



ROYAL INSTITUTE
OF TECHNOLOGY

Industrial information and control systems

Projektstyrning/Management of projects EH2010/EH2720 (7.5 ECTS)

Course plan for the academic year 07/08

Examiner

Professor Torsten Cegrell

Course leaders

Course leaders are Pia Gustafsson, Joakim Lilliesköld, Ulrik Franke, David Höök and Johan König. Don't hesitate to come to us with your questions! The simplest and most effective way to get in touch with us is by sending an email to our common e-mail address pstyr@ics.kth.se. You're also welcome to give us a call. Our tel. nos. are 790 68 38 (Pia) and 790 68 69 (Joakim).

The objectives and goals of the courses

The development and delivery of complex industrial systems require effective routines and methods of project management. Project management includes planning, implementation, management, tracking and documentation during the various phases of a project. Project management skills are becoming increasingly important. As the complexity of industrial systems ordered and developed increases, increasing demands are placed also on project work.

At the end of the course participants should understand what a project manager does and how work is done in an industrial project by:

- Practicing oral and written communication
- Planning and implementing a risk analysis
- Performing an analysis of an industrial project
- Describing and implementing the various phases of a project, i.e. planning, tracking and completion of a project.
- Being able to give examples of how activities, such as planning, project meetings, documentation and oral presentations, are done
- Being able to use methods and tools for planning and tracking a project with regard to time, costs and resources
- Being able to make use of a project model to create required project documentation

Entrance qualifications

Prerequisites for 4th year studies.

Course plan Projektstyrning EH2010
2008-09-04
Version 1.1

Course examination

The grading of this course is probably different from what you are used to. In principle you grade yourself based upon how many of the assignments you choose to do. The course consists of several different assignments each of which can give you a certain number of points (not to be confused with university credits). The total number of course points you obtain determines your grade (see the grading system below). It is also required that you have a least one point for every mandatory course assignment. Furthermore, you can receive additional points by doing optional assignments or if your reports are well done.

The course also requires that you attend lectures, i.e. complete attendance of at least 12 of 16 lectures is required. Complete attendance means that you will have to be on time and stay for both lecture hours. If you know that you will be unable to fulfill the attendance requirement then it is possible, under special circumstances and after a special agreement with the course leaders, to pass the course by doing a literature study. It takes much more time to do a literature study than to participate in the lectures.

Grading system for EH2010/EH2720		11 p = grade A 10 p = grade B 9 p = grade C		8 p = grade D 6 p = grade E		
Bonus (0,5 p)	Final report					
	Project plan	Project description	Project plan	Risk analysis	Project handbook	
Optional task (1 p)		Oral presentation	Final report		Extended project handbook	
Mandatory Task (1 p)	Project plan Final report	Project description	Project plan	Risk analysis	Project handbook	Approved attendance
	A1	A2	A3	A4	A5	Attendance

Course assignments

The course consists of a number of mandatory and optional assignments. In order to pass the course it is required that you do all of the mandatory assignments, but your final grade depends upon which assignment tasks you choose to do and if the tasks qualify for bonus points. See the figure, and section on the grading system below.

If the assignment does not meet the requirements, a new version must be handed in for renewed grading.

Grading system

The grading system consists of mandatory and optional tasks which both can give points. In addition, it is possible to receive 'bonus points' if the mandatory tasks are well performed.

To obtain bonus points the assignment must be judged to be **well done** when it is submitted for **the first time**. This means that the text should be detailed and complete; all headings and content specified in the assignment instructions must be included. The text should be carefully proofread and neatly formatted. In addition, the readers (i.e. course leaders) must feel comfortable that the reports are based on a thorough work and has been thought through.

Note that bonus points for a very well done assignment can be given even if the assignment needs to be supplemented – but an assignment that was not evaluated to be worth a bonus the

first time it is handed in can not be supplemented to get the bonus. Receiving a bonus equals 0.5 extra points for each assignment, as illustrated in the figure.

