



Course Syllabus

ME2096 ICT Innovation Study Project

KTH Royal Institute of Technology
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Course coordinator and teachers

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Examiner

Johan Nordensvärd

Course description and main content

This course covers two different fields with similar concepts, methods and/or tools: innovation and entrepreneurship. The course is based on student driven projects and case studies. During the course, students will have the opportunity to learn about technical innovations and entrepreneurship, analyse real technical innovations in relation to real business and societal settings, as well as to develop new knowledge, ideas, and strategies for technical innovations and entrepreneurship. The course will also give the students the basic skills to do and write academic texts within a social science framework.

Intended learning outcomes

After passing the course, the students should be able to:

1. Apply, synthesise and evaluate previously acquired knowledge of innovations and entrepreneurship for a specific innovation area
2. Carry out a business analysis, make a decision about and design recommendations or justify decisions in a real environment
3. Choose between and apply relevant concepts and methods and/or tools as well as collect relevant data to implement a business analysis and make decision in a real environment
4. Apply concepts, methods and tools to identify and evaluate the value of a technology in a sector, market and/or organisation and the innovation and commercial possibilities that they result in
5. Produce a professional text about a subject related to business analysis. With this, also write an academic text up to social science standard with references to the academic literature

Course structure

This course consists of three lectures and seven workshops, some of which have invited guests who work with different types of ICT related issues in companies and others consist of presentations / seminars. Within the framework of the course, there is an individual assignment as well as a project work carried out in groups and in collaboration with a company.

See literature suggestions in canvas under *Modules > Links and other important information > Literature and other resources*.

Digital Support (Canvas)

Additional, course-related, material and information will be made available in a Canvas course room for students registered on the course.

Language

The course language is English. This means that lectures, workshops, course literature and material, student presentations and reports is to be delivered in English.

Teaching Philosophy

The teaching philosophy is that of *learner-centered teaching*, which means:

- The teacher is facilitator and guide.
- Learners take responsibility for their own learning.
- Content is used and not just covered.
- Students teach others what they have learned.
- Students participate in self-assessments.

Participants' responsibilities

- Every student is expected to provide an input of not less than 160 working hours for this course.
- Students are expected to study related chapters and selected cases in advance.
- Learning to work in a team is both important and necessary. Individual students are responsible for, and expected to, do their part within their respective team's activities. Failing to participate in team activities will affect your grade!
- Plagiarism will be dealt with in accordance with the University rules. Any copying or unethical use of sources may lead to severe disciplinary actions.
- Students are required to engage and actively participate during the lectures and seminars.

Examination

- INL2 - Assignment, 2,0 credits, grading scale: A, B, C, D, E, FX, F
- PRO2 - Project, 4,0 credits, grading scale: A, B, C, D, E, FX, F

Formula used for combining the grades:

| INL2 \ PRO2 | | A | B | C | D | E | F |
|-------------|---|---|---|---|---|---|---|
| | | A | B | C | D | E | F |
| A | A | A | B | B | C | F | |
| B | B | B | B | C | C | F | |
| C | B | C | C | C | D | F | |
| D | C | C | D | D | D | F | |
| E | C | D | D | E | E | F | |
| F | F | F | F | F | F | F | |

Examination adapted to students with special needs

The following applies for students with functional variations who have a statement from KTH's FUNKA unit on recommended support measures during examination:

- Support measures under code R (i.e. adjustments relating to space, time, and physical circumstances) are granted by the examiner.
- Support measures under code P (i.e. pedagogical measures) are granted or rejected by the examiner after the examiner has been contacted by the student in accordance with KTH's rules. Normally, support measures under code P will be granted.

More information is available on [KTH's website](#).

Assignments

INL2 – Individual assignment (related to ILO 1 and 4)

An analysis report of a self-selected technology (draft of the report, presentation, feedback, and final report)

Chose an already existing technology, or a technology that you are developing (or are about to develop), to analyse in a report. Analyse how this particular technology has influenced and been influenced by external and internal market forces. The forces can for example be competitors, suppliers, partners, other stakeholders, research, the economic and technical context, sustainability, legal obligations, digitalization, business models, and strategies. In addition, relate the technology to what the four guest lecturers talk about, as well as how that can be tied to the chosen technology. The report will be presented as a written report and the first part of the report through an oral presentation during a workshop.

