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## STUDY PERIODS

**1A:** 2009-08-31 – 2009-10-04  
**1B:** 2009-10-05 – 2009-11-01

**2 A:** 2009-11-02 – 2009-11-29  
**2 B:** 2009-11-30 – 2010-01-17

**3 A:** 2010-01-18 – 2010-02-21  
**3 B:** 2010-02-22 – 2010-03-28

**4 A:** 2010-03-29 – 2010-05-02  
**4 B:** 2010-05-03 – 2010-06-06

# STUDY PERIOD 3 AND 4

## SPRING SEMESTER

### SS

#### STUDY PERIODS

1A: 2009-08-31 - 2009-10-04  
1B: 2009-10-05 - 2009-11-01

2A: 2009-11-02 - 2009-11-29  
2B: 2009-11-30 - 2010-01-17

3A: 2010-01-18 - 2010-02-21  
3B: 2010-02-22 - 2010-03-28

4A: 2010-03-29 - 2010-05-02  
4B: 2010-05-03 - 2010-06-06

## BUILDING ENGINEERING

### Energy Optimization for Buildings

**CODE:** WBT014

**CREDITS:** 15

**LABORATORY HOURS:** 0

**STUDY PACE:** Part time 50%

**LOCATION:** Västerås

**EXAMINATION:** Exercise

**PREREQUISITES:** At least 120 credits in the technical or natural sciences areas with at least 90 credits in Building and/or Energy Engineering.

**COURSE CONTENT:** In this course calculations, analyses and parameter studies of the energy balance of buildings are made. It includes comparisons and analyses regarding energy consumption based on measurements as well as calculations. Thermal inertia and thermal indoor climate is also something that is important as well as calculations and analyses of life cycle costs and optimisation regarding costs of energy, investment, maintenance etc. You will get practice in critical evaluations, and will be able to understand and utilize results taking different limitations into account. The course also includes a comprehensive view as well as deeper studies within parts of the broad field of interaction between buildings and installations.

**CONTACT PERSON:** Karin Spets, karin.spets@mdh.se

**SCHOOL:** School of Sustainable Development of Society and Technology

**LECTURE HOURS:** 40

**START PERIOD:** 3

**LEVEL OF EDUCATION:** Advanced level

**LANGUAGE:** English

## BUSINESS ADMINISTRATION

### Contemporary Issues in Marketing

**CODE:** EFO218

**CREDITS:** 7,5

**LABORATORY HOURS:** 0

**STUDY PACE:** Part time 50%

**LOCATION:** Västerås

**EXAMINATION:** Oral/Written examinations

**PREREQUISITES:** A Bachelor's degree from an institution of higher education of three years or more, equivalent to at least 180 credits in Business Administration, Social Science or Technology; or at least 90 credits in Business Administration of which at least 30 credits on Basic level Third Year.

**COURSE CONTENT:**

- Contemporary marketing issues in practice, research and current debate.
- Case analyses.
- Guest lectures.
- Business intelligence.

**CONTACT PERSON:** Madeleine Lundberg, madeleine.lundberg@mdh.se

**SCHOOL:** School of Sustainable Development of Society and Technology

**LECTURE HOURS:** 40

**START PERIOD:** 3

**LEVEL OF EDUCATION:** Advanced level

**LANGUAGE:** English

### Managerial Economics and Financial Theory

**CODE:** EFO011

**CREDITS:** 7,5

**LABORATORY HOURS:** 0

**STUDY PACE:** Part time 50%

**LOCATION:** Västerås

**EXAMINATION:** Seminars, Paper

**PREREQUISITES:** Business administration 60 credits (at least 45 credits finished when the course starts). At least 20 credits in Business Administration have to be on Basic Level Second Year.

**COURSE CONTENT:** The course examines the theoretical and empirical aspects of management of existing resources within an organisation. Discussed topics are managerial economics of strategy, management in the situation of imperfect market conditions, the use of financial statements and financial ratios for decision making, acquisitions, mergers, financial forecasting and planning, operational financial management, business valuation and corporate restructuring techniques. The course is based on literature, lectures and active participation of the students, involving student-led seminars reflecting literature review, presentation of a paper and discussion of papers by the students.

**CONTACT PERSON:** Mona Andersson, mona.andersson@mdh.se

**SCHOOL:** School of Sustainable Development of Society and Technology

**LECTURE HOURS:** 30

**START PERIOD:** 3

**LEVEL OF EDUCATION:** Basic Level Third Year

**LANGUAGE:** English

### Marketing of Services

**CODE:** EFO211

**CREDITS:** 7,5

**LABORATORY HOURS:** 0

**STUDY PACE:** Part time 50%

**LOCATION:** Västerås

**EXAMINATION:** Exercise, Oral/Written examinations

**PREREQUISITES:** 30 credits in Business Administration

**LECTURE HOURS:** 30

**START PERIOD:** 3b

**LEVEL OF EDUCATION:** Basic Level Second Year

**LANGUAGE:** English

### COURSE CONTENT:

- definitions of services and service quality
- development and construction of services
- marketing models in the marketing of services
- service quality from a customer and an employee perspective
- managing service quality

During the course the students will both study literature and make empirical investigations of how companies deal with service marketing.

**CONTACT PERSON:** Madeleine Lundberg, madeleine.lundberg@mdh.se

**SCHOOL:** School of Sustainable Development of Society and Technology

### Marketing Systems

**CODE:** EFO217

**CREDITS:** 7,5

**LABORATORY HOURS:** 0

**STUDY PACE:** Part time 50%

**LOCATION:** Västerås

**EXAMINATION:** Oral/Written examinations

**PREREQUISITES:** A Bachelor's degree from an institution of higher education of three years or more, equivalent to at least 180 credits in Business Administration, Social Science or Technology; or at least 90 credits in Business Administration of which at least 30 credits on Basic level Third Year.

**COURSE CONTENT:**

- Industry characteristics in relation to cultural characteristics.
- Managing business markets.
- Technology's impact on products and production.
- Business relationships and business networks.
- Industrial marketing
- Service marketing

**CONTACT PERSON:** Madeleine Lundberg, madeleine.lundberg@mdh.se

**SCHOOL:** School of Sustainable Development of Society and Technology

**LECTURE HOURS:** 40

**START PERIOD:** 3

**LEVEL OF EDUCATION:** Advanced level

**LANGUAGE:** English

### Organization theory and Entrepreneurship

**CODE:** EFO512

**CREDITS:** 15

**LABORATORY HOURS:** 0

**STUDY PACE:** Full time

**LOCATION:** Västerås

**EXAMINATION:** Exercise, Project, Oral/Written examinations

**PREREQUISITES:** A Bachelor's degree from an institution of higher education of three years or more, equivalent to at least 180 credits in Business Administration, Social Science or Technology; or at least 90 credits in Business Administration of which at least 30 credits on Basic level Third Year.

**COURSE CONTENT:** The objectives in this course are deeper theoretical and practical understanding and knowledge about organizations and entrepreneurship. The course aims at developing knowledge and skills in analysing organizations and entrepreneurship in terms of processes and where organizational development, change, and interpretation are important aspects.

**CONTACT PERSON:** Mona Andersson, mona.andersson@mdh.se

**LECTURE HOURS:** 40

**START PERIOD:** 3

**LEVEL OF EDUCATION:** Advanced level

**LANGUAGE:** English

### Organization, Innovation and Entrepreneurship

**CODE:** EFO519

**CREDITS:** 15

**LABORATORY HOURS:** 0

**STUDY PACE:** Full time

**LOCATION:** Västerås

**EXAMINATION:** Exercise, Project, Oral/Written examinations

**PREREQUISITES:** Business administration 60 credits (at least 45 credits finished when the course starts). At least 20 credits in Business Administration have to be on Basic Level Second.

**COURSE CONTENT:** The aim of this course is to gain a theoretical and practical understanding of innovation and entrepreneurial processes within organizations. Important themes are organizational development, innovation and entrepreneurial behavior. Project work related to the themes of the course is an important part of the course.

**CONTACT PERSON:** Mona Andersson, mona.andersson@mdh.se

**SCHOOL:** School of Sustainable Development of Society and Technology

**LECTURE HOURS:** 40

**START PERIOD:** 3

**LEVEL OF EDUCATION:** Basic Level Third Year

**LANGUAGE:** English

### Strategic Marketing Management

**CODE:** EFO210

**CREDITS:** 15

**LABORATORY HOURS:** 0

**STUDY PACE:** Full time

**LOCATION:** Västerås

**EXAMINATION:** Oral/Written examinations

**PREREQUISITES:** Business administration 60 credits (at least 45 credits finished when the course starts). At least 20 credits in Business Administration have to be on Basic Level Second Year.

**LECTURE HOURS:** 40

**START PERIOD:** 4

**LEVEL OF EDUCATION:** Basic Level Third Year

**LANGUAGE:** English

## STUDY PERIODS

1A: 2009-08-31 – 2009-10-04

1B: 2009-10-05 – 2009-11-01

2 A: 2009-11-02 – 2009-11-29

2 B: 2009-11-30 – 2010-01-17

3 A: 2010-01-18 – 2010-02-21

3 B: 2010-02-22 – 2010-03-28

4 A: 2010-03-29 – 2010-05-02

4 B: 2010-05-03 – 2010-06-06

**COURSE CONTENT:** The aim of the course is to critically examine different perspectives on strategy and actions a company can take towards its markets and environment, and to provide students with skills in analysing situations where companies and organizations are about to take decisions concerning strategies on marketing. The examination consists of project work, seminars and a written test. Students are supposed to take an active part in the seminars. The course is structured upon a great deal of interaction between the students.

**CONTACT PERSON:** Madeleine Lundberg, madeleine.lundberg@mdh.se

**SCHOOL:** School of Sustainable Development of Society and Technology

### The Internationalisation Process of Companies

**CODE:** FÖA200

**CREDITS:** 7,5

**LABORATORY HOURS:** 0

**STUDY PACE:** Full time

**LOCATION:** Västerås

**EXAMINATION:** Projects, Seminars, Oral and written presentations, Exercise and/or Written exam.

**PREREQUISITES:** 30 credits in Business Administration

**COURSE CONTENT:** Many companies face the issue of expanding onto an international market during their development. In this course we study the process of entering a foreign market. The issues behind why and how companies internationalize, as in how to obtain knowledge on the foreign market and the role of cultural diversity in that context are central themes.

The main purpose of the course is to obtain knowledge and skills that you will need as a manager when developing strategies for the internationalization of your company. The course is also a good foundation if you wish to further study international marketing and business at out university.

In this course we practice reading, writing, discussing and analyzing as means to attain knowledge on the internationalization process.

**CONTACT PERSON:** Cecilia Lindh, cecilia.lindh@mdh.se

**SCHOOL:** School of Sustainable Development of Society and Technology

## CARING SCIENCE

### Caring from a Cultural Perspective- Clinical Studies

**CODE:** OVA045

**CREDITS:** 7,5

**LABORATORY HOURS:** 0

**STUDY PACE:** Full time

**LOCATION:** Västerås

**EXAMINATION:** Exercise

**PREREQUISITES:** Caring Sciences 30 credits on Basic level First Year and 30 credits on Basic level Second Year or equivalent.

**COURSE CONTENT:** The aim of the studies are that students shall enhance their knowledge and skills concerning the caring from a cultural perspective.

**CONTACT PERSON:** Lillemor Fernqvist, lillemor.fernqvist@mdh.se

**SCHOOL:** School of Health, Care and Social Welfare

### Cultural Perspectives in Health and Care

**CODE:** OVA004

**CREDITS:** 7,5

**LABORATORY HOURS:** 0

**STUDY PACE:** Part time 25%

**LOCATION:** Västerås

**EXAMINATION:** Written or oral examination

**PREREQUISITES:** Three years of upper secondary school or equivalent.

**COURSE CONTENT:** The aim of the course is for students to acquire basic knowledge about cultural perspective of health and caring.

**CONTACT PERSON:** Lillemor Fernqvist, lillemor.fernqvist@mdh.se

**SCHOOL:** School of Health, Care and Social Welfare

### International Ageing: Implications for Gerontological Nursing

**CODE:** VÅE009

**CREDITS:** 7,5

**LABORATORY HOURS:** 0

**STUDY PACE:** Part time 50%

**LOCATION:** Västerås

**EXAMINATION:** Written examination

**PREREQUISITES:** First level undergraduate degree comprising 180 credits in the field of nursing, medicine, care or equivalent.

**COURSE CONTENT:** Implications for Gerontological Nursing; This course aims at an understanding of both national and international aspects of gerontological nursing.

**CONTACT PERSON:** Lillemor Fernqvist, lillemor.fernqvist@mdh.se

**SCHOOL:** School of Health, Care and Social Welfare

### Thesis in Caring Science

**CODE:** OVA018

**CREDITS:** 15

**LABORATORY HOURS:** 0

**STUDY PACE:** Full time

**LOCATION:** Eskilstuna

**EXAMINATION:** Thesis

**PREREQUISITES:** Caring Sciences 30 credits on Basic level First Year and 30 credits on Basic level Second Year or equivalent.

**COURSE CONTENT:** The aim of the course is to enable students to intensify and apply their knowledge of caring science and scientific methods. Students are to undertake an independent project and also present an oral and written account of their results in a paper.

**CONTACT PERSON:** Ing-Marie Backman, ing-marie.backman@mdh.se

**SCHOOL:** School of Health, Care and Social Welfare

## COMMERCIAL LAW

### Introduction to Commercial Law

**CODE:** EHA012

**CREDITS:** 15

**LABORATORY HOURS:** 0

**STUDY PACE:** Full time

**LOCATION:** Västerås

**EXAMINATION:** Oral/Written examinations

**PREREQUISITES:** Three years of upper secondary school or equivalent.

**COURSE CONTENT:** The course intends to give the student basic knowledge of European Community law, the rules regarding Business Contracts in International Markets and Commercial law with focus on Competition law and Intellectual property law.

**CONTACT PERSON:** Mona Andersson, mona.andersson@mdh.se

**SCHOOL:** School of Sustainable Development of Society and Technology

## COMPUTER SCIENCE

### Advanced Component-based Software engineering

**CODE:** CDT501

**CREDITS:** 7,5

**LABORATORY HOURS:** 0

**STUDY PACE:** Part time 50%

**LOCATION:** Västerås

**EXAMINATION:** Project

**PREREQUISITES:** At least 180 credits where at least 90 credits are in the area of computer science with experience in an object-oriented language and research methodology.