Assume, for example, that you choose to do only the mandatory part of Assignment 2 and submit your report prior to the deadline indicated in the course description:

If the course leaders judge that changes are required in order to fulfill the minimum requirements then you receive a total of 1 course point when these corrections have been made.

If the report fulfills the minimum requirements specified in the assignment instructions and it does not need to be supplemented but doesn't show that you've worked through the assignment thoroughly, then you receive 1 point for the mandatory task, but you will not receive a bonus.

If the content of the report is comprehensive and of very good quality, then you will receive 1 point directly for the mandatory assignment, and 0.5 point for an assignment that is very well done. If some small part of the report is missing despite all, then you still have to submit supplementary information.

You will receive an additional point if you have given an oral presentation which is approved by the course leaders. Thus assignment 2 can give you 1, 1.5, 2, or 2.5 points.

When the course is over your points from the various assignments are added up. If you have 11 points or more then you will receive an A, 10 points gives you a B, 9 points a C, and 8 points a D. For an E, 6 points are required. Given 5.5 points or less, all mandatory assignments have not been completed and must be supplemented to receive an E.

Administration

Apart from what is described above, there are several administrative details associated with each assignment and with which you must be familiar.

General

- Department rooms are located at Osquldas väg 12, floor 7. Should you wish to visit us, take the elevator (alongside the study area in building Q) to the 7th floor and press the doorbell beside the elevator.
- A great deal of our course administration is handled by the Bilda platform which can be reached via www.bilda.kth.se where you log in with your kth.se account. Information about Bilda will be presented at the first lecture. Bilda is used, for example, to:
 - Communicate with course leaders and others who are taking the course
 - Read and access assignment instructions and other material you need to do the assignments
 - Submit assignments
 - Obtain corrected assignments and comments, and lists of results
- Important information about the course will be provided at the lectures.
- Attendance will be registered on one or more lists that are passed around during the lectures. Approved attendance of a minimum of 12 lectures yields 0.8 ECTS credits, which means that the attendance requirement is a grading factor. Cheating with the attendance list is thus equivalent to cheating on an exam and you are required to inform course leaders if you have to leave a lecture. Show ***respect to our guest lecturers by being on time to the lectures!***

Assignments

Course management corrects hundreds of assignments each week. In order to fulfill the ambition of giving you quick and relevant feedback on your work, the following is applicable:

- Assignments are done in groups of two.* Reporting of groups is done on lists that are available during the first lectures. This must be done before Assignment 1 is submitted! Note that the members of a group must have the same level of ambition, since they will both receive the same grade.
- The assignments are submitted in the pdf format via the Bilda system. Pdf files can be created with Adobe Acrobat software, which is unfortunately not free-of-charge. There are, however, several services on the Internet which can be used free-of-charge to convert, for example, a word file to a pdf file.
<http://www.cutepdf.com/Products/CutePDF/writer.asp> (recommended software)
http://www.pdfonline.com/convert_pdf.asp (sends pdf file to mail address)
<http://site4.pdf995.com/download.html> (downloadable software)
- Build a single pdf for each assignment. *Do not hand in any appendices separately!* The Adobe Professional has a built in feature for bulding pdfs from multiple sources. You may also paste excel appendices into the main word document before conversion to pdf. Finally, http://www.pdfill.com/pdf_tools_free.html is a free software for merging pdf:s
- You must name your assignment so that it complies to the following criteria: *GXX_2008_assignment_Y.pdf*, where “XX” is your group number (two digits, 01, 02, 03, etc), “Y” is a number between 1 and 3 indicating whether it is the first, second or third submission of the assignment, and “assignment” is one of the following: *projectplan/ statusreport/ finalreport/ projectdescription/ riskanalysis/ projecthandbook*
Example: G06_2008_projectplan_2.pdf is group 6’s project plan, which after correction had to be submitted a second time.
- If you encounter technical difficulties, you can also submit your assignment in the red letter box outside the door of the department for Industrial Information and Management Systems at Osquldas väg 12, floor 7, or in conjunction with a lecture.
- A prerequisite for obtaining a higher grade than an E for the course is that all assignments and supplements are submitted on time! Assignments that still, after the first supplement, do not fulfill requirements to pass will only be corrected in order to obtain mandatory points. Thus your possibility to obtain points for optional tasks and bonus points is lost.
- Assignments that are submitted after the deadline will be corrected after the rest period in January 2009.
- Any complaints about the corrections are to be submitted in writing to the course leaders.
- Assignments that are submitted in the pdf format are commented electronically and can be retrieved from Bilda during the periods indicated in the course instruction. Reports that are dropped in the red box are corrected by hand.
- Any reports suggesting mass duplication will be unconditionally failed, and no opportunity to complete the course will be offered.

* Certain part of the report on Assignment 4, however, are done in larger groups where 3 groups of 2 cooperate.

Course literature

Course literature consists of "Handbook för mindre projekt" by Mikael Eriksson and Joakim Lilliesköld (Liber). It is sold at the Kårbokhandeln (student bookstore). Last year the price was 110 kronor for the book. Assignment instructions and other material needed for the course are available via Bilda.

There are many interesting books about project management. Books (in Swedish) worth mentioning include: "Handbok i projektekonomi" by Agneta Östlund (Liber) which can be purchased on the Internet for about 240 kronor, and the book "Projekt och Helhet – Att leda projekt i praktiken" by Mikael Klasson *et al* and which is sold at Osquldas väg 12, floor 7, for 200 kronor. Neither of the aforementioned books is, however, mandatory course reading. Supplementary material is handed out at lectures.

Lecture schedule

Week	Nr	Time and place				Swedish course EH2010 Lectures	English course EH2720 Lectures
36	L1E	Mon	01-sep	8-10	D3		Intro to project management (JL)
	L1S	Tues	02-sep	17-19	E1	Intro to project management (PG)	
	L2E	Wed	03-sep	15-17	F1	Project planning in theory (JL)	
	L2S	Thur	04-sep	17-19	E1		Project planning in theory (JL)
	L3E	Fri	05-sep	10-12	D2		Project planning in practice (JL)
	L3S	Fri	05-sep	13-15	E1	Project planning in practice (LS)	
37	L4E	Wed	10-sep	10-12	E3		Procurement of complex systems (TC)
	L4S	Wed	10-sep	13-15	Q1	Procurement of complex systems (TC)	
	L5SE	Thur	11-sep	13-15	Q1	Project budget (AÖ)	
	L6E	Fri	12-sep	10-12	E3		Risk management (JL)
	L6S	Fri	12-sep	13-15	F2	Risk management (JL+PG)	
	38	L7SE	Mon	15-sep	13-15	E1	PROPS (MB)
L8SE		Fri	19-sep	13-15	E1	Working with complex industrial projects (BN/SR)	
39		L9E	Wed	24-sep	10-12	E3	
	L9S	Wed	24-sep	10-12	Q1	Group dynamics (LSc)	
	L10S	Thur	25-sep	10-12	Q1	Leadership (JA)	
40	L11S	Tues	30-sep	13-15	E1	Quality (MK)	
	L10E						
	L12S, L11E	Wed	01-okt	13-15	F2	Project Communication (OH)	
	L12E	Fri	03-okt	13-15	F2	Leadership (UF)	
41	L13SE	Mon	06-okt	8-10	D2	Scrum in projects (RF)	
	L14S	Tues	07-okt	10-12	D1	Leading IT-project – do's and don't's... (ME)	
	L15S	Thur	09-okt	10-12	E1	Software projects (KJ)	
	L14E		09-okt	13-15	D3	Project management... from the inside (TA)	
	L15E	Fri	10-okt	10-12	D2	Totally integrated automation on a regional level (LJ)	
	42	L16E	tis	14-okt	13-15	H1	Summary and future (JL, XX)
L16S		ons	15-okt	13-15	F2	Summary and future (PG, XX)	
		tor	16-okt	10-12	D1	Back-up lecture	
Frl16		fre	17-okt	10-12	D1	Back-up lecture	