1. Include the following in your report

- A short introduction where you describe the technology and what type of innovation area it belongs to, as well as to why the analysis is relevant. Include an overarching and interesting self-selected question tied to the course theme and the chosen technology of the report, which you answer in the end of the report (conclusion).
- Briefly describe what previously acquired knowledge was needed in order for this technology to have been innovated, and also what type of entrepreneurship that was needed.
- Make a comparison between the chosen technology and other comparable or competitive technologies. Elaborate why one or more of the technologies are superior in relation to the other technologies.

- Make a PESTLE analysis of the chosen technology to get a wider perspective of the technology.
- Make an analysis based on Porter's Five forces model to get a wider perspective of the external market forces.
- Back casting: Describe a possible second phase in a sequential back casting, that is a future scenario where the technology you analyze is (still) in full use. In this scenario description, elaborate on why, or why not, it is likely that a new industry structure will develop because of the analyzed technology. If it is likely, include a detailed new possible industry structure that could develop because of the analyzed technology. If it is not likely, give validated reasons based on your analysis to why it is not likely.
- Tie the technology to the guest lectures as a last reflective part of the report.
- Base your arguments on research sources, and if you want, also on other types of resources. Suggested resources are found under *Modules > Links and other important information > Literature and other resources*.

2. Presentation

The report is presented during the second workshop. Each presenter needs to prepare a PowerPoint (max 5 slides) and discuss their analysis highlights for a maximum of 5 minutes. After each presentation, two other course participants will give oral feedback to the presenting student. The presenting students are expected to explain their work if asked for further details and answer questions from the reviewers and other seminar participants. There will be an allotted 5 minutes for each reviewer (further discussed in the next section).

3. Feedback

Giving feedback is an excellent way to develop your own analytical and writing skills. Thus, in addition to teachers' feedback, peer assessments for the first part of the report will be an important part of this assignment and you are required to provide written and oral feedback. Feedback schemes will be available under *Modules > Links and other important information > Feedback schemes*. It is expected that reviewers have analysed their reviewees' drafts and prepared a written and oral feedback before the seminar where the reports are presented. It is also important that participants keep to the deadlines so that reviewers have enough time to review the drafts.

Written feedback – Checklist for your written feedback

4. Does it include all points expected (see under *Include the following in your analysis report*)?
 - ✓ Are terms and concepts used correctly?
 - ✓ Is an analytical ability displayed?
 - ✓ Are the formalities correct (e.g., references, number of pages, etc.)?
 - ✓ Recommendation to further improve the work?

Oral feedback – Points from the written feedback will be orally presented during the seminar.

5. Final report

After receiving feedback for the draft, the final report will be developed. In addition to the points provided under *Include the following in your analysis report*, a reflection section must be included as an appendix in the final version of the written analysis. In this section, you must also discuss your thoughts while developing the final report in relation to the feedback you have received from the student reviewers and the teacher. Note that it is an authors' prerogative to choose if what suggestion/s they consider (and not) essential to develop the report. However, the author's choices have to be explained and argued, and will be part of the assessment of the report. Final reports are expected to have 1000-1500 words including a reflection section (excluding cover sheets, references and appendices).

NOTE

- All reports are expected to use the Times New Roman/Calibri, size 12, normal 1.5 line spacing.
- The reports are expected to follow the Harvard Referencing System or APA referencing System for in-text referencing and the list of references at the end of the report. See the [KTH reference guide](#) for further instructions.
- Late submissions will result to (letter) grade deduction, so submit in good time.

PRO2 – Group project (related to ILO 1-5)

A case study report of a self-selected ICT innovation (draft of the report, presentation, feedback, and final report)

This is a group project that involves a *case study*. This assignment allows students to study real ICT innovations and the related entrepreneurship, and to evaluate the effects of a new ICT innovation in a market and an industry setting. You will learn how to use a systematic analytic approach to identify challenges which precedes a technological innovation or can occur for existing technological innovations, as well as how to overcome the challenges or work around them. The report will be presented as a written and professional report, as well as through a professional pitch during a seminar.

1. Group Formation

Students are responsible to build their own teams through Canvas. Each group need to have 5-6 members. See instruction in Canvas under *Assignment > Group formation*.

