Situated and Distributed Cognition 729G12

Fall Term 2019

Course examiner: Erik Prytz

Course administrator: Annelie Almqvist

V.0.4

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Kursplan (svenska)

Huvudområde: Kognitionsvetenskap

Utbildningsnivå: Grundnivå

Fördjupningsnivå: G1X

Kursen ges för: Kognitionsvetenskap, kandidatprogram

Förkunskapskrav: För tillträde till kursen krävs att de särskilda behörighetsregler som gäller för kandidatprogrammet i kognitionsvetenskap är uppfyllda, samt att kurserna Kognitionsvetenskaplig introduktionskurs (6 hp), eller Kognitiv psykologi (6 hp), eller Lingvistik (6 hp), eller motsvarande, samt en empirisk forskningsmetod-kurs (t.ex. Kvalitativa forskningsmetoder (6 hp) eller Forskningsmetodik och statistik (6 hp) eller motsvarande), är avklarade.

Lärandemål

Efter avslutad kurs skall den studerande kunna:

- redogöra för de vanligaste inriktningarna inom distribuerad och situerad kognition,
- redogöra för likheter och skillnader som finns mellan dessa teorier,
- redogöra för de teoretiska perspektiv som vuxit fram som ett alternativ till kognitivistiska teorier,
- redogöra för grunderna i etnografiska forskningsmetoder och förhållningssätt,
- tillämpa etnografiska metoder och förhållningssätt i enklare sammanhang.

Kursinnehåll

Kursens innehåll fokuserar på:

- Teorier om distribuerad och situerad kognition
- Samspel mellan tekniska artefakter och användare i kognitiva processer
- Teorier om kognition och kommunikation
- Kognition i ett antropologiskt kulturperspektiv
- Etnografiska metoder för att studera kognitiva och kommunikativa processer

Undervisnings- och arbetsformer: Undervisningen består av föreläsningar och seminarier, samt ett mindre etnografiskt metodprojekt som utförs i mindre grupper. Den studerande förväntas arbeta med självstudier, enskilt eller i grupp.

Examination: Kursen examineras genom skriftlig tentamen samt muntliga och skriftliga redovisningar av projekt och uppgifter. Detaljerad information återfinns i studiehandledningen. Studerande, vars examination underkänts två gånger på kursen eller del av kursen, har rätt att begära en annan examinator vid förnyat examinationstillfälle. Den som godkänts i prov får ej delta i förnyat prov för högre betyg.

Betygsskala: U, G, VG

Övrig information: Planering och genomförande av kurs ska utgå från kursplanens formuleringar. Den kursvärdering som ska ingå i varje kurs ska därför behandla frågan om hur kursen överensstämmer med kursplanen. Kursen bedrivs på ett sådant sätt att både mäns och kvinnors erfarenhet och kunskaper synliggörs och utvecklas.

Ämnesområde: Övriga tvärvetenskapliga studier

Utbildningsområde: Tekniska området

Institution: Institutionen för Datavetenskap

Course syllabus (English)

Main field of study: Cognitive Science

Course level: First cycle

Advancement level: G1X

Course offered for: Cognitive Science

Entry requirements: For admission to the course, the specific entry requirements that apply for admission to the Bachelor's Programme in Cognitive Science must be satisfied and the courses Introduction to Cognitive Science, comprising 6 HE credits, Cognitive Psychology, comprising 6 HE credits, and Qualitative Research Methods, comprising 6 HE credits, or the equivalent, must be completed.

Intended learning outcomes

On completion of the course, the student should be able to:

- account for the most common specialisations within distributed and situated cognition,
- account for similarities and differences that exist between these theories,
- account for the theoretical perspectives that have emerged as alternatives to cognitivist theories,
- account for the bases in ethnographic research methods and approaches,
- apply ethnographic methods and approaches in simple contexts.

Course content

- The contents of the course are focused on:
- Theories of distributed and situated cognition
- Interplay between technical artefacts and users in cognitive processes
- Theories of cognition and communication
- Cognition from an anthropological culture perspective
- Ethnographic methods for studying cognitive and communicative processes

Teaching and working methods: The teaching takes the form of lectures and seminars and a smaller ethnographic method project that is carried out in small groups. The student is expected to study independently, individually or in groups.

Examination: The course is examined through written examination and passed oral and written project presentation.