Lecture topics

Intro to project management (Swedish & English)	We introduce the course and go through basic concepts. What is a project, what differs a project from other work, etc.
Project planning in theory (Swedish & English)	We introduce how to plan a project using Work Breakdown Structure(WBS). GANTT-diagrams are discussed together with some thumb rules for project planning and resource allocation. Assignment 1 will be presented.
Project planning in practice (Swedish & English)	Prevas is an IT company that often delivers their projects for a fixed price rather than on a running account.. Lars talks about Prevas' way of working which is characterized by good order and accountability and careful planning. A project model that Prevas uses is also presented, which can be useful for Assignment 3.
Procurement of complex systems (Swedish & English)	A procurement project begins by specifying the requirements for the system that is needed from the perspective of the Orderer. Then the procurement begins - a process that includes offers and several stages of evaluation. Procurement can be decisive to the success or failure of a project. Torsten discusses procurement projects based upon his many years of experience with international procurement of complex systems.
Project budget (English)	Many projects fail because no one keeps an eye on where all the money goes. Agneta presents the Earned Value method, which is used a lot in the defence industry. Earned Value can be used to make it easier to find out if a time plan and cost analysis will hold up throughout a project - which is something you can test in Assignment 1!
Risk management (Swedish & English)	We deal with various methods of risk analysis and how the risk events that can arise in a project. We also talk about the project organization, participants, and communication.
PROPS (English)	The PROPS project model was originally developed by Ericsson but is used today by many different companies. When used properly PROPS can be a major help in running complex projects with several parallel increments (an increment is a testable part of a system with limited functionality).
Working with complex industrial projects (English)	Bo Normark is Sales Manager at ABB Power Systems/Grid Systems and Stefan Rinaldo has earlier worked as Project Manager at ABB's HVDC Division. They talk about their experiences with complex electrical energy projects.
Leadership (Swedish & English)	The lecture focuses on leadership and group dynamics. These are intangibles that can be decisive to the success or failure of a project. The FIRO model of group dynamics is presented here, along with an introduction to and presentation of various styles of leadership.
Group dynamics (Swedish & English)	The lecture deals with project roles and organization. Further, important tools for communicating such as Johari windows, the Feedback staircase and the difference between 'what' and 'how' in work processes will be discussed. Lena Schagerström works today as a consultant with a focus on leadership, group cooperation and the effectiveness of processes. Lena has been working as a manager in industry, most recently as an operational development manager at Volvo Construction Equipment where she has worked with issues such as group development and leadership.
Quality in projects (English)	Michel was an electronic engineering student who works now at Ericsson. As a project manager it is extremely important to be able to deliver a product with the exact level of quality the customer requests and pays for. This lecture sheds some light on the concept of quality in a project and the cost deficient quality, as well as measuring and improving quality.
Project communication (English)	JAS is one of Sweden's largest ever industrial projects. It has been running for 30 years, and subprojects with duration of less than 3 years are considered short...Oscar Hull is a project manager for JAS at FMV who talks about how to get various stakeholders in large projects to communicate with one another.
Scrum in projects (English)	Scrum is one of the mostly discussed work methods used in projects. It is not a project management method, but contain a lots of useful hints how to work more effectively in projects.
Leading IT projects – do's and don'ts (Swedish)	Micael Erneborg is a very driven project leader with experience from the IT' business. He tells in a pragmatic way about his work and gives several tips on how to succeed as a project manager and not burn out totally...
Soft ware project (Swedish)	Karin Jansson works at Microsoft and describes the pitfalls that a project manager can stumble into. She tells about how to avoid these, or get up again.
Project management... from the inside (English)	This lecture deals with some of the leadership challenges in international projects and large organizations. Terrence will also discuss the experience from some international projects.
Totally integrated automation on a regional level (English)	The implementation of an on top Traffic Management system including descition support for the Stockholm Region. Description of different steps in the project from defining the needs to the final delivery.
Summary and future (Swedish & English)	We summarize the course and go though the feedback which we have received in the final reports. We also talk about how you as a student of technology can learn more through, for example, PMI and PMP certifications. We also give recommendations on books for further reading..