2. Chose the case

Your team is expected to find a company where you can study one of their ICT innovations and write about it in a report. The company must be willing to have at least one interview with the team. The role of your team is to be consultants that assists the company in analyzing, evaluating, and suggesting relevant developments of the particular technology. This will be presented in the form of a report that your team can give to the company in the end of the course.

3. The report

It is important that the report is reader friendly, but also contain the important aspects of the phenomenon. It should be easy and appealing for both course participants and the company to read the report. It should also be a good base for future decisions regarding the company's ICT development. One third of the report should include introduction, methods, and a theoretical framework. The introduction should introduce the company, the industry, the technology, as well as the type of innovation area that the technology belongs to. You should also include an aim and a research question in the introduction that you answer in the end of the report. The methodological section and a theoretical frame can be part of the introduction or presented in their own sections. The main part, about 3/5 of the report, is where the data is presented and analysed. You will strengthen your analysis and arguments in the report by referring to the scientific articles and other relevant sources that you presented in the theoretical frame. The guide to your analysis is the introduction and research question. Some data can also be placed in an appendix to which you can refer to in your text, which for example is good if the data that takes up a lot of words or space. Approximately 1/5 of the report is allocated to the conclusions. For more guidance of how to write, check the resource library under *Modules > Links and other important information > Literature and other resources*.

Method

In this assignment you will study an ICT innovation in one company, and the method that you are supposed to use is a case study. A case study method is used to investigate a specific phenomenon, often narrowed down to something like an incident, a practice, a company, or an institution. Write a brief description of the method, a case study, and what data you have used, for example specified in a table where also the used sources are shown. Your data can be almost anything when it comes to a case study, for example observations, the content of a website or posts in social media, interviews, reports (e.g. annual reports), advertisements, and newspaper articles. Remember to collect your data systematically and give a short description of what you collected and how you collected it. For more guidance of how to write the methodological section, check the resource library under *Modules > Links and other important information > Literature and other resources*.

Checklist when writing your report

- Should be 2000 – 3000 words, excluding cover sheets, table of content, references and appendices.
- Include a minimum of five scientific sources (e.g. course book and scientific articles).
- The report should include following parts (but not necessarily these headings):
 - Cover sheet with a title of your study, the course name, and your full names
 - Short summary (abstract)
 - Table of content
 - Introduction to the phenomenon, aim and/or research question, theoretical framing, short method (case study and what data that has been used) description.
 - Results (data) and analysis
 - Conclusion (base it on your analysis and answer the research question from the introduction)
 - References
 - Appendix (if you need it)

4. Presentation

The teams will present their reports in the eights workshop. During this workshop, the presenting team will adopt the role of a consultant team. A reviewing group will take the role of the company's executive group. Remaining students can also contribute with feedback or discussions. The presenters need to prepare a PowerPoint (max 5 slides) and discuss their reports' highlights for a maximum of 5-10 minutes. After each presentation, reviewers will orally give feedback (highlights from the written feedback) to the presenting students for a maximum of 5 minutes. There will also be an allotted 5 minutes for additional discussions where all participants can contribute.

5. Feedback

In addition to the teacher's feedback, peer assessments will be an important part of this assignment. Each team will be assigned by canvas to review other teams' submitted report drafts. The reviewers are expected to have analysed the drafts and prepared written and oral feedback before the seminar where the report is presented. It is important that participants keep to the deadlines so that reviewers have enough time to review the drafts. Giving feedback is a good way to contribute to other students' learning, but also a way to develop your own writing skills (learning by analysing others' writing).

Written feedback – Checklist

- ✓ Does the report follow the instructions (see *The report* section)?
- ✓ Does the title fit the content?
- ✓ Is there an interesting introduction? Does it make you curious? Do you understand

- the phenomena? Is there a problematisation and a research question?
- ✓ Are terms and concepts used correctly?
 - ✓ Have relevant data been used?
 - ✓ Is an analytical ability displayed and has a research question (or problematisation) been answered?
 - ✓ Is the report logic and rational? Is it reader friendly? Do you like to read it? Is it understandable?
 - ✓ Is the report self-supporting in that you can read the text without needing further information?
 - ✓ Are the formalities correct (e.g., references, number of pages, etc.)?
 - ✓ Is the language good?
 - ✓ Do you as an executive group find the report useful when it comes to making a decision regarding the technology?
 - ✓ Any further recommendation to improve the report?

