



ROYAL INSTITUTE
OF TECHNOLOGY

Industrial information and control systems

Projektstyrning EH2010 (7.5 ECTS)

Course plan for the academic year 07/08

Examiner

Professor Torsten Cegrell

Course leaders

Course leaders are Mårten Simonsson, Joakim Lilliesköld and Pia Gustafsson. 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 29 (Mårten), 790 68 69 (Joakim) and 790 68 38 (Pia).

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 the industrial systems that are ordered and developed increases, increasing demands are being placed 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
- Analyzing 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 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 from the beginning and do not need to be supplemented.

The course also requires that you attend lectures, i.e. complete attendance of at least 12 of 16 lectures is required. 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 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.

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'. There are two ways to obtain bonus points.

The first possibility to obtain bonus points is by submitting a **complete assignment** that does not need to be supplemented later. All headings and required text are included. The text should be carefully proofread and neatly formatted.

The second possibility to obtain bonus points occurs if the course leaders judge that an assignment is **very well done** when it is first submitted. This means that the text is detailed and

complete. The assignment contains the headings and content which were specified in the assignment instructions. In addition, it contains further, *relevant*, material which clearly indicates that you have understood the problem and solved it in a creative way. Note that bonus points for a very well done assignment can be given even if some point in the assignment must be supplemented – this is our way of rewarding students who think and reflect on the content of the assignments while they are working on them. A maximum of 0.5 bonus points can be given for each assignment submitted. Thus it is not possible to obtain bonus points both for a complete assignment and an assignment that is well done.

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 does not need to be supplemented, then you receive 1 point directly for the mandatory task, and 0.5 point for the complete assignment.

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 (Bilda) 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, however, 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)
 - http://www.pdfonline.com/convert_pdf.asp (sends pdf file to mail address)
 - http://www.pdfonline.com/convert_pdf.asp (sends pdf file to mail address)
- Build a single pdf for each assignment. *Please 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 should name your assignment so that it complies to the following criteria: GXX_2007_assignment_Y.pdf, where “XX” is your group number (two digits, 01, 02, 03, etc), “Y” is a number between 1 and 3 indicating the time for which the assignment is submitted, and “assignment” is one of the following:
 - projectplan
 - statusreport
 - finalreport
 - projectdescription
 - riskanalysis
 - projecthandbook

Example: G06_2007_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 in time! Assignments that still, after the first supplement, do

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

not fulfill requirements to pass will only be corrected in order to obtain obligatory 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 resit period in January 2008.
- 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.

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) for 110 kronor. 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 Osqudas 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	No.	Time and venue			Subject (lecturer)
w. 36	F1	Mon.	3 Sept.	9-11 room V2	Introduction to Project Management (Course leaders) We introduce the course and review basic concepts. What is a project, how does it differ from routine operations, when to begin a project etc.
	F2	Thurs.	6 Sept.	13-15 room F2	Project management in theory (Course leaders) We review project planning with the help of Work Breakdown Structure (WBS). We also discuss the GANIT diagram and some practical rules of thumb for project planning and resource allocation. Assignment 1 is presented.
	F3	Fri.	7 Sept.	13-15 room F2	Project management in practice (LS) 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.
w. 37	F4	Thurs.	13 Sept.	13-15 room D1	Procurement of complex systems (TC) 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.
	F5	Fri.	14 Sept.	13-15 room D1	Project budget (AÖ) Many projects fail because no one keeps an eye on where all the money goes. Agneta has many years of experience as a project leader and shares her knowledge of project economy in this lecture. She also presents the Earned Value method, which is used a lot in the defense 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! Agneta is the author of "Handbok i projektekonomi" which is an excellent supplement to course literature in Swedish.
w. 38	F6	Tue.	18 Sept.	15-17 roomQ1	Risk management in projects (Course leaders) 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.