Grades: F, P, PWD

Other information: Planning and implementation of a course must take its starting point in the wording of the syllabus. The course evaluation included in each course must therefore take up the question how well the course agrees with the syllabus. The course is carried out in such a way that both men´s and women´s experience and knowledge is made visible and developed.

Subject area: Other Interdisciplinary Studies

Disciplinary domain: Technology

Department: Department of Computer and Information Science (IDA)

Introduction to the course

This course focuses on *situated* and *distributed* cognition and *ethnographic methodology*, with some additional content about *embodied* cognition and activity theory. These topics are widely defined and relate to topics, activities, and theoretical perspectives that are in line with cognitive science in general. The topics will be covered through several complementary perspectives:

- Theoretical connections with other cognitive science directions.
- Introduction to some research areas.
- Concrete examples of studies in this area.

The course is given in the form of lectures, literature seminars, and a group project. The course examination is based on the group project, the literature seminars, and a take-home exam.

The lectures are aimed primarily at providing an overview of the area, and to connect different theoretical concepts and development trends within cognitive science to each other. There are readings for each lecture that the student is expected to read on their own.

The literary seminars aim to provide more advanced readings on the situated and distributed perspectives. The purpose is to deepen the students' understanding of this research, and to enable discussions of key concepts and issues concerning situated and distributed cognition.

The group project aims to give an initial introduction to and a first practical experience with ethnographic methods, as well as to provide an opportunity for the students to apply their theoretical knowledge through cognitive ethnography.

Finally, the take-home exam is a test of the students' theoretical understanding of situated, distributed, and embodied cognition as well as theoretical reasoning within ethnography. The questions on the take-home exam are based on the lectures, the seminar articles, and the course literature.

Teachers and staff

Erik Prytz (erik.prytz@liu.se) at the Department of Computer and Information Science (IDA). Lecturer, seminar leader, and course examiner.

Mattias Arvola (mattias.arvola@liu.se) at the Department of Computer and Information Science (IDA). Project adviser.

Johan Blomkvist (johan.blomkvist@liu.se) at the Department of Computer and Information Science (IDA). Project adviser.

Corinna Kruse (corinna.kruse@liu.se) at the Department of Thematic Studies – Technology and Social Change. Lecturer.

Tom Ziemke (tom.ziemke@liu.se) at the Department of Computer and Information Science (IDA). Lecturer.

Sam Thellman (sam.thellman@liu.se) at the Department of Computer and Information Science (IDA). Seminar leader, course assistant.

Annelie Almquist (annelie.almquist@liu.se), course administrator.

Literature List

Required reading

Books:

- Garbis, C. (2002). *The Cognitive Use of Artifacts in Cooperative Process Management.* Dissertation Tema Kommunikation, Linköpings universitet.
- Göransson, Kristina, (2019). *Etnografi: sjösätt, navigera och ro i land ditt projekt*. Lund: Studentlitteratur

Only two chapters (three and four) from Garbis (2002) will be used, and those will be available for purchase through the bookshop. Göransson (2019) will be your primary guide on how to conduct the ethnographic project whereas the other literature will focus on the theories of situated, distributed, and embodied cognition. You should read the introduction and chapters 1 and 2 in Göransson, and then read the other parts of the book as needed to help you with your project.

Articles and book chapters:

- Adams, F., & Aizawa, K. (2001). The bounds of cognition. *Philosophical psychology, 14*(1), 43-64.
- Blandford, A. & Furniss D. (2006) DiCoT: a methodology for applying Distributed Cognition to the design of team working systems. Proc. DSVIS 2005. Springer: LNCS.
- Clark, A., & Chalmers, D. (1998). The extended mind. *Analysis, 58*(1), 7-19.
- Hollan, J., Hutchins, E. & Kirsh, D (2000). Distributed Cognition: Toward a New Foundation for Human-Computer Interaction Research. *ACM Transactions on Computer-Human Interaction*, 7, No 2, 174 - 196.
- Hutchins, E. (1995a). Chapter 9: Cultural Cognition. In E. Hutchins (Ed.), *Cognition in the Wild*. Cambridge, Mass.: The MIT Press.
- Hutchins, E. (1995b). How a Cockpit Remembers Its Speeds. *Cognitive Science*, *19*, 265-288.
- Johnson, M. (2015). Embodied understanding. *Frontiers in psychology, 6*, 875
- Kaptelinin, V. (2014). Activity Theory. In: M. Soegaard and R. F. Dam (Eds.), *The Encyclopedia of Human-Computer Interaction, 2nd Ed*. Aarhus, Denmark: The Interaction Design Foundation. Retrieved from https://www.interaction-design.org/encyclopedia/activity_theory.html.
- Kirsh, D. (1995). The Intelligent Use of Space. *Artificial Intelligence*, 73, 31-68.

- Rowlands, M. (2009). Extended cognition and the mark of the cognitive. *Philosophical Psychology, 22*(1), 1-19.

Garbis' (2001) dissertation "The Cognitive Use of Artifacts in Cooperative Process Management", Hutchins (1995a) book chapter from "Cognition in the Wild", and the articles comprises the main theoretical parts of this course. Clark and Chalmers (1998), Adams and Aizawa (2001), and Rowlands (2009) are part of the seminar series. Blandford and Furniss (2006) presents DiCoT, which you will use in your project.

There is a separate document on Lisam containing a reading guide which shows where the articles and book chapters fit with the lectures and seminars.

Optional reading

Below we list some additional literature that you can read on your own, if you are interested. If you are struggling with or want to know more about a particular concept you might find this additional material helpful.

Books and book chapters:

- Emerson, R. M. (2011). *Writing Ethnographic Fieldnotes.* 2nd Edition. The University of Chicago Press.
- Alm, B. (2019). *Introduktion till etnografiskt fältarbete*. Gleerups.
- Forsblad, M. (2016). *Distributed cognition in home environments: the prospective memory and cognitive practices of older adults*. Dissertation, Department of Computer and Information Science, Linköping University.
- Robbins, P. & Aydede, M. (2009). *Cambridge Handbook of Situated Cognition*. Cambridge: Cambridge University Press.
- Kaptelinin, V. & Nardi, B. A. (2006). *Acting with technology: Activity Theory and Interaction Design*. Cambridge, MA: MIT Press.
- Ladner, S. (2014). *Practical Ethnography: A guide to doing ethnography in the private sector*.
- Norman, C. (1993). *Things that make us smart.* Reading, Mass.: Pegasus Press.
- Rybing, J. (2018). *Studying simulations with distributed cognition*. Dissertation, Department of Computer and Information Science, Linköping University.

Kaptelinin and Nardi (2006) is available online through the university library. Chapter 3 ("Activity theory in a nutshell") is highly recommended. The first chapters of Ladner (2014) are available through www.practicalethnography.com, and the book is available at the library. Mattias Forsblad's dissertation (2016) provides a useful overview on distributed cognition and is available at http://urn.kb.se/resolve?urn=urn:nbn:se:liu:diva-130861. Jonas Rybing's dissertation (2018) is also a very useful guide to distributed cognition (pp. 27-37) as a theory and associated methodologies (in particular DiCoT). It is available here: http://urn.kb.se/resolve?urn=urn:nbn:se:liu:diva-145307. Both Mattias and Jonas are former cognitive science students from Linköping University. Norman (1993) is the same book that is used in the introductory course to the Cognitive Science program, and only chapters three and four are relevant in this course. The book "Writing Ethnographic Fieldnotes" by Emerson (2011) is a well-known guide to ethnographic

methods and is often used by cognitive science students for projects on man-machine interfaces. It is best used as a guide on specific parts of conducting an ethnographic project but is not suited to be read from start to finish. Björn Alm has written the book "Introduktion till etnografiskt fältarbete" based on his experiences as a researcher and teacher in social anthropology, including as a teacher in this course.

Articles:

- Adams, F., & Garrison, R. (2013). The mark of the cognitive. *Minds and Machines, 23*(3), 339-352.
- Beach, K. (1993) Becoming a Bartender: The Role of External Memory Cues in A Work-directed Educational Activity. *Applied Cognitive Psychology*, 7, 191-204.
- Clark, A. (2005) Beyond the Flesh: Some Lessons from a Mole Cricket. *Artificial Life*, 11, 233-244.
- Clark, A. (2006) Soft Selves and Ecological Control. In Spurrett, D., Kincaid, R. H. & Stephens, L. (Eds.) Distributed Cognition and the Will. MIT Press, Cambridge, MA.
- Dourish, P. (2004). What We Talk About When We Talk About Context. *Personal and Ubiquitous Computing*, 8(1), 19-30.
- Edmondson, W. H., & Beale, R. (2008). Projected Cognition–extending Distributed Cognition for the study of human interaction with computers. *Interacting with Computers, 20*(1), 128-140.
- Gedenryd, H. (1998) How Designers Work. PhD thesis, Lund University
- Goodwin, C. (1994) Professional Vision. *American Anthropologist*, *96*(3), 606-33.
- Goodwin, C. (2000) Action and embodiment within situated human interaction. *Journal of Pragmatics*, 32, 1489-1522.
- Heath, C. & Knoblau, H. & Luff, P. (2000). Technology and social interaction: the emergence of 'workplace studies'. British Journal of Sociology, 51(2), 299-320.
- Henrich, J., Heine, S. & Norenzayan, A. (2010) The weirdest people in the world. *Behavioral and Brain Sciences*. DOI: 10.1017/S0140525X0999152X
- Kaptelinin, V. & Nardi, B. & Macaulay, C. (1999) The Activity Checklist: A Tool for Representing the "Space" of Context. *Interactions*, July + August, 27-39.
- Kirsh, D. (2010) Thinking with external representations. *AI & Soc*, 25, 441-454.
- Kirsh, D. & Maglio, P. (1994). On Distinguishing Epistemic from Pragmatic Action. *Cognitive Science*, *18*, 513-549.
- Rawls, A. (2008) Harold Garfinkel, ethnomethodology and workplace Studies. *Organization Studies*, 29, p. 701
- Roth, W.-M. & Jornet, A. (2013) Situated cognition. *WIREs Cognitive Science*, 4(5), 463-478.
- Rybing, J., Prytz, E., Hornwall, J., Nilsson, H., Jonson, C.-O., & Bang, M. (2017). Designing a Digital Medical Management Training Simulator Using Distributed Cognition Theory. *Simulation and Gaming*, *48*(1). https://doi.org/10.1177/1046878116676511
- Rybing, J., Nilsson, H., Jonson, C.-O., & Bang, M. (2016). Studying distributed cognition of simulation-based team training with DiCoT. *Ergonomics*, *59*(3), 423–434. https://doi.org/10.1080/00140139.2015.1074290

- Schwartz, D. L. & Martin, T. (2006) Distributed learning and mutual adaptation. *Pragmatics & Cognition*, 14(2).
- Shapiro, L. (2007) The Embodied Cognition Research Programme. *Philosophy Compass*, 2/2, 338-346.
- Suchman, L. (1983) Office Procedure as Practical Action: Models of Work and System Design. *ACM Transaction on Office Information Systems*, 1(4), 320-328. (Le: 2)
- Suchman, L. (1997) Centres of coordination: A case and some themes. In Resnick, L. B., Säljö, R., Pontecorvo, C., & Burge, B. (Eds.) *Discourse, Tools, and Reasoning: Essays on Situated Cognition*. Berlin: Springer-Verlag, 41-62.
- Tribble, E. & Sutton, J. (2011) Cognitive Ecology as a Framework for Shakespearean Studies. *Shakespeare Studies*, 39, 94-104.
- Wilson, R. A. (1994) Wide Computationalism. *Mind*, New Series, 103(411), 351-372.

Teaching methods

Lectures

There are eight lectures planned for this course. The specific topics, along with recommended readings, will be presented before the start of the course in a separate document (the reading guide). The slides from the lectures will be uploaded to Lisam.

Seminars

The purpose of the seminars is to provide a forum for in-depth discussions on research studies within the topic of situated and distributed cognition. The seminars are conducted in smaller groups, are 45 minutes in length, and are lead by a seminar leader.

The students will be assigned to one of two timeslots for each seminar (e.g., 13-14 or 14-15). The student must also provide two relevant, open-ended questions that can be discussed during the seminar. These questions should be typed into a word-document and submitted on Lisam 24 hours before the seminar. The purpose of this submission is twofold. First, to ensure that the students who participate in the seminar have all read the material (otherwise it will not be a good discussion!). Second, to provide preparation material in the form of questions for the seminar leader to be used during the seminar.

The specific topics and articles for the seminars will be presented in a separate document, along with dates for the seminars and sign-up deadlines.

Examinations

The grade in the course is decided based on a group project, participation in the seminars, and a take-home exam.

