



Course syllabus

Teknologistrategier Technology Strategy

MION25, 7,5 credits, A (Second Cycle)

Valid for: 2023/24

Faculty: Faculty of Engineering, LTH

Decided by: PLED I

Date of Decision: 2023-04-14

General Information

Elective for: B5, C5, D5, E5-ae, I4-ai, I5-pvs, K5, M4

Language of instruction: The course will be given in Swedish

Aim

The goal of the course is to create a deep understanding for the technology strategy in relation to the business strategy in companies. Enterprising has become more and more complex and there is a high demand that the management is taking the correct strategical decisions; business and technology, in a fast way!

In order to prepare the students for this complex environment and especially the technological development, this course aims to give them a broad overview of the technological development processes and its near relation and implication for the business strategies in the companies. The course is mainly focused on the earlier innovation phases in companies where there is a high demand and a necessity for foresight in order to accomplish unique and sustaining competitive advantages.

Learning outcomes

Knowledge and understanding

For a passing grade the student must

- have developed, in depth, an individual capability and, within a team conduct an advanced technology strategy analysis i.e. technological SWOT. In this is included an ability to describe and understand (incl. assess) the importance of technology in alignment with its business strategy.
- be able to identify, relate and develop the models and methods of technology strategy to different types of enterprising to have the possibility to in a correct

way take strategical and tactical business decisions.

- independently and in team be able to collect and integrate technological, financial, and other business information.
- be able to transform the above skills to knowledge which will be used for different decisions; internal and external.
- actively be able to collaborate (incl presenting) a technology strategy project together with a company or public organization.

Competences and skills

For a passing grade the student must

- have developed a good capability to, independently and in a group, be able to perform an analysis of technological strategy. This includes identifying, describing, explaining and evaluating, in particular the technology and its relation to the chosen business strategy.
- be able to independently and in a group collect and arrange both technical and business data and transfer this to knowledge that can be used in decision making within several areas in the company.

The areas that are affected are:

- technological SWOT
- environmental, resource and competence analysis
- designing technology strategy
- management planning
- risk analysis

After the course, the student shall be able to use established concepts and the main terminology in an easy and explicit manner in order to communicate orally and in written formats with other functions within the company and in its Swedish and international market network.

Contents

Technological change: patterns and models The students are given a broad picture of the technological developments and change processes and its implication for the strategies of business. We discuss different innovation processes and phases of technological development (technological shifts and paradigms). We emphasize the connection between changes in the knowledge base of technology and business strategies in relation to different industrial structural changes.

Technological foresight The development of long term technological strategies, built upon inevitable future technological and market trends. Can these assumptions be more realistic through the use of more formalistic methods? What time horizons can be applied? We do a systematic exposition of qualitative and quantitative methods (including scenario construction) for technical foresight and technological evaluation. Special effort is put on the integration of technological foresight in the decision processes and the planning of R & D.

Strategic decisions and decision processes This element of the course focuses mainly on strategic considerations which the management should include and consider in their decision process to formulate their business strategy. This may for example concern decisions about new products, services and systems. This can also include the development of current ones in order to in an improved way meet the demands of the market. We discuss here different considerations whose purpose is to stimulate and quality certify strategic decisions in companies.

Examination details

Grading scale: TH - (U,3,4,5) - (Fail, Three, Four, Five)

Assessment: The examination consists of two parts: A case which is self constructed in a team of maximum of four (4) students and a written individual literature examination. The grade is balanced between the case (60 %) and the written individual examination (40%). The boarding overnight, case seminars, guest lectures and the presentation including the discussion of the written case are obligatory.

The examiner, in consultation with Disability Support Services, may deviate from the regular form of examination in order to provide a permanently disabled student with a form of examination equivalent to that of a student without a disability.

Parts

Code: 0112. **Name:** Project.

Credits: 3. **Grading scale:** UG. **Assessment:** This part can give 60 points, out of totally 100 points for the course.

Code: 0212. **Name:** Examination.

Credits: 4,5. **Grading scale:** UG. **Assessment:** This part can give totally 40 points, out of 100 points for the whole course.

Admission

Admission requirements:

- Basic course in Managerial economics

Assumed prior knowledge: MIO022/MIOF20/MIOF21 Strategic Management and basic course in Marketing,

The number of participants is limited to: No

The course overlaps following course/s: MIO090

Reading list

- Dodgson, M, Gann and Salter, A.: The Management of Technological Innovation: Strategy and practice. Oxford University Press.
- Matheson, D and Matheson, J: The smart organization. Creating value through strategic. R & D. Harvard Business School Press.
- Dodgson, M, Gann and Salter, A. The Management of Technological Innovation: Strategy and practice. Oxford University Press.
- Matheson, D and Matheson, J: The smart organization. Creating value through strategic. R & D. Harvard Business School Press,.
- Articles and case material.

Contact and other information

Course coordinator: Ola Alexanderson, ola.alexanderson@iml.lth.se

Course homepage: <http://www.pm.lth.se>