**COURSE CONTENT:** The purpose of the course to give students insight in principals for building software systems from components, the latest trends in the practice and research in component-based software engineering. The students will be trained in searching for, in comprising the proper research information, in critical thinking, and presentation of relevant information.

**CONTACT PERSON:** Annika Björklund, annika.bjorklund@mdh.se

**SCHOOL:** School of Innovation, Design and Engineering

### Advanced Software Verification and Validation

**CODE:** DVA402

**CREDITS:** 7,5

**LABORATORY HOURS:** 0

**STUDY PACE:** Part time 50%

**LOCATION:** Västerås

**EXAMINATION:** Laboratory work, Seminar, Project work.

**PREREQUISITES:** At least 120 credits or equivalent, out of which at least 60 should be from computer science, computer engineering or corresponding subjects. A course in real-time systems basics or equivalent is required.

**COURSE CONTENT:** The theme of the course is modeling and verification techniques for concurrent and real-time systems. The course will cover the following topics: transition systems, modal logics, modeling, verification by model-checking, deductive formal verification, and model-based testing and test-case generation.

**CONTACT PERSON:** Annika Björklund, annika.bjorklund@mdh.se

**SCHOOL:** School of Innovation, Design and Engineering

### Applied Artificial Intelligence

**CODE:** CDT406

**CREDITS:** 15

**LABORATORY HOURS:** 0

**STUDY PACE:** Part time 50%

**LOCATION:** Västerås

**LECTURE HOURS:** 20

**START PERIOD:** 3

**LEVEL OF EDUCATION:** Advanced level

**LANGUAGE:** English

## STUDY PERIODS

1A: 2009-08-31 - 2009-10-04

2A: 2009-11-02 - 2009-11-29

3A: 2010-01-18 - 2010-02-21

4A: 2010-03-29 - 2010-05-02

1B: 2009-10-05 - 2009-11-01

2B: 2009-11-30 - 2010-01-17

3B: 2010-02-22 - 2010-03-28

4B: 2010-05-03 - 2010-06-06

**EXAMINATION:** Exercise, Seminar, Thesis, Degree Project, Essay

**PREREQUISITES:** At least two years of studies on the basic level or at least 120 credits in the relevant subject area. Theoretical knowledge and practical competences in fundamentals of Artificial Intelligence

**COURSE CONTENT:** The course deals with all aspects from problem formulation to implementation of a intelligent system including methods and techniques from artificial intelligence:

- problem formulation
- identification solutions based on artificial intelligence (AI)
- knowledge about a number of projects that use AI
- ability and knowledge on how a decision system/ case based reasoning system is implemented
- how to explain and describe an "intelligent" AI based system

**CONTACT PERSON:** Annika Björklund, annika.bjorklund@mdh.se

**SCHOOL:** School of Innovation, Design and Engineering

### Component Technologies

**CODE:** CDT401

**CREDITS:** 7,5

**LABORATORY HOURS:** 0

**STUDY PACE:** Part time 50%

**LOCATION:** Västerås

**LECTURE HOURS:** 10

**START PERIOD:** 4

**LEVEL OF EDUCATION:** Advanced level

**LANGUAGE:** English

**EXAMINATION:** Exercise, Laboratory work, Project

**PREREQUISITES:** At least 180 credits with at least 90 credits in computer science where theoretical knowledge and practical competence in an object-oriented programming language like Java or C++ is included.

**COURSE CONTENT:** Introduction to component-based development

- Object-oriented programming and components component models
- Overview of components models such as COM/DCOM, Enterprise Javabeans (EJB), CORBA and .NET.
- Laboratory assignment to implement the different technologies
- Article writing and review
- Project in .NET to implement a distributed component-based application

**CONTACT PERSON:** Annika Björklund, annika.bjorklund@mdh.se

**SCHOOL:** School of Innovation, Design and Engineering

### Computer Graphics

**CODE:** DVA304

**CREDITS:** 7,5

**LABORATORY HOURS:** 0

**STUDY PACE:** Part time 50%

**LOCATION:** Västerås

**LECTURE HOURS:** 10

**START PERIOD:** 4

**LEVEL OF EDUCATION:** Basic level Third Year

**LANGUAGE:** English

**EXAMINATION:** Exercise, Laboratory work, Oral/Written examinations

**PREREQUISITES:** Theoretical knowledge and practical competence in:

- Programming in a high level language (for example C, C++, C#, Java, or Ada)
- Data structures and algorithms
- Algebra and Calculus are desirable but not required

**COURSE CONTENT:** affine transformations, homogeneous coordinates, combined transformations, viewing, projection, rendering pipeline, phong lighting and shading, back face culling and hidden surfaces elimination, clipping, texture mapping, bump mapping, environment mapping, graphics hardware, shader programming OpenGL, OpenGL Shading Language, color, BRDFs, anisotropic shading, shadows, global illumination, ray tracing.

**CONTACT PERSON:** Annika Björklund, annika.bjorklund@mdh.se

**SCHOOL:** School of Innovation, Design and Engineering

### Computer Network I, distance course

**CODE:** CDT102

**CREDITS:** 7,5

**LABORATORY HOURS:** 0

**STUDY PACE:** Part time 50%

**LANGUAGE:** English

**LECTURE HOURS:** 10

**START PERIOD:** 3

**LEVEL OF EDUCATION:** Basic Level First Year

**EXAMINATION:** Exercise, Laboratory work, Oral/Written examinations

**PREREQUISITES:** Mathematics course C and Civics course A from Swedish upper secondary education or equivalent. This is a translation and an abbreviated version of the standard eligibility requirement D.4.1. For all details please see (in Swedish) at [www.hsv.se/sv/CollectionServlet/53/82/184/1242.html](http://www.hsv.se/sv/CollectionServlet/53/82/184/1242.html). For subjects and course contents (in English) for Swedish upper secondary school please see Programme manual at [www.skolverket.se/english/publ.shtml](http://www.skolverket.se/english/publ.shtml). Exemption from requirement Civics course A.

**COURSE CONTENT:** Network fundamentals, routing protocols and concepts. OSI-reference model, TCP/IP, IP-networks including IP-subnets. Ethernet, LAN, WAN, network components, router configuration, routing, routing protocols, switching, network terminology and traffic filtering.

**CONTACT PERSON:** Annika Björklund, annika.bjorklund@mdh.se

**SCHOOL:** School of Innovation, Design and Engineering

### Distributed Systems

**CODE:** CDT316

**CREDITS:** 7,5

**LABORATORY HOURS:** 0

**STUDY PACE:** Part time 50%

**LOCATION:** Västerås

**LECTURE HOURS:** 10

**START PERIOD:** 3

**LEVEL OF EDUCATION:** Basic Level Third Year

**LANGUAGE:** English

**EXAMINATION:** Exercise, Laboratory work, Oral/Written examinations

**PREREQUISITES:** Mathematics from three years of upper secondary school with science profile. Also theoretical knowledge and good practical competences in programming in C, data communication and operating system are required.

**COURSE CONTENT:** History, design, process communications, remote procedure calls, distributed operating systems, distributed object orientation, distributed file systems, time and coordination, replication, distributed transactions, fault tolerance and safety.

**CONTACT PERSON:** Annika Björklund, annika.bjorklund@mdh.se

**SCHOOL:** School of Innovation, Design and Engineering

### Formal Languages, Automata and Theory of Computation

**CODE:** CDT314

**CREDITS:** 7,5

**LABORATORY HOURS:** 0

**STUDY PACE:** Part time 50%

**LOCATION:** Västerås

**LECTURE HOURS:** 10

**START PERIOD:** 3

**LEVEL OF EDUCATION:** Basic Level Third Year

**LANGUAGE:** English

**EXAMINATION:** Exercise, Laboratory work, Oral/Written examinations

**PREREQUISITES:** Mathematics from three years of upper secondary school with science profile. Theoretical knowledge and practical competence in

- a high level programming language (for instance C, C++ or java)
- Fundamentals of Discrete Mathematics

**COURSE CONTENT:** This course will give an introduction to formal languages and automata theory. Automata and formal languages appear (possibly in various disguises) in almost every branch of computer science.

**CONTACT PERSON:** Annika Björklund, annika.bjorklund@mdh.se

**SCHOOL:** School of Innovation, Design and Engineering

### Real-Time Systems I, distance course

**CODE:** CDT308

**CREDITS:** 7,5

**LABORATORY HOURS:** 0

**STUDY PACE:** Part time 25%

**LANGUAGE:** English

**LECTURE HOURS:** 10

**START PERIOD:** 3

**LEVEL OF EDUCATION:** Basic Level Third Year

**EXAMINATION:** Exercise, Laboratory work

**PREREQUISITES:** Mathematics from three years of upper secondary school with science profile. Also theoretical knowledge and practical competences in programming in C, datastructures and algorithms and operating systems are required.

**COURSE CONTENT:** The course gives an insight into how real-time systems differ from traditional computer systems, covering the topics such as timeliness, real-time scheduling, operating system support, resource usage, design of real-time systems, real-time communication and distributed real-time applications. Furthermore, it explains how these theories can be applied when implementing and analysing such systems or real hardware platforms.

**CONTACT PERSON:** Annika Björklund, annika.bjorklund@mdh.se

**SCHOOL:** School of Innovation, Design and Engineering

### Robotics - project course

**CODE:** CDT506

**CREDITS:** 30

**LABORATORY HOURS:** 0

**STUDY PACE:** Full time

**LOCATION:** Västerås

**LECTURE HOURS:** 30

**START PERIOD:** 3

**LEVEL OF EDUCATION:** Advanced level

**LANGUAGE:** English

**EXAMINATION:** Exercise

**PREREQUISITES:** At least 150 credits in the technical or natural sciences areas where at least 22,5 credits in courses at advanced level in either Computer Science, Electronics or Product and Process Development are included.

**COURSE CONTENT:** The course starts with a requirement specification and results from previous years project. Since the project in itself is so large, it is natural that the tasks are divided into several sub projects, and they are adapted to the actual participating students. Each sub project has very good knowledge about its problems and solutions, and all are informed about other sub projects progress and possible obstacles.

**CONTACT PERSON:** Annika Björklund, annika.bjorklund@mdh.se

**SCHOOL:** School of Innovation, Design and Engineering

### Software Engineering Project

**CODE:** CDT412

**CREDITS:** 15

**LABORATORY HOURS:** 0

**STUDY PACE:** Full time

**LOCATION:** Västerås

**LECTURE HOURS:** 20

**START PERIOD:** 3, 4

**LEVEL OF EDUCATION:** Advanced level

**LANGUAGE:** English

## STUDY PERIODS

1A: 2009-08-31 - 2009-10-04

2 A: 2009-11-02 - 2009-11-29

3 A: 2010-01-18 - 2010-02-21

4 A: 2010-03-29 - 2010-05-02

1B: 2009-10-05 - 2009-11-01

2 B: 2009-11-30 - 2010-01-17

3 B: 2010-02-22 - 2010-03-28

4 B: 2010-05-03 - 2010-06-06

**EXAMINATION:** Project

**PREREQUISITES:** At least 120 credits of higher education where at least 60 credits are in the area of computer science where at least 15 credits is about foundations in Software Engineering.

**COURSE CONTENT:** The project work is individual, or done in a pair. The projects can cover different areas in Software Engineering, or in different domains (like web-based applications, or real-time systems, or development environments, etc.). The project is also introduction to thesis work. The work includes specification and analysis of the problem, searching for similar and related works in practices and research, and providing its solution on a modeling and possibly reimplementing level.

**CONTACT PERSON:** Annika Björklund, annika.bjorklund@mdh.se

**SCHOOL:** School of Innovation, Design and Engineering

## ECONOMICS

### Industrial Economics

**CODE:** NAA300

**CREDITS:** 7,5

**LABORATORY HOURS:** 0

**STUDY PACE:** Part time 50%

**LOCATION:** Västerås

**EXAMINATION:** Oral/Written examinations

**PREREQUISITES:** Economics 60 credits (at least 45 credits finished when the course starts). At least 20 credits in Economics have to be on Basic Level Second Year.

**COURSE CONTENT:** The course covers the following topics: modern industry structure and performance; non-cooperative oligopoly models; cooperative games; product differentiation and monopolistic competition; non-linear pricing; limited and asymmetric information; regulation and deregulation.

**CONTACT PERSON:** Mona Andersson, mona.andersson@mdh.se

**SCHOOL:** School of Sustainable Development of Society and Technology

**LECTURE HOURS:** 30

**START PERIOD:** 3

**LEVEL OF EDUCATION:** Basic Level Third Year

**LANGUAGE:** English

### Macroeconomic Theory

**CODE:** NAA302

**CREDITS:** 7,5

**LABORATORY HOURS:** 0

**STUDY PACE:** Part time 50%

**LOCATION:** Västerås

**EXAMINATION:** Oral/Written examinations

**PREREQUISITES:** Economics 60 credits (at least 45 credits finished when the course starts). At least 20 credits in Economics have to be on Basic Level Second Year.

**COURSE CONTENT:** The course analyzes how consumers, firms, the government, and the international economy interact on markets for goods, labor, physical and financial capital, and currencies. Models are developed for aggregate analysis of each of these markets and their interdependences. The theories presented deal with output determination, capital formation, consumption, savings, employment, unemployment, international trade, interest rates and exchange rates. The role of the government is analyzed and the scope for relevant economic policy discussed. The emphasis is on the long run development of the economy, such as causes and effects of economic growth and the structure of international trade, but the short and intermediate time horizon with adjustment and business cycles are also treated. A theme in the course is how macroeconomic relationships are founded in microeconomic analysis.

**CONTACT PERSON:** Mona Andersson, mona.andersson@mdh.se

**SCHOOL:** School of Sustainable Development of Society and Technology

**LECTURE HOURS:** 30

**START PERIOD:** 3

**LEVEL OF EDUCATION:** Basic Level Third Year

**LANGUAGE:** English

### Macroeconomics and International Finance

**CODE:** NAA103

**CREDITS:** 15

**LABORATORY HOURS:** 0

**STUDY PACE:** Part time 50%

**LOCATION:** Västerås

**EXAMINATION:** Oral/Written examinations

**PREREQUISITES:** Mathematics from three years of upper secondary school with science profile.

**COURSE CONTENT:** Macroeconomics treats the working of the economy at the most aggregate level, i.e. a nation, a wider area of economic activity such as the EU, or even the world. The course introduces measures of economic activity such as the national accounts for GDP, consumption and international trade, and others for unemployment, inflation etc. These measures are used to analyze the development of the national and international economy. The analysis treats growth and structural change in the long term and business cycles in the medium term. Markets of special importance for macroeconomic performance, such as financial markets and the labor market are covered. International trade and international finance is treated with an emphasis on the perspective of a small open economy such as Sweden. Economic policy, fiscal as well as monetary, is discussed in terms of goals, means and effects.

