
Exchange Programme Master's level

Study Facts

Credits: 60

Duration: 2 semesters

Study mode: Full-time

Campus: Molde

Level of study: Master

Year: 2017

English title: Exchange Programme Master's level

Program of study: Exchange Programme Master's level

Faculty: Logistics

Person in charge: Arnt Buvik

Introduction

The international Master's level programme is aiming at offering international students an opportunity to integrate one or two semesters, i.e. 30 or 60 ECTS credits, into their own studies at home. The courses offered are part of our Master's programmes in Logistics and Informatics.

Students are free to combine the courses offered under this programme, but it is the responsibility of each exchange student to make sure the combination is approved by their sending institution through a signed learning agreement (if applicable). A full term/semester should comprise courses totaling at least 30 credits, and equivalently a full academic year must comprise at least 60 credits.

Target audience

International students at the Master's level.

This programme is only open for exchange students. If you as an exchange student have any questions about admission, prerequisites etc, please contact the International Coordinator: post@himolde.no

Admission and rating

Master's courses are available to students having completed a minimum of three years of relevant university studies (equivalent to a bachelor's degree).

Some of the courses are fairly specialized and have specific background requirements, whereas other may be taken with any background. **It is the responsibility of the student to check the prerequisites listed in the course description, and to find a suitable course combination.** The program managers for master programs in logistics or informatics can be consulted regarding course selection.

Content structure

Most classes are taught over a full semester/term. A typical course will have between 2 and 6 lecture hours per week, and may have additional group work and assignments/course work. The assessment will partly be based on compulsory coursework and exams. All grades are either passed/not passed or ECTS letter grades (A through F).

Exchange Programme Master's level

COURSE	2017 AUTUMN	2018 SPRING
Available courses autumn semester		
ADM715 Essentials in organization and management	7.5	
ADM825 Special Issues in Organization and Management	7.5	
IDR710 Philosophy of Science and Research Methods	7.5	
IDR720 Introduction to Sport and Event Economics	7.5	
IDR803 Seminars in Football Management	15	
IDR804 Seminars in Marketing, media and sponsorship	15	
LOG708 Applied Statistics	7.5	
LOG711 Supply Chain Management 1	7.5	
LOG713 Models for Production Management	7.5	
LOG716 Mathematical Modelling in Logistics	7.5	
LOG722 Inventory Management	7.5	
LOG904 Seminars in Logistics	30	
SCM702 Purchasing and Supply Theory	7.5	
SØK710 Industrial Organization	7.5	
Available courses in the spring semester		
IDA710 Business processes and information modelling		7.5
IDA715 Discrete Event Simulation		7.5
IDR705 Team Sport History		7.5
IDR725 Team Sport Economics		7.5
IDR810 Event Organization		7.5
IDR805 Sport and Event Marketing		7.5
JUR710 Contract Law		7.5
LOG715 Business cases in SCM		7.5
LOG733 Exact Optimization Methods in Logistics		7.5
LOG765 Project Planning and Control		7.5
LOG820 Vehicle Routing with Heuristics		7.5
SCM703 Applied Supply Chain Management		7.5
SCM705 Cost Management in SC		7.5

COURSE	2017 AUTUMN	2018 SPRING
TRA700 Transportation Infrastructure Assessment		7.5
TRA705 Urban Freight Logistics		7.5
TRA816 Maritime Transportation		7.5
TRA820 Air Transport Economics		7.5
Sum (0 total)	0	0

Exchange Study Programme Bachelor's level

Study Facts

Credits: 30

Duration: 1 semester

Study mode: Full-time

Campus: Molde

Level of study: Bachelor

Year: 2017

Program of study: Exchange Programme Bachelor's level

Faculty: Logistics

Person in charge: Olav Hauge, Anette Kristin Myrstad

Introduction

The international Bachelor's level programme is aiming at offering international students an opportunity to integrate one or two semesters, i.e. 30 or 60 ECTS credits, into their own studies at home. The courses are selected from the 2nd or 3rd year level of our Bachelor's programmes in Business Administration, Logistics and Supply Chain Management, and Business Informatics. Instead of offering very basic and general courses, we have chosen to focus most on our specialities by offering courses that you will not find everywhere.

Students are free to combine the courses offered under this programme, but it is the responsibility of each exchange student to make sure the combination is approved by their sending institution through a signed learning agreement. A full semester should comprise courses totalling at least 30 credits, and equivalently a full academic year must comprise at least 60 credits.

The available courses make it possible to choose a specialization in Business Informatics or in Logistics and Supply Chain Management.

Target audience

International students at the Bachelor's level.

This programme is only open for exchange students. If you as an exchange student have any questions about admission, prerequisites etc, please contact the International Coordinator: post@himolde.no

Admission and rating

Most of the courses will be available to all students having completed basic courses in business administration, economics and mathematics. **It is the responsibility of the student to check the prerequisites listed in the course description, and to find a suitable course combination.**

Content structure

Most classes are taught over a full semester. A typical course will have between 2 and 6 lecture hours per week, and may have additional group work and assignments/course work. The assessment will partly be based on compulsory coursework and examinations. All grades are either passed/not passed or ECTS letter grades (A through F).

Exchange Study Programme Bachelor's level

COURSE	2017 AUTUMN	2018 SPRING
TRA500 European Transport Policies	7.5	
Available courses spring semester		
TRA410 Transport and Economic Development		7.5
Sum (0 total)	0	0

Course Facts

Credits: 7.5
Fagområde: Logistics
Person in charge: Olav Hauge
Level of study: Bachelor
Program of study: Bachelor i logistikk og SCM
Campus: Molde
Course name in Norwegian Nynorsk: