Economics of innovation and growth
Motivation for the program

Innovation and entrepreneurship are prime factors behind value creation, economic prosperity and employment growth. The growing awareness of the importance of innovation among knowledge-based firms, financial markets and policymakers has created a demand for a program which integrates aspects of technology, economics, financing and other related areas.

Economics of innovation and growth

Started in 2005, one intake a year

2-year master's program (120 ECTS)

Economics with a focus on innovation and growth

Highly attractive for both students and employers

- ~ 10 qualified applicants per available seat
- Swedish and international students
- Many are offered employment before graduation

Entrance requirements and selection criteria

Special admission requirements

- ≥ 30 ECTS in economics/statistics/mathematics
- Bachelor degree in economics/engineering/mathematics

Selection criteria

- Motivation
- University ranking
- Quantity of relevant courses
- Quality in relevant courses

Top ten countries of origin in 2017 (65.4 %)

Country	Percent of qualified applicants 2017
Sweden	38.4
Germany	5.7
China	3.4
Greece	3.2
Indonesia	3.2
Pakistan	2.9
Azerbaijan	2.3
Bangladesh	2.3
Russia	2.0
USA	2.0

Program structure

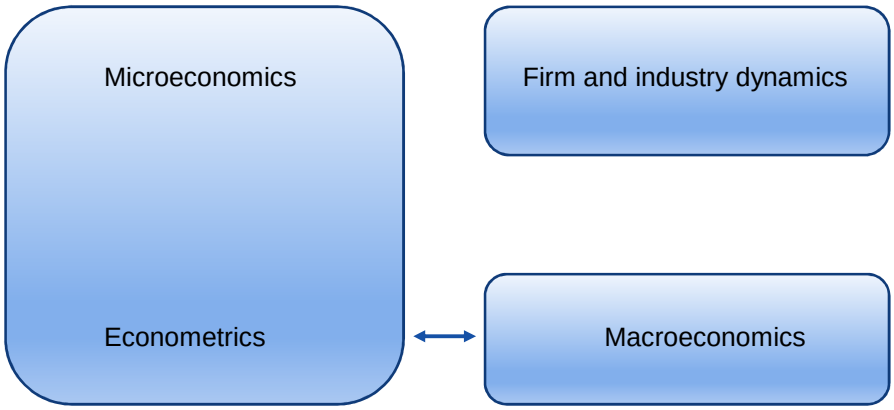
Each study year comprises 40 weeks (60 ECTS) divided into four periods

Two 7.5 ECTS courses per period except last term which is entirely devoted to the degree project 30 ECTS

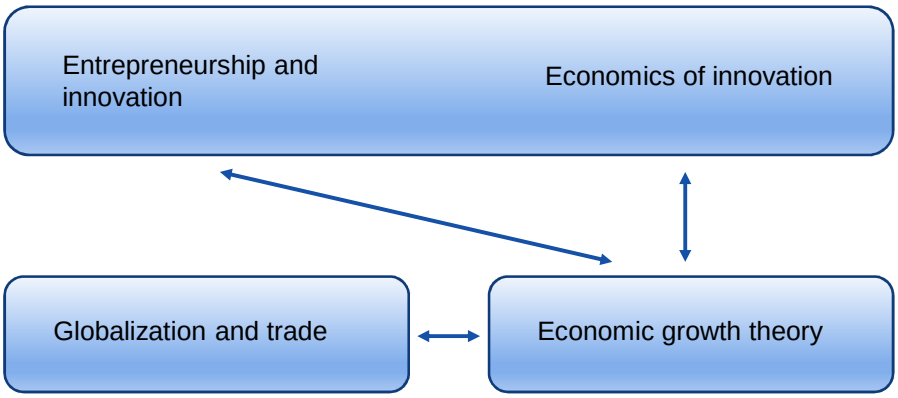
First year all courses compulsory

Second year mainly elective courses

Courses year 1, period 1 and 2



Courses year 1, period 3 and 4



Courses year 2, period 1 and 2

Theory and methodology of science

Possibility for exchange term

Conditionally elective
- Advanced econometrics
- Management and strategy
- Corporate finance
- Green economics
- …
- …