**CONTACT PERSON:** Mona Andersson, mona.andersson@mdh.se

**SCHOOL:** School of Sustainable Development of Society and Technology

**LECTURE HOURS:** 60

**START PERIOD:** 3

**LEVEL OF EDUCATION:** Basic Level First Year

**LANGUAGE:** English

### Microeconomics and Trade Theory

**CODE:** NAA102

**CREDITS:** 15

**LABORATORY HOURS:** 0

**STUDY PACE:** Part time 50%

**LOCATION:** Västerås

**EXAMINATION:** Oral/Written examinations

**PREREQUISITES:** Mathematics from three years of upper secondary school with science profile.

**COURSE CONTENT:** Consumption theory; Cost theory; Production theory; Perfect & Imperfect competition; Monopoly & Oligopoly; Factor Markets; Externalities & Public goods; Absolute & comparative advantage; Classic and neo-classic trade theories; Trade policies; Trade unions; Labour and Capital movements.

**CONTACT PERSON:** Mona Andersson, mona.andersson@mdh.se

**SCHOOL:** School of Sustainable Development of Society and Technology

**LECTURE HOURS:** 60

**START PERIOD:** 3

**LEVEL OF EDUCATION:** Basic Level First Year

**LANGUAGE:** English

## ELECTRONICS

### Robotics - project course

**CODE:** CDT506

**CREDITS:** 30

**LABORATORY HOURS:** 0

**STUDY PACE:** Full time

**LOCATION:** Västerås

**EXAMINATION:** Exercise

**PREREQUISITES:** At least 150 credits in the technical or natural sciences areas where at least 22,5 credits in courses at advanced level in either Computer Science, Electronics or Product and Process Development are included.

**COURSE CONTENT:** The course starts with a requirement specification and results from previous years project. Since the project in itself is so large, it is natural that the tasks are divided into several sub projects, and they are adapted to the actual participating students. Each sub project has very good knowledge about its problems and solutions, and all are informed about other sub projects progress and possible obstacles.

**CONTACT PERSON:** Annika Björklund, annika.bjorklund@mdh.se

**SCHOOL:** School of Innovation, Design and Engineering

**LECTURE HOURS:** 30

**START PERIOD:** 3

**LEVEL OF EDUCATION:** Advanced level

**LANGUAGE:** English

### Biomedical Engineering

**CODE:** ELA402

**CREDITS:** 7,5

**LABORATORY HOURS:** 0

**STUDY PACE:** Part time 50%

**LOCATION:** Västerås

**EXAMINATION:** Seminar, Project

**PREREQUISITES:** At least 90 credits in Computer Science and/or Electronics.

**COURSE CONTENT:** This course gives a survey of the subject Biomedical Engineering and treats measurements of biosignals, physical diagnostics, therapeutic interventions, radiology, medical informatics and telemedicine. Further, the complex models of measuring systems that arises with the registration of physiological parameters are explored.

**CONTACT PERSON:** Annika Björklund, annika.bjorklund@mdh.se

**SCHOOL:** School of Innovation, Design and Engineering

**LECTURE HOURS:** 10

**START PERIOD:** 4

**LEVEL OF EDUCATION:** Advanced level

**LANGUAGE:** English

### Project course in electronics

**CODE:** CEL307

**CREDITS:** 15

**LABORATORY HOURS:** 0

**STUDY PACE:** Part time, 50%

**LOCATION:** Västerås

**EXAMINATION:** Project implementation, documentation and presentation

**PREREQUISITES:** 90 credits where at least 40 credits within the subject electronics.

**COURSE CONTENT:** The course content will be planned together with the teacher.

**CONTACT PERSON:** Magnus Otterskog, magnus.otterskog@mdh.se

**SCHOOL:** School of Innovation, Design and Engineering

**LECTURE HOURS:** 0

**START PERIOD:** 3, 4

**LEVEL OF EDUCATION:** Basic level

**LANGUAGE:** English

### Project course in electronics

**CODE:** CEL405

**CREDITS:** 15

**LABORATORY HOURS:** 0

**STUDY PACE:** Part time, 50%

**LOCATION:** Västerås

**EXAMINATION:** Project implementation, documentation and presentation

**PREREQUISITES:** At least 150 credits from an institution of higher education.

**COURSE CONTENT:** The course will cover different areas within electronics and the course content can vary between course instances. The project course is organized together with the teacher and the students, giving a possibility for students to de-

**LECTURE HOURS:** 0

**START PERIOD:** 3, 4

**LEVEL OF EDUCATION:** Advanced level

**LANGUAGE:** English

## STUDY PERIODS

1A: 2009-08-31 - 2009-10-04

1B: 2009-10-05 - 2009-11-01

2A: 2009-11-02 - 2009-11-29

2B: 2009-11-30 - 2010-01-17

3A: 2010-01-18 - 2010-02-21

3B: 2010-02-22 - 2010-03-28

4A: 2010-03-29 - 2010-05-02

4B: 2010-05-03 - 2010-06-06

pen their knowledge in a specific area which is relevant for their education.

**CONTACT PERSON:** Magnus Otterskog, magnus.otterskog@mdh.se

**SCHOOL:** School of Innovation, Design and Engineering

## ENERGY ENGINEERING

### Refrigeration and Heat Pump Technology

**CODE:** WER002

**CREDITS:** 7,5

**LABORATORY HOURS:** 0

**STUDY PACE:** Part time 50%

**LOCATION:** Västerås

**EXAMINATION:** Laboratory work, Project, Oral/Written examinations

**PREREQUISITES:** Thermodynamics 7,5 credits and Heat and mass transfer 7,5 credits or equivalent.

**COURSE CONTENT:** This is a basic course, in which mainly the compressor driven refrigeration process is treated. You will learn how to perform calculations on cooling capacity, power consumption, and coefficients of performance and so on, for different types of refrigeration- and heat pump processes. You will also learn about main components which are parts of a complete unit and also different lay outs of these. In a special part, heat pumps for dwellings will be discussed. You will learn how to optimize the size of heat pumps when taking into account the heat need and different types of heat sources. You will also get knowledge about how heat systems are adapted and how cooperation is performed with other types of heat sources. The course treats different refrigerants and their affection on people and environment and also the international agreements and actual Swedish legislation in this field.

**CONTACT PERSON:** Benny Ekman, benny.ekman@mdh.se

**SCHOOL:** School of Sustainable Development of Society and Technology

### Sustainable Energy Systems

**CODE:** WER003

**CREDITS:** 7,5

**LABORATORY HOURS:** 0

**STUDY PACE:** Part time 50%

**LOCATION:** Västerås

**EXAMINATION:** Project, Oral/Written examinations

**PREREQUISITES:** At least 60 credits in Energy Engineering or 160 credits from an engineering program are required.

**COURSE CONTENT:** The main purpose of the course is to give the participants a comprehensive view of how sustainable energy systems can be used together. The course illustrates how these affect the whole energy system in Sweden and worldwide, concerning both power- and energy consumption. Studies are performed on the resources that are available in Sweden and worldwide, and how the energy consumption pattern looks like for individuals and for the societies.

**CONTACT PERSON:** Benny Ekman, benny.ekman@mdh.se

**SCHOOL:** School of Sustainable Development of Society and Technology

## ENGLISH

### English 1

**CODE:** HEN100

**CREDITS:** 30

**LABORATORY HOURS:** 0

**STUDY PACE:** Full time

**LOCATION:** Västerås, Eskilstuna

**EXAMINATION:** Written and spoken assignments, Pronunciation, Final exam, Assessment of optional course component

**PREREQUISITES:** English B is required for Swedish students.

**COURSE CONTENT:** This course offers an introduction to English Studies. If you plan to continue in the subject, English 1 will give you the foundation for your future studies. If you want to include a single term of English in your degree, this course will give you a good overview of the subject, as well as the chance to improve your English language skills.

**CONTACT PERSON:** Diane Pecorari, diane.pecorari@mdh.se

**SCHOOL:** School of Education, Culture and Communication

### English 1, Language in context 1

**CODE:** HEN103

**CREDITS:** 15

**LABORATORY HOURS:** 0

**STUDY PACE:** Part time 50%

**LOCATION:** Västerås, Eskilstuna

**EXAMINATION:** Spoken and written assignments, Pronunciation, Preparation for and participation in course activities, Final exam, Final examination of optional course component

**PREREQUISITES:** English B is required for Swedish students.

**COURSE CONTENT:** In this course you will get an opportunity to improve your English by using English to communicate within a context. You will practice communication skills such as public speaking, debating and essay writing, and at the same time learn more about key features of contemporary British and American society. Assessment is by way of spoken and written assignments and a final exam.

**CONTACT PERSON:** Diane Pecorari, diane.pecorari@mdh.se

**SCHOOL:** School of Education, Culture and Communication

### English 1, Linguistics 1

**CODE:** HEN102

**CREDITS:** 7,5

**LABORATORY HOURS:** 0

**STUDY PACE:** Part time 25%

**LOCATION:** Eskilstuna, Västerås

**EXAMINATION:** Written and spoken assignments, Preparation for and participation in course activities, Written examination

**PREREQUISITES:** English B is required for Swedish students.

**COURSE CONTENT:** Linguistics 1 provides an introduction to three fundamental areas of English linguistics: grammar, phonetics and lexical semantics. Teaching is in the form of lectures and discussion groups. Assessment is by means of activities in and out of class, and a final written examination.

**CONTACT PERSON:** Diane Pecorari, diane.pecorari@mdh.se

**SCHOOL:** School of Education, Culture and Communication

### English 1, Literature 1

**CODE:** HEN101

**CREDITS:** 7,5

**LABORATORY HOURS:** 0

**STUDY PACE:** Part time 25%

**LOCATION:** Västerås, Eskilstuna

**EXAMINATION:** Written and spoken assignments, Preparation for and participation in course activities, Final exam

**PREREQUISITES:** English B is required for Swedish students.

**COURSE CONTENT:** This course will give you an introduction to contemporary Global English literature, and to the use of literary terminology and some techniques for literary study. The reading list consists of contemporary and important novels, short stories and plays from the English speaking world and reflects the course's focus on post-colonial literature. Assessment is by way of spoken and written assignments and a final exam.

**CONTACT PERSON:** Diane Pecorari, diane.pecorari@mdh.se

**SCHOOL:** School of Education, Culture and Communication

### English 2

**CODE:** HEN200

**CREDITS:** 30

**LABORATORY HOURS:** 0

**STUDY PACE:** Full time

**LOCATION:** Västerås, Eskilstuna

**EXAMINATION:** Written and spoken assignments, Final Exam

**PREREQUISITES:** At least 30 credits English as a major subject including at least 7,5 credits linguistics.

**COURSE CONTENT:** In English 2 you will build on the knowledge and skills you gained in the first term to complete your foundation studies in English from a historical perspective.

Like English 1, the course consists of three components: in Language in Context 2 you will get an overview of important historical episodes in the English-speaking world, and you will further develop your ability to understand and produce English, particularly in academic contexts. Literature 2 surveys the development of English-language literature, and in Linguistics 2 you will sample a range of sub-disciplines in English linguistics, including the history of the English language.

**CONTACT PERSON:** Diane Pecorari, diane.pecorari@mdh.se

**SCHOOL:** School of Education, Culture and Communication

### English 2, Language in Context 2

**CODE:** HEN201

**CREDITS:** 15

**LABORATORY HOURS:** 0

**STUDY PACE:** Full time

**LOCATION:** Västerås, Eskilstuna

**EXAMINATION:** Written and spoken assignments, Preparation for and participation in course activities, British and American history and writing skills

**PREREQUISITES:** At least 30 credits English as a major subject including at least 7,5 credits linguistics.

**COURSE CONTENT:** Language in Context 2 has two objectives: to give an overview of important historical trends and episodes in the English-speaking world, and to create opportunities for students to improve their English language skills.

Learning activities in Language in Context 2 include lectures, seminar discussions and individual writing conferences. Assessment activities consist of written assign-

## STUDY PERIODS

1A: 2009-08-31 - 2009-10-04

2A: 2009-11-02 - 2009-11-29

3A: 2010-01-18 - 2010-02-21

4A: 2010-03-29 - 2010-05-02

1B: 2009-10-05 - 2009-11-01

2B: 2009-11-30 - 2010-01-17

3B: 2010-02-22 - 2010-03-28

4B: 2010-05-03 - 2010-06-06

ments, participation in, and preparation for, class activities, and a final exam.

**CONTACT PERSON:** Diane Pecorari, [diane.pecorari@mdh.se](mailto:diane.pecorari@mdh.se)

**SCHOOL:** School of Education, Culture and Communication

### English 2, Linguistics 2

**CODE:** HEN202

**CREDITS:** 7,5

**LABORATORY HOURS:** 0

**STUDY PACE:** Part time 50%

**LOCATION:** Västerås, Eskilstuna

**EXAMINATION:** Written and spoken assignments, Preparation for and participation in course activities, Final exam

**PREREQUISITES:** At least 30 credits English as a major subject including at least 7,5 credits linguistics.

**COURSE CONTENT:** Linguistics 2 provides a survey of key areas in English linguistics, including: the development of human language, the historical development of the English language, phonology, pragmatics, sociolinguistics, discourse analysis.

**CONTACT PERSON:** Diane Pecorari, [diane.pecorari@mdh.se](mailto:diane.pecorari@mdh.se)

**SCHOOL:** School of Education, Culture and Communication

### English 2, Literature 2

**CODE:** HEN203

**CREDITS:** 7,5

**LABORATORY HOURS:** 0

**STUDY PACE:** Part time 50%

**LOCATION:** Västerås, Eskilstuna

**EXAMINATION:** Written and spoken assignments, Preparation for and participation in course activities

**PREREQUISITES:** At least 30 credits English as a major subject including at least 7,5 credits literature.

**COURSE CONTENT:** Literature 2 builds on your previous studies in English and offers an historical review of English literature.

**CONTACT PERSON:** Diane Pecorari, [diane.pecorari@mdh.se](mailto:diane.pecorari@mdh.se)

**SCHOOL:** School of Education, Culture and Communication

### English 3, Contemporary Detective Fiction: Trends and Theories

**CODE:** HEN308

**CREDITS:** 7,5

**LABORATORY HOURS:** 0

**STUDY PACE:** Part time 50%

**LOCATION:** Eskilstuna

**EXAMINATION:** Exercise, Seminar, Oral/Written examinations

**PREREQUISITES:** At least 60 credits English as a major including at least 15 credits literature.

**COURSE CONTENT:** This course will extend your knowledge of literary studies in English, especially of the detective genre, a genre that deals with serious topics in a popular form. The reading list consists of contemporary detective and crime fiction, and of some literary theory and criticism. The course could help you identify a relevant essay topic and equip you for essay research. Assessment is by way of spoken and written assignments and a final exam.

**CONTACT PERSON:** Diane Pecorari, [diane.pecorari@mdh.se](mailto:diane.pecorari@mdh.se)

**SCHOOL:** School of Education, Culture and Communication

### English 3, Essay in English Studies

**CODE:** HEN301

**CREDITS:** 15

**LABORATORY HOURS:** 0

**STUDY PACE:** Part time 50%

**LOCATION:** Västerås

**EXAMINATION:** Essay and ventilation seminar

**PREREQUISITES:** At least 60 credits English as a major subject.

**COURSE CONTENT:** The essay in English studies on the 300 level and the advanced essay on the 400 level are independent research projects. During the course of the term you'll plan, carry out, and write up, a research project, under the supervision of a member of the English studies staff. The booklet "Essay Supervision" lists the research interests of the staff and indicates the type of topics they can supervise. If you have identified a research area that is not listed here, contact a member of staff to discuss your ideas; we'll try to match you up with an appropriate supervisor.

**CONTACT PERSON:** Diane Pecorari, [diane.pecorari@mdh.se](mailto:diane.pecorari@mdh.se)

**SCHOOL:** School of Education, Culture and Communication

### English 3, Literature 3: From Modernism to Postmodernism

**CODE:** HEN312

**CREDITS:** 7,5

**LABORATORY HOURS:** 0

**STUDY PACE:** Part time 50%

**LOCATION:** Västerås

**EXAMINATION:** Written and spoken assignments, Preparation for and participation in course activities, Final exam

**PREREQUISITES:** At least 30 credits English as a major subject including at least 7,5 credits literature.

**COURSE CONTENT:** Literature 3 builds on your previous studies in English and offers an historical review of English literature.

**CONTACT PERSON:** Diane Pecorari, [diane.pecorari@mdh.se](mailto:diane.pecorari@mdh.se)

**SCHOOL:** School of Education, Culture and Communication

**EXAMINATION:** Oral and written exercises, Seminar, Oral/Written examinations

**PREREQUISITES:** At least 60 credits in English including at least 15 credits literature or equivalent.

**COURSE CONTENT:** This course will build on and extend your knowledge of literature in English, especially of British and North American texts of the Modernist and Postmodernist periods, and of literary analysis. It is also an introduction to literary theory and criticism. The reading list contains famous works from two related and highly important periods of literature in English. This course could help you identify relevant areas of study for the Essay in English and equip you for such research. Assessment is by way of spoken and written assignments and a final exam.

**CONTACT PERSON:** Diane Pecorari, [diane.pecorari@mdh.se](mailto:diane.pecorari@mdh.se)

**SCHOOL:** School of Education, Culture and Communication

### English 3, Social and Regional Variation

**CODE:** HEN304

**CREDITS:** 7,5

**LABORATORY HOURS:** 0

**STUDY PACE:** Part time 50%

**LOCATION:** Eskilstuna

**EXAMINATION:** Spoken and written assignments, Preparation for and participation in course activities, Final exam

**PREREQUISITES:** At least 60 credits English as a major including at least 15 credits linguistics.

**COURSE CONTENT:** The focus of this course is examining the variation in how English is used around the world and in a range of contexts. We will look at questions such as

- how people from different social groups differ in their use of English.

- similarities and differences in how men and women use language.

- the varieties of English spoken around the world.

- the implications of the growth of English as an international language.

**CONTACT PERSON:** Diane Pecorari, [diane.pecorari@mdh.se](mailto:diane.pecorari@mdh.se)

**SCHOOL:** School of Education, Culture and Communication

### English 3, Translation Studies

**CODE:** HEN313

**CREDITS:** 7,5

**LABORATORY HOURS:** 0

**STUDY PACE:** Part time 50%

**LOCATION:** Västerås

**EXAMINATION:** Spoken and written assignments, Preparation for and participation in course activities, Final exam

**PREREQUISITES:** English 2, 30 credits (of which a minimum of 22,5 credits at the start of course) or equivalent.

**COURSE CONTENT:** This course provides an introduction to the field of Translation Studies, including its historical development and current concerns. We will acquaint ourselves with the core issues (What is a translation? How should one translate? What is the role of translation in society?), as well as some of its more specialized subareas, such as: literary translation, poetry translation, technical translation, screen translation, interpreting, translation and language learning, translation of specific textual features such as humour and culture-related elements.

Theoretical studies will be combined with hands-on exercises, both in the seminars and in the projects to be carried out.

**CONTACT PERSON:** Diane Pecorari, [diane.pecorari@mdh.se](mailto:diane.pecorari@mdh.se)

**SCHOOL:** School of Education, Culture and Communication

### English 3, Translation Studies

**CODE:** HEN313

**CREDITS:** 7,5

**LABORATORY HOURS:** 0

**STUDY PACE:** Part time 50%

**LOCATION:** Västerås

**EXAMINATION:** Spoken and written assignments, Preparation for and participation in course activities, Final exam

**PREREQUISITES:** English 2, 30 credits (of which a minimum of 22,5 credits at the start of course) or equivalent.

**COURSE CONTENT:** This course provides an introduction to the field of Translation Studies, including its historical development and current concerns. We will acquaint ourselves with the core issues (What is a translation? How should one translate? What is the role of translation in society?), as well as some of its more specialized subareas, such as: literary translation, poetry translation, technical translation, screen translation, interpreting, translation and language learning, translation of specific textual features such as humour and culture-related elements.

Theoretical studies will be combined with hands-on exercises, both in the seminars and in the projects to be carried out.

**CONTACT PERSON:** Diane Pecorari, [diane.pecorari@mdh.se](mailto:diane.pecorari@mdh.se)

**SCHOOL:** School of Education, Culture and Communication

### English 3, Translation Studies

**CODE:** HEN313

**CREDITS:** 7,5

**LABORATORY HOURS:** 0

**STUDY PACE:** Part time 50%

**LOCATION:** Västerås

**EXAMINATION:** Spoken and written assignments, Preparation for and participation in course activities, Final exam

**PREREQUISITES:** English 2, 30 credits (of which a minimum of 22,5 credits at the start of course) or equivalent.

**COURSE CONTENT:** This course provides an introduction to the field of Translation Studies, including its historical development and current concerns. We will acquaint ourselves with the core issues (What is a translation? How should one translate? What is the role of translation in society?), as well as some of its more specialized subareas, such as: literary translation, poetry translation, technical translation, screen translation, interpreting, translation and language learning, translation of specific textual features such as humour and culture-related elements.

**CONTACT PERSON:** Diane Pecorari, [diane.pecorari@mdh.se](mailto:diane.pecorari@mdh.se)

**SCHOOL:** School of Education, Culture and Communication

### English 4, Advanced Essay in English Studies

**CODE:** HEN401

**CREDITS:** 15

**LABORATORY HOURS:** 0

**STUDY PACE:** Part time 50%

**LOCATION:** Västerås

**EXAMINATION:** Essay and Ventilation seminar

**PREREQUISITES:** At least two years of studies on the basic level or at least 120 credits in the relevant subject area.

**COURSE CONTENT:** The essay in English studies on the 300 level and the advanced essay on the 400 level are independent research projects. During the course of the term you will plan, carry out, and write up, a research project, under the supervision of a member of the English studies staff. The booklet "Essay Supervision" lists the research interests of the staff and indicates the type of topics they can supervise. If you have identified a research area that is not listed here, contact a member of staff to discuss your ideas; we will try to match you up with an appropriate supervisor.

**CONTACT PERSON:** Diane Pecorari, [diane.pecorari@mdh.se](mailto:diane.pecorari@mdh.se)

**SCHOOL:** School of Education, Culture and Communication

### English 4, Advanced Essay in English Studies

**CODE:** HEN401

**CREDITS:** 15

**LABORATORY HOURS:** 0

**STUDY PACE:** Part time 50%

**LOCATION:** Västerås

**EXAMINATION:** Essay and Ventilation seminar

**PREREQUISITES:** At least two years of studies on the basic level or at least 120 credits in the relevant subject area.

**COURSE CONTENT:** The essay in English studies on the 300 level and the advanced essay on the 400 level are independent research projects. During the course of the term you will plan, carry out, and write up, a research project, under the supervision of a member of the English studies staff. The booklet "Essay Supervision" lists the research interests of the staff and indicates the type of topics they can supervise. If you have identified a research area that is not listed here, contact a member of staff to discuss your ideas; we will try to match you up with an appropriate supervisor.

**CONTACT PERSON:** Diane Pecorari, [diane.pecorari@mdh.se](mailto:diane.pecorari@mdh.se)

**SCHOOL:** School of Education, Culture and Communication

### English 4, Contemporary Detective Fiction: Trends and theories

**CODE:** HEN408

**CREDITS:** 7,5

**LABORATORY HOURS:** 0

**STUDY PACE:** Part time 50%

**LOCATION:** Eskilstuna

**EXAMINATION:** Written and spoken assignments, Preparation for and participation in course activities, Final exam

**PREREQUISITES:** At least 60 credits English as a major including at least 15 credits literature.

**COURSE CONTENT:** This course will extend your knowledge of literary studies in English, especially of the detective genre, a genre that deals with serious topics in a popular form. The reading list consists of contemporary detective and crime fiction, and of some literary theory and criticism. The course could help you identify a relevant essay topic and equip you for essay research. Assessment is by way of spoken and written assignments and a final exam.

**CONTACT PERSON:** Diane Pecorari, [diane.pecorari@mdh.se](mailto:diane.pecorari@mdh.se)

**SCHOOL:** School of Education, Culture and Communication

## STUDY PERIODS

1A: 2009-08-31 - 2009-10-04

2 A: 2009-11-02 - 2009-11-29

3 A: 2010-01-18 - 2010-02-21

4 A: 2010-03-29 - 2010-05-02

1B: 2009-10-05 - 2009-11-01

2 B: 2009-11-30 - 2010-01-17

3 B: 2010-02-22 - 2010-03-28

4 B: 2010-05-03 - 2010-06-06

**EXAMINATION:** Exercise, Seminar

**PREREQUISITES:** At least two years of studies on the basic level or at least 120 credits in the relevant subject area including at least 22,5 credits literature.

**COURSE CONTENT:** This course will extend and deepen your mastery of literary studies in English, particularly within the detective genre. We investigate trends and theories of a genre with deep as well as broad applications; a genre that deals with serious topics in a popular form. The reading list contains contemporary British and American detective fiction, as well as literary theory and criticism applied to this genre. This course could help you identify a relevant topic for the Advanced essay and will equip you for such research. Assessment will be by way of spoken assignments and a 7-8 page essay.

**CONTACT PERSON:** Diane Pecorari, diane.pecorari@mdh.se

**SCHOOL:** School of Education, Culture and Communication

#### English 4, Literature 4: From Modernism to Postmodernism

**CODE:** HEN412

**CREDITS:** 7,5

**LABORATORY HOURS:** 0

**STUDY PACE:** Part time 50%

**LOCATION:** Västerås

**EXAMINATION:** Exercise, Seminar

**PREREQUISITES:** At least two years of studies on the basic level or at least 120 credits in the relevant subject area, including at least 22,5 credits in literature.

**COURSE CONTENT:** This course will extend and deepen your mastery of literary studies in English, particularly of British and American Modernist and Postmodernist texts and of literary analysis. The reading list contains famous works from these important literary periods, and applied literary theory and criticism. On the 400 level this course could also help you identify a relevant topic for the Advanced essay and equip you for such research. Assessment will be by way of spoken assignments and a 7-8 page essay.

**CONTACT PERSON:** Diane Pecorari, diane.pecorari@mdh.se

**SCHOOL:** School of Education, Culture and Communication

#### English 4, Social and Regional Variation

**CODE:** HEN403

**CREDITS:** 7,5

**LABORATORY HOURS:** 0

**STUDY PACE:** Part time 50%

**LOCATION:** Eskilstuna

**EXAMINATION:** Spoken and written assignments, Preparation for and participation in course activities, Final exam

**PREREQUISITES:** At least two years of studies on the basic level or at least 120 credits in the relevant subject area.

**COURSE CONTENT:** The focus of this course is examining the variation in how English is used around the world and in a range of contexts. We will look at questions such as

- how people from different social groups differ in their use of English.
- similarities and differences in how men and women use language.
- the varieties of English spoken around the world.
- the implications of the growth of English as an international language.

**CONTACT PERSON:** Diane Pecorari, diane.pecorari@mdh.se

**SCHOOL:** School of Education, Culture and Communication

#### English 4, Translation Studies

**CODE:** HEN413

**CREDITS:** 7,5

**LABORATORY HOURS:** 0

**STUDY PACE:** Part time 50%

**LOCATION:** Västerås

**EXAMINATION:** Spoken and written assignments, Preparation for and participation in course activities, Final exam

**PREREQUISITES:** English 3, 30 credits (of which a minimum of 22.5 credits at the start of course) and at least 22.5 credits in English linguistics or equivalent.

**COURSE CONTENT:** This course provides an introduction to the field of Translation Studies, including its historical development and current concerns. We'll acquaint ourselves with the core issues (What is a translation? How should one translate? What is the role of translation in society?), as well as some of its more specialized subareas, such as: literary translation, poetry translation, technical translation, screen translation, interpreting, translation and language learning, translation of specific textual features such and humour or culture-related elements. Theoretical studies will be combined with hands-on exercises, both in the seminars and in the projects to be carried out. The demands on 4th-term students will be somewhat higher than on 3rd-term students as regards, for example, their scientific attitude and approach, as well as oral and written presentation skills.