Group project

Purpose

The purpose of the project is primarily to provide an initial introduction to ethnographic research methodology with a focus on cognitive ethnography. The aim of this course is to broaden the students' method repertoire by providing a basic understanding of ethnographic methodology and the issues that can be explored by this method. The research tradition of ethnography aims at gaining an understanding of the participants' perspectives on the activities being studied. This is a way to work with empirical studies that in their starting points and choice of methods differ from the more experimental and laboratory-oriented methods introduced in other courses in the cognitive science program. In this group project you are to work with ethnographic methods, especially field observations and interviews, trying to capture the participants´ perspective(s) as well as practice how to document this in the form of field notes. This involves not only documentation but also, as a very important part, analysis of the material. The group project is included in this course for two reasons. First, much of the research presented in this course is based on these methods. Second, ethnographic methods have become increasingly important in several areas of applied cognitive science. The project provides an opportunity to study the aspects of cognition that are included in the theoretical part of the course, thus creating a more practical understanding of cognition from a situated and distributed perspective.

Basic structure of the project

The class will be divided into project groups with three (3) students in each group. This is done during the first, introductory lecture. At this point, you are also assigned to a project adviser.

The first part of the project is for each group to *find an interesting setting to study using ethnographic methods*. Essentially, your group should come up with an interesting context in which to conduct further observations. What "interesting" is, is up to you. The requirements are that this context includes people performing some sort of activity (alone or in groups) within some sort of physical environment. Examples of such contexts from previous projects are: the LiU mail distribution service; different sport activities (both at Campushallen and in sport clubs); professional meetings; preschools (but beware: studying children requires consent from their legal guardians which can be a lengthy process – these projects focused on teachers); supermarket cashiers; parking bicycles; waiting at the train station; escalator use; coffee shop baristas; library loans; driving lessons, and much more. In other words, there is a wide range of possibilities – choose something you are interested in taking a closer look at! Your choice will be discussed at the first advising session, your final choice will be in consultation with the group advisor.

The second part is to conduct initial observations in the environment that you chose. This is done to construct a first understanding of the context and activity, and to find something more specific in that context to investigate further. After this you conduct more data collection on this more specific topic that you want to investigate further. The exact nature of this data collection will vary depending on the context and research question but can involve additional observations or interviews. You must also use either

the Distributed Cognition for Teamwork (DiCoT) or the Activity Checklist as support in your data collection (or analysis).

Next, after you have completed the data collection, you will conduct an analysis of this material. This analysis should use one of the theoretical areas covered in the course (situated, distributed or embodied cognition, or activity theory). You should not determine which theory to use until you have established an understanding of the context, activity, and the participant's perspective. Advising session two is oriented towards helping you with choosing an analytical approach.

Finally, you will write a report to convey your findings. For more information on the report, see the subheading "Project grade".

Teaching and literature

This course includes two lectures on ethnographic method, three advising sessions (see details below), as well as a presentation. The main literature is "Etnografi: sjösätt, navigera och ro i land ditt projekt" by Kristina Göransson. You should read the introduction and chapters 1 and 2 for a general background to ethnography, and then do selective reading from section 2 (chapters 3-7) to help you along in your project.

You will also need to select additional articles for your specific project. This could be articles or other sources that provides background on the particular context you have chosen, articles that provides theories or models for explaining your findings, or articles that describes methods or frameworks for data collection or analysis. Such articles for the individual projects are added in consultation with the group advisor. The literature list for this course provides suggestions for some articles on situated and distributed cognition, ethnographic method, and activity theory that can serve as support and structure for your project, but you are also free, and encouraged, to find additional material.

The project groups are composed of 3 students. The advising sessions are conducted with multiple groups (usually about three groups) at the same time. We have chosen this model to give students the opportunity to draw experiences and lessons from more projects than just their own.

Advising sessions

The project advising sessions will serve as three waypoints, as you will show how far you have come and how to proceed with your work from that point. Experiences from previous years have shown that it is important to take advantage of these opportunities. The advising sessions are where you can get help with any problems you might have encountered with the project.

Advising session 1: You should present the overall plan for your project; that is, the context you have selected, how you plan to gain access to this context, and how you will collect data.

Advising session 2: You should have *completed* the empirical work (i.e., data collection), and present how it went and how you think about progressing with the data material you have collected (i.e., what analysis you plan to do).

Advising session 3: You should present the analysis you have done and connect this to the research question you set out to answer. What was the answer to your question? You will also discuss how you intend to present your project and write your report.

Project grade

The project will be graded based on the quality of the written and oral project reports. Some general grading criteria are outlined below. The most important aspect to consider is to use an ethnographic method and not an experimental method. Read up on ethnographic methodology and make sure you use it. Analysis of the material is also important. The person grading your work must be able to see that you have *worked* with the material, not just that you are referring to it or retelling the events that you observed. You must use one of the theoretical perspectives presented in the course in your analysis.

