

MÄLARDALEN UNIVERSITY
SCHOOL OF BUSINESS,
SOCIETY AND ENGINEERING

ACADEMIC YEAR

2019 – 2020

**COURSE OFFER
FOR
EXCHANGE STUDENTS**



**MÄLARDALEN UNIVERSITY
SWEDEN**

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MÄLARDALEN UNIVERSITY

Mälardalen University (MDH) was founded in 1977 to meet the region's need for education and research. Today MDH has 15 000 students and 900 employees, about 500 of whom are teachers at its four schools:

- School of Business, Society and Engineering (EST)
- School of Education, Culture and Communication (UKK)
- School of Health, Care and Social Welfare (HVV)
- School of Innovation, Design and Engineering (IDT)

MDH is signatory of Magna Charta and as such emphasizes strong links between education and research, with value and applicability as key concepts.

MDH has campuses in the cities of Eskilstuna and Västerås, both of which are situated one hour from Stockholm. The population of the Mälardalen region comprises about three million people and a range of global companies is active here.

SCHOOL OF BUSINESS, SOCIETY AND ENGINEERING

The School of Business, Society and Engineering (EST) offers study programs at bachelor and master level:

LEVEL	PROGRAMME	LANGUAGE OF INSTRUCTION
Bachelor	Building Engineering	Swedish
Bachelor	Business Studies	Swedish
Bachelor	Energy Engineering	Swedish
Bachelor	International Business Management*	English
Bachelor	International Marketing	Swedish
Bachelor	Political Science	Swedish
Master	Business Administration	Swedish
Master	Energy Systems	Swedish
Master	Engineering and Management	Swedish
Master	International Marketing*	English
Master	Sustainable Energy Systems	English

*EPAS accredited by EFMD (European Foundation for Management Development)

Three programs offered at EST have English as sole language of instruction. In addition, many of the programs that have Swedish as language of instruction also include courses taught in English and therefore, as an exchange student, you will find plenty of courses at bachelor and master level taught in English. Courses are available within the following areas:

- Building Engineering,
- Business Administration
- Commercial Law
- Economics
- Energy Engineering
- Environmental Engineering
- Industrial Engineering and Management
- Political Science
- Statistics

STUDY PERIODS AND ACADEMIC CALENDAR

The academic year is divided into two semesters of 20 weeks each. Each semester is divided into two study periods, accounting for 10 weeks each. Thus, the academic year has four study periods as follows:

Fall Semester 2019 <i>September 2, 2019 – January 19, 2020</i>	Period 1 <i>September 2 – November 10, 2019</i>	Period 1A <i>September 2 – October 6, 2019</i>
		Period 1B <i>October 7 – November 10, 2019</i>
	Period 2 <i>November 11, 2019 – January 19, 2020</i>	Period 2A <i>November 11 – December 15, 2019</i>
		Period 2B <i>December 16, 2019 – January 19, 2020</i>

Spring Semester 2020 <i>January 20 – June 7, 2020</i>	Period 1 <i>January 20 – March 29, 2020</i>	Period 1A <i>January 20 – February 23, 2020</i>
		Period 1B <i>February 24 – March 29, 2020</i>
	Period 2 <i>March 30 – June 7, 2020</i>	Period 2A <i>March 30 – May 3, 2020</i>
		Period 2B <i>May 4 – June 7, 2020</i>

WORKLOAD

The ordinary workload per semester is 30 ECTS credits (60 ECTS credits / academic year) where, you usually study 15 ECTS credits each study period depending on the structure of the course. Local students normally do not study more than 30 ECTS credits per semester.

When studying in Sweden, students normally take one course at a time, they do not do parallel studies, the courses stretch for 5 (7,5 ECTS credits) or 10 (15 ECTS credits) weeks. Some courses are however given parallel as part time courses i.e. 7,5 ECTS credits for 10 weeks and 15 ECTS for 20 weeks.

The time spent in a classroom for lectures or a seminar is based on the content of the course and how the lecturer chooses to use the allotted time. If the course is connected to problem solving activities i.e. accounting, students will most likely have more time in the classroom with a lecturer in comparison to a course based on lots of reading and solving cases.

Students studying in Sweden normally do not spend more than 5 – 10 hours per week attending lectures in social science (business, psychology, etc.). Nevertheless, it does not mean that students have 30 – 35 hours free every week. Those 30 – 35 hours should be spent e.g. doing group work, studying and preparing presentations for seminars and lectures. For every course there is usually different types of examinations – each course normally ends with a written examination. In addition, students usually write papers during the course, either individually or as a group and attend seminars, which are **all part of the examination and the final grade**. This can feel quite different if you are used to spending 20 – 25 hours per week attending lecture at your home university.

International students find this way of studying quite frustrating in the beginning but soon realize that the studies here are built on **individual responsibility** and if you are not prepared for seminars and lectures it will be tough to pass the exam or succeed in group assignments.

Normally, you count that 1,5 ECTS credits equal 40 hours of workload (the same as a full-time job) which means that a 5 week course (7,5 ECTS credits) = 200 hour workload and a 10 week course (15 ECTS credits) = 400 hour workload

FACT SHEET

Institutional Information

NAME OF INSTITUTION	Mälardalens högskola / Mälardalen University (MDH)
ERASMUS CODE	S VASTERA01
EUC	29369
PIC	999881530
INSTITUTION WEBSITE	https://mdh.se/
ONLINE COURSE CATALOGUE	https://mdh.se/utbildning/kurser

Main Contacts – School of Business, Society and Engineering (EST)

ACADEMIC CONTACTS	Pablo Camacho Sanhueza Head of Internationalisation @est-international@mdh.se ☎ +46 21 15 17 82 Main contact for Inbound exchange students	Fredrik Berggren International Liaison Officer @est-international@mdh.se ☎ +46 21 10 70 53 Main contact for Outbound exchange students
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General Information

APPLICATION	Nomination deadline	May 10 th , 2019
	Application deadline	May 15 th , 2019
HOUSING	Although Mälardalen University does not have any apartments of its own, we cooperate closely with accommodation agencies in the city and inform them about admitted students. <u>Bostad Västerås</u> @info@bostadvasteras.se ☎ + 46 21 17 19 50	
INSURANCE	As a student at MDH, we insure you during education hours and during direct travel between your home in Sweden and the University. For more information, please visit: <u>Insurance Terms and Conditions</u> Contact person: Martina Delby International Liaison Officer Management Office @exchangein@mdh.se ☎ + 46 21 10 73 67	

RESIDENCE PERMIT	For information, please visit: Swedish Migration Agency
STUDYING WITH DISABILITIES	For information, please visit: https://www.mdh.se/utbildning/2.4153/funktionsnedsattning Should you have any questions about specific support, please email us at est-international@mdh.se

APPLICATION

The application procedure for admission can be divided into the following steps:

1. Nomination
2. Confirmation
3. Online Application
4. Assessment
5. Letter of Admission

Upon receiving this file, steps 1 and 2 have already been completed. Now it is the time to go ahead with step 3.

Online Application

The online application will be available from the first week of April through the following link;
<https://mdh.se/utbildning/exchange-students/exchange-application>

There are nine sections in the application that you will need to complete:

1. Personal Information
2. Emergency Contacts
3. Educational Background and Requested Stay
4. Course Choice
5. Language Skills
6. Further Information
7. Relevant Documents to be uploaded
8. Declaration of Consent
9. Submit Application

Please note that you do not need to complete your application all at once. At any point in the process, you can save the information and be able to complete it a later date. Remember to click on “save your progress” for every page you complete!

Below, you find some simple tips on how to complete each section and/or how to proceed:

Personal Information

In this section, you will provide us with all your basic information, please make sure that you use an email address that you usually check and that you write your full legal name (as stated in your passport).

Based on the information you provide in this section, we will issue the letter of admission that you will use (if needed) to apply for a residence permit at your nearest Swedish Embassy.

Emergency Contacts

We strongly recommend that you provide us with the contact details of a family member.

Educational Background and Requested Stay

Please make sure that the coordinator's contact details that you provide us with in this section are of the coordinator or study advisor that can approve your learning agreement. During assessment of your application, we may need to contact your coordinator with questions in regards to your choice of courses.

Course Choice

It is important that the courses you list here are the same as those included in your learning agreement.

Pay special attention to information provided in this guide in regards to course selection and the schedule collision codes.

If you are interested in participating the course “Swedish for Foreign Students Level I”, this course should be listed in this section as well as in your Learning Agreement. The course code is SVA131.

Language Skills

Language 1 in this section refers to your skills in the English language.

Further Information

Please indicate if you wish to participate in the orientation program. Please note that while it is not mandatory it is highly recommended since we will guide you through the registration process.

Relevant documents to be uploaded

A complete application contains the following documents:

- Academic transcript of records
- Certificate of current studies
- Learning agreement
- Passport Copy
- CV
- Proof of language proficiency (if applicable)

All documents should be uploaded in pdf format and in English.

The **Academic transcript of records** should include all your studies at university level even if you have studied at other schools than your current home university at the time of application

The **Certificate of current studies** is provided along with the application email and should list the courses you are currently studying at your home university during the semester prior to your semester of exchange. Have your international coordinator sign and stamp the form!

Your **Learning agreement** should include all courses you are interested in studying with us and should be the same courses you select in the “Course Choice” section of the application.

Please use the learning agreement that your university requires you to use! If you send an approval form that will be used to then create the Learning Agreement, please keep in mind that due to the number of learning agreements that have to be processed, the new document will only be signed upon your arrival, during the orientation program.

Your **Passport** does not need to be valid at the time of application however make sure that you have a valid passport in case you need to apply for a residence permit at a Swedish embassy. You will also need a valid passport once you begin your studies during registration and as means of identification for examinations and other activities organized by the students union throughout the semester.

There is no specific format for the **CV**, just make sure to include relevant information about you and your studies. The CV should be written in English.

The **Proof of language proficiency** is only necessary if you are studying a language course that specifically requires it. You do not need a TOEFL, IELTS or similar to take courses offered by the School of Business, Society and Engineering for exchange students.

Once you have completed and sent the online application, make sure to save a copy of the pdf file produced for your records. Please note that there is no need for you to send any documents via email or postal mail.

Assessment

The official assessment of your application begins officially the day after the application deadline however, we will process your application as soon as it is completed and sent to us. Our Admissions Office will make a first review of your application in order to determine that all necessary documents have been uploaded and that the documents can be read/opened. If a document is missing or the file cannot be opened, the Admissions Office will send an email requesting you to review the contents. Once your application is complete, and processed by the Admissions Office, we will begin assessing your learning agreement. During the assessment period, we may contact you in regards to your learning agreement and choice of courses. We will contact you via email to the email address noted in the application and with a copy to your coordinator. Please make sure you reply to the email per the information provided.

Once we have reviewed your learning agreement and confirmed that you can be admitted to the courses you requested or, the courses proposed by us during the assessment process, we will send you an email with a scanned copy of your signed and stamped learning agreement.

Letter of Admission

Our Admissions Office will issue a Letter of Admission and send it to you via email. Please note that no hard copy will be sent. The letter of admission will also include your insurance certificate. These electronic copies are accepted by the Swedish Migration Board when applying for a residence permit (if needed).

SELECTING YOUR COURSES

When selecting courses, please make sure you fulfil the eligibility requirements and that the courses can be combined with other courses you may want to select as per the Schedule Collision Code.

The Schedule Collision Codes are as follows:

SCHEDULE COLLISION CODE	DESCRIPTION
K1	Courses with this code may have lectures, workshops or seminars: <ul style="list-style-type: none">• Monday afternoons• Wednesday mornings
K2	Courses with this code may have lectures, workshops or seminars: <ul style="list-style-type: none">• Monday mornings• Thursday mornings
K3	Courses with this code may have lectures, workshops or seminars: <ul style="list-style-type: none">• Tuesday mornings• Thursday afternoons
K4	Courses with this code may have lectures, workshops or seminars: <ul style="list-style-type: none">• Tuesday afternoons• Friday mornings
K5	Courses with this code may have lectures, workshops or seminars: <ul style="list-style-type: none">• Wednesday afternoons• Friday afternoons
X	Courses with this code cannot be combined with other courses taught during the same study period since these courses are paced full time during the period during which they are taught.
DISTANCE	Courses with this code do not have any physical meetings and can be combined with other courses independent of their Schedule Collision Code.

Please keep in mind that full time studies during the semester are equivalent to 30 ECTS credits – normally 15 ECTS credits in period 1 and 15 ECTS credits in period 2

When selecting courses, please consider the following recommendations:

- Each semester is divided into 2 periods (1 and 2) and each of this periods may be divided into 2 sub-periods (1a and 1b or 2a and 2b)
- 15 ECTS credits courses with Schedule Collision Code X are equivalent to full-time studies during that period
- 7,5 ECTS credits courses with Schedule Collision Code X during one period can only be combined with other 7,5 ECTS credits courses with Schedule Collision code X as long as they are not taught in the same sub-period

- Courses with the same Schedule Collision Code cannot be combined in the same study period

You can also select distance courses however if you require a residence permit to study in Sweden, you need to take 30 ECTS credits of campus courses in order to apply for a residence permit at any Swedish embassy.

You can select courses offered by other departments/schools at Mälardalen University. However, admission to these courses may only be granted if you fulfil the eligibility requirements of the course and if there are seats available in the course.

Please note that while other department/schools at Mälardalen University follow the same Schedule Collision Code as presented before, not all courses may have one.

For information about courses offered at other departments/schools, please visit our course database; <https://www.mdh.se/utbildning/kurser> (make sure that you select the correct semester; “Courses for exchange students” under type and “English” as the course language)

Please note that a Schedule Collision Course for courses offered by other departments, if one has been assigned, will be available in the online application form.

In case you apply for courses from other departments/schools, you do not need to contact the other department/school directly. We will process your application and inform you of their decision.

COURSE OFFER OVERVIEW

Campus Courses

	FALL SEMESTER				SPRING SEMESTER					
	1		2		1		2			
	A	B	A	B	A	B	A	B		
Building Engineering	Energy Efficient Buildings									
Business Administration	Financial Accounting	Management Accounting	Marketing Management		Financial Accounting		Management Accounting			
	Nordic Perspectives on Marketing and Management		Organization and Leadership		Business Analysis	E-Commerce and Digitalization	Service Management	The Internationalization Process of Companies		
	Business Research Methods		International Marketing		International Project Management		International Human Resource Management	Research Methods and Academic Writing		
	Strategy and International Marketing		Managing the Multinational Enterprise		Strategic Marketing Management					
			Marketing Strategy in Practice							
			Contemporary Issues in Consumer Marketing							
Commercial Law						International Commercial Law				
Economics	Basic Microeconomics		Applied Microeconomics		Industrial Economics					
	Macroeconomic Principles		International Trade Theory		Macroeconomic Theory					
	Finance		Econometrics							
	Intermediate Microeconomics		Labour Economics							
Energy Engineering	Introduction to Sustainable Energy Systems		Heat and Power Technology 2		Process Optimization					
	Sustainable Energy Systems – Advanced Studies			International Energy Systems		Process Simulation				
	Sustainable Energy Systems - Project			Process Modelling		Sustainable Energy Systems				
Environmental Engineering	Biomass and Energy Source		Air Quality	Air Quality Management						
			Sustainable Consumption	Climate Change and Energy: Past Present and Future						
			Sustainable Engineering for Developing Countries							
Industrial Engineering and Management			Technology and Society	Global Operations Management						
			Industrial Marketing	Controlling and Financing of Industrial Operations						
			Organisation: Form and Function							
Other Subjects within Technology	Project in Energy and Environmental Engineering (15)			Project in Energy and Environmental Engineering (15)						
	Project in Energy and Environmental Engineering (30)			Project in Energy and Environmental Engineering (30)						
	Project in Future Energy (15)			Project in Future Energy (15)						
	Project in Future Energy (30)			Project in Future Energy (30)						
	Scientific Manuscript in Energy and Environmental Engineering – Process, Method and Implementation			Scientific Manuscript in Energy and Environmental Engineering – Process, Method and Implementation						
Political Science	Urban Politics and Citizenship									
Statistics			Statistics for Business							

Distance Courses

	FALL SEMESTER				SPRING SEMESTER									
	1		2		1		2							
	A	B	A	B	A	B	A	B						
Business Administration	Cross Cultural Management				Consumer Behaviour									
Energy Engineering	Implementation of Industrial Process Control		Applied Spectroscopy for Future Energy and Environmental Systems											
	Measurement Techniques in Fluid Flow and Heat Transfer		Power Plants and Processes Monitoring and Diagnostics											
Environmental Engineering	Biomass and Energy Source		Air Quality		Water Quality Management									
			Virtual Biochemical Methane Potential (BMP) Test		Climate Change and Energy: Past Present and Future									
			Ambient Air Quality Management											
			Circular Economy and Environmental Engineering											
			Sustainable Consumption											
	Sustainable Engineering for Developing Countries													
Other Subjects within Technology			Applied Statistics in Engineering											

FALL SEMESTER 2019

Courses taught throughout the semester (period 1 and 2)

Start: September 2, 2019

End: January 19, 2020

LEVEL	SUBJECT AREA	COURSE CODE	COURSE NAME	CREDITS	SCHEDULE COLLISION CODE
Undergraduate 2 nd year	Business Administration	FOA117	Cross-Cultural Management	7,5	Distance
Undergraduate 3 rd year	Building Engineering	BTA209	Energy Efficient Buildings	15	K1
	Other Subjects within Technology	OAH200	Project in Energy and Environmental Engineering	15	
		OAH201	Project in Energy and Environmental Engineering	30	X
Graduate 1 st year	Other Subjects within Technology	OAH302	Project in Future Energy	15	
		OAH303	Project in Future Energy	30	X
		OAH304	Scientific Manuscript in Energy and Environmental Engineering – Process, Method and Implementation	30	X
Graduate 2 nd year	Energy Engineering	ERA305	Sustainable Energy Systems – Project	10	K3
		ERA306	Sustainable Energy Systems – Advanced Studies	20	K2

Courses taught in period 1

Start: September 2, 2019

End: November 10, 2019

LEVEL	SUBJECT AREA	COURSE CODE	COURSE NAME	CREDITS	SCHEDULE COLLISION CODE
Undergraduate 1 st year	Business Administration	FOA146	Financial Accounting*	7,5	X
		FOA147	Management Accounting**	7,5	X
	Economics	NAA128	Basic Microeconomics	7,5	K3
		NAA130	Macroeconomic Principles	7,5	K2
Undergraduate 2 nd year	Political Science	SKA124	Urban Politics and Citizenship*	7,5	X
Undergraduate 3 rd year	Economics	NAA115	Finance	7,5	K3
		NAA122	Intermediate Microeconomics	7,5	K1
Graduate 1 st year	Business Administration	FOA219	Nordic Perspectives on Marketing and Management	15	X
	Energy Engineering	ERA204	Introduction to Sustainable Energy Systems	7,5	K4
Graduate 2 nd year	Business Administration	FOA307	Business Research Methods	15	X
	Energy Engineering	ERA315	Implementation of Industrial Process Control	2,5	Distance
		ERA316	Measurement Techniques in Fluid Flow and Heat Transfer	2,5	Distance
	Environmental Engineering	MTK310	Biomass and Energy Source	7,5	
		MTK311	Biomass and Energy Source	7,5	Distance

* Course taught only during period 1a (September 2, 2019 – October 6, 2019)

** Course taught only during period 1b (October 7, 2019 – November 10, 2019)

Courses taught in period 2

Start: November 11, 2019

End: January 19, 2020

LEVEL	SUBJECT AREA	COURSE CODE	COURSE NAME	CREDITS	SCHEDULE COLLISION CODE
Undergraduate 1 st year	Business Administration	FOA144	Marketing Management	7,5	K4
		FOA156	Organization and Leadership	7,5	K2
	Economics	NAA129	Applied Microeconomics	7,5	K3
		NAA133	International Trade Theory	7,5	K4
	Industrial Engineering and Management	IEO101	Technology and Society*	7,5	K1+K4
Undergraduate 2 nd year	Statistics	STA104	Statistics for Business	7,5	K2
	Economics	NAA120	Econometrics	7,5	K3
		NAA203	Labour Economics	7,5	K2
	Industrial Engineering and Management	IEO102	Industrial Marketing: Industrial Systems, Market and Value Creating*	7,5	K2+K5
		IEO105	Organisation: Form and Function*	7,5	K2
Undergraduate 3 rd year	Business Administration	EFO253	International Marketing	15	X
Graduate 1 st year	Business Administration	FOA308	Strategy and International Marketing	15	X
	Energy Engineering	ERA313	Applied Spectroscopy for Future Energy and Environmental Systems	2,5	Distance
		ERA314	Power Plants and Process Monitoring and Diagnostics	2,5	Distance
	Environmental Engineering	MTK308	Air Quality	7,5	
		MTK309	Air Quality	7,5	Distance
		MTK314	Virtual Biochemical Methane Potential (BMP) Test	2,5	Distance
		MTK315	Ambient Air Quality Management	2,5	Distance
		MTK316	Circular Economy and Environmental Engineering	2,5	Distance
		MTK320	Sustainable Consumption	2,5	
		MTK321	Sustainable Consumption	2,5	Distance
		MTK322	Sustainable Engineering for Developing Countries	2,5	
		MTK323	Sustainable Engineering for Developing Countries	2,5	Distance
	Other Subjects within Technology	OAH305	Applied Statistics in Engineering	2,5	Distance

* Course taught at the Eskilstuna campus

BUILDING ENGINEERING COURSES

COURSE CODE	BTA209
COURSE NAME	Energy Efficient Buildings
CREDITS	15
SUBJECT AREA	Building Engineering
LEVEL	Undergraduate
PERIOD	1-2
SCHEDULE COLLISION CODE	K1
LINK TO THE SYLLABUS	BTA209 – Energy Efficient Buildings

ELIGIBILITY REQUIREMENTS

75 ECTS credits within an engineering program including 2 ECTS credits or equivalent within Building Physics and 2 ECTS credits or equivalent within Building Services Engineering (HVAC), or similar.

COURSE CONTENT

Calculations of the energy balance of buildings without available energy calculation programs (existing software), primarily monthly calculations for residential buildings. Building technology and building services engineering (HVAC) that contribute to lower energy consumption, with different conditions for new and existing buildings. Electric efficiency for fans, pumps, lighting etc. Heat pumps. Heat exchangers. Passive solar heating, active solar heating and solar electricity. Experiences from existing energy efficient buildings. Energy efficiency and conservation requirements for existing buildings – contradictions and opportunities. Energy efficiency and healthy buildings – contradictions and opportunities. Building related problems and health issues. Indoor climate issues regarding air quality, thermal indoor climate and acoustics. The importance of ventilation for energy efficiency and indoor climate. Building technology and calculations regarding moisture problems

BUSINESS ADMINISTRATION COURSES

COURSE CODE	EFO253
COURSE NAME	International Marketing
CREDITS	15
SUBJECT AREA	Business Administration
LEVEL	Undergraduate
PERIOD	2
SCHEDULE COLLISION CODE	X
LINK TO THE SYLLABUS	EFO253 – International Marketing

ELIGIBILITY REQUIREMENTS

60 ECTS credits or equivalent in business administration with gradual progression where at least 45 ECTS credits or equivalent must be completed when the course starts

COURSE CONTENT

The course gives an international and a cultural perspective on management and marketing where we discuss and analyze the political, economical, cultural and technological environment. We also take into consideration who the state and surrounding business life have an effect on a company. One part of the course is to create models to solve marketing problems in an international environment.

The course is also about critically applying the collected information from different learning activities that relates to the practical skills you need as a marketer in different international contexts. The tasks will be based on case studies where different companies marketing strategies are explored and analyzed thoroughly.

One important part is to provide skills in analyzing scientific articles and also to increase the ability to perform presentations in oral and writing. One important element is the practice of communicative abilities and letting the student develop the ability to connect theories and models with practical tasks for his/her future working career.

COURSE CODE	FOA117
COURSE NAME	Cross-Cultural Management
CREDITS	7,5
SUBJECT AREA	Business Administration
LEVEL	Undergraduate
PERIOD	1 – 2
SCHEDULE COLLISION CODE	Distance
LINK TO THE SYLLABUS	FOA117 – Cross-Cultural Management

ELIGIBILITY REQUIREMENTS

30 ECTS credits or equivalent in business administration where at least 22,5 ECTS credits or equivalent must be completed when the course starts.

COURSE CONTENT

The course will cover topics such as business culture, national culture and cultural management.

COURSE CODE	FOA144
COURSE NAME	Marketing Management
CREDITS	7,5
SUBJECT AREA	Business Administration
LEVEL	Undergraduate
PERIOD	2
SCHEDULE COLLISION CODE	K4
LINK TO THE SYLLABUS	FOA144 – Marketing Management
ELIGIBILITY REQUIREMENTS	
None	

COURSE CONTENT

The course is introduced with lectures and the students own study of different course materials where:

- Core marketing concepts are presented.
- The historical development of marketing (including previous research and practice) is described
- Alternative perspectives on marketing are presented.
- The marketing topic is elaborated based on other current developments (as e.g., digitalization, globalization, and corporate social responsibility).

This is followed by seminars and other ways of student-driven interaction where the participants:

- Get to use their new marketing knowledge to analyze contemporary markets.
- Select an individual topic to examine deeper – and later on present their findings both verbally and in text
- Review and reflect upon peer student material and presentations following de facto academic practice.

COURSE CODE	FOA146
COURSE NAME	Financial Accounting
CREDITS	7,5
SUBJECT AREA	Business Administration
LEVEL	Undergraduate
PERIOD	1a
SCHEDULE COLLISION CODE	X
LINK TO THE SYLLABUS	FOA146 – Financial Accounting
ELIGIBILITY REQUIREMENTS	
None	

COURSE CONTENT

The course will focus on financial accounting and give students an introduction to read and analyse the key financial statements. The course will cover how organisations use these statements and how they can be analysed to understand the financial position of an organisation and its financial strategy. The course will also give an introduction to the different international general accounting standards and how ethical and sustainability aspects can influence financial reporting.

COURSE CODE	FOA147
COURSE NAME	Management Accounting
CREDITS	7,5
SUBJECT AREA	Business Administration
LEVEL	Undergraduate
PERIOD	1b
SCHEDULE COLLISION CODE	X
LINK TO THE SYLLABUS	FOA147 – Management Accounting
ELIGIBILITY REQUIREMENTS	
None	

COURSE CONTENT

The course will give focus on management accounting principles and how they are used to implement and control an organisation's strategy. The course will provide an understanding of the development of management accounting literature and its application. The course will also focus on how management retrieve and use accounting information for decision-making in regards to an organisation's position and strategy.

COURSE CODE	FOA156
COURSE NAME	Organization and Leadership
CREDITS	7,5
SUBJECT AREA	Business Administration
LEVEL	Undergraduate
PERIOD	2
SCHEDULE COLLISION CODE	K2
LINK TO THE SYLLABUS	FOA156 – Organization and Leadership
ELIGIBILITY REQUIREMENTS	

None

COURSE CONTENT

The course Organization and Leadership comprise of basic concepts, models and theories in the contemporary field of organization and business studies. It provides perspectives and tools for practical application as well as theoretical analysis. The course is based on flexible learning through individual and group assignments.

COURSE CODE	FOA219
COURSE NAME	Nordic Perspectives on Marketing and Management
CREDITS	15
SUBJECT AREA	Business Administration
LEVEL	Undergraduate
PERIOD	1
SCHEDULE COLLISION CODE	X
LINK TO THE SYLLABUS	FOA219 – Nordic Perspectives on Marketing and Management

ELIGIBILITY REQUIREMENTS

60 ECTS credits or equivalent in business administration with gradual progression where at least 45 ECTS credits or equivalent must be completed when the course starts.

COURSE CONTENT

The course consists of four parts:

- Part 1 International Business Culture
- Part 2 Service and Relationship Marketing
- Part 3 Industrial Marketing in a Network Perspective
- Part 4 Case-work in the different aspects the course covers

COURSE CODE	FOA307
COURSE NAME	Business Research Methods
CREDITS	15
SUBJECT AREA	Business Administration
LEVEL	Graduate
PERIOD	1
SCHEDULE COLLISION CODE	X
LINK TO THE SYLLABUS	FOA307 – Business Research Methods

ELIGIBILITY REQUIREMENTS

90 ECTS credits or equivalent in business administration with gradual progression

COURSE CONTENT

The course provides an overview of available and relevant research methods and will allow the student to develop their skills in using research models and methods to support decision making in organizations.

COURSE CODE	FOA308
COURSE NAME	Strategy and International Marketing
CREDITS	15
SUBJECT AREA	Business Administration
LEVEL	Graduate
PERIOD	2
SCHEDULE COLLISION CODE	X
LINK TO THE SYLLABUS	FOA308 – Strategy and International Marketing
ELIGIBILITY REQUIREMENTS	90 ECTS credits or equivalent in business administration with gradual progression
COURSE CONTENT	<p>The course provides an international and cultural perspectives on management and marketing where we discuss and analyze the political, economic, cultural and technological environment. The course provides a broad view of the multinational corporation and its global and local environment. A company operating in a global market must be able to implement and manage their marketing strategies effectively in order to be able to organize their activities so that it can be competitive in global and local markets. Part of the course is to create models to solve marketing problems in an international environment and to study a company's approach to internationalization.</p>

ECONOMICS COURSES

COURSE CODE	NAA115
COURSE NAME	Finance
CREDITS	7,5
SUBJECT AREA	Economics
LEVEL	Undergraduate
PERIOD	1
SCHEDULE COLLISION CODE	K3
LINK TO THE SYLLABUS	NAA115 - Finance

ELIGIBILITY REQUIREMENTS

30 ECTS credits or equivalent in economics where at least 22,5 ECTS credits or equivalent must be completed when the course starts or, 30 ECTS credits or equivalent in economics where at least 15 ECTS credits or equivalent must be completed when the course starts and 15 ECTS credits or equivalent in business administration (at least 7,5 ECTS credits or equivalent in financial and management accounting).

COURSE CONTENT

Classical investment rules under no risk. Using the time value of money to evaluate investments and find optimal prices for both bonds and stocks. Modern theory of investment, the Capital Assets Pricing Model and the Arbitrage Pricing Theory. The firm's optimal capital structure and dividend policy under various tax systems. Financial instruments, such as options, futures, forwards, and duration in order to hedge various types of risk of different financial assets.

COURSE CODE	NAA120
COURSE NAME	Econometrics
CREDITS	7,5
SUBJECT AREA	Economics
LEVEL	Undergraduate
PERIOD	2
SCHEDULE COLLISION CODE	K3
LINK TO THE SYLLABUS	NAA120 - Econometrics

ELIGIBILITY REQUIREMENTS

30 ECTS credits or equivalent in economics where at least 22,5 ECTS credits or equivalent must be completed when the course starts and 15 ECTS credits or equivalent in statistics.

COURSE CONTENT

General description of econometric models and their application in economics. Linear regression models with one or more explanatory variables. Estimation and inference. Heteroscedasticity and autocorrelation. Multicollinearity. Measurement error. Dummy variables as explanatory / dependent variables

COURSE CODE	NAA122
COURSE NAME	Intermediate Microeconomics
CREDITS	7,5
SUBJECT AREA	Economics
LEVEL	Undergraduate
PERIOD	1
SCHEDULE COLLISION CODE	K1
LINK TO THE SYLLABUS	NAA122 – Intermediate Microeconomics

ELIGIBILITY REQUIREMENTS

30 ECTS credits or equivalent in economics where at least 22,5 ECTS credits or equivalent must be completed when the course starts

COURSE CONTENT

Consumer preferences, utility, consumer choice, consumer and market demand, firm behavior, profits, costs, firm and market supply, determination of prices and quantities in market equilibrium, factor markets, and general equilibrium. Compared to the introductory Microeconomics course, these topics are explored in a more formal way, using mathematical analysis. In addition, a selection of other relevant topics such as inter-temporal choice, choice under uncertainty and risk, game theory, monopoly, oligopoly, welfare, and externalities will be covered.

COURSE CODE	NAA128
COURSE NAME	Basic Microeconomics
CREDITS	7,5
SUBJECT AREA	Economics
LEVEL	Undergraduate
PERIOD	1
SCHEDULE COLLISION CODE	K3
LINK TO THE SYLLABUS	NAA128 – Basic Microeconomics

ELIGIBILITY REQUIREMENTS

Mathematics from 3 years of upper secondary education with a science profile

COURSE CONTENT

The Basics of Supply and Demand; Consumption theory; Production theory; Cost theory; Perfect competition; Monopoly, Monopsony & Natural Monopolies; Analysis of Competitive Markets; Public Goods

COURSE CODE	NAA129
COURSE NAME	Applied Microeconomics
CREDITS	7,5
SUBJECT AREA	Economics
LEVEL	Undergraduate
PERIOD	2
SCHEDULE COLLISION CODE	K3
LINK TO THE SYLLABUS	NAA129 – Applied Microeconomics
ELIGIBILITY REQUIREMENTS	Mathematics from 3 years of upper secondary education with a science profile
COURSE CONTENT	The course covers various topics such as: Uncertainty and Consumer Behaviour; Price Discrimination; Monopolistic Competition; Oligopoly; Game Theory; General Equilibrium and Economic Efficiency; Asymmetric Information; Externalities; Classical and neo-classical trade theories; Barriers to Trade.

COURSE CODE	NAA130
COURSE NAME	Macroeconomic Principles
CREDITS	7,5
SUBJECT AREA	Economics
LEVEL	Undergraduate
PERIOD	1
SCHEDULE COLLISION CODE	K2
LINK TO THE SYLLABUS	NAA130 – Macroeconomic Principles
ELIGIBILITY REQUIREMENTS	Mathematics from 3 years of upper secondary education with a science profile
COURSE CONTENT	Macroeconomics treats the working of the economy on an aggregate level, i.e. a nation, a wider area of economic activity such as the EU, or even the world as a whole. The course introduces the basic macroeconomic concepts and measures of economic activity such as the national accounts for GDP, consumption, investment and international trade, and measures for unemployment, inflation etc. These concepts are used to analyze the development of the national and international economy. The long run analysis treats how production technology and the available capital stock and labor force combine to determine equilibrium levels of important economic variables such as production and growth. Markets of special importance for macroeconomic performance, such as the labor market and financial markets, are covered. International trade and international finance is treated with an emphasis on the perspective of a small open economy such as Sweden.