**CONTACT PERSON:** Diane Pecorari, diane.pecorari@mdh.se

**SCHOOL:** School of Education, Culture and Communication

1A: 2009-08-31 - 2009-10-04

1B: 2009-10-05 - 2009-11-01

2A: 2009-11-02 - 2009-11-29

2B: 2009-11-30 - 2010-01-17

#### English for Academic Purposes 1

**CODE:** HEN002

**CREDITS:** 7,5

**LABORATORY HOURS:** 0

**STUDY PACE:** Part time 50%

**LOCATION:** Västerås

**EXAMINATION:** Written and spoken assignments, Preparation for and participation in scheduled activities, Grammar and vocabulary examination.

**PREREQUISITES:** Three years of upper secondary school or equivalent.

**COURSE CONTENT:** English for Academic Purposes 1 aims at developing oral and written proficiency in English at the upper intermediate level. The course comprises lectures, seminars and individual and group exercises.

**CONTACT PERSON:** Diane Pecorari, diane.pecorari@mdh.se

**SCHOOL:** School of Education, Culture and Communication

#### English for Academic Purposes 3

**CODE:** HEN112

**CREDITS:** 7,5

**LABORATORY HOURS:** 0

**STUDY PACE:** Part time 25%

**LOCATION:** Västerås

**EXAMINATION:** Written and spoken assignments, Seminar, Written examination

**PREREQUISITES:** English for three years of upper secondary school or equivalent.

**COURSE CONTENT:** English for Academic Purposes 3 offers an opportunity to put your knowledge of English to work on a range of communicative tasks.

**CONTACT PERSON:** Diane Pecorari, diane.pecorari@mdh.se

**SCHOOL:** School of Education, Culture and Communication

#### English for Business Purposes

**CODE:** HEN111

**CREDITS:** 7,5

**LABORATORY HOURS:** 0

**STUDY PACE:** Part time 50%

**LOCATION:** Västerås

**EXAMINATION:** Written and spoken assignments, Preparation for and active participation in the campus meetings, Written examination

**PREREQUISITES:** English B is required for Swedish students.

**COURSE CONTENT:** The course is designed to improve oral and written techniques in business contexts. Features of style and the language of different types of business correspondence are practised: how to say what mean can make or break a business deal. Other business-related matters such as banking, insurance, personnel, social correspondence, interview skills and intercultural communication are also dealt with.

**CONTACT PERSON:** Diane Pecorari, diane.pecorari@mdh.se

**SCHOOL:** School of Education, Culture and Communication

#### The English Identity

**CODE:** HEN114

**CREDITS:** 7,5

**LABORATORY HOURS:** 0

**STUDY PACE:** Part time 25%

**LOCATION:** Västerås

**EXAMINATION:** Seminar, Written and oral examination

**PREREQUISITES:** English for three years of upper secondary school or equivalent.

**COURSE CONTENT:** What makes a person "typically English"? In this course we look at the cultural and social behaviour patterns in England and at the same time develop oral and written skills in English. After a brief introduction aiming at providing a general background to the social structure of England, particular aspects of conversation and behaviour codes are examined and discussed: language, class, humour, dress, food, work, play, dress etc. Comparisons with corresponding phenomena in Sweden and/or the student's own country are also discussed.

**CONTACT PERSON:** Diane Pecorari, diane.pecorari@mdh.se

**SCHOOL:** School of Education, Culture and Communication

## ENVIRONMENTAL SCIENCE

#### Discourses and Sustainable Development

**CODE:** WMX043

**CREDITS:** 15

**LABORATORY HOURS:** 0

**STUDY PACE:** Full time

**LOCATION:** Västerås

**EXAMINATION:** Project Comparative analysis, Project Actor analysis, Oral/Written examinations

**PREREQUISITES:** A Bachelor's degree from an institution of higher education of three years or more, equivalent to at least 180 credits in Business Administration, Social

**LECTURE HOURS:** 40

**START PERIOD:** 3

**LEVEL OF EDUCATION:** Advanced level

**LANGUAGE:** English

4A: 2010-03-29 - 2010-05-02

4B: 2010-05-03 - 2010-06-06

#### STUDY PERIODS

3A: 2010-01-18 - 2010-02-21

3B: 2010-02-22 - 2010-03-28

Science or Technology; or at least 90 credits in Business Administration of which at least 30 credits on Basic level Third Year.

**COURSE CONTENT:** The course will contain a critical analysis of the development discourse, done by literature studies, journal article analysis, actor's analysis and journal article writing. Various alternative definitions of development will be studied in depth. Environmental and justice issues are add-on's in today's development discourse, while GNP-growth is in its center. Why? The course explores the relationship between theories and policy advice of the scientific expertise, the language used to describe, persuade, and gain influence, and the power relations of different significant actors within the development discourse. Who are let into the arena of development and sustainable development and why? Who owns power and the right of definition within the discourse? What are the historical explanations to today's ideas on development, and to the way development is imagined and pictured by different actor groups in the global community? These questions will be dealt with thoroughly throughout the course.

**CONTACT PERSON:** Åke Forsberg, ake.forsberg@mdh.se

**SCHOOL:** School of Sustainable Development of Society and Technology

### Ecological Risk Assessment

**CODE:** WMX024

**CREDITS:** 6

**LABORATORY HOURS:** 0

**STUDY PACE:** Part time 50%

**LOCATION:** Västerås

**EXAMINATION:** Project Potential Ecological Risk, Project Ecological Risk Assessment, Oral/Written examinations

**PREREQUISITES:** Three years of university studies at basic level in biology, chemistry, environmental science or environmental engineering. Basic knowledge in statistics can be acquired in the course Methods in natural Sciences 15 credits.

**COURSE CONTENT:** The course will provide knowledge about ecotoxicology, environmental analysis and predictive modeling. The theoretical background, methodology and criteria for testing toxicity and environmental monitoring. Ranking and modelling of environmental threats. Assessment of the outcome of measures to reduce the extent of threats to the environment.

**CONTACT PERSON:** Åke Forsberg, ake.forsberg@mdh.se

**SCHOOL:** School of Sustainable Development of Society and Technology

### Ecotoxicological Bioassays

**CODE:** WMX025

**CREDITS:** 4

**LABORATORY HOURS:** 0

**STUDY PACE:** Part time 50%

**LOCATION:** Västerås

**EXAMINATION:** Project, Seminar, Oral/Written examinations

**PREREQUISITES:** Three years of university studies at basic level in biology, chemistry, environmental science or environmental engineering. Basic knowledge in ecotoxicology and statistics. Basic knowledge in statistics can be acquired in the course Methods in Natural Sciences 15 credits and basic knowledge in ecotoxicology can be acquired in the course Ecotoxicology 4 credits.

**COURSE CONTENT:** Basic terminology. A role of bioassays in ecotoxicology. Test-standardisation at EU, international and national levels. In practical courses, attention is focused on sampling and sample preparation, bioassays for liquid samples, ecotoxicological bioassays for soil and sediment samples; specific types of ecotoxicological bioassays, legislation, sources of variability, validation and interpretation of results of ecotoxicological bioassays and professional contacts and advanced communication in the field of bioassays.

**CONTACT PERSON:** Åke Forsberg, ake.forsberg@mdh.se

**SCHOOL:** School of Sustainable Development of Society and Technology

### Ecotoxicology

**CODE:** WMX036

**CREDITS:** 4

**LABORATORY HOURS:** 0

**STUDY PACE:** Part time 50%

**LOCATION:** Västerås

**EXAMINATION:** Project, Seminar, Oral/Written examinations

**PREREQUISITES:** Three years of university studies at basic level in biology, chemistry, environmental science or environmental engineering.

**COURSE CONTENT:** History and current structure of ecotoxicology. Chemical compounds in ecosystems. Effects of chemical stressors on ecosystems and on organisms. Acute and chronic toxicity vs. genotoxicity vs. carcinogenicity. Biomarkers. Hierarchy of the biological system, effects at subcellular and cellular levels; biochemical and molecular modes of toxic action. Properties, structure and functions of ecosystems; stress in communities and ecosystems; spatial and temporal changes; experimental approaches: laboratory testing vs. in situ studies vs. biomonitoring. Methods and experiments of different complexities in ecotoxicology. Laboratory biotests and ecological studies; in situ studies; in situ study methods. Major classes of important contaminants: individual chemicals vs. mixtures and complex samples. Applica-

tions of predictive ecotoxicology: principles and characteristics of structure-activity relationship modelling (QSAR); mathematical models for fate and transport of chemicals in the environment and in food chains. Risk assessment - basic concepts and realization; hazard vs. risk.

**CONTACT PERSON:** Åke Forsberg, ake.forsberg@mdh.se

**SCHOOL:** School of Sustainable Development of Society and Technology

### Environmental Informatics

**CODE:** WMX026

**CREDITS:** 4

**LABORATORY HOURS:** 0

**STUDY PACE:** Part time 25%

**LOCATION:** Västerås

**EXAMINATION:** Project, Seminar

**PREREQUISITES:** Three years of university studies at basic level in biology, chemistry, environmental science or environmental engineering.

**COURSE CONTENT:** Basic knowledge of picture processing. Basic knowledge of communication. Basic knowledge of building web pages using Macromedia MX 2004 (Flash and/or Dreamweaver).

**CONTACT PERSON:** Åke Forsberg, ake.forsberg@mdh.se

**SCHOOL:** School of Sustainable Development of Society and Technology

### Predictive Limnology

**CODE:** WMX030

**CREDITS:** 4

**LABORATORY HOURS:** 0

**STUDY PACE:** Part time 25%

**LOCATION:** Västerås

**EXAMINATION:** Project, Seminar

**PREREQUISITES:** Three years of university studies at basic level in biology, chemistry, environmental science or environmental engineering. Basic knowledge in freshwater ecology and in statistics. Basic knowledge in freshwater ecology can be acquired in the course Aquatic Ecology 6 credits. Basic knowledge in statistics can be acquired in the course Methods in Natural Sciences 15 credits.

**COURSE CONTENT:** Time and area compatibility of data. Statistical analyses: Prairies staircase, Regression analyses, Variability within and among ecosystems, Uncertainties in empirical data and Basic principles determining the predictive success of ecosystem models. Dynamical and statistical ecosystem modelling: Effect-Load-Sensitivity models. Predictions using a model: Testing functions in a validated model. Model development: Building a simulation model. Model testing: Calibration, Validation and Uncertainty tests using Monte Carlo techniques.

**CONTACT PERSON:** Åke Forsberg, ake.forsberg@mdh.se

**SCHOOL:** School of Sustainable Development of Society and Technology

### Remediation

**CODE:** WMX031

**CREDITS:** 4

**LABORATORY HOURS:** 0

**STUDY PACE:** Part time 50%

**LOCATION:** Västerås

**EXAMINATION:** Project, Seminar, Oral/Written examinations

**PREREQUISITES:** Three years of university studies at basic level in biology, chemistry, environmental science or environmental engineering and the courses Ecotoxicology 4 credits, Sedimentology 4 credits and Wastewater Treatment 4 credits.

**COURSE CONTENT:** Ex Situ and In Situ methods:

Physical methods including isolation, lining, capping and dredging of materials.

Chemical methods including precipitation, buffering, flocculation, dispersion and buffering. Biological methods including the use of biocides, bioremediation (micro-organisms) phytoremediation, manipulation of food chains, control and removal of invasive species and pathogenic organisms and biostimulation.

Commercial products and techniques; current state of the art, potential and limitations. Systems for selecting and evaluating remedial actions:

Handling of waste including dredged materials obtained in remedial actions. Evaluation of present large scale remedial projects in Europe; ecosystem, remedial actions and monitoring.

Design of monitoring programmes for following up remedial actions:

Evaluation of the efficiency of remedial actions and monitoring programmes.

**CONTACT PERSON:** Åke Forsberg, ake.forsberg@mdh.se

**SCHOOL:** School of Sustainable Development of Society and Technology

### Sedimentology

**CODE:** WMX032

**CREDITS:** 4

**LABORATORY HOURS:** 0

**STUDY PACE:** Part time 50%

**LOCATION:** Västerås

**EXAMINATION:** Project, Seminar, Oral/Written examinations

**PREREQUISITES:** Three years of university studies at basic level in biology, chemistry,

## STUDY PERIODS

1A: 2009-08-31 - 2009-10-04

2A: 2009-11-02 - 2009-11-29

3A: 2010-01-18 - 2010-02-21

4A: 2010-03-29 - 2010-05-02

1B: 2009-10-05 - 2009-11-01

2B: 2009-11-30 - 2010-01-17

3B: 2010-02-22 - 2010-03-28

4B: 2010-05-03 - 2010-06-08

environmental science or environmental engineering.

**COURSE CONTENT:** Geomorphology of ecosystems. Processes influencing recent sediments. Effects of different environmental conditions on sedimentation processes. Effects of plants and animals on sediments. Deposition and transport processes. Different types of sediments. Quality assessment using sediment data. Human impacts. Sediments in regulated rivers. Eutrophication and effects on sediments. Heavy metals and organic pollution of sediments. Remediation of contaminated sediments.

**CONTACT PERSON:** Åke Forsberg, ake.forsberg@mdh.se

**SCHOOL:** School of Sustainable Development of Society and Technology

## FRENCH

### Business French

**CODE:** FRA205

**CREDITS:** 7,5

**LABORATORY HOURS:** 0

**STUDY PACE:** Part time 50%

**LOCATION:** Västerås

**EXAMINATION:** Oral and written examination

**PREREQUISITES:** French from three years of upper secondary school or equivalent

**COURSE CONTENT:** Business Texts, Written Exercises in the form of Memos, CVs, Business Letters, Business Communication, French Business Culture

**CONTACT PERSON:** Hans Färnlöf, hans.farnlof@mdh.se

**SCHOOL:** School of Education, Culture and Communication

## INFORMATION DESIGN

### VR Visualization, distance course

**CODE:** KIT176

**CREDITS:** 7,5

**LABORATORY HOURS:** 0

**STUDY PACE:** Part time 25%

**LANGUAGE:** English

**EXAMINATION:** Exercise, Oral/Written examinations

**PREREQUISITES:** At least 7,5 credits 3D-Modeling or CAD studies.

**COURSE CONTENT:** In theory and practice this course gives an introduction to Virtual Reality as a tool for product and spatial visualizations. The course focuses on design aspects and user interface. We will be studying strategies and metaphors for handling and interaction with 3D objects and translations in 3D space. Hands-on programming in icon-based software.

**CONTACT PERSON:** Annika Björklund, annika.bjorklund@mdh.se

**SCHOOL:** School of Innovation, Design and Engineering

## INFORMATION SYSTEMS

### Basic Course in Informatics

**CODE:** EIK031

**CREDITS:** 7,5

**LABORATORY HOURS:** 0

**STUDY PACE:** Part time 50%

**LOCATION:** Västerås

**EXAMINATION:** Exercise, Oral/Written examinations

**PREREQUISITES:** Mathematics from three years of upper secondary school with science profile.

**COURSE CONTENT:** The course will give fundamental knowledge about information technology and its use, foremost within the administrative area with attention to information systems. The course will also give skills in practical use of system programs and application programs for PC's, focusing on spreadsheets and experience of using Internet/Intranet.

**CONTACT PERSON:** Madeleine Lundberg, madeleine.lundberg@mdh.se

**SCHOOL:** School of Sustainable Development of Society and Technology

### Marketing and IT

**CODE:** EIK035

**CREDITS:** 7,5

**LABORATORY HOURS:** 0

**STUDY PACE:** Part time 50%

**LOCATION:** Västerås

**EXAMINATION:** Oral/Written examinations, Group Project, Seminar

**PREREQUISITES:** 30 credits in Business Administration (at least 15 credits finished when the course starts) and Informatics 7,5 credits.

**COURSE CONTENT:** The purpose of this course is to let the students develop knowledge about the use of information technology (IT) in marketing situation. The students will develop understanding for the consequences and significance of the use of information systems (IS) in companies and organizations. Perspectives on different

information system in marketing contexts are discussed based on scientific articles in seminar form. In this course, the student will develop an understanding of how information technology enables marketing thinking. The student will also train in written and oral presentation.

**CONTACT PERSON:** Madeleine Lundberg, madeleine.lundberg@mdh.se

**SCHOOL:** School of Sustainable Development of Society and Technology

### Project and Innovation Management with an IT Focus

**CODE:** EIK033

**CREDITS:** 15

**LABORATORY HOURS:** 0

**STUDY PACE:** Part time 50%

**LOCATION:** Västerås

**EXAMINATION:** Exercise, Oral/Written examinations

**PREREQUISITES:** A Bachelor's degree from an institution of higher education of three years or more, equivalent to at least 180 credits in Business Administration, Social Science or Technology; or at least 90 credits in Business Administration or Informatics of which at least 30 credits on Basic level Third Year.

**COURSE CONTENT:** The course examines Information Technology (IT) in an innovation management perspective, including project management. This includes types of innovations, the diffusion of innovation in social systems, the adoption of innovation in organizations, groups and at the individual level. Furthermore facilitating and hindering factors are covered as well as how to manage the complex processes involved, for example how to organize innovation projects and when to launch a product and/or service on the market for successful diffusion. A central dimension, beside functionality, is the design and usability aspects of software and hardware. Also methodological issues related to the course as well as the program as a whole are included. The objective is to provide students with a better understanding of innovation processes in IT and with IT as well as how to manage these processes based on scientific knowledge.

**CONTACT PERSON:** Madeleine Lundberg, madeleine.lundberg@mdh.se

**SCHOOL:** School of Sustainable Development of Society and Technology

## INNOVATION TECHNOLOGY

### Creativity and Innovation Management

**CODE:** INO002

**CREDITS:** 15

**LABORATORY HOURS:** 0

**STUDY PACE:** Part time 50%

**LOCATION:** Eskilstuna

**EXAMINATION:** Exercise

**PREREQUISITES:** At least 30 credits from higher education, advanced level.

**COURSE CONTENT:** The course consists of the following five main parts - in theory and in practice - of creativity, innovation, design and entrepreneurship:

- part 1) The Principles of Creativity and Innovation with the innovation imperative in today's global economy, prerequisites for organizing innovation and entrepreneurship, networks and systems supporting innovation, creativity and idea generation
- part 2) Product and process innovation and design takes a more concrete view on how new products, services and processes can be developed and how the manufacturing and service capabilities need to be adapted and developed to meet the demands of speed and complexity - but also simplicity - in new products. The design process is a crucial part of the success on the individualized customer market today, where design and innovation are merging
- part 3) Creating and sharing knowledge and intellectual property looks at the need for searching and creating new knowledge, to protect new ideas and business knowledge, ways to share new knowledge, the importance to understand the relationships between knowledge, networks, learning and innovation and to understand and to build a leadership and management to support organizational learning for innovation
- part 4) Entrepreneurship, business creation and exploiting innovations looks at the context of entrepreneurship, the processes of creating new ventures from both business and social perspectives
- part 5) Innovation, sustainability and globalization, looks at the links between innovation, growth and sustainability, corporate social responsibility, national and international competitiveness, comparison and learning. This part will also consolidate the previous parts/themes in the course and focus on making innovation happen.

**CONTACT PERSON:** Annika Björklund, annika.bjorklund@mdh.se

**SCHOOL:** School of Innovation, Design and Engineering

### Graduation Project in Innovation Management

**CODE:** INO001

**CREDITS:** 15

**LABORATORY HOURS:** 0

**STUDY PACE:** Full time

**LOCATION:** Eskilstuna

**EXAMINATION:** Oral/Written examinations, Project work, Final paper

**LECTURE HOURS:** 20

**START PERIOD:** 4

**LEVEL OF EDUCATION:** Advanced level

**LANGUAGE:** English

## STUDY PERIODS

1 A: 2009-08-31 - 2009-10-04

2 A: 2009-11-02 - 2009-11-29

3 A: 2010-01-18 - 2010-02-21

4 A: 2010-03-29 - 2010-05-02

1 B: 2009-10-05 - 2009-11-01

2 B: 2009-11-30 - 2010-01-17

3 B: 2010-02-22 - 2010-03-28

4 B: 2010-05-03 - 2010-06-06

**PREREQUISITES:** Pass (G) in the courses Innovation Management, KIN320 och Creativity Tools, KIN280.

**COURSE CONTENT:** The project is mainly an independent task to be carried out in a company or another type of organization in working life. It is required that the student heavily emphasizes the description, analysis and development of the project. The project may also consist of the development of a personal product concept or business idea. In total, the work shall correspond to ten weeks of full time labor. The progression shall be documented in a "reflective diary" during the whole extent of the project. Most of the work is done independently and there is only a limited time of classroom-scheduled activities.

The student's knowledge creation is mainly experienced based and staff independent. Main support is given through (group-) tuition by supervisors and a certain amount of lectures and seminars are given during the course. A peer-debriefing procedure is also organized where the students support each other.

**CONTACT PERSON:** Annika Björklund, annika.bjorklund@mdh.se

**SCHOOL:** School of Innovation, Design and Engineering

### Trendspotting, distance course

**CODE:** INO101

**CREDITS:** 7,5

**LABORATORY HOURS:** 0

**STUDY PACE:** Part time 25%

**LANGUAGE:** English

**EXAMINATION:** GRU1, 4 credits, group assignment with written and oral/visual report INL1, 3 credits, home assignment, practise assignment

NÄR1, 0,5 credits, presence mandatory, seminar on INL 1

**PREREQUISITES:** Three years of upper secondary school or equivalent.

**COURSE CONTENT:**

- Source evaluation with emphasis on web-based sources.
- Research basics (covering texts, digital media and real world research).
- The 7-step model for Business Intelligence and trend spotting.
- Collection, sorting, compilation, analysis and presentation.
- Project work with group assigned environmental analysis, trend spotting and presentations.

**CONTACT PERSON:** Annika Björklund, annika.bjorklund@mdh.se

**SCHOOL:** School of Innovation, Design and Engineering

### Trendspotting

**CODE:** INO101

**CREDITS:** 7,5

**LABORATORY HOURS:** 0

**STUDY PACE:** Part time 25%

**LOCATION:** Eskilstuna

**LANGUAGE:** English

**EXAMINATION:** GRU1, 4 credits, group assignment with written and oral/visual report INL1, 3 credits, home assignment, practise assignment

NÄR1, 0,5 credits, presence mandatory, seminar on INL 1

**PREREQUISITES:** Three years of upper secondary school or equivalent.

**COURSE CONTENT:**

- Source evaluation with emphasis on web-based sources.
- Research basics (covering texts, digital media and real world research).
- The 7-step model for Business Intelligence and trend spotting.
- Collection, sorting, compilation, analysis and presentation.
- Project work with group assigned environmental analysis, trend spotting and presentations.

**CONTACT PERSON:** Annika Björklund, annika.bjorklund@mdh.se

**SCHOOL:** School of Innovation, Design and Engineering

## MATHEMATICS/APPLIED MATHEMATICS

### Actuarial Mathematics

**CODE:** MMA713

**CREDITS:** 7,5

**LABORATORY HOURS:** 0

**STUDY PACE:** Part time 50%

**LOCATION:** Västerås

**LANGUAGE:** English

**EXAMINATION:** Continuous examination/project, Seminars

**PREREQUISITES:** At least 120 credits in the technical, natural sciences, business administration or economics areas where Probability 7,5 credits or equivalent is included.

**COURSE CONTENT:** Actuarial mathematics constitutes the mathematical foundation of the insurance business. The stochastic nature of accidents and the length of people's lives make uncertainty an integral part of this business. The course Actuarial Mathematics provides students with essential knowledge and tools required to explore the consequences of uncertainty as well as to solve other mathematical and statistical problems arising in the insurance business. The concepts of risk theory and risk processes are introduced. Various forms of life insurance and their mechanisms are considered. Insurance models, reinsurance contracts, different types of distributions and simulation methods for both claim sizes and claim numbers will be analysed in

the framework of non-life insurance. A computer software package is used throughout the course.

**CONTACT PERSON:** Dmitrii Silvestrov, dmitrii.silvestrov@mdh.se

**SCHOOL:** School of Education, Culture and Communication

### Calculus I

**CODE:** MMA302

**CREDITS:** 7,5

**LABORATORY HOURS:** 0

**STUDY PACE:** Part time 50%

**LOCATION:** Västerås

**EXAMINATION:** Project, Seminar, Written examination

**PREREQUISITES:** Advanced mathematics from three years of upper secondary school with science profile.

**COURSE CONTENT:** Many problems in business and economics (as well as in many other fields) can be described by functions of a real variable. For instance: How does the cost of production change when production increase? What is the marginal cost of production? How many units should be produced in order to maximize the company's profit? What is the net excess profit of investment plan A over investment plan B?

**CONTACT PERSON:** Anatoliy Malyarenko, anatoliy.malyarenko@mdh.se

**SCHOOL:** School of Education, Culture and Communication

### Degree Project in Mathematics, Basic level 300

**CODE:** MMA390

**CREDITS:** 15

**LABORATORY HOURS:** 0

**STUDY PACE:** Full time

**LOCATION:** Västerås

**EXAMINATION:** Degree project

**PREREQUISITES:** Non-overlapping courses in Mathematics/Applied Mathematics, excluding previous degree projects, with a total sum of at least 75 credits.

**COURSE CONTENT:** The course

- gives deeper knowledge in a mathematical subject
- develops the ability to formulate a problem and to work independently
- develops the ability to make oral and written presentations of knowledge and the results obtained.

**CONTACT PERSON:** Dmitrii Silvestrov, dmitrii.silvestrov@mdh.se

**SCHOOL:** School of Education, Culture and Communication

### Degree Project in Mathematics, Advanced level, 15 Credits

**CODE:** MMA890

**CREDITS:** 15

**LABORATORY HOURS:** 0

**STUDY PACE:** Full time

**LOCATION:** Västerås

**EXAMINATION:** Degree project

**PREREQUISITES:** A completed degree project 15 credits on the basic level in Mathematics/Applied Mathematics and non-overlapping courses in Mathematics/Applied Mathematics with a total sum of at least 90 credits, excluding previous degree projects, of which at least 15 credits must relate to courses at advanced levels.

**COURSE CONTENT:** The course:

- gives deeper knowledge in a mathematical subject
- develops the ability to formulate a problem and to work independently
- develops the ability to make oral and written presentations of knowledge and of the results obtained.

**CONTACT PERSON:** Dmitrii Silvestrov, dmitrii.silvestrov@mdh.se

**SCHOOL:** School of Education, Culture and Communication

### Degree Project in Mathematics, Advanced level, 30 Credits

**CODE:** MMA891

**CREDITS:** 30

**LABORATORY HOURS:** 0

**STUDY PACE:** Full time

**LOCATION:** Västerås

**EXAMINATION:** Degree project

**PREREQUISITES:** Non-overlapping courses in Mathematics/Applied Mathematics with a total sum of at least 90 credits, excluding previous degree projects, of which at least 30 credits must relate to courses on the advanced level.

**COURSE CONTENT:** The course:

- gives deeper knowledge in a mathematical subject
- develops the ability to formulate a problem and to work independently
- develops the ability to make oral and written presentations of knowledge and of results obtained.

**CONTACT PERSON:** Dmitrii Silvestrov, dmitrii.silvestrov@mdh.se

**SCHOOL:** School of Education, Culture and Communication

## STUDY PERIODS

1A: 2009-08-31 – 2009-10-04

1B: 2009-10-05 – 2009-11-01

2A: 2009-11-02 – 2009-11-29

2B: 2009-11-30 – 2010-01-17

3A: 2010-01-18 – 2010-02-21

3B: 2010-02-22 – 2010-03-28

4A: 2010-03-29 – 2010-05-02

4B: 2010-05-03 – 2010-06-06

### Financial and Risk Management Software

**CODE:** MMA709  
**CREDITS:** 7,5  
**LECTURE HOURS:** 30  
**LABORATORY HOURS:** 0  
**START PERIOD:** 3  
**STUDY PACE:** Part time 50%  
**LEVEL OF EDUCATION:** Advanced level  
**LOCATION:** Västerås  
**LANGUAGE:** English  
**EXAMINATION:** Projects, Seminars  
**PREREQUISITES:** At least 120 credits in the technical, natural sciences, business administration or economics areas where Analytical Finance II 7,5 credits or equivalent is included.  
**COURSE CONTENT:** An introduction to systems that are used by financial institutions for trading and risk management. Along with the basics of trading system usage, SQL and Python will be covered to further extend system functionality. After this course the student will have a good understanding of what a trading system is and how it is used at various departments of a trading organization.  
**CONTACT PERSON:** Anatoliy Malyarenko, anatoliy.malyarenko@mdh.se  
**SCHOOL:** School of Education, Culture and Communication

### Introduction to Financial Mathematics

**CODE:** MMA303  
**CREDITS:** 7,5  
**LECTURE HOURS:** 30  
**LABORATORY HOURS:** 0  
**START PERIOD:** 4  
**STUDY PACE:** Part time 50%  
**LEVEL OF EDUCATION:** Basic Level Second Year  
**LOCATION:** Västerås  
**LANGUAGE:** English  
**EXAMINATION:** Continuous examination and quizzes, Seminars, Written examination  
**PREREQUISITES:** Calculus I 7,5 credits or equivalent.  
**COURSE CONTENT:** Financial economics is perhaps the most mathematical branch of economics. Mathematical finance aims to solve real problems in financial economics using simple mathematical models. This subject is taught in both business schools and mathematical science departments, and it is also widely and extensively utilized in the financial industry. The course will give an introduction to some basic notions such as, cash-flows, interest rates, present value, option pricing and arbitrage, in mathematical finance.  
**CONTACT PERSON:** Dmitrii Silvestrov, dmitrii.silvestrov@mdh.se  
**SCHOOL:** School of Education, Culture and Communication

### Methods of Statistical Inference

**CODE:** MMA308  
**CREDITS:** 7,5  
**LECTURE HOURS:** 30  
**LABORATORY HOURS:** 0  
**START PERIOD:** 4  
**STUDY PACE:** Part time 50%  
**LEVEL OF EDUCATION:** Basic Level Third Year  
**LOCATION:** Västerås  
**LANGUAGE:** English  
**EXAMINATION:** Continuous examination, Quiz, Seminar, Written examination  
**PREREQUISITES:** Probability 7,5 credits or equivalent.  
**COURSE CONTENT:** Statistical analysis of real market data has an important role in analytical finance and economics. The course aims to equip students with the skills required for statistical inference. The course presents the main concepts and methods of statistical inference, such as estimation, confidence intervals, hypothesis testing, regression analysis, analysis of variances. It is anticipated that Matlab and other software will be used throughout the course.  
 Review of Probability: probability, random variables, distributions, expectations, sampling distributions, sampling from normal distribution, Estimation: unbiased estimates and mean square error, selection of sample size, efficiency, consistency, sufficiency, minimum variance estimation, moment estimation, maximum likelihood estimation. Confidence Intervals: two-sided and one-sided intervals, coverage probability, confidence intervals for parameters of normal distributions, pivots. Hypothesis Testing: error probabilities, likelihood ratio tests, tests for parameters of normal distribution, power of tests, Neyman-Pearson lemma, hypothesis testing and confidence intervals, p-values. Regression Analysis: linear models, estimation by least squares, inference for regression parameters, regression prediction. Analysis of Variance: one-way layout analysis, ANOVA tables, statistical inference for one-way layout.  
**CONTACT PERSON:** Anna Fedyszak-Koszela, anna.koszela@mdh.se  
**SCHOOL:** School of Education, Culture and Communication

### Numerical Methods with MATLAB

**CODE:** MMA307  
**CREDITS:** 7,5  
**LECTURE HOURS:** 30  
**LABORATORY HOURS:** 0  
**START PERIOD:** 3  
**STUDY PACE:** Part time 50%  
**LEVEL OF EDUCATION:** Basic Level Second Year  
**LOCATION:** Västerås  
**LANGUAGE:** English  
**EXAMINATION:** Laboratory work, Computer project, Folder examination and quizzes  
**PREREQUISITES:** Algebra 7,5 credits and Calculus I 7,5 credits or equivalent.  
**COURSE CONTENT:** Numerical methods are used to solve mathematical problems by the help of computers. In economics and engineering different mathematical models are developed to analyse some problem of interest. These models are often very complex and involve a large number of variables and conditions. Different kinds of approximations can be used to solve the problems by a computer. The course focus on some of the most important methods to solve mathematical problems

with the aid of a computer. The World spread numerical software package MATLAB is introduced and used throughout the course. Explicitly the course consists of an introduction to MATLAB, including basic algorithms and programming in MATLAB, and the following topics: Non-linear equations, linear systems, interpolation, numerical differentiation, differential equations and numerical integration, applications in economics e.g. valuation of fixed income securities, Black-Scholes model and pricing American options by binomial lattices.

**CONTACT PERSON:** Nils-Hassan Quttineh, nisse.quttineh@mdh.se  
**SCHOOL:** School of Education, Culture and Communication

### Operations Research

**CODE:** MAA315  
**CREDITS:** 7,5  
**LECTURE HOURS:** 30  
**LABORATORY HOURS:** 0  
**START PERIOD:** 3  
**STUDY PACE:** Part time 50%  
**LEVEL OF EDUCATION:** Basic Level Third Year  
**LOCATION:** Västerås  
**LANGUAGE:** English  
**EXAMINATION:** Written and oral examination  
**PREREQUISITES:** Calculus II 7,5 credits and Numerical Methods 7,5 credits or equivalent and English A.  
**COURSE CONTENT:** Linear programming: the simplex algorithms, sensitivity analysis, duality, transportation problems, network optimization, dynamic programming, practical applications. Nonlinear Programming: nonlinear optimization models with or without constraints, vconvex sets and functions, steepest descent and Newton type methods, quadratic programming with linear constraints, Karush-Kuhn-Tucker conditions, SQP methods, Lagrangean duality, practical applications. Integer programming: Gomory's cutting plane methods for pure and mixed-integer linear programming, search methods, branch and bound algorithms, combinatorial programming, practical applications. Practical solution of optimization problems in Matlab using the optimization environment TOMLAB, and free and commercial software for optimization.  
**CONTACT PERSON:** Torgil Abrahamsson, torgil.abrahamsson@mdh.se  
**SCHOOL:** School of Education, Culture and Communication

### Portfolio Theory II

**CODE:** MMA705  
**CREDITS:** 7,5  
**LECTURE HOURS:** 30  
**LABORATORY HOURS:** 0  
**START PERIOD:** 3  
**STUDY PACE:** Part time 50%  
**LEVEL OF EDUCATION:** Advanced level  
**LOCATION:** Västerås  
**LANGUAGE:** English  
**EXAMINATION:** Project, continuous examination, Seminar, Final examination  
**PREREQUISITES:** At least 120 credits in the technical, natural sciences, business administration or economics areas where Portfolio Theory I 7,5 credits or equivalent is included.  
**COURSE CONTENT:** The course is a continuation of Portfolio Theory. The Capital Asset Pricing Model (CAPM) and Arbitrage Pricing Theory (APT) are surveyed in more detail during the semester. In addition, students study the valuation of assets and the inputs needed for construction of ex-ante optimal financial portfolios. Asset valuation focuses on equity instruments using various techniques. Performance measurement and attribution are examined through risk-adjusted methods. Market timing and style investing are discussed. Other topics surrounding portfolio allocation include: Passive versus active management, market efficiency, value vs. growth, Roll's criticism, performance persistency, alternative investments, benchmarks, impact of transactions costs and peer groups. Risk management is addressed via Value-at-Risk. There is a project during the course.  
**CONTACT PERSON:** Lars Pettersson, lars.pettersson@mdh.se  
**SCHOOL:** School of Education, Culture and Communication

### Simulation

**CODE:** MAA313  
**CREDITS:** 7,5  
**LECTURE HOURS:** 30  
**LABORATORY HOURS:** 0  
**START PERIOD:** 3  
**STUDY PACE:** Part time 50%  
**LEVEL OF EDUCATION:** Basic Level Third Year  
**LOCATION:** Västerås  
**LANGUAGE:** English  
**EXAMINATION:** Written and oral examination  
**PREREQUISITES:** Methods of Statistical Inference 7,5 credits or equivalent, and English A.  
**COURSE CONTENT:** Bootstrapping, historical simulation, Monte-Carlo simulation. Generation of random variables from distributions: normal, exponential, gamma, lognormal, student's, Poisson Rayleigh, uniform. Generation of stochastic processes, geometrical Brownian motion, Poisson process, Lévy processes, multivariate geometrical Brownian motion. Cholesky SVD decomposition. Variance reduction techniques. Financial contracts: American option contract barrier option contracts, Asian option, lookback option. Risk measures: Value at risk.  
**CONTACT PERSON:** Dmitrii Silvestrov, dmitrii.silvestrov@mdh.se  
**SCHOOL:** School of Education, Culture and Communication

## STUDY PERIODS

1A: 2009-08-31 - 2009-10-04  
 1B: 2009-10-05 - 2009-11-01

2A: 2009-11-02 - 2009-11-29  
 2B: 2009-11-30 - 2010-01-17

3A: 2010-01-18 - 2010-02-21  
 3B: 2010-02-22 - 2010-03-28

4A: 2010-03-29 - 2010-05-02  
 4B: 2010-05-03 - 2010-06-08

## PRODUCT AND PROCESS DEVELOPMENT

### Applied Operations Research and Logistics

**CODE:** KPP226  
**CREDITS:** 7,5  
**LECTURE HOURS:** 10  
**LABORATORY HOURS:** 0  
**START PERIOD:** 3  
**STUDY PACE:** Part time 50%  
**LEVEL OF EDUCATION:** Advanced level  
**LOCATION:** Eskilstuna  
**LANGUAGE:** English  
**EXAMINATION:** Thesis, Degree Project, Essay  
**PREREQUISITES:** Production and logistics planning 7,5 credits or Planning and control 7,5 credits or equivalent and a Bachelor's degree in the fields of technology from an institution of higher education of three years or more, equivalent to at least 180 credits with at least 22,5 credits in mathematics/applied mathematics or a Bachelor's degree in the fields of economics, business or science from an institution of higher education of three years or more, equivalent to at least 180 credits with at least 22,5 credits in mathematics/applied mathematics with one year of working experience in the industry.  
**COURSE CONTENT:** Operations Research is concerned with the application of mathematical modelling of problems arising in the management and operation of systems of human beings, machines, materials and money in industry, business...etc. The purpose is to help management to determine its policy and actions. Techniques of operations research considered are: Linear programming, Transportation and Assignment problems. Game theory and Decision analysis, Dynamic programming, Nonlinear programming, Integer programming, and Inventory theory.  
**CONTACT PERSON:** Annika Björklund, annika.bjorklund@mdh.se  
**SCHOOL:** School of Innovation, Design and Engineering

### Production-, Maintenance-, and Quality Management

**CODE:** KPP206  
**CREDITS:** 7,5  
**LECTURE HOURS:** 10  
**LABORATORY HOURS:** 0  
**START PERIOD:** 4  
**STUDY PACE:** Part time 50%  
**LEVEL OF EDUCATION:** Advanced level  
**LOCATION:** Eskilstuna  
**LANGUAGE:** English  
**EXAMINATION:** Project, Oral/Written examinations  
**PREREQUISITES:** Innovative Production and logistics 7,5 credits and Process Quality 7,5 credits or equivalent and a Bachelor's degree in the fields of technology from an institution of higher education of three years or more, equivalent to at least 180 credits with at least 22,5 credits in mathematics/applied mathematics or a Bachelor's degree in the fields of economics, business or science from an institution of higher education of three years or more, equivalent to at least 180 credits with at least 22,5 credits in mathematics/applied mathematics with one year of working experience in the industry.  
**COURSE CONTENT:** The course aims to give an understanding of production and quality development within the industrial operations. After the course, the students should be able to apply modern methods and activities to conduct developments within the production processes. They will also be able to lead development work independently and have the ability to analyse and evaluate problems in production processes and develop measures and improvement plans.  
**CONTACT PERSON:** Annika Björklund, annika.bjorklund@mdh.se  
**SCHOOL:** School of Innovation, Design and Engineering

### Supply Chain Management

**CODE:** KPP241  
**CREDITS:** 7,5  
**LECTURE HOURS:** 10  
**LABORATORY HOURS:** 0  
**START PERIOD:** 4  
**STUDY PACE:** Part time 50%  
**LEVEL OF EDUCATION:** Advanced level  
**LOCATION:** Eskilstuna  
**LANGUAGE:** English  
**EXAMINATION:** Exercise, Seminar  
**PREREQUISITES:** At least 22,5 credits on advanced level in product and process development and a Bachelor's degree in the fields of technology from an institution of higher education of three years or more, equivalent to at least 180 credits with at least 22,5 credits in mathematics/applied mathematics or a Bachelor's degree in the fields of economics, business or science from an institution of higher education of three years or more, equivalent to at least 180 credits with at least 22,5 credits in mathematics/applied mathematics with one year of working experience in the industry.  
**COURSE CONTENT:** The course aims to give a deeper understanding and to prepare the student for research in the area of Supply Chain Management. The course focus on logistics and process development. The course deals with logistics development, cooperation and collaboration between companies, to by/ to manufacture questions and the connection between the value chain and the work in product development. The aim of the course is also to give a deeper discussion and knowledge of "Supply Chain Management" - what it comprises and means and how the work is done.  
**CONTACT PERSON:** Annika Björklund, annika.bjorklund@mdh.se  
**SCHOOL:** School of Innovation, Design and Engineering

## PSYCHOLOGY

### Intercultural Leadership Program

**CODE:** SP0006  
**CREDITS:** 30  
**LECTURE HOURS:** 120  
**LABORATORY HOURS:** 0  
**START PERIOD:** 3  
**STUDY PACE:** Full time  
**LEVEL OF EDUCATION:** Basic Level First Year  
**LOCATION:** Västerås  
**LANGUAGE:** Swedish  
**EXAMINATION:** Written and oral examination, Seminar  
**PREREQUISITES:** Three years of upper secondary school or equivalent.  
**COURSE CONTENT:** In the light of globalization and an increasingly culturally diverse labour market, managers and coaches need new competences. Drawing from a broad range of theories and concepts in the social sciences, the program focuses leadership processes and management strategies in intercultural contexts. Special attention is given to management challenges and problems emanating in culture differences, as they are expressed in symbols, language, time conception, values, norms, habits, power distance, management styles etc. In lectures, seminars, workshops and study assignments theoretical studies are combined with practical applications, where students are expected to perform independently as well as in multicultural study groups.  
**CONTACT PERSON:** Agneta Brav, agneta.brav@mdh.se/Pia Lindberg, pia.lindberg@mdh.se  
**SCHOOL:** School of Sustainable Development of Society and Technology

## SCIENCE OF PUBLIC HEALTH

### Project Management in Public Health

**CODE:** OFH020  
**CREDITS:** 7,5  
**LECTURE HOURS:** 50  
**LABORATORY HOURS:** 0  
**START PERIOD:** 3  
**STUDY PACE:** Part time 50%  
**LEVEL OF EDUCATION:** Advanced level  
**LOCATION:** Västerås  
**LANGUAGE:** English  
**EXAMINATION:** Seminar  
**PREREQUISITES:** Degree of Bachelor or equivalent.  
**COURSE CONTENT:** - Health Projects in theory and practice  
 - Theories and models for project work and project management  
 - Leadership and different styles  
 - To start a Public Health Project, to maintain it and to finalise it  
 - Risk analyses  
 - Stakeholder analyses  
**CONTACT PERSON:** Lillemor Fernqvist, lillemor.fernqvist@mdh.se  
**SCHOOL:** School of Health, Care and Social Welfare