The written report should be 5-15 single-spaced pages and comply with normal academic requirements for such texts (clear, precise, formal, and correct language; proper use of citations and references; clear and legible figures and charts, if used; proper formatting; etc.). T**his project requires page numbers for in-text references**, in accordance with the tradition for ethnographic texts.

There is no ready-made template for the report (and please do not try to find or use one) because ethnographic texts can differ quite widely. It is part of your task to find a clear and logical way of communicating your work.

To pass, the report must contain the following:

- an attempt to capture the perspective(s) of the studied people;
- an explanation of what ethnographic methods are and why they are useful for the project in question;
- a methods description and discussion;
- a description of the studied activity;
- a theoretically grounded analysis;
- and a conclusion.

For a VG grade, these elements must be well-integrated with each other, there must be a clear narrative thread, and the studied people's perspective(s) must be communicated clearly.

The oral presentation will be done as a mini-conference towards the end of the course. Each group will be given a 15-minute time slot (10 minutes for presentation, 5 minutes for Q&A and discussion).

Deadlines for submitting your written work, as well as the conference presentation schedule, will be provided during lectures and on Lisam.

Group problems?

Nine times out of ten the project groups work fine. However, sometimes a group of students may not work out. It may be that one student, for whatever reason, is not doing their share of the work, it might be communication issues, scheduling issues, or personal

friction between group members. If this happens to you it is crucial that you *notify the course examiner (Erik Prytz) immediately*. The course examiner and the group adviser will help with inter-group issues, if we are made aware of them in time.

Seminars

The seminars are mandatory and part of the course grade. There are four seminars in the course, and a separate document containing more information (e.g., specific articles, dates and times, and seminar groups) will be published on Lisam at the start of the course.

For each seminar you are expected to read the assigned article and submit two discussion questions that can be used during the seminar. A good discussion question is one that will stimulate an interesting and meaningful discussion in a group of your peers – not simply clarification questions or questions focused on trivial details. You must submit a document containing your two discussion questions on Lisam no later than 12:00 the day prior to the seminar.

To receive a passing grade for the seminar part of the course you must participate in (i.e., submit questions for and attend) at least three seminars. You are encouraged to participate in all seminars as this will help you understand the material better and also aid you greatly with the take-home exam.

If you fail to participate in three seminars you can complete make-up assignments to pass this part of the course. The make-up assignments are to write a summary of the article (1 page), and also answer a selected discussion question (0.5-1 pages). The discussion question to be answered will be drawn from the pool of discussion questions raised during the seminar. Further details on these assignments will be published on Lisam during the course.

If you are unable to participate in three seminars due to extenuating circumstances, you must contact the course examiner (Erik Prytz) as soon as possible. Your absence may be excused if you have a valid reason (e.g., long-term illness or death in the immediate family).

Take-home exam

The take-home exam in this course typically consists of 5 questions, each of which requires approximately one page to answer. The questions can be based on material from the lectures, seminars, or the required reading list. Each question is worth five points, and you must score at least 12.5 points for G and 20 for VG. In addition, the take-home exam will include a bonus question worth up to three extra points. Thus, you can achieve a total score of 28 (of which 12.5 are required for G, and 20 for VG).

The take-home exam will be published on Lisam one week prior to the deadline.

The take-home exam is an individual exam; you are not allowed to collaborate with other students when writing your answers.

General examination and grading information

The course grade is based on the take-home exam, the group project, and the seminar series. All assignments are graded on the scale U, G, and VG except for the seminar series which is graded on a U/G scale. *A grade of at least G on all assignments is required to receive a final course grade.*

The distinction between G and VG for the course grade is determined by your *total points in the course*. The take-home exam and the project each contribute points to your total. For the take-home exam you can earn up to 28 points (5 questions worth 5 points per question, plus the bonus question worth 3 points). For the project, you will receive 1 point if you have G and 3 points if you have VG. Thus, you can earn up to 31 points total (25 from the take-home, plus 3 for the bonus question, plus 3 for the project). Of these 31, you must score *at least 23* (ca 75%) total to receive VG in the course. You receive G if you have less than 23 points and at least G on all individual assignments (take-home, project, and seminars). You receive a course grade of U if you have a U on any assignment.