COURSE CODE	NAA133
COURSE NAME	International Trade Theory
CREDITS	7,5
SUBJECT AREA	Economics
LEVEL	Undergraduate
PERIOD	2
SCHEDULE COLLISION CODE	K4
LINK TO THE SYLLABUS	NAA133 – International Trade Theory

ELIGIBILITY REQUIREMENTS

Mathematics from 3 years of upper secondary education with a science profile

COURSE CONTENT

International economics treats the working of the economy with a particular emphasis on the international economic relations between countries, such as international trade in goods and services, international financial markets and currency markets. It also considers the development, on the aggregate level, of wider areas of economic activity such as the EU, or the world as a whole. The course uses the basic macroeconomic concepts and measures of economic activity such as the national accounts for GDP, consumption, investment, imports, exports and international financial transactions, and measures for unemployment, inflation etc. to analyze the development of the domestic and international economy, with an emphasis on the short time horizon. These concepts are used to analyze how the trade balance and monetary flows develop over the business cycle, and the adjustment of the global economy towards long run equilibrium. Markets of special importance for the international economy, such as international markets for goods, services, capital, and currency, are covered. International trade and international finance are treated with an emphasis on the perspective of a small open economy such as Sweden. Economic stabilization policy is discussed in terms of goals, means and effects, as well as the interaction between fiscal and monetary policy in an international setting.

COURSE CODE	NAA203
COURSE NAME	Labour Economics
CREDITS	7,5
SUBJECT AREA	Economics
LEVEL	Undergraduate
PERIOD	2
SCHEDULE COLLISION CODE	K2
LINK TO THE SYLLABUS	NAA203 – Labour Economics

ELIGIBILITY REQUIREMENTS

30 ECTS credits or equivalent in economics where at least 22,5 ECTS credits or equivalent must be completed when the course starts

COURSE CONTENT

Labour supply and demand is studied, with applications to labour market participation, employment and working hours. A flow perspective of the labour market is applied to the analysis of job creation and destruction, job search and the matching of workers with vacant jobs. Various theories of wage determination are studied, e.g. compensating differences, human capital, and individual and centralized wage bargaining. The determinants of unemployment are treated from the perspectives of labour market friction, as in the theory of search and matching, and of wage formation, as in the theories of unions and efficiency wages. These theories are applied to questions of labour market policy.

ENERGY ENGINEERING COURSES

COURSE CODE	ERA204
COURSE NAME	Introduction to Sustainable Energy Systems
CREDITS	7,5
SUBJECT AREA	Energy Engineering
LEVEL	Undergraduate
PERIOD	1
SCHEDULE COLLISION CODE	K4
LINK TO THE SYLLABUS	ERA204 – Introduction to Sustainable Energy Systems

ELIGIBILITY REQUIREMENTS

75 ECTS credits or equivalent within engineering of which at least 22,5 ECTS credits or equivalent are within thermodynamics, fluid dynamics and, heat and mass transfer.

COURSE CONTENT

The course provides basic knowledge on issues related to society's energy and sustainable development. The course deals with different fuels, combustion process and the emissions produced during combustion. The course covers combustion installations and technical equipment used for gas cleaning. The course includes review of the thermodynamic cycle for converting heat into mechanical energy, steam cycle with heat from different fuels, gas turbine cycle and energy conversion in turbines. The course provides an overview of solar and wind power with respect to technology, environmental impact, economics, problems and opportunities.

COURSE CODE	ERA305
COURSE NAME	Sustainable Energy Systems – Project
CREDITS	10
SUBJECT AREA	Energy Engineering
LEVEL	Graduate
PERIOD	1 – 2
SCHEDULE COLLISION CODE	K3
LINK TO THE SYLLABUS	ERA305 – Sustainable Energy Systems – Project

ELIGIBILITY REQUIREMENTS

180 ECTS credits or equivalent from completed courses in engineering including at least 65 ECTS credits or equivalent in energy engineering (of which at least 15 ECTS credits or equivalent are at advanced level) including courses within heat and power technology and/or introduction to sustainable energy systems.

COURSE CONTENT

A larger project assignment, concerning an issue of current interest within the area of sustainable energy systems, accomplished in a working group. The assignment includes one or several of the following tasks: measurement/experiment and analysis of the results, calculation/simulation/optimization and analysis of the results, planning/dimensioning

COURSE CODE	ERA306
COURSE NAME	Sustainable Energy Systems – Advanced Studies
CREDITS	20
SUBJECT AREA	Energy Engineering
LEVEL	Graduate
PERIOD	1 – 2
SCHEDULE COLLISION CODE	K2
LINK TO THE SYLLABUS	ERA306 – Sustainable Energy Systems – Advanced Studies

ELIGIBILITY REQUIREMENTS

180 ECTS credits or equivalent from completed courses in engineering including at least 65 ECTS credits or equivalent in energy engineering (of which at least 15 ECTS credits or equivalent are at advanced level) including courses within heat and power technology and/or introduction to sustainable energy systems.

COURSE CONTENT

The course consist mainly of individual analysis and calculation assignments within sustainable energy systems such as thermal engineering, power systems, solar cells and solar collectors, biofuels, transmission/distribution and more.

COURSE CODE	ERA313
COURSE NAME	Applied Spectroscopy for Future Energy and Environmental Systems
CREDITS	2,5
SUBJECT AREA	Energy Engineering
LEVEL	Graduate
PERIOD	2
SCHEDULE COLLISION CODE	Distance
LINK TO THE SYLLABUS	ERA313 – Applied Spectroscopy for Future Energy and Environmental Systems

ELIGIBILITY REQUIREMENTS

120 ECTS credits or equivalent including at least 90 ECTS credits or equivalent within engineering and 7,5 ECTS credits or equivalent within mathematics.

COURSE CONTENT

The course covers:

- Near infrared spectroscopy including hyperspectral imaging,
- Infrared spectroscopy
- Raman spectroscopy
- Chemometrics and spectral data interpretation
- Implementation of spectroscopy methods for process and environmental monitoring, control and optimization

COURSE CODE	ERA314
COURSE NAME	Power Plant and Processes Monitoring and Diagnostics
CREDITS	2,5
SUBJECT AREA	Energy Engineering
LEVEL	Graduate
PERIOD	2
SCHEDULE COLLISION CODE	Distance
LINK TO THE SYLLABUS	ERA314 – Power Plant and Processes Monitoring and Diagnostics

ELIGIBILITY REQUIREMENTS

120 ECTS credits or equivalent including at least 90 ECTS credits or equivalent within engineering and 7,5 ECTS credits or equivalent within mathematics.

COURSE CONTENT

The course will give an overview of process monitoring and diagnostics with a focus on the power generation sector. Different fault detection methods using physics-based and data-driven models coupled with machine learning techniques will be covered. The course will address challenges currently experienced in the process industry with regards to power plants health management. The participants will familiarize with process monitoring and apply their knowledge of process performance and simulation to the development of advanced algorithms for fault diagnosis.

COURSE CODE	ERA315
COURSE NAME	Implementation of Industrial Process Control
CREDITS	2,5
SUBJECT AREA	Energy Engineering
LEVEL	Graduate
PERIOD	1
SCHEDULE COLLISION CODE	Distance
LINK TO THE SYLLABUS	ERA315 – Implementation of Industrial Process Control

ELIGIBILITY REQUIREMENTS

120 ECTS credits or equivalent including at least 90 ECTS credits or equivalent within engineering and 7,5 ECTS credits or equivalent within mathematics.

COURSE CONTENT

The course will present applications of control methods for energy processes and power plants. The influence of data acquisition and sensor noise, time response, and uncertainty on the control design will be addressed. Examples of practical implementation will be given ranging from traditional PID controllers to adaptive and predictive controls, including state of practice solutions in industrial applications.

COURSE CODE	ERA316
COURSE NAME	Measurement Techniques in Fluid Flow and Heat Transfer
CREDITS	2,5
SUBJECT AREA	Energy Engineering
LEVEL	Graduate
PERIOD	1
SCHEDULE COLLISION CODE	Distance
LINK TO THE SYLLABUS	ERA316 – Measurement Techniques in Fluid Flow and Heat Transfer
ELIGIBILITY REQUIREMENTS	120 ECTS credits or equivalent including at least 90 ECTS credits or equivalent within engineering and 7,5 ECTS credits or equivalent within mathematics.
COURSE CONTENT	<p>The course will give an overview of measurement techniques in fluid mechanics applications for the characterization of the flow and heat transfer field. It will cover different intrusive and non-intrusive methods for the measurement of key parameters such as pressure, velocity, temperature, and will highlight the fundamental phenomena on which the different measurement techniques are based. The importance of reliable experimental measurements, and measurement uncertainty and repeatability will also be addressed in the course.</p>

ENVIRONMENTAL ENGINEERING COURSES

COURSE CODE	MTK308
COURSE NAME	Air Quality
CREDITS	7,5
SUBJECT AREA	Environmental Engineering
LEVEL	Graduate
PERIOD	2
SCHEDULE COLLISION CODE	TBD
LINK TO THE SYLLABUS	MTK308 – Air Quality

ELIGIBILITY REQUIREMENTS

120 ECTS credits or equivalent including at least 90 ECTS credits or equivalent within engineering and 7,5 ECTS credits or equivalent within mathematics.

COURSE CONTENT

The course will mainly address the following:

Atmospheric composition, atmospheric pollution and pollutants, atmospheric dispersion, transport and deposition, atmospheric effects, health effects, air quality and emissions assessment, and control of emissions from motor vehicles and stationary sources.

COURSE CODE	MTK309
COURSE NAME	Air Quality
CREDITS	7,5
SUBJECT AREA	Environmental Engineering
LEVEL	Graduate
PERIOD	2
SCHEDULE COLLISION CODE	Distance
LINK TO THE SYLLABUS	MTK309 – Air Quality

ELIGIBILITY REQUIREMENTS

120 ECTS credits or equivalent including at least 90 ECTS credits or equivalent within engineering and 7,5 ECTS credits or equivalent within mathematics.

COURSE CONTENT

The course will mainly address the following:

Atmospheric composition, atmospheric pollution and pollutants, atmospheric dispersion, transport and deposition, atmospheric effects, health effects, air quality and emissions assessment, and control of emissions from motor vehicles and stationary sources.

COURSE CODE	MTK310
COURSE NAME	Biomass and Energy Source
CREDITS	7,5
SUBJECT AREA	Environmental Engineering
LEVEL	Graduate
PERIOD	1
SCHEDULE COLLISION CODE	TBD
LINK TO THE SYLLABUS	MTK310 – Biomass and Energy Source

ELIGIBILITY REQUIREMENTS

120 ECTS credits or equivalent including at least 90 ECTS credits or equivalent within engineering and 7,5 ECTS credits or equivalent within mathematics.

COURSE CONTENT

The course will mainly address the following:

Biomass based energy sources, composition and characterisation of biomass, techniques for biomass conversion, strategies for control, availability and potential of bio energy, environmental impacts and lifecycle analysis.

COURSE CODE	MTK311
COURSE NAME	Biomass and Energy Source
CREDITS	7,5
SUBJECT AREA	Environmental Engineering
LEVEL	Graduate
PERIOD	1
SCHEDULE COLLISION CODE	Distance
LINK TO THE SYLLABUS	MTK311 – Biomass and Energy Source

ELIGIBILITY REQUIREMENTS

120 ECTS credits or equivalent including at least 90 ECTS credits or equivalent within engineering and 7,5 ECTS credits or equivalent within mathematics.

COURSE CONTENT

The course will mainly address the following:

Biomass based energy sources, composition and characterisation of biomass, techniques for biomass conversion, strategies for control, availability and potential of bio energy, environmental impacts and lifecycle analysis.

COURSE CODE	MTK314
COURSE NAME	Virtual Biochemical Methane Potential (BMP) Test
CREDITS	2,5
SUBJECT AREA	Environmental Engineering
LEVEL	Graduate
PERIOD	2
SCHEDULE COLLISION CODE	Distance
LINK TO THE SYLLABUS	MTK314 – Virtual Biochemical Methane Potential (BMP) Test

ELIGIBILITY REQUIREMENTS

120 ECTS credits or equivalent including at least 90 ECTS credits or equivalent within engineering and 7,5 ECTS credits or equivalent within mathematics.

COURSE CONTENT

The course will mainly address the following: biogas production by anaerobic digestion, co-digestion, organic waste treatment, experimental and analytical methods for determination of biochemical methane potential, interpretation and evaluation of results from BMP test.

COURSE CODE	MTK315
COURSE NAME	Ambient Air Quality Management
CREDITS	2,5
SUBJECT AREA	Environmental Engineering
LEVEL	Graduate
PERIOD	2
SCHEDULE COLLISION CODE	Distance
LINK TO THE SYLLABUS	MTK315 – Ambient Air Quality Management

ELIGIBILITY REQUIREMENTS

120 ECTS credits or equivalent including at least 90 ECTS credits or equivalent within engineering and 7,5 ECTS credits or equivalent within mathematics.

COURSE CONTENT

The course addresses atmospheric composition, atmospheric pollution and pollutants, monitoring of air quality, assessment of emissions and modeling of air quality, control of emissions from vehicles and stationary sources, and regulations and policy, with focus on EU and Sweden.

COURSE CODE	MTK316
COURSE NAME	Circular Economy and Environmental Engineering
CREDITS	2,5
SUBJECT AREA	Environmental Engineering
LEVEL	Graduate
PERIOD	2
SCHEDULE COLLISION CODE	Distance
LINK TO THE SYLLABUS	MTK316 – Circular Economy and Environmental Engineering
ELIGIBILITY REQUIREMENTS	120 ECTS credits or equivalent including at least 90 ECTS credits or equivalent within engineering and 7,5 ECTS credits or equivalent within mathematics.
COURSE CONTENT	The course addresses the concept of circular economy, its use and limitations in the field of environmental engineering, methods for the assessment of resource efficiency, sustainability and environmental impact and practical examples related to waste management.

COURSE CODE	MTK320
COURSE NAME	Sustainable Consumption
CREDITS	2,5
SUBJECT AREA	Environmental Engineering
LEVEL	Graduate
PERIOD	2
SCHEDULE COLLISION CODE	TBD
LINK TO THE SYLLABUS	MTK320 – Sustainable Consumption
ELIGIBILITY REQUIREMENTS	120 ECTS credits or equivalent including at least 90 ECTS credits or equivalent within engineering and 7,5 ECTS credits or equivalent within mathematics.
COURSE CONTENT	The course will mainly address the following: Perspectives of consumption and environmental impacts, rebound effect, decoupling, eco-labeling, fair trade certification, private and public consumption, carbon compensation.

COURSE CODE	MTK321
COURSE NAME	Sustainable Consumption
CREDITS	2,5
SUBJECT AREA	Environmental Engineering
LEVEL	Graduate
PERIOD	2
SCHEDULE COLLISION CODE	Distance
LINK TO THE SYLLABUS	MTK321 – Sustainable Consumption

ELIGIBILITY REQUIREMENTS

120 ECTS credits or equivalent including at least 90 ECTS credits or equivalent within engineering and 7,5 ECTS credits or equivalent within mathematics.

COURSE CONTENT

The course will mainly address the following:

Perspectives of consumption and environmental impacts, rebound effect, decoupling, eco-labeling, fair trade certification, private and public consumption, carbon compensation.

COURSE CODE	MTK322
COURSE NAME	Sustainable Engineering for Developing Countries
CREDITS	2,5
SUBJECT AREA	Environmental Engineering
LEVEL	Graduate
PERIOD	2
SCHEDULE COLLISION CODE	TBD
LINK TO THE SYLLABUS	MTK322 – Sustainable Engineering for Developing Countries

ELIGIBILITY REQUIREMENTS

120 ECTS credits or equivalent including at least 90 ECTS credits or equivalent within engineering and 7,5 ECTS credits or equivalent within mathematics.

COURSE CONTENT

The course will mainly address the following:

World poverty and development, sustainable development, cultural barriers, development strategies, engineering for sustainable community development, sustainable technology and participatory technology development.

COURSE CODE	MTK323
COURSE NAME	Sustainable Engineering for Developing Countries
CREDITS	2,5
SUBJECT AREA	Environmental Engineering
LEVEL	Graduate
PERIOD	2
SCHEDULE COLLISION CODE	Distance
LINK TO THE SYLLABUS	MTK323 – Sustainable Engineering for Developing Countries

ELIGIBILITY REQUIREMENTS

120 ECTS credits or equivalent including at least 90 ECTS credits or equivalent within engineering and 7,5 ECTS credits or equivalent within mathematics.

COURSE CONTENT

The course will mainly address the following:

World poverty and development, sustainable development, cultural barriers, development strategies, engineering for sustainable community development, sustainable technology and participatory technology development.

INDUSTRIAL ENGINEERING AND MANAGEMENT COURSES

COURSE CODE	IEO101
COURSE NAME	Technology and Society
CREDITS	7,5
SUBJECT AREA	Industrial Engineering and Management
LEVEL	Undergraduate
PERIOD	2
SCHEDULE COLLISION CODE	K1+K4
LINK TO THE SYLLABUS	IEO101 – Technology and Society
ELIGIBILITY REQUIREMENTS	
Comments	None
COURSE CONTENT	<p>The students work with different group and individual assignments and are supported by lectures and seminars that introduce and discuss concepts and tools for working with technological development. The students produce not only own suggestions for models and solutions in the group and individual assignments, but also perform critical evaluations of such suggestions.</p>
COMMENTS	This course is taught at the Eskilstuna campus

COURSE CODE	IEO102
COURSE NAME	Industrial Marketing: Industrial Systems, Market and Value Creating Processes
CREDITS	7,5
SUBJECT AREA	Industrial Engineering and Management
LEVEL	Undergraduate
PERIOD	2
SCHEDULE COLLISION CODE	K2+K5
LINK TO THE SYLLABUS	IEO102 – Industrial Marketing: Industrial Systems, Market and Value Creating Processes
ELIGIBILITY REQUIREMENTS	30 ECTS credits or equivalent within an industrial engineering and management program that includes 5 ECTS credits or equivalent in industrial engineering and management and 4 ECTS credits or equivalent in other technical subjects
COURSE CONTENT	<p>This course combines lectures, that provide students with tools and models for analyzing industrial systems and value adding processes, with teamwork in which students evaluate and apply such tools and models. Students are put in contact with industrial marketing and engineer's work through simulations of one or more typical situations related to industrial marketing. The course also includes exercises in which students practice searching for knowledge in different ways and integrating knowledge from different sources. In the course, both oral and writing communicational skills are trained.</p>
COMMENTS	This course is taught at the Eskilstuna campus

COURSE CODE	IEO105
COURSE NAME	Organisation: Form and Function
CREDITS	7,5
SUBJECT AREA	Industrial Engineering and Management
LEVEL	Undergraduate
PERIOD	2
SCHEDULE COLLISION CODE	K2
LINK TO THE SYLLABUS	IEO105 – Organisation: Form and Function
ELIGIBILITY REQUIREMENTS	15 ECTS credits or equivalent within industrial engineering and management and 7,5 ECTS credits in other technical subjects.
COURSE CONTENT	The course requires an active participation on behalf of the students by combining seminars and workshops on various systemic perspectives, with group work, where the students based on a given case work with developing and finalizing a digital prototyope that visualizes a more sustainable organization. The course also includes lectures that introduce various methods for analysis and ways of working for developing prototypes. The lectures furthermore problematize the idea of optimization and the idea of planned change. Finally, the course contains activities that aim at developing the students' abilities to support the work processes of other student groups.
COMMENTS	This course is taught at the Eskilstuna campus

OTHER SUBJECTS WITHIN TECHNOLOGY COURSES

COURSE CODE	OAH200
COURSE NAME	Project in Energy and Environmental Engineering
CREDITS	15
SUBJECT AREA	Other Subjects within Technology
LEVEL	Undergraduate
PERIOD	1 – 2
SCHEDULE COLLISION CODE	TBD
LINK TO THE SYLLABUS	OAH200 – Project in Energy and Environmental Engineering

ELIGIBILITY REQUIREMENTS

120 ECTS credits or equivalent of completed courses related to the research profile Future Energy (e.g. intelligent energy systems, renewable energy, power engineering, energy storage, energy markets, energy efficiency, efficient and smart buildings, biological process related to renewable energy, simulation and optimization of process industry) including 30 ECTS credits or equivalent in mathematics/natural sciences courses.

COURSE CONTENT

The project work carried out within a development project or in cooperation with industrial partners, containing one relevant problem related to the field of Future Energy. The project task contains one of the following elements: measurement / experiments and analysis of results, calculation / simulation / optimization and analysis of results, planning / design.

COURSE CODE	OAH201
COURSE NAME	Project in Energy and Environmental Engineering
CREDITS	30
SUBJECT AREA	Other Subjects within Technology
LEVEL	Undergraduate
PERIOD	1 – 2
SCHEDULE COLLISION CODE	X
LINK TO THE SYLLABUS	OAH201 – Project in Energy and Environmental Engineering

ELIGIBILITY REQUIREMENTS

120 ECTS credits or equivalent of completed courses related to the research profile Future Energy (e.g. intelligent energy systems, renewable energy, power engineering, energy storage, energy markets, energy efficiency, efficient and smart buildings, biological process related to renewable energy, simulation and optimization of process industry) including 30 ECTS credits or equivalent in mathematics/natural sciences courses.

COURSE CONTENT

The project work carried out within a development project or in cooperation with industrial partners, containing one relevant problem related to the field of Future Energy. The project task contains one of the following elements: measurement / experiments and analysis of results, calculation / simulation / optimization and analysis of results, planning / design.

COURSE CODE	OAH302
COURSE NAME	Project in Future Energy
CREDITS	15
SUBJECT AREA	Other Subjects within Technology
LEVEL	Graduate
PERIOD	1 – 2
SCHEDULE COLLISION CODE	TBD
LINK TO THE SYLLABUS	OAH302 – Project in Future Energy

ELIGIBILITY REQUIREMENTS

180 ECTS credits or equivalent of completed courses related to the research profile Future Energy (e.g. intelligent energy systems, renewable energy, power engineering, energy storage, energy markets, energy efficiency, efficient and smart buildings, biological process related to renewable energy, simulation and optimization of process industry). Alternatively having successfully completed the course OAH201

COURSE CONTENT

The advanced project work carried out in a current research project in Future Energy or in cooperation with industrial partner, containing current one research problem in the field. The project task contains one of the following elements: measurement / experiments and analysis of results, calculation / simulation / optimization and analysis of results, planning / design.

COURSE CODE	OAH303
COURSE NAME	Project in Future Energy
CREDITS	30
SUBJECT AREA	Other Subjects within Technology
LEVEL	Graduate
PERIOD	1 – 2
SCHEDULE COLLISION CODE	X
LINK TO THE SYLLABUS	OAH303 – Project in Future Energy

ELIGIBILITY REQUIREMENTS

180 ECTS credits or equivalent of completed courses related to the research profile Future Energy (e.g. intelligent energy systems, renewable energy, power engineering, energy storage, energy markets, energy efficiency, efficient and smart buildings, biological process related to renewable energy, simulation and optimization of process industry). Alternatively having successfully completed the course OAH201

COURSE CONTENT

The advanced project work carried out in a current research project in Future Energy or in cooperation with industrial partner, containing current one research problem in the field. The project task contains one of the following elements: measurement / experiments and analysis of results, calculation / simulation / optimization and analysis of results, planning / design.