Lecturers

Name	Company	Abbrev.
Lars Sjöström	Prevas	LS
Agneta Östlund	Ceterum	AÖ
Torsten Cegrell	Industriella informations- och styrsystem	TC
Jonas Andersson	Syntell	JA
Martin Bäcklund	Ericsson	MB
Michel Koivisto	Ericsson	MK
Lena Schagerström	Lindström & Schagerström	LSc
Bo Normark	ABB	BN
Stefan Rinaldo	ABB	SR
Micael Erneborg	Kvadrat	ME
Karin Jansson	Microsoft	KJ
Oscar Hull	FMV	OH
Lars Jonsson	Vägverket	LJ
Terrence Acton	Ericsson	TA
Reza Farhang	Unibet/Crisp	RF
Pia Gustafsson	Industriella informations- och styrsystem	PG
Joakim Lilliesköld	Industriella informations- och styrsystem	JL
Ulrik Franke	Industriella informations- och styrsystem	UF

Appointments for optional oral presentation of Assignment 2:

Available times for an oral presentation are:

- Thursday, 2 October, 8.00 a.m. - 10.00 a.m., 1.00 p.m.- 6.00 p.m.
- Friday, 3 October, 8.00 a.m. - 12.00 noon, 4.00 p.m.- 6.00 p.m.

Note that it is important to be on time for the oral presentations! A booking list with available times for appointments will be at lectures 7, 8, 9, 10 and 11.

Guidance sessions

No.		Time		Content
G1	Thurs.	04 Sept	15-17	A1
G2	Fri	05 Sept	15-17	A1
G3	Mon.	08 Sept.	15-17	A3
G4	Wed.	10 Sept.	15-17	A3
G5	Fri	12 Sept	15-17	A3
G6	Mon.	15 Sept	15-17	A4
G7	Thur.	18 Sept.	15-17	A2, A4
G8	Wed.	24 Sept.	13-15	A2
G9	Fri.	26 Sept.	10-12	A5
G10	Wed.	01 Oct.	15-17	A5
G11	Wed.	08 Oct.	15-17	A1
Total		22 h		

The venue for guidance sessions is the classroom on the 7th floor at Osquldas väg 12. The door should be open. If not – ring the bell. At the guidance sessions there will be an opportunity to ask specific questions about the assignments. Remember to be well-prepared – do not just ask for a general opinion on your drafts! Our experience shows that students who take advantage of the guidance sessions stand a much better chance of passing the course without supplementary reports than those who do not.

Dates for submitting and correcting assignments

Submission in Bilda. Assignments should be received by the last indicated hour.

Date		Assignment submission	Correction completed	Assignment supplement	Correction of supplement
Mon.	08 Sept.	A1 Project plan 5.00 p.m.			
Wed.	10 Sept.		A1 Project plan 12.00 noon		
Fri.	12 Sept.	A3 Project plan (optional) 9.00 a.m.			
Mon.	15 Sept.	A3 Project plan, Final report, A1 Status report 5.00 p.m.		A1 Project plan 5.00 p.m.	
Mon.	22 Sept.	A4, A1 Status report 5.00 p.m.	A3 3.00 p.m.		A1 Project plan 3.00 p.m.
Mon.	29 Sept.	A2, A1 Status report 5.00 p.m.	A4 3.00 p.m.	A3 5.00 p.m.	
Mon.	06 Oct.		A2 3.00 p.m.	A4 5.00 p.m.	A3 3.00 p.m.
Fri.	10 Oct.	A5 9.00 a.m.			
Mon.	13 Oct.			A2 5.00 p.m.	A4 3.00 p.m.
Tues.	14 Oct.	A1 Final report 5.00 p.m.			
Fri.	17 Oct.		A5 3.00 p.m.		
Mon.	20 Oct.		A1 Final report 3.00 p.m.		A2 3.00 p.m.
Mon.	27 Oct.			A1 Final report, A5 5.00 p.m.	
Fri.	31 Oct.				A1 Final report, A5 3.00 p.m.