6. Contribution diary

Additional to the team report, each team member shall write a contribution diary where the own contributions are described. Each diary needs to have between 250 and 500 words stating what you have contributed with to the group work. This assignment is designed to comply with students' ethical obligations (see course syllabus), and to give participants the possibility of reflecting about the own strengths and weaknesses in projects and groups.

NOTE

- All reports are expected to use the Times New Roman/Calibri, size 12, normal 1.5 line spacing.
- The reports are expected to follow the Harvard Referencing System or APA referencing System for in-text referencing and the list of references at the end of the report. See the [KTH reference guide](#) for further instructions.
- Late submissions will result to (letter) grade deduction, so submit in good time.

Grading criteria

The grading of the course will be based on two types of examination activity:

- INL2 - Assignment, 2,0 credits, grading scale: A, B, C, D, E, FX, F. This assignment is directly connected to learning outcome 1 and 4.
- PRO2 - Project, 4,0 credits, grading scale: A, B, C, D, E, FX, F. This assignment is directly connected to learning outcome 1-5.

NOTE: To complete the course, students must pass both of these two assignments.

The following provides points of reference for the grading of the INL2 and PRO2, both graded A to F (A- E passed, F failed):

Grade FX

Fail. Some work required before the credit can be awarded.

Grade E

An ICT related technology is identified, described, evaluated, and related to an innovation and entrepreneurial area. In connection to this technology, relevant technological and business oriented challenges are identified, described, and evaluated. Also in relation to the studied technology, a business analysis is carried out and recommendations regarding the commercial possibilities are designed. A complete report has been written where the studied field, technology, analysis, and recommendations are synthesized in relation to the assignment instructions, but it lacks some basic knowledge or other basic features. The report and/or the

problematization is partially autonomous. The analysis is partial. Suggestions of improvements are included in the report, but important aspects are not adequately treated.

Grade C

In addition to above requirements, the student should be able to apply concepts, frameworks and theoretical insights from the course main content in a complete analysis of the complex strategic problems associated to the phenomenon and relevant knowledge presented in the report. A complete report has been written where the studied field, technology, analysis, and recommendations are synthesized in relation to the assignment instructions. The report and the problematization are autonomous. The report contains sufficient knowledge, an adequate analysis, and other relevant features for the suggested improvements presented in the report.

Grade A

In addition to above requirements, insights from different parts of the course are provided as sound managerial advice regarding complex strategic challenges. The report provides a theoretically grounded argumentation based on relevant literature and combining several sources in a meaningful way. An ability to autonomously use theoretical concepts and ideas in order to develop knowledge on the subject is in the report demonstrated by providing own interpretations and reflections in a systematic, detailed and coherent way, and by approaching the subject from different points of views. The ability to organize the line of reasoning is clear and strengthens the argument of the report. The report is building on knowledge, identification, descriptions, understanding, analysis and evaluation of the phenomena, as well as creates new relevant insights and ideas in relation to challenges associated with the studied technology, innovation, and business setting. The report is presented in a well-structured and reader-friendly way from both an academic and an industry perspective.

Grade D and B

If the student meets level C, but only parts of level A, will this result in grade B. If the student meets level E, but only parts of level C, will this result in grade D.

Course schedule – ME2096 ICT Innovation Study Project

Note:

- Students are expected to attend lectures and workshops.
- When in need of extra guidance, write or schedule an extra zoom time with the teacher.