	F7	Fri.	21 Sept.	13-15	room Q1	PROPS (MH) 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). Mats Hultman is a project manager who tells how PROPS is associated with the Ericsson sales process and thus how the project manager's world is integrated in the business process.
	F9	Thurs.	27 Sept.	13-15	room Q1	Leadership and group dynamics (LSc) Lena Schagerström has been a high school teacher who 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. The lecture deals with Johari windows, the Feedback staircase and the difference between 'what' and 'how' in work processes.
	F10	Fri.	28 Sept.	10-12	room E1	Working with complex industrial projects (BN/SR) Bo Normark is Sales Manager at ABB Power Systems/Grid Systems and Stefan Rinaldo is Project Manager at ABB's HVDC Division. They talk about their experiences with complex electrical energy projects, e.g. major power transmission projects using HVDC technology, and which are operated internationally by ABB.
w. 40	F11	Wed.	3 Oct.	10-12	room E1	Project communication (OH) JAS is one of Sweden's largest ever industrial projects. It has been running for 30 years, and subprojects with a duration of less than 3 years are considered short....Oscar Hill is a project manager for JAS at FMV who talks about the difference between projects and operations, and how to get the various stakeholders in large projects to communicate with one another.
	F12	Thurs.	4 Oct.	13-15	room D1	The significance of the group in projects (JA) Jonas has worked previously for the Swedish Armed Forces (Försvarsmakten) and at KTH. He uses this lecture to talk about 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.
w. 41	F13	Tues.	9 Oct.	13-15	room D1	Managing an IT project – tips about how, and how not to do... (ME) Micael Erneborg is a very driven project manager with experiences that include the IT industry. He talks pragmatically about his multifaceted profession and gives a lot of tips about what is necessary to be a successful project manager and what to do to avoid becoming totally burnt out....
	F14	Wed.	10 Oct.	10-12	room D1	Software project (KJ) Karin Jansson works at Microsoft and speaks during this lecture about the project culture at a large, international software company..
	F15	Thurs.	11 Oct.	13-15	room Q1	Project management in medium-sized companies (DS) Dag Sundman established the IT company CATS, which today is a part of HiQ. Running a project in a medium-sized company is different from running project in a big company like Ericsson. Dag discusses the importance of always having the customer in focus, for example, the difficult art of being able to say no, and how (un)important formalities really are.
w. 39	F8	Mon.	15 Oct.	15-17	room E1	The cost of quality and lack of quality (MK) 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.
w. 42	F16	Tues.	16 Oct.	10-12	room D1	Summary and the future (Course leaders) We summarize the course and go through 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 recommend interesting books for further reading..
Total				16x2 = 32 h		

Lecturers

Name	Company	Abbrev.
Lars Sjöström	Prevas	LS
Agneta Östlund	Ceterum	AÖ
Torsten Cegrell	Industriella informations- och styrsystem	TC
Jonas Andersson	Syntell	JA
Mats Hultman	Ericsson	MH
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
Dag Sundman	-	DS
Pia Gustafsson	Industriella informations- och styrsystem	PG
Joakim Lilliesköld	Industriella informations- och styrsystem	JL
Mårten Simonsson	Industriella informations- och styrsystem	MS

Appointments for optional oral presentation of Assignment 2:

Available times for an oral presentation are:

- Wednesday, 3 October, 8.00 a.m. - 10.00 a.m., 1.00 p.m.- 6.00 p.m.
- Thursday, 4 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 6, 7, 8, 9 and 10.

Guidance sessions

No.	Time and venue	Content
Ö1	Thurs. 06 Sept 15-17	A1
Ö2	Wed. 12 Sept. 15-17	A3
Ö3	Fri. 14 Sept. 15-16	A3
Ö4	Thurs. 20 Sept. 15-17	A4
Ö5	Mon. 24 Sept. 13-14	A2, A4
Ö6	Fri. 28 Sept. 13-15	A2
Ö7	Tues. 09 Oct. 15-17	A5
Ö8	Thurs 11 Oct. 15-17	A5
Ö9	Tues. 16 Oct. 13-14	A1
Total	15 Sept.	

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 questions about the assignments. Remember to be well-prepared so that we can give you more qualitative help. 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.	10 Sept.	A1 Project plan 5.00 p.m.			
Wed.	12 Sept.		A1 Project plan 12.00 noon		
Fri.	14 Sept.	A3 Project plan (optional) 9.00 a.m.			
Mon.	17 Sept.	A3 Project plan, Final report, A1 Status report 5.00 p.m.		A1 Project plan 5.00 p.m.	
Mon.	24 Sept.	A4, A1 Status report 5.00 p.m.	A3 3.00 p.m.		A1 Project plan 3.00 p.m.
Mon.	1 Oct.	A2, A1 Status report 5.00 p.m.	A4 3.00 p.m.	A3 5.00 p.m.	
Mon.	08 Oct.		A2 3.00 p.m.	A4 5.00 p.m.	A3 3.00 p.m.
Fri.	12 Oct.	A5 9.00 a.m.			
Mon.	15 Oct.			A2 5.00 p.m.	A4 3.00 p.m.
Tues.	16 Oct.	A1 Final report 5.00 p.m.			
Fri.	19 Oct.		A5 3.00 p.m.		
Mon.	22 Oct.		A1 Final report 3.00 p.m.		A2 3.00 p.m.
Sun.	28 Oct.			A1 Final report, A5 5.00 p.m.	
Fri.	2 Nov.				A1 Final report, A5 3.00 p.m.