COURSE CODE	OAH304
COURSE NAME	Scientific Manuscript in Energy and Environmental Engineering – Process, Method and Implementation
CREDITS	30
SUBJECT AREA	Other Subjects within Technology
LEVEL	Graduate
PERIOD	1 – 2
SCHEDULE COLLISION CODE	X
LINK TO THE SYLLABUS	OAH304 – Scientific Manuscript in Energy and Environmental Engineering – Process, Method and Implementation

ELIGIBILITY REQUIREMENTS

180 ECTS credits or equivalent of completed courses related to the research profile Future Energy (e.g. intelligent energy systems, renewable energy, power engineering, energy storage, energy markets, energy efficiency, efficient and smart buildings, biological process related to renewable energy, simulation and optimization of process industry). Alternatively having successfully completed the course OAH201

COURSE CONTENT

This course increases the understanding for scientific writing, and it will be conducted parallel with an individual work where results from a project are included in a manuscript. In the course train the skills to write a scientific publication for a scientific journal or conference. The participants will obtain a deepened understanding of the main components in a scientific work, and the importance to describe/understand how knowledge gaps that are addressed. Based on this a clear research question, suitable methodologies, and the scientific result be presented. Finally, the course addresses various strategies on how to use discussions and conclusion parts to conclude the scientific publication.

COURSE CODE	OAH305
COURSE NAME	Applied Statistics in Engineering
CREDITS	2,5
SUBJECT AREA	Other Subjects within Technology
LEVEL	Graduate
PERIOD	2
SCHEDULE COLLISION CODE	Distance
LINK TO THE SYLLABUS	OAH305 – Applied Statistics in Engineering

ELIGIBILITY REQUIREMENTS

120 ECTS credits or equivalent including at least 90 ECTS credits or equivalent within engineering and 7,5 ECTS credits or equivalent within mathematics.

COURSE CONTENT

Statistical thinking; understanding and management of large data sets; statistical significance; statistical inference; correlation and linear regression; analysis of variance (ANOVA)

POLITICAL SCIENCE COURSES

COURSE CODE	SKA124
COURSE NAME	Urban Politics and Citizenship
CREDITS	7,5
SUBJECT AREA	Political Science
LEVEL	Undergraduate
PERIOD	1a
SCHEDULE COLLISION CODE	X
LINK TO THE SYLLABUS	<u>SKA124 – Urban Politics and Citizenship</u>
ELIGIBILITY REQUIREMENTS	
None	
COURSE CONTENT	<p>The course syllabus focuses on the City as three units of analyses: the neighbourhood, city and municipality. Here the course reflects over and analyzes the relationships of power that govern the City.</p>

STATISTICS COURSES

COURSE CODE	STA104
COURSE NAME	Statistics for Business
CREDITS	7,5
SUBJECT AREA	Statistics
LEVEL	Undergraduate
PERIOD	2
SCHEDULE COLLISION CODE	K2
LINK TO THE SYLLABUS	STA104 – Statistics for Business
ELIGIBILITY REQUIREMENTS	
None	
COURSE CONTENT	
	The course introduces statistical concepts and statistical analyses by focusing on descriptive statistics, probability calculations and inferential statistics. As such, the course gives an introduction to applied statistics in a business context.

SPRING SEMESTER 2020

Courses taught throughout the semester (period 1 and 2)

Start: January 20, 2020

End: June 7, 2020

LEVEL	SUBJECT AREA	COURSE CODE	COURSE NAME	CREDITS	SCHEDULE COLLISION CODE
Undergraduate 2 nd year	Business Administration	FOA107	Consumer Behaviour	7,5	Distance
Undergraduate 3 rd year	Other Subjects within Technology	OAH200	Project in Energy and Environmental Engineering	15	
		OAH201	Project in Energy and Environmental Engineering	30	X
Graduate 1 st year	Other Subjects within Technology	OAH302	Project in Future Energy	15	
		OAH303	Project in Future Energy	30	X
		OAH304	Scientific Manuscript in Energy and Environmental Engineering – Process, Method and Implementation	30	X

Courses taught in period 1

Start: January 20, 2020

End: March 29, 2020

LEVEL	SUBJECT AREA	COURSE CODE	COURSE NAME	CREDITS	SCHEDULE COLLISION CODE
Undergraduate 1 st year	Business Administration	FOA146	Financial Accounting	7,5	K3
	Commercial Law	HAA103	International Commercial Law***	15	K2
Undergraduate 2 nd year	Business Administration	FOA100	E-Commerce and Digitalization**	7,5	X
		FOA149	Business Analysis*	7,5	X
		FOA153	International Project Management*	7,5	X
	Industrial Engineering and Management	IEO103	Global Operations Management****	7,5	K4+K5
		IEO104	Controlling and Financing of Industrial Operations****	7,5	K1+K2
Undergraduate 3 rd year	Business Administration	FOA227	Managing the Multinational Enterprise	15	X
		FOA229	Marketing Strategy in Practice	15	X
	Economics	NAA204	Industrial Economics	7,5	K4
		NAA205	Macroeconomic Theory	7,5	K1
Graduate 1 st year	Energy Engineering	ERA212	Heat and Power Technology 2	7,5	K1+K2
	Business Administration	FOA309	Contemporary Issues in Consumer Marketing	15	X
	Energy Engineering	ERA301	International Energy Systems	7,5	K1
		ERA311	Process Modelling	7,5	K2
	Environmental Engineering	MTK312	Water Quality Management	7,5	
		MTK313	Water Quality Management	7,5	Distance
		MTK317	Climate Change and Energy: Past, Present and Future	7,5	
		MTK319	Climate Change and Energy: Past, Present and Future	7,5	Distance

* Course taught only during period 1a (January 20, 2020 – February 23, 2020)

** Course taught only during period 1b (February 24, 2020 – March 29, 2020)

*** Course taught during period 1b and 2a (February 24, 2020 – May 3, 2020)

**** Course taught at the Eskilstuna campus

Courses taught in period 2

Start: March 30, 2020

End: June 7, 2020

LEVEL	SUBJECT AREA	COURSE CODE	COURSE NAME	CREDITS	SCHEDULE COLLISION CODE
Undergraduate 1 st year	Business Administration	FOA147	Management Accounting	7,5	K3
Undergraduate 2 nd year	Business Administration	FOA105	Service Management*	7,5	X
		FOA154	International Human Resource Management*	7,5	X
		FOA155	Research Methods and Academic Writing**	7,5	X
		FOA200	The Internationalization Process of Companies**	7,5	X
	Energy Engineering	ERA120	Sustainable Energy Systems***	7,5	K3+K4
Undergraduate 3 rd year	Business Administration	EFO210	Strategic Marketing Management	15	X
Graduate 1 st year	Energy Engineering	ERA303	Process Optimization	7,5	K2
		ERA312	Process Simulation	7,5	K1+K3+K4+K5

* Course taught only during period 2a (March 30, 2020 – May 3, 2020)

** Course taught only during period 2b (May 4, 2020 – June 7, 2020)

*** Course taught at the Eskilstuna campus

BUSINESS ADMINISTRATION COURSES

COURSE CODE	EFO210
COURSE NAME	Strategic Marketing Management
CREDITS	15
SUBJECT AREA	Business Administration
LEVEL	Undergraduate
PERIOD	2
SCHEDULE COLLISION CODE	X
LINK TO THE SYLLABUS	EFO210 – Strategic Marketing Management

ELIGIBILITY REQUIREMENTS

60 ECTS credits or equivalent in business administration where at least 45 ECTS credits or equivalent must be completed when the course starts.

COURSE CONTENT

During the course the student will discuss and analyse concepts connected to different views on strategy. The base for the discussion will come from the course literature, articles and case studies. The student will do a research where they should describe strategies used by a company / organization. Part of the course is also to get the experience of leading and managing a seminar. The course contains 30% applied business administration.

COURSE CODE	FOA100
COURSE NAME	E-Commerce and Digitalization
CREDITS	7,5
SUBJECT AREA	Business Administration
LEVEL	Undergraduate
PERIOD	1b
SCHEDULE COLLISION CODE	X
LINK TO THE SYLLABUS	FOA100 – E-Commerce and Digitalization

ELIGIBILITY REQUIREMENTS

30 ECTS credits or equivalent in business administration where at least 22,5 ECTS credits or equivalent must be completed when the course starts.

COURSE CONTENT

The course is introduced with lectures that summarize the course literature and outlines the course assignments. This is followed by seminars and laboratories where the students carry out their projects in groups. The course does also have individual activities that are carried out online. The course results in two related student group presentations as well as student peer reviews.

COURSE CODE	FOA105
COURSE NAME	Service Management
CREDITS	7,5
SUBJECT AREA	Business Administration
LEVEL	Undergraduate
PERIOD	2a
SCHEDULE COLLISION CODE	X
LINK TO THE SYLLABUS	FOA105 – Service Management

ELIGIBILITY REQUIREMENTS

30 ECTS credits or equivalent in business administration where at least 22,5 ECTS credits or equivalent must be completed when the course starts.

COURSE CONTENT

During this course the Gaps Model of Service quality will be used as a framework. The lectures and seminars will cover the five gaps starting by discussing service from the customer's point of view and their expectations, behaviour and perceptions. The next part of the course will cover service quality from the management perspective. The course will cover market research, relationships, and service recovery. The next part will discuss designing of services: service standards and physical evidence. The course contains the service employees: role in service, internal marketing and communication of services. This course is built on a chain of student activities, where students plan, implement and report the activities.

COURSE CODE	FOA107
COURSE NAME	Consumer Behaviour
CREDITS	7,5
SUBJECT AREA	Business Administration
LEVEL	Undergraduate
PERIOD	1 – 2
SCHEDULE COLLISION CODE	Distance
LINK TO THE SYLLABUS	FOA107 – Consumer Behaviour

ELIGIBILITY REQUIREMENTS

30 ECTS credits or equivalent in business administration where at least 22,5 ECTS credits or equivalent must be completed when the course starts.

COURSE CONTENT

Continuously during the course, the students are given lectures and tutorials via a communication platform. Different types of discussion groups will be available where students can discuss and debate a theme every week. The students shall carry out three individual assignments á 2,5 credits (see detailed information in the course information provided at the start of the course).

COURSE CODE	FOA146
COURSE NAME	Financial Accounting
CREDITS	7,5
SUBJECT AREA	Business Administration
LEVEL	Undergraduate
PERIOD	1
SCHEDULE COLLISION CODE	K3
LINK TO THE SYLLABUS	FOA146 – Financial Accounting
ELIGIBILITY REQUIREMENTS	
None	
COURSE CONTENT	
The course will focus on financial accounting and give students an introduction to read and analyse the key financial statements. The course will cover how organisations use these statements and how they can be analysed to understand the financial position of an organisation and its financial strategy. The course will also give an introduction to the different international general accounting standards and how ethical and sustainability aspects can influence financial reporting.	

COURSE CODE	FOA147
COURSE NAME	Management Accounting
CREDITS	7,5
SUBJECT AREA	Business Administration
LEVEL	Undergraduate
PERIOD	2
SCHEDULE COLLISION CODE	K3
LINK TO THE SYLLABUS	FOA147 – Management Accounting
ELIGIBILITY REQUIREMENTS	
None	
COURSE CONTENT	
The course will give focus on management accounting principles and how they are used to implement and control an organisation's strategy. The course will provide an understanding of the development of management accounting literature and its application. The course will also focus on how management retrieve and use accounting information for decision-making in regards to an organisation's position and strategy.	

COURSE CODE	FOA149
COURSE NAME	Business Analysis
CREDITS	7,5
SUBJECT AREA	Business Administration
LEVEL	Undergraduate
PERIOD	1
SCHEDULE COLLISION CODE	X
LINK TO THE SYLLABUS	FOA149 – Business Analysis

ELIGIBILITY REQUIREMENTS

30 ECTS credits or equivalent in business administration where at least 22,5 ECTS credits or equivalent must be completed when the course starts.

COURSE CONTENT

This course dedicates its attention towards predicitive analyses that serve as platforms for decision making. The course therefore includes several analytical models, methods and tools. The course includes sessions that develop students' ability to both formulate analytical inquiries and select between analytical possibilities. A central aspect of the content is exercises that improve students' ability to critical assess assumptions, validity, limitations, and shortcomings. The content in this course is therefore build upon both practical and theoretical parts which together stimulate the development of the students' analytical capabilities.

