



## COURSE SYLLABUS

### Ekonomisk analys av teknologi, teknologisk förändring och strategi Economic Analysis of Technology, Technological Change and Strategy 7.5 credits (7,5 högskolepoäng)

**Course code:** IY2614

**Main field of study:** Industrial Economics and Management

**Disciplinary domain:** Technology

**Education level:** Second cycle

**Specialization:** AIF - Second cycle, has second cycle course/s as entry requirements

**Subject area:** Industrial Engineering and Management

**Language of instruction:** English

**Applies from:** 2019-11-01

**Approved:** 2019-10-25

#### 1. Decision

This course is established by Dean 2019-10-17. The course syllabus is approved by Head of Department of Industrial Economics 2019-10-25 and applies from 2019-11-01.

#### 2. Entry requirements

Admission to the course requires taken course Economic Analysis of Markets, Firms and Industries 7.5 credits.

#### 3. Objective and content

##### 3.1 Objective

The purpose of the course is to provide students with an understanding of the drivers of innovation and technological change as well as how new technology and technological change influence the competitive environment and strategy. The course includes the application of game theoretic concepts to analyse how network technologies influence competition and strategy, and analytical methods to evaluate how new types of platform technologies change the conditions for new actors and different market structures.

##### 3.2 Content

- Firm-specific and contextual determinants of innovation and new technology
- Product and process innovation
- Market structure, competition and technological change – causes and consequences
- Network effects and standards
- Passive and active consumers
- Diffusion of innovation and technology
- Patent, intellectual property rights and strategy
- Skill bias and properties of technological change – causes and consequences
- Technology markets, M&A and entrepreneurship
- Modern technology, network externalities and business strategy, such as lock-in, switching costs, first mover advantages, the analysis of demand and price setting in the context of network externalities

#### 4. Learning outcomes

The following learning outcomes are examined in the course:

##### 4.1 Knowledge and understanding

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

- explain and discuss different types of innovation, their origin and diffusion in the economy
- understand and explain the basic qualities and the challenges facing the innovative firm
- understand, explain and analyse the relationship between innovation, technological change and market structure
- understand, explain how the characteristics of modern technology influence the competitive environment on different markets
- understand and explain the significance of intellectual property rights, such as patents, and the market for technology in the modern economy

#### 4.2 Competence and skills

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

- apply analytical models and concepts from innovation economics to identify effects on market structures and competitive environment of new products and technologies
- use analytical models such as game and price theory to develop strategies regarding price setting, product differentiation and organization in response to changing market conditions through innovation and new technology
- use models of technology diffusion to model and predict the spread of new technology in an economy

#### 4.3 Judgement and approach

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

- demonstrate the ability to use analytical models to analyse the conditions for and consequences of innovation and new technology for firms and markets
- apply economic theory and concepts for strategic thinking and decision making

### 5. Learning activities

Teaching in this course consists of lectures and assignments

### 6. Assessment and grading

Modes of examinations of the course

Code	Module	Credits	Grade
I910	Written assignment	2.5 credits	GU
I920	Written examination	5 credits	AF

The course will be graded A Excellent, B Very good, C Good, D Satisfactory, E Sufficient, FX Fail, supplementation required, F Fail.

The course-PM for each course revision should include the assessment criteria and make explicit in which modes of examination that the learning outcomes are assessed.

An examiner can, after consulting the Disability Advisor at BTH, decide on a customized examination form for a student with a long-term disability to be provided with an examination equivalent to one given to a student who is not disabled.

### 7. Course evaluation

The course evaluation should be carried out in line with BTH's course evaluation template and process.

### 8. Restrictions regarding degree

The course can form part of a degree but not together with another course the content of which completely or partly corresponds with the contents of this course.

### 9. Course literature and other materials of instruction

David S Evans and Richard Schmalensee, Matchmakers – the new economics of multisided platforms. (Latest edition) Harvard Business Press

Peter Swann, The economics of innovation. (Latest edition) Edward Elgar Publishing

2-3 cases purchased from Harvard Business Publishing (assigned cases are mandatory and the student will have to purchase access from the publisher)

Scientific articles and other materials (500 pages maximum)