| Week /Day | Date | Location | Time | Content | Activity |
|-----------|-----------|----------|-----------------|---|--------------------------------------|
| 35 Mon | 28 Aug | L1 | 08:00- 10:00 | Introduction to course and academic culture in Social Sciences INL2/PRO2 | Workshop 1 (JN/AMN) INL2/PRO2 |
| 35 Tue | 29 Aug | Zoom | 10:00- 12:00 | Social Scientific Practice and method | Lecture 1 (JN) INL2/PRO2 |
| 35 Thu | 31 Aug | Zoom | 10:00- 12:00 | Information searching, referencing & plagiarism | Lecture 2 (JN) INL2/PRO2 |
| 35 Fri | 01 Sep | B2 | 15:00- 17:00 | Writing up your University Assignments | Lecture 3 (JN) INL2/PRO2 |
| 35 Fri | 01 Sep | | 19:00 | Deadline: Group formation | Group formation INL2/PRO2 |
| 36 Mon | 04 Sep | | 19:00 | Deadline: Draft INL2 | Deadline INL2 |
| 36 Wed | 06 Sep | | 08:00 | Deadline: Feedback draft 1 INL2 | Deadline INL2 |
| 36 Wed | 06 Sep | | 08:00 | Deadline: 5 presentation slides INL2 | Deadline INL2 |
| 36 Wed | 06 Sep | ZOOM | 08:00- 10:00 | Presentations and feedback draft INL2 | Workshop 2 (JN/AMN) INL2 |
| 37 Mon | 11 Sep | | 19:00 | Deadline: draft 1 PRO2 | Deadline PRO2 |
| 37 Wed | 13 Sep | | 08:00 | Deadline: Feedback draft 1 PRO2 | Deadline PRO2 |
| 37 Wed | 13 Sep | ZOOM | 08:00- 10:00 | Guest lecturer Feedback PRO2 | Workshop 3 + Guest lecturer (AMN) |
| 37 Wed | 13 Sep | | 19:00 | Deadline: Reflections tied to guest lecturer and INL2 technology | Deadline INL 2 |
| 38 Mon | 18 Sep | | 19:00 | Deadline: draft 2 PRO2 | Deadline PRO2 |
| 38 Wed | 20 Sep | | 15:00 | Deadline: Feedback draft 2 PRO2 | Deadline PRO2 |
| 38 Wed | 20 Sep | ZOOM | 15:00- 17:00 | Guest lecturer Feedback PRO2 draft 2 | Workshop 4 + Guest lecturer (AMN) |
| 38 Wed | 20 Sep | | 19:00 | Deadline: Reflections tied to guest lecturer and INL2 technology | INL 2 |
| 38 Fri | 22 Sep | | 19:00 | Deadline: Draft 3 PRO2 | PRO2 |
| 39 Tue | 27 Sep | | 08:00 | Deadline: Feedback draft 3 PRO2 | PRO2 |
| 39 Tue | 27 Sep | ZOOM | 08:00- 10:00 | Guest lecturer Feedback PRO2 draft 3 | Workshop 5 + Guest lecturer (AMN) |
| 39 Wed | 27 Sep | | 19:00 | Deadline: Reflections tied to guest lecturer and INL2 technology | INL 2 |
| 39 Fri | 29 Sep | | 19:00 | Deadline: Draft 4 PRO2 | PRO2 |
| 40 Thu | 05 Oct | | 10:00 | Deadline: Feedback draft 4 PRO2 | PRO2 |
| 40 Thu | 05 Oct | ZOOM | 10:00- 12:00 | Guest lecturer Feedback PRO2 draft 4 | Workshop 6 + Guest lecturer (AMN) |

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|-------------------|-------------------|----------------|--------------------|--|----------------------------------|
| 40 Thu | 05 Oct | | 19:00 | Deadline: Reflections tied to guest lecturer and INL2 technology | INL 2 |
| 40 Fri | 06 Oct | | 19:00 | Deadline: Final version INL2 | INL2 |
| 41 Mon | 09 Oct | | 19:00 | Deadline: PRO2 draft 5 | PRO2 |
| 41 Fri | 13 Oct | | 10:00 | Deadline: PRO2 5 presentation slides | PRO2 |
| 41 Fri | 13 Oct | | 10:00 | Deadline: Feedback draft 5 PRO2 | PRO2 |
| 41 Fri | 13 Oct | V23/V35 | 10:00-12:00 | Presentations and feedback PRO2 draft 5 | Workshop 7 (JN & AMN) |
| 41 Fri | 13 Oct | Q11/Q13 | 13:00-15:00 | Presentations and feedback PRO2 draft 5 | Workshop 7 (JN & AMN) |
| 43 Mon | 23 Oct | | 19:00 | Deadline: Final version PRO2 | PRO2 |
| 43 Tue | 24 Oct | | 19:00 | Deadline: Contribution diary (individual) | PRO2 |