COURSE CODE	FOA153
COURSE NAME	International Project Management
CREDITS	7,5
SUBJECT AREA	Business Administration
LEVEL	Undergraduate
PERIOD	1a
SCHEDULE COLLISION CODE	X
LINK TO THE SYLLABUS	FOA153 – International Project Management

ELIGIBILITY REQUIREMENTS

30 ECTS credits or equivalent in business administration where at least 22,5 ECTS credits or equivalent must be completed when the course starts.

COURSE CONTENT

The course covers concepts, models and theories in the contemporary field of international project management. It provides perspectives and tools for work in, as well as theoretical analysis of, international projects. The course is based on flexible learning through individual and group assignments.

COURSE CODE	FOA154
COURSE NAME	International Human Resource Management
CREDITS	7,5
SUBJECT AREA	Business Administration
LEVEL	Undergraduate
PERIOD	2a
SCHEDULE COLLISION CODE	X
LINK TO THE SYLLABUS	FOA154 – International Human Resource Management
ELIGIBILITY REQUIREMENTS	30 ECTS credits or equivalent in business administration where at least 22,5 ECTS credits or equivalent must be completed when the course starts.
COURSE CONTENT	The course covers concepts, models and theories in the contemporary field of international project management. It provides perspectives and tools for work in, as well as theoretical analysis of, international projects. The course is based on flexible learning through individual and group assignments.

COURSE CODE	FOA155
COURSE NAME	Research Methods and Academic Writing
CREDITS	7,5
SUBJECT AREA	Business Administration
LEVEL	Undergraduate
PERIOD	2b
SCHEDULE COLLISION CODE	X
LINK TO THE SYLLABUS	FOA155 – Research Methods and Academic Writing
ELIGIBILITY REQUIREMENTS	30 ECTS credits or equivalent in business administration where at least 22,5 ECTS credits or equivalent must be completed when the course starts.
COURSE CONTENT	The course comprise of basic knowledge and understanding of research as a practice, focusing on collection, processing and presentation of data. It provides knowledge through theoretical learning as well as practical assignments.

COURSE CODE	FOA200
COURSE NAME	The Internationalization Process of Companies
CREDITS	7,5
SUBJECT AREA	Business Administration
LEVEL	Undergraduate
PERIOD	2b
SCHEDULE COLLISION CODE	X
LINK TO THE SYLLABUS	FOA200 – The Internationalization Process of Companies

ELIGIBILITY REQUIREMENTS

30 ECTS credits or equivalent in business administration where at least 22,5 ECTS credits or equivalent must be completed when the course starts.

COURSE CONTENT

This is a course about the internationalization process of companies. We study why companies go international and how they do it. To commit resources to enter a foreign market requires knowledge and investment that often go beyond acting only on the home market. One obstacle for companies that go international is to overcome the differences of culture between the countries, as it inflicts on how companies do business.

Main focus of the course is the process of internationalization. The role national culture play is also an important theme.

During this course we will use Blackboard as a tool for administration and communication.

COURSE CODE	FOA227
COURSE NAME	Managing the Multinational Enterprise
CREDITS	15
SUBJECT AREA	Business Administration
LEVEL	Undergraduate
PERIOD	1
SCHEDULE COLLISION CODE	X
LINK TO THE SYLLABUS	FOA227 – Managing the Multinational Enterprise

ELIGIBILITY REQUIREMENTS

60 ECTS credits or equivalent in business administration where at least 45 ECTS credits or equivalent must be completed when the course starts.

COURSE CONTENT

The course deals with the problems management in multinational enterprises face and the strategies they consider to act on their markets, as well a scientific approach to the study of multinational enterprises (MNEs) and their markets.

The course is given in two parallel tracks, one with a project work and one with a practical work placement. In the project track the students work in group with an extensive written paper of scientific nature. In the practical track the student must initiate and establish contact with an enterprise or an organization, that is operating in an international market, and make an agreement about suitable work placement tasks.

COURSE CODE	FOA229
COURSE NAME	Marketing Strategy in Practice
CREDITS	15
SUBJECT AREA	Business Administration
LEVEL	Undergraduate
PERIOD	1
SCHEDULE COLLISION CODE	X
LINK TO THE SYLLABUS	FOA229 – Marketing Strategy in Practice
ELIGIBILITY REQUIREMENTS	60 ECTS credits or equivalent in business administration where at least 45 ECTS credits or equivalent must be completed when the course starts.
COURSE CONTENT	To achieve the learning objectives of this course, the course is based on a business simulation game. The course provides a basis for making strategic market-based decisions that includes different perspectives on market and actors' conditions. Lectures and discussions reflect the decisions that managers of companies need to make on a daily basis, and with the business simulation the student is given the tools to test and practice their knowledge and skills to form new perspectives and knowledge.

COURSE CODE	FOA309
COURSE NAME	Contemporary Issues in Consumer Marketing
CREDITS	15
SUBJECT AREA	Business Administration
LEVEL	Undergraduate
PERIOD	1
SCHEDULE COLLISION CODE	X
LINK TO THE SYLLABUS	FOA309 – Contemporary Issues in Consumer Marketing
ELIGIBILITY REQUIREMENTS	90 ECTS credits or equivalent in business administration with gradual progression
COURSE CONTENT	The course is focused on consumer marketing and containing one or more components where students must demonstrate that they can apply their knowledge in different contexts. During the course the students discuss and analyze concepts related to current trends in consumer marketing.

COMMERCIAL LAW COURSES

COURSE CODE	HAA103
COURSE NAME	International Commercial Law
CREDITS	15
SUBJECT AREA	Commercial Law
LEVEL	Undergraduate
PERIOD	1b – 2a
SCHEDULE COLLISION CODE	K2
LINK TO THE SYLLABUS	HAA103 – International Commercial Law
ELIGIBILITY REQUIREMENTS	
None	
COURSE CONTENT	<p>The course starts with an introduction to different legal systems and basic introduction to European Union Law. After the introduction, we continue with some IT-law regarding Privacy protection and Criminal law followed by Principles of Commercial contract law. Followed by tax law for individuals working in different countries and after that Intellectual property law and Competition law.</p>

ECONOMICS COURSES

COURSE CODE	NAA204
COURSE NAME	Industrial Economics
CREDITS	7,5
SUBJECT AREA	Economics
LEVEL	Undergraduate
PERIOD	1
SCHEDULE COLLISION CODE	K4
LINK TO THE SYLLABUS	NAA204 – Industrial Economics

ELIGIBILITY REQUIREMENTS

60 ECTS credits or equivalent in economics where at least 45 ECTS credits or equivalent must be completed when the course starts.

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.

COURSE CODE	NAA205
COURSE NAME	Macroeconomic Theory
CREDITS	7,5
SUBJECT AREA	Economics
LEVEL	Undergraduate
PERIOD	1
SCHEDULE COLLISION CODE	K1
LINK TO THE SYLLABUS	NAA205 – Macroeconomic Theory

ELIGIBILITY REQUIREMENTS

60 ECTS credits or equivalent in economics where at least 45 ECTS credits or equivalent must be completed when the course starts.

COURSE CONTENT

The course describes how the production technology in combination with available productive resources determine production and income in an economy, and 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.

ENERGY ENGINEERING COURSES

COURSE CODE	ERA120
COURSE NAME	Sustainable Energy Systems
CREDITS	7,5
SUBJECT AREA	Energy Engineering
LEVEL	Undergraduate
PERIOD	2
SCHEDULE COLLISION CODE	K3+K4
LINK TO THE SYLLABUS	ERA120 – Sustainable Energy Systems

ELIGIBILITY REQUIREMENTS

45 ECTS credits or equivalent within an industrial engineering and management programme including 2,5 ECTS credits or equivalent within thermodynamics.

COURSE CONTENT

The course provides basic knowledge on issues that concern society's energy supply and sustainable development.

The course includes a review of thermodynamic cycles for conversion of heat to mechanical energy, steam cycle, gas turbine cycle and the cooling / heat pump process. The course gives an overview of solar, wind and hydropower with regard to technical solutions, environmental impact, economics, problems and opportunities

COMMENTS

This course is taught at the Eskilstuna campus

COURSE CODE	ERA212
COURSE NAME	Heat and Power Technology 2
CREDITS	7,5
SUBJECT AREA	Energy Engineering
LEVEL	Undergraduate
PERIOD	1
SCHEDULE COLLISION CODE	K1+K2
LINK TO THE SYLLABUS	ERA212 – Heat and Power Technology 2

90 ECTS credits or equivalent within engineering including 6 ECTS credits or equivalent in applied thermodynamics, 6 ECTS credits or equivalent in fluid mechanics and 7,5 ECTS credits or equivalent in mathematics.

COURSE CONTENT

Gas turbine applications and performance as well as turbomachinery design (the various components and system functionality, design and operation). The energy conversion process in fuel cells. Particular focus will be given to economic aspects up during the operation of energy systems. The course also includes laboratory work, study visits and assignments.

COURSE CODE	ERA301
COURSE NAME	International Energy Systems
CREDITS	7,5
SUBJECT AREA	Energy Engineering
LEVEL	Graduate
PERIOD	1
SCHEDULE COLLISION CODE	K1
LINK TO THE SYLLABUS	ERA301 – International Energy Systems

ELIGIBILITY REQUIREMENTS

150 ECTS credits or equivalent within energy engineering including 15 ECTS credits or equivalent from the courses Energy, Environment and Resources and, Perspectives on Energy Markets or similar.

COURSE CONTENT

The course provides definitions of a system and energy system and what system thinking mean, regarding energy systems development in an international context. It includes examples from different parts of the world, description of stakeholders in the energy sector on global, national, regional and local levels, and how natural science (e.g. geoscience and ecology), technological, economic and political frameworks influence the conditions for energy systems, policy instruments and development targets within the energy sector and local conditions for energy systems.

COURSE CODE	ERA303
COURSE NAME	Process Optimization
CREDITS	7,5
SUBJECT AREA	Energy Engineering
LEVEL	Graduate
PERIOD	2
SCHEDULE COLLISION CODE	K2
LINK TO THE SYLLABUS	ERA303 – Process Optimization

ELIGIBILITY REQUIREMENTS

150 ECTS credits or equivalent within energy engineering including the following:

- 7,5 ECTS credits or equivalent from the course Applied Thermodynamics or equivalent
- 7,5 ECTS credits or equivalent from the course Heat and Mass Transfer or equivalent
- 7,5 ECTS credits or equivalent from the course Fluid Dynamics or equivalent
- 22,5 ECTS credits or equivalent in mathematics/applied mathematics where at least 7,5 ECTS credits or equivalent are in single variable calculus or similar.

COURSE CONTENT

The theoretical background about setting up objective functions and constraints for energy related processes. Mathematical optimization methods as Lagrange Multipliers method, dynamic programming, search methods, linear programming with and without binary variables. Economic analyses and production planning in district heating systems. Practical use of computer programs for solving optimization problems.

COURSE CODE	ERA311
COURSE NAME	Process Modelling
CREDITS	7,5
SUBJECT AREA	Energy Engineering
LEVEL	Graduate
PERIOD	1
SCHEDULE COLLISION CODE	K2
LINK TO THE SYLLABUS	ERA311 – Process Modelling

ELIGIBILITY REQUIREMENTS

150 ECTS credits or equivalent within energy engineering including the following:

- 7,5 ECTS credits or equivalent from the course Applied Thermodynamics or equivalent
- 7,5 ECTS credits or equivalent from the course Heat and Mass Transfer or equivalent
- 7,5 ECTS credits or equivalent from the course Fluid Dynamics or equivalent
- 22,5 ECTS credits or equivalent in mathematics/applied mathematics where at least 7,5 ECTS credits or equivalent are in single variable calculus or similar.

COURSE CONTENT

The course covers principles in model building in process engineering, theory about mathematical modelling within energy processes, analytical and numerical solutions, statistical and empirical modelling.