Courses year 2, period 3 and 4

Degree project

Exchange term 2017

- Iowa State University, **USA**
- Queensland University of Technology, **Australia**
- Singapore Management University, **Singapore**
- Nanyang Technological University, **Singapore**
- Korea Advanced Institute of Science and Technology (KAIST), **Korea**
- Technische Universität Berlin, **Germany**
- Keio University, **Japan**
- Tokyo University, **Japan**

Alumni

The program allows for a broad spectrum of career opportunities within the private and public sector. Previous students can be found in banking, large multinational corporations, governmental agencies, consultancy companies, academia and entrepreneurial ventures

Alumni

- Business Analyst at a Russian subsidiary of **Air Liquide**
- Associate Account Strategist at **Google**
- Sales Manager Financial Services at **Tieto**
- Business developer at the Department for Household Strategy and Development (HSD) at **Nordea**
- Project Manager at **Nordicstation**, an IT consultant company
- Capital and Risk Analyst at **Nordea**
- IT specialist in the IT department at **Aviva**
- Manager at the market intelligence and research department at **ALB-telecom**
- Research team leader at **Nepa**, a research company
- Analyst within the Global Marketing team at **Oriflame**
- Analyst at the Swedish branch of **The Royal Bank of Scotland**

Microeconomics
Intended learning outcomes

- Be able to use and derive advanced microeconomics theory to analyze market competition, technological change and productivity growth, with mathematically formalized models.
- Be able to describe and apply formal mathematical models to prognosticate how supply and demand for specific goods will develop.
- Have knowledge of duality and optimization for modern applied economical analysis.
- Have knowledge and tool to analyze welfare economics effects of technical and commercial development.
- Be able to use game theory for the analysis of strategic decisions.
- Be able to use advanced microeconomics theories and models
- Have knowledge how these can be applied for decision making in company, for example by engineers in managerial positions.

Microeconomics
Main content

- Consumer and producer theory
- Competition
- Theory of general equilibrium
- Welfare analysis
- Strategic behavior and game theory
- Information asymmetries

Firm and industry dynamics
Intended learning outcomes

- Be able to explain and analyze the importance of firm and industry dynamics for economic development.
- Be able to explain, compare and analyze the importance of firm and industry dynamics according to different economic theories.
- Have knowledge about and discuss critically empirical research results about firm and industry dynamics.
- Be able to explain the importance of institutions and industrial policy for firm and industry dynamics.
- Be able to compile, analyze critically and present an empirical case study of the development of an industry sector.

Firm and industry dynamics
Main content

- Innovation and economic development
- Firm and industry dynamics in economic theories
- Start-up and close-down of companies
- High-growth companies
- Institutional aspects of industry dynamics
- Company localization and industry clusters
- Business policy

Macroeconomics for business
Intended learning outcomes

- Relate theoretical macroeconomic models to policy issues
- Show a broad expertise in macroeconomics
- Use macroeconomic theory and empirical data to generate decision support
- Independently and in groups analyse, reason and communicate on issues related to macroeconomic variables, both in writing and verbally
- Select relevant macroeconomic models and empirical methods for analysing macroeconomic phenomena
- Reflect over how economic shocks influence the aggregate economic development in a short and long perspective

Macroeconomics for business
Main content

- How the different components of the macroeconomics stick together
- Exchange rates, deflation, inflation and prices
- Focus on empirical macroeconomics
- Technical development, innovation, competitiveness and growth
- Monetary and fiscal policy
- Financial markets, labour and product market
- Compile, analyse and report on macroeconomic data, verbally and in writing

Basic econometrics
Intended learning outcomes

On completion of the course, the student should:

- have understanding of why econometrics is necessary and which tools that can be used for an empirical analysis
- apply econometric tools for modelling, estimation, conclusion and forecasts in connection with real problems from different parts of the society
- critically evaluate results and conclusions from others that use basic tools for quantitative analysis
- have a basis and an understanding of further studies of econometrics/quantitative analysis
- have an understanding the range of more advanced technologies that are available and that can be covered in later econometric courses/courses in quantitative analysis

Basic econometrics
Main content

- Statistical probability theory and mathematics
- Simple and multivariable models for linear regression analysis
- Models for simultaneous equations
- Estimations with time series data
- Models for panel data
- Models for quantitative variables
- Hypothesis testing, prediction and model adaptation

Economics of innovation
Intended learning outcomes

- Understand the meaning of concepts such as R&D, technology, technology dispersion, markets for technology, invention, innovation, productivity.
- Understand the importance of the innovation processes of the companies and the leverage effect that can be created by utilizing industrial, regional and national innovation systems.
- Show ability to understand the often complex nature of the innovative activities
- Understand why funding of innovative activities can be a problem
- Understand why the private return on investment on innovative activities is often lower than the social return on investment
- Understand how innovative activities can be converted to new knowledge, technical changes and economical growth.
- Understand the importance of the globalization for innovative activities.

Economics of innovation
Main content

- Creation and dispersion of technology and knowledge
- Risk and funding of innovative activities
- Innovation and technology policy

Entrepreneurship and innovation
Intended learning outcomes

- Be able to explain and analyze the role of entrepreneurs for economic development.
- Be able to explain, compare and analyze the importance of entrepreneurship and innovation according to different economical theories.
- Have knowledge of the empirical results within entrepreneurship research.
- Have knowledge of the process of turning an innovation into a business.
- Have knowledge of different financing options for entrepreneurs.
- Be able to explain the importance of institutions and entrepreneurship policy for innovation and entrepreneurship.
- Be able to compile, present and critically analyze empirical research within entrepreneurship and innovation.

Entrepreneurship and innovation
Main content

- The process from innovation to business; entrepreneurship in economic theories; measuring entrepreneurship; determinants of entrepreneurial activities and success; financing entrepreneurship; institutions and entrepreneurship policy.

Globalization and trade
Intended learning outcomes

- Describe the processes of globalization and demonstrate knowledge of the political, social and economic impacts
- Describe the development of international trade and the relevant trade policy institutions
- Describe and assess the relevance of various trade theories
- Analyze the effects of various forms of trade
- Apply fundamental macro-, micro-, and international economic theory to analyze globalization
- Describe and analyze multinationals importance to globalization and localization of economic activity
- Identify factors that promote or hinder globalization
- Assess the implications of globalization for economic growth
- Critically review and reflect on the ideas in the academic literature dealing with globalization

Globalization and trade
Main content

- Static and dynamic comparative advantages
- Spatial preferences and specialization
- One-and two-way trade
- Spatial price equilibrium
- Barriers
- Specialization, agglomeration and regional/national growth
- International and regional migration patterns
- FDI

Economic growth
Intended learning outcomes

- Understand the relationship between technological development and economic growth
- Use basic theoretical and mathematical tools to analyze long-term economic growth
- Understand and reflect on the four main growth paradigms' implications for economic policy
- Use mathematical models to analyze the role of physical capital, human capital, R&D, institutions, entrepreneurship and innovation for economic growth
- Analyze the role of natural resources in sustainable economic growth
- Read, interpret and assess both basic and highly technical theoretical and empirical research on economic growth

Economic growth
Main content

- The aim of the course is to give students both broad and deep knowledge of the facts and the theories of economic growth. A special emphasis is placed on the relationship between technological development and economic growth.
- The course starts with presenting facts about economic growth and then the four main growth paradigms are introduced: the neoclassical model, the Romer product variety model, the Schumpeterian model and the AK model.
- The study of economic growth requires highly theoretical models in order to understand how different factors affect the development of the economy and a large part of the course is devoted to develop students' ability to use mathematics in solving these models. Group work and seminars are essential parts of the course, where students will develop good working skills in using relevant mathematical tools for analyzing economic growth and designing growth policies.