Example 1: Student A scores 20 points on the take-home exam (VG on the exam) and receives VG on the project. Student A's total is therefore 20+3 = 23 points. Student A receives VG in the course.

Example 2: Student B scores 20 points on the take-home exam (VG on the exam) and receives G on the project. Student B's total is therefore 20+1 = 21 points. Student B receives G in the course.

Example 3: Student C scores 23 points on the take-home exam (VG on the exam) and receives G on the project. Student C's total is therefore 23+1 = 24 points. Student C receives VG in the course.

Example 4: Student D scores 19 points on the take-home exam (G on the exam) and receives VG on the project. Student D's total is therefore 19+3 = 22 points. Student D receives G in the course.

Example 5: Student E does not complete the take-home exam (U on the exam) and receives VG on the project. Student E receives U in the course.

Deadlines

All assignments must be submitted through Lisam before the deadline. Always check Lisam for any updates to the deadlines. The planned deadlines for the fall semester 2019 are:

- 2019-09-16 – Seminar questions for seminar 1
- 2019-09-23 – Seminar questions for seminar 2
- 2019-09-30 – Seminar questions for seminar 3
- 2019-10-07 – Seminar questions for seminar 4
- 2019-10-18 – Project report
- 2019-10-25 – Take-home exam
- 2019-10-25 – Make-up work for missed seminars

Late assignments

If you for any reason are unable to submit an assignment by the deadline you should always contact the course examiner (Erik Prytz) as soon as possible. The general rule is that late assignments will not be graded until the next deadline ("omexaminationstillfälle") for the same assignment.

Exceptions from this general rule may be granted on a case-to-case basis, e.g. for prolonged illness, death in the family, or as determined by the office of student support (link).

Make-up work and re-examination

Failure to complete mandatory coursework results in a grade of U (Underkänd) on that course component. If an assignment is very close to a passing grade the examiner *may* decide to give a "komplettering". You then have certain time to correct the assignment (deadline is provided with the komplettering). If you fail to submit a corrected assignment within this timeframe the assignment receives a U-grade.

If you receive a grade of U for any assignment (group project, take-home exam, or seminars) the next re-examination (omexaminationstillfälle) deadline is **January 17th 2020**. For the re-examination of the take-home exam a new exam will be provided on Lisam on the **10th of January**. Project re-examinations will be decided on a case-to-case basis based on what component is missing from the project (e.g. a presentation of the work, a new report, or individual make-up assignments). The re-examination for missed seminars will consists of new make-up assignments with different questions to answer. These assignments will be published on Lisam on **January 10th**.

Plagiarism and academic dishonesty

As with all courses at LiU, plagiarism and academic dishonesty is not allowed. Unfortunately, there have been recent instances in this course where students have tried to cheat, e.g. copied answers from past student assignments. All such instances *will* be reported to the Disciplinary Board, and may result in a disciplinary action such as a suspension (which was the case in this course). The decision to report a suspected attempt to cheat is not made by the course examiner. The course examiner *must* report such attempts as per the university guidelines:

"Suspected attempts at cheating and disturbances of the peace *shall* be reported to the Vice-Chancellor and the matter treated by the University Disciplinary Board." (link to source, my emphasis)

Cheating (from LiU Disciplinary Board):

According to chapter 10 in the Higher Education Ordinance, disciplinary measures can be used against a student who:

1. Uses prohibited aids and equipment, or in any other way, purposely acts inappropriately during the examination or the assessment of a study assignment.
2. Causes disturbance, prevents teaching, examinations or other university related activities from taking place.

Examples of what LiU's Disciplinary Board has judged as cheating:

- text written onto a formula sheet
- loose sheets of paper containing the student's own writing during a test
- plagiarizing an essay
- copying a programming project
- working with another group during individual projects when doing so was not allowed

Plagiarism (from LiU Library):

What is plagiarism?

To plagiarize means using somebody else's work and presenting it as your own without referring to the source. It may be a text, idea, theory, image, chart, figure, music, computer program or a product. Even reformulation, paraphrasing, text to your own words, without referencing the source is plagiarism.
Plagiarism may also violate Copyright laws.

What happens if I plagiarize?

Plagiarism is a serious offense against good academic practice and can if worse comes to worst result in temporary suspension from studies by decision of The Disciplinary Board at Linköping University. A student who is suspended may not participate in lectures, laboratory sessions, seminars, exams, tutorials, assignments, and may not access to LiU's computer labs. The suspension may also affect payment of student support.