COURSE CODE	ERA312
COURSE NAME	Process Simulation
CREDITS	7,5
SUBJECT AREA	Energy Engineering
LEVEL	Graduate
PERIOD	2
SCHEDULE COLLISION CODE	K1+K3+K4+K5
LINK TO THE SYLLABUS	ERA312 – Process Simulation

ELIGIBILITY REQUIREMENTS

150 ECTS credits or equivalent within energy engineering including the following:

- 7,5 ECTS credits or equivalent from the course Applied Thermodynamics or equivalent
- 7,5 ECTS credits or equivalent from the course Heat and Mass Transfer or equivalent
- 7,5 ECTS credits or equivalent from the course Fluid Dynamics or equivalent
- 22,5 ECTS credits or equivalent in mathematics/applied mathematics where at least 7,5 ECTS credits or equivalent are in single variable calculus or similar.

COURSE CONTENT

The course covers principles in building simulation models in process engineering, use of different tools for dynamic simulation, chemical equilibrium calculations and energy and material balances for different type of problems, simulation solvers, including simultaneous and sequential solvers, model verification and validation.

ENVIRONMENTAL ENGINEERING COURSES

COURSE CODE	MTK312
COURSE NAME	Water Quality Management
CREDITS	7,5
SUBJECT AREA	Environmental Engineering
LEVEL	Graduate
PERIOD	1
SCHEDULE COLLISION CODE	TBD
LINK TO THE SYLLABUS	MTK312 – Water Quality Management

ELIGIBILITY REQUIREMENTS

180 ECTS credits or equivalent from completed courses in engineering and/or natural sciences including at least 7,5 ECTS credits or equivalent in mathematics and 7,5 ECTS credits or equivalent in environmental engineering

COURSE CONTENT

The course will mainly address the following:

Water quality management, the water cycle, physical, chemical and biological aspects of water quality, quality requirements for use of water, pollution sources, loadings and waste water characterization, current technology available for waste water treatment and research and development status, and water quality modelling tools.

COURSE CODE	MTK313
COURSE NAME	Water Quality Management
CREDITS	7,5
SUBJECT AREA	Environmental Engineering
LEVEL	Graduate
PERIOD	1
SCHEDULE COLLISION CODE	Distance
LINK TO THE SYLLABUS	MTK313 – Water Quality Management

ELIGIBILITY REQUIREMENTS

180 ECTS credits or equivalent from completed courses in engineering and/or natural sciences including at least 7,5 ECTS credits or equivalent in mathematics and 7,5 ECTS credits or equivalent in environmental engineering

COURSE CONTENT

The course will mainly address the following:

Water quality management, the water cycle, physical, chemical and biological aspects of water quality, quality requirements for use of water, pollution sources, loadings and waste water characterization, current technology available for waste water treatment and research and development status, and water quality modelling tools.

COURSE CODE	MTK317
COURSE NAME	Climate Change and Energy: Past, Present and Future
CREDITS	7,5
SUBJECT AREA	Environmental Engineering
LEVEL	Graduate
PERIOD	1
SCHEDULE COLLISION CODE	TBD
LINK TO THE SYLLABUS	MTK317 – Climate Change and Energy: Past, Present and Future

ELIGIBILITY REQUIREMENTS

120 ECTS credits or equivalent within engineering and/or natural sciences including at least 7,5 ECTS credits in mathematics.

COURSE CONTENT

The course will mainly address the following:

Climate change, physical and chemical processes related to atmosphere, biosphere, hydrosphere and lithosphere, expected and actual consequences of climate change, greenhouse effect, global warming, effects of energy production on climate, CO₂ and other greenhouse gases, climate monitoring and modelling, negative carbon emissions, sustainable development goals, actions to adapt to and mitigate climate change and its impacts.

COURSE CODE	MTK319
COURSE NAME	Climate Change and Energy: Past, Present and Future
CREDITS	7,5
SUBJECT AREA	Environmental Engineering
LEVEL	Graduate
PERIOD	1
SCHEDULE COLLISION CODE	Distance
LINK TO THE SYLLABUS	MTK319 – Climate Change and Energy: Past, Present and Future

ELIGIBILITY REQUIREMENTS

120 ECTS credits or equivalent within engineering and/or natural sciences including at least 7,5 ECTS credits in mathematics.

COURSE CONTENT

The course will mainly address the following:

Climate change, physical and chemical processes related to atmosphere, biosphere, hydrosphere and lithosphere, expected and actual consequences of climate change, greenhouse effect, global warming, effects of energy production on climate, CO₂ and other greenhouse gases, climate monitoring and modelling, negative carbon emissions, sustainable development goals, actions to adapt to and mitigate climate change and its impacts.

INDUSTRIAL ENGINEERING AND MANAGEMENT COURSES

COURSE CODE	IEO103
COURSE NAME	Global Operations Management
CREDITS	7,5
SUBJECT AREA	Industrial Engineering and Management
LEVEL	Undergraduate
PERIOD	7,5
SCHEDULE COLLISION CODE	K4+K5
LINK TO THE SYLLABUS	IEO103 – Global Operations Management

ELIGIBILITY REQUIREMENTS

45 ECTS credits or equivalent within an industrial engineering and management program that include 7,5 ECTS credits or equivalent in industrial engineering and management and 7,5 ECTS credits or equivalent in other engineering subjects.

COURSE CONTENT

This course combines lectures with different kinds of teamwork in order to offer insight on important areas of operations management, and to give students the possibility to apply such insights on practical cases/problems. Students' previous knowledge and interests are mobilized through workshops/seminars and teamwork. Students are also trained in scientific writing through different activities. Finally, there is also some focus on teamwork and how to improve it, in particular by paying attention to issues related to equal opportunities and by using digital technologies as a supporting tool in teamwork.

COMMENTS

This course is taught at the Eskilstuna campus

COURSE CODE	IEO104
COURSE NAME	Controlling and Financing of Industrial Operations
CREDITS	7,5
SUBJECT AREA	Industrial Engineering and Management
LEVEL	Undergraduate
PERIOD	7,5
SCHEDULE COLLISION CODE	K1+K2
LINK TO THE SYLLABUS	IEO104 – Controlling and Financing of Industrial Operation

ELIGIBILITY REQUIREMENTS

20 ECTS credits or equivalent within industrial engineering and management and 7,5 ECTS credits within engineering.

COURSE CONTENT

Lectures introducing tools and processes that industrial enterprises implement to efficiently allocate financial resources are combined with group work and individual assignments. During the course, students will be trained in the practical use of methods and models, and will evaluate their usefulness. Finally, the students will actively work to produce financial data to base decisions on when it comes to the optimizations and changes of processes through investments.

COMMENTS

This course is taught at the Eskilstuna campus

OTHER SUBJECTS WITHIN TECHNOLOGY COURSES

COURSE CODE	OAH200
COURSE NAME	Project in Energy and Environmental Engineering
CREDITS	15
SUBJECT AREA	Other Subjects within Technology
LEVEL	Undergraduate
PERIOD	1 – 2
SCHEDULE COLLISION CODE	TBD
LINK TO THE SYLLABUS	OAH200 – Project in Energy and Environmental Engineering

ELIGIBILITY REQUIREMENTS

120 ECTS credits or equivalent of completed courses related to the research profile Future Energy (e.g. intelligent energy systems, renewable energy, power engineering, energy storage, energy markets, energy efficiency, efficient and smart buildings, biological process related to renewable energy, simulation and optimization of process industry) including 30 ECTS credits or equivalent in mathematics/natural sciences courses.

COURSE CONTENT

The project work carried out within a development project or in cooperation with industrial partners, containing one relevant problem related to the field of Future Energy. The project task contains one of the following elements: measurement / experiments and analysis of results, calculation / simulation / optimization and analysis of results, planning / design.

COURSE CODE	OAH201
COURSE NAME	Project in Energy and Environmental Engineering
CREDITS	30
SUBJECT AREA	Other Subjects within Technology
LEVEL	Undergraduate
PERIOD	1 – 2
SCHEDULE COLLISION CODE	X
LINK TO THE SYLLABUS	OAH201 – Project in Energy and Environmental Engineering

ELIGIBILITY REQUIREMENTS

120 ECTS credits or equivalent of completed courses related to the research profile Future Energy (e.g. intelligent energy systems, renewable energy, power engineering, energy storage, energy markets, energy efficiency, efficient and smart buildings, biological process related to renewable energy, simulation and optimization of process industry) including 30 ECTS credits or equivalent in mathematics/natural sciences courses.

COURSE CONTENT

The project work carried out within a development project or in cooperation with industrial partners, containing one relevant problem related to the field of Future Energy. The project task contains one of the following elements: measurement / experiments and analysis of results, calculation / simulation / optimization and analysis of results, planning / design.

COURSE CODE	OAH302
COURSE NAME	Project in Future Energy
CREDITS	15
SUBJECT AREA	Other Subjects within Technology
LEVEL	Graduate
PERIOD	1 – 2
SCHEDULE COLLISION CODE	TBD
LINK TO THE SYLLABUS	OAH302 – Project in Future Energy

ELIGIBILITY REQUIREMENTS

180 ECTS credits or equivalent of completed courses related to the research profile Future Energy (e.g. intelligent energy systems, renewable energy, power engineering, energy storage, energy markets, energy efficiency, efficient and smart buildings, biological process related to renewable energy, simulation and optimization of process industry). Alternatively having successfully completed the course OAH201

COURSE CONTENT

The advanced project work carried out in a current research project in Future Energy or in cooperation with industrial partner, containing current one research problem in the field. The project task contains one of the following elements: measurement / experiments and analysis of results, calculation / simulation / optimization and analysis of results, planning / design.

COURSE CODE	OAH303
COURSE NAME	Project in Future Energy
CREDITS	30
SUBJECT AREA	Other Subjects within Technology
LEVEL	Graduate
PERIOD	1 – 2
SCHEDULE COLLISION CODE	X
LINK TO THE SYLLABUS	OAH303 – Project in Future Energy

ELIGIBILITY REQUIREMENTS

180 ECTS credits or equivalent of completed courses related to the research profile Future Energy (e.g. intelligent energy systems, renewable energy, power engineering, energy storage, energy markets, energy efficiency, efficient and smart buildings, biological process related to renewable energy, simulation and optimization of process industry). Alternatively having successfully completed the course OAH201

COURSE CONTENT

The advanced project work carried out in a current research project in Future Energy or in cooperation with industrial partner, containing current one research problem in the field. The project task contains one of the following elements: measurement / experiments and analysis of results, calculation / simulation / optimization and analysis of results, planning / design.

COURSE CODE	OAH304
COURSE NAME	Scientific Manuscript in Energy and Environmental Engineering – Process, Method and Implementation
CREDITS	30
SUBJECT AREA	Other Subjects within Technology
LEVEL	Graduate
PERIOD	1 – 2
SCHEDULE COLLISION CODE	X
LINK TO THE SYLLABUS	OAH304 – Scientific Manuscript in Energy and Environmental Engineering – Process, Method and Implementation
ELIGIBILITY REQUIREMENTS	
180 ECTS credits or equivalent of completed courses related to the research profile Future Energy (e.g. intelligent energy systems, renewable energy, power engineering, energy storage, energy markets, energy efficiency, efficient and smart buildings, biological process related to renewable energy, simulation and optimization of process industry). Alternatively having successfully completed the course OAH201	
COURSE CONTENT	
This course increases the understanding for scientific writing, and it will be conducted parallel with an individual work where results from a project are included in a manuscript. In the course train the skills to write a scientific publication for a scientific journal or conference. The participants will obtain a deepened understanding of the main components in a scientific work, and the importance to describe/understand how knowledge gaps that are addressed. Based on this a clear research question, suitable methodologies, and the scientific result be presented. Finally, the course addresses various strategies on how to use discussions and conclusion parts to conclude the scientific publication.	