deliverables, and assess the reasonableness of these in light of available time and resources



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Engineering project skills

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Tested in the MVK project

# The Essay Project

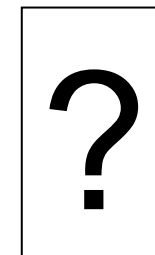
- Individual or in pairs
- Pairwise projects are recommended
- Supervisor groups of 10-12 students
- Shares some activities
  - Halfway meetings
  - A few checkpoint meetings
  - Group supervisor organizes this
- Exjobbskonferens April 27 2011 !

# Schedule

- Today: Kickoff
- Friday: Mail to [mfd@kth.se](mailto:mfd@kth.se) on group/subject preference
- Monday 24: Group assignments
- Feb 3, 24:00: Project specification deadline
- Weeks 7, week 13: Lectures on report writing and presentation techniques, Richard Nordberg, TMH
- Week 10: Halfway meetings, Richard Nordberg, TMH
- April 14, 24:00 – Essay hand in, graded version
- April 26 – Written review deadline
- April 27 – Exjobsconference
- Early May: Hand in of final version

# Supervisors

- Mads Dam, CS, theory, security, programming languages, distributed systems
- Lars Kjeldahl, CS, HCI, graphics
- Johan Boye, CS, language technology
- Henrik Eriksson, CS, algorithms, combinatorics
- Mikael Goldmann, CS, theory, security
- Alexander Baltatzis, CS, programming



# Supervisors

- First port of call
- Feedback on subject, work, and writing
- Meeting frequency is up to supervisor and student
- Min 2-3 meetings, more if needed
- Important: Project specification must be accepted by the supervisor

# Supervisor Groups

- Projects collected in 9 supervisor groups
- 10-12 students per supervisor group
- All supervisor are able to supervise all subjects
- Supervisor organizes the groups

Note: Everybody cannot get their first choice

However:

- We do the best we can
- We are happy to see some thematic coherence

# What Is a Good Project?

- Demonstrate that you meet the goals
- So study them !
- Some important points:
  - Analytic skills: Problem statement, analysis, evaluation, criteria, criticism
  - Problem solving skills
  - Motivation and tech/societal/environmental/... context
  - Identify and review suitable background literature, state of the art
  - Planning and execution
  - Quality of report and oral presentation



# Finding a Good Subject

Look at the [project catalogue](#) on the web

Several essay groups can choose same subject

- Within reasonable limits ...

Own suggestions are very welcome

- Start thinking yesterday
- Wide scope of possibilities

Choice of subject must be approved by supervisor

# What Is a Good Subject?

Subjects that allow you to demonstrate that you meet the goals as well as possible

- High quality background material
  - Scientific papers
  - Open source project
  - Textbook
  - High quality systems, applications, tools
- Some own contribution
  - Examination
  - Evaluation/test
  - Case study
  - Interviews
  - Prototype
  - Animation
  - Project plan
  - Systems description

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**Both elements are important!**

# What Is NOT a Good Subject?

Do not be overambitious

- Time is limited
- Better to do a good job on a limited project
- Than a bad job on a overambitious project

Beware of DIY

No references of good engineering/scientific quality?



# Example Essay Structure

## Introduction

- What is the general subject and why is it interesting?

## Problem statement

- Important – aim for precision and conciseness

## Background

- What has been done?

## Approach

- What?

## Results

- Elaborate, maybe several sections

## Conclusions

# Example Project Specification

## Introduction

- What is the general subject and why is it interesting?
- Brief – couple of paragraphs will do

## Problem statement

- As precise as possible at this point

## Approach

- What you will do to solve the problem

## References

- Important relevant references that you have identified so far

## Time plan

1-2 pages, due on Feb 3, midnight!



# Requirements

- Approved projectspecification
- Essay
  - Can be written in Swedish or English
- Oral presentation
  - At the exjobb conference
  - Can be done in Swedish or English
- Written review of another essay
- Opposition at exjobb conference
- Pass mark always required

# Grading

Total dkand11 = min(essay,MVK)

Essay project A-F

MVK A-F

Essay project:

		Weight
• Approved project specification	U/G	-
• Essay		
– Scientific and engineering content	A-F	3
– Report	A-F	1
• Oral presentation	A-F	1
• Written review	A-F	1
• Oral opposition	U/G	-



# Scientific + Engineering Content

- Tydligt avgränsat och relevant problem
- Välmotiverat val av metod
- Väl utfört experiment eller undersökning
- Teknisk korrekthet
- Originalitet och självständighet
- God kännedom om teoretisk bakgrund och tidigare gjort arbete

# Report

- Syfte och frågeställning är lätt att identifiera och understöds av innehållet
- Presentationsstilen är väl anpassad till de avsedda läsarna
- De viktigaste idéerna och resultaten betonas
- Åsikter och egna kommentarer är väl underbyggda
- Data är presenterade och förklarade på ett tydligt sätt
- Tabeller och/eller grafer åskådliggör de viktigaste resultaten
- Slutsatserna är rimliga
- Arbetet är satt i ett sammanhang
- Språket i rapporten är klart och strukturerat
- Stavning, grammatik och formatering är på en god nivå

# Written Review

- The report is summarized fairly
- Points brought forward are relevant and constructive
- Main points are addressed
- Advice for improvements is given
- The relevant evaluation criteria are covered

# Presentation

- Presenterar sig? Startar utan att segdra
- Problembeskrivning och bakgrund (lättbegripligt? lagom långt? intresseväckande?)
- Angreppssätt och metodik (lagom detaljerat? korrekt?)
- Användning av projektorn (text, bilder)
- Redovisning av resultat
- Slutsatser, egna tankar, slutknorr?
- Fördelar stoffet mellan sig vettigt (om två personer)?
- Väl förberedda?
- Engagerade, lyckas göra presentationen intressant? Kontakt?
- Håller tiden?
- Svarar bra på frågor

# Sample Reports

- Some [sample reports](#)
- <http://www.csc.kth.se/utbildning/kandidatexjobb/datateknik/2010/index.php>
- Note: The list is far from complete at this point (Jan 2011)

Questions?