## SOCIAL WORK

### Social Welfare from a Cultural Perspective

**CODE:** SAA001  
**CREDITS:** 7,5  
**LECTURE HOURS:** 50  
**LABORATORY HOURS:** 0  
**START PERIOD:** 3  
**STUDY PACE:** Full time  
**LEVEL OF EDUCATION:** Basic Level Second Year  
**LOCATION:** Eskilstuna  
**LANGUAGE:** English  
**EXAMINATION:** INL1, 7,5 credits, Exercis. Individual written assignment. INL1 also includes assessment during placement study. Opportunities to sit examinations are restricted for INL1. For examinations offered during placement studies where the supply of placement is limited, only one re-examination/new will be available unless particular reasons exist. Rules and regulations for examinations in undergraduate education at Mälardalen University.  
**PREREQUISITES:** Social sciences 30 credits on Basic level First year or equivalent.  
**COURSE CONTENT:** Social welfare is in a great extent built on a cultural context. The idea of social welfare and the ways of running social work are inspired by fundamental values in the society. Social work has to be carried out in a sensitive way to cultural context confirming respect and integrity to the everyday life of the individual. With reference to practical work and a theoretical approach make the importance of cultural understanding clear to achieve quality of social work in a multicultural society. The course addresses to students within care sciences and social work from Sweden and foreign nations. In this way will specific observations and reflections be accomplished. English is the main language of this course.  
**CONTACT PERSON:** Håkan Karp, hakan.karp@mdh.se  
**SCHOOL:** School of Health, Care and Social Welfare

### STUDY PERIODS

1A: 2009-08-31 – 2009-10-04  
 1B: 2009-10-05 – 2009-11-01

2A: 2009-11-02 – 2009-11-29  
 2B: 2009-11-30 – 2010-01-17

3A: 2010-01-18 – 2010-02-21  
 3B: 2010-02-22 – 2010-03-28

4A: 2010-03-29 – 2010-05-02  
 4B: 2010-05-03 – 2010-06-08

## SPANISH

### Spanish 1, Basic Cultural Studies

**CODE:** HSP103  
**CREDITS:** 7,5  
**LECTURE HOURS:** 30  
**LABORATORY HOURS:** 0  
**START PERIOD:** 3  
**STUDY PACE:** Part time 25%  
**LEVEL OF EDUCATION:** Basic Level First Year  
**LOCATION:** Västerås  
**LANGUAGE:** Spanish  
**EXAMINATION:** Seminar, Literature and Culture  
**PREREQUISITES:** C.2 Swedish course B/Swedish as a second language course B and language in question; at least C-language course B/stage 3 from Swedish upper secondary education or equivalent. This is a translation and an abbreviated version of the standard eligibility requirement C.2.  
 Exemptions is granted from Swedish course B. Spanish, Preparatory course (Level 2) 15 credits gives equivalent eligibility.  
**COURSE CONTENT:** Pure Literature and Culture, 7,5 credits  
 Intensive training of language proficiency on the basis of modern literature. Continual presentation of the texts under the teacher's guidance. Exercises in written work, mainly in the form of summaries and reports in connection with the presentation of the texts. Lectures on the history of ideas and art in the Spanish-speaking countries.  
**CONTACT PERSON:** Magda Salinas, magda.salinas@mdh.se  
**SCHOOL:** School of Education, Culture and Communication

### Spanish 1, Speaking Skills

**CODE:** HSP102  
**CREDITS:** 7,5  
**LECTURE HOURS:** 30  
**LABORATORY HOURS:** 0  
**START PERIOD:** 3  
**STUDY PACE:** Part time 25%  
**LEVEL OF EDUCATION:** Basic Level First Year  
**LOCATION:** Västerås  
**LANGUAGE:** Spanish  
**EXAMINATION:** Examination, Phonetics, Pronunciation Practice, Exercise, Oral Communication.  
**PREREQUISITES:** C.2 Swedish course B/Swedish as a second language course B and language in question; at least C-language course B/stage 3 from Swedish upper secondary education or equivalent. This is a translation and an abbreviated version of the standard eligibility requirement C.2.  
 Exemptions is granted from Swedish course B. Spanish, Preparatory course (Level 2) 15 credits gives equivalent eligibility.  
**COURSE CONTENT:** The course comprises the following parts: (3 credits) Phonetics, (1.5 credits) Pronunciation Practice, (3 credits) Oral Communication. Lectures on the main features of general and Spanish phonetics: Spanish phonemes, phonetic signs, types of intonation and phonological processes and also a little about regional deviations from standard pronunciation. Conversation exercises.  
**CONTACT PERSON:** Magda Salinas, magda.salinas@mdh.se  
**SCHOOL:** School of Education, Culture and Communication

### Spanish American Society and Culture

**CODE:** HSP202  
**CREDITS:** 7,5  
**LECTURE HOURS:** 30  
**LABORATORY HOURS:** 0  
**START PERIOD:** 3  
**STUDY PACE:** Part time 25%  
**LEVEL OF EDUCATION:** Basic Level Second Year  
**LOCATION:** Västerås  
**LANGUAGE:** Spanish  
**EXAMINATION:** Presentation of tasks and written work  
**PREREQUISITES:** Swedish: course B or Swedish as a second language course B or 3-year HSENT or stage 3. With the exception of (dispensation) the requirement of Swedish course B for persons with another native language than Swedish. Appropriate language [Spanish]: at least C language course B or 2-year B language or 3-year C language or stage 3 or similar. C.2 Swedish course B/Swedish as a second language course B and language in question; at least C-language course B/stage 3 from Swedish upper secondary education or equivalent. This is a translation and an abbreviated version of the standard eligibility requirement C.2. Exemptions is granted from Swedish course B. Spanish, Preparatory course (Level 2) 15 credits gives equivalent eligibility.  
**COURSE CONTENT:** Knowledge of the history, politics and social institutions, economics and general cultural conditions of present-day Spanish America. Oral and written presentations. Continual presentations of texts.  
**CONTACT PERSON:** Magda Salinas, magda.salinas@mdh.se  
**SCHOOL:** School of Education, Culture and Communication

## STATISTICS

### Statistics for Business

**CODE:** EST001  
**CREDITS:** 15  
**LECTURE HOURS:** 60  
**LABORATORY HOURS:** 0  
**START PERIOD:** 3  
**STUDY PACE:** Full time  
**LEVEL OF EDUCATION:** Basic Level First Year  
**LOCATION:** Västerås  
**LANGUAGE:** English  
**EXAMINATION:** Oral/Written examinations  
**PREREQUISITES:** Mathematics from three years of upper secondary school with science profile.  
**COURSE CONTENT:** The aim of the course is to provide the student with basic statistical tools often used in the field of economics. The first part of the course deals with descriptive statistics, basic probability theory, statistical inference and various problems related to the sampling and collection of statistical data. The second part deals with techniques for describing the relationship between two or more variables; description and analysis of time series data, and forecasting techniques.  
**CONTACT PERSON:** Mona Andersson, mona.andersson@mdh.se  
**SCHOOL:** School of Sustainable Development of Society and Technology

## SWEDISH

### Scandinavian Studies 1: Language and Society

**CODE:** SVA001  
**CREDITS:** 30  
**LECTURE HOURS:** 120  
**LABORATORY HOURS:** 0  
**START PERIOD:** 3  
**STUDY PACE:** Full time  
**LEVEL OF EDUCATION:** Preparatory level  
**LOCATION:** Västerås  
**LANGUAGE:** Swedish  
**EXAMINATION:** Oral/Written examinations  
**PREREQUISITES:** Three years of upper secondary school or equivalent  
**COURSE CONTENT:** Unit 1: Oral Communication, 9 credits  
 In this unit the basic ability to express oneself orally in Swedish is practised as well as the ability to understand simple spoken Swedish.  
 Unit 2: Written Communication, 9 credits  
 In this unit the basic ability to read and write simple texts in Swedish is practised as well as the use of dictionaries and other aids.  
 Unit 3: Phonetics and Grammar, 9 credits  
 This unit deals with the structure and characteristic features of the Swedish language as well as giving basic knowledge for the discussion of linguistic issues.  
 Unit 4: Social Conditions and Culture, 3 credits  
 This unit comprises studies in Swedish geography, politics and social structure.  
**CONTACT PERSON:** Magnus Jansson, magnus.jansson@mdh.se  
**SCHOOL:** School of Education, Culture and Communication

### Scandinavian Studies 2: Language and Culture

**CODE:** SVA002  
**CREDITS:** 30  
**LECTURE HOURS:** 120  
**LABORATORY HOURS:** 0  
**START PERIOD:** 3  
**STUDY PACE:** Full time  
**LEVEL OF EDUCATION:** Preparatory level  
**LOCATION:** Västerås  
**LANGUAGE:** Swedish  
**EXAMINATION:** Oral/Written examinations  
**PREREQUISITES:** Applicants from Nordic countries, the Netherlands, German-speaking Switzerland, Germany and Austria will have read Swedish as a degree subject at their home university for at least one year, and applicants from other countries for at least two years. The course in Swedish language and culture for guest students, 30 credits, will also meet the requirements.  
**COURSE CONTENT:** Unit 1: Language Description, 6 credits  
 This unit deals with structure and characteristic features of the Swedish language as well as giving advanced knowledge for the discussion of linguistic issues.  
 Unit 2: Written Work, 9 credits  
 In this unit the ability to read and write various types of texts in Swedish is practiced as well as the use of dictionaries and other aids.  
 Unit 3: Oral Work and Listening Comprehension, 9 credits  
 In this unit the ability to express oneself in Swedish is practised as well as the ability to understand spoken Swedish.  
 Unit 4: Swedish Literature, 3 credits  
 The course comprises studies in Swedish literature.  
 Unit 5: Swedish History, Swedish Social Conditions and Swedish Culture, 3 hp  
 The course comprises studies in Swedish history, Swedish social conditions and Swedish culture.  
**CONTACT PERSON:** Magnus Jansson, magnus.jansson@mdh.se  
**SCHOOL:** School of Education, Culture and Communication

## STUDY PERIODS

1A: 2009-08-31 – 2009-10-04  
 1B: 2009-10-05 – 2009-11-01

2A: 2009-11-02 – 2009-11-29  
 2B: 2009-11-30 – 2010-01-17

3A: 2010-01-18 – 2010-02-21  
 3B: 2010-02-22 – 2010-03-28

4A: 2010-03-29 – 2010-05-02  
 4B: 2010-05-03 – 2010-06-08

## Scandinavian Studies 3: Language, History and Literature

**CODE:** SVA101

**CREDITS:** 30

**LABORATORY HOURS:** 0

**STUDY PACE:** Full time

**LOCATION:** Västerås

**EXAMINATION:** Oral/Written examinations

**PREREQUISITES:** Swedish Language and culture for guest students, 30 credits, Swedish language and culture for guest students 2, 30 credits or equivalent knowledge of Swedish.

**COURSE CONTENT:** Unit 1: Language Description, 4.5 credits

This unit deals with descriptive and prescriptive grammar and also phonetics.

Unit 2: Oral Work, 4.5 credits

This unit deals with various speaking situations, preparation, structuring, target audience adaptation, argumentation and the use of aids.

Unit 3: Written Work, 6 credits

This unit deals with various writing situations, text types, the writing process, structuring, target group adaptation as well as the use of handbooks/dictionaries.

Unit 4: Nordic History, 7.5 credits

This unit deals with the history of the Nordic countries politically, socially, economically and culturally. The emphasis is placed on Sweden and Swedish conditions.

Unit 5: Modern Nordic Literature, 7.5 credits

This unit comprises studies in Nordic literature from the modern breakthrough period up to the present with the emphasis on Swedish literature.

**CONTACT PERSON:** Magnus Jansson, magnus.jansson@mdh.se

**SCHOOL:** School of Education, Culture and Communication

## THEATRE

### Multicultural Improvisation

**CODE:** IÖÄ001

**CREDITS:** 7,5

**LABORATORY HOURS:** 0

**STUDY PACE:** Part time 50%

**LOCATION:** Eskilstuna, Västerås

**EXAMINATION:** Exercise, Participation, Project

**PREREQUISITES:** Curiosity towards developing one's own multicultural awareness and social skills.

**COURSE CONTENT:** The course aims: - to enhance social skills that support constructive and friendly interaction in a multicultural environment - to create methods for becoming aware of and decreasing false negative attitudes, prejudices and isolation - to support the foreign students' acculturation process, i.e. adjusting to and coping with a new culture - to explore, compare and contrast customs and features of the different cultures represented in the group - to offer creative challenges that require working together in small and large groups - to give the students the chance to make friends and to support expanding their social network - to encourage the students to get more involved, committed and active in the student life and studies in the university

**CONTACT PERSON:** Annika Björklund, annika.bjorklund@mdh.se

**SCHOOL:** School of Innovation, Design and Engineering

## UNSPECIFIED SUBJECTS

### Process Simulation

**CODE:** WOA011

**CREDITS:** 7,5

**LABORATORY HOURS:** 0

**STUDY PACE:** Full time

**LOCATION:** Västerås

**EXAMINATION:** Project

**LECTURE HOURS:** 40

**START PERIOD:** 3b

**LEVEL OF EDUCATION:** Advanced level

**LANGUAGE:** English

**PREREQUISITES:** At least 180 credits where knowledge in modelling of processes on an advanced level and the use of calculation tools are included, which can be acquired in the course Process Modelling 7,5 credits.

**COURSE CONTENT:** In the course Process Simulation, fundamentals of simulation methods are considered. Mathematical models in a simulation can be used for analysing different construction solutions for heat and power production by renewable energy resources, comparison of processes for water treatment, or to study the effect of wind on sky scrapers. The course brings up items regarding simulators and their construction, how to choose simulator principle, set up an experimental plan, how to perform evaluation and validation of results from simulations. The course is a natural continuation of the course Process Modelling and is one of the basic courses for further studies in Process and Resource Optimisation.

**CONTACT PERSON:** Benny Ekman, benny.ekman@mdh.se

**SCHOOL:** School of Sustainable Development of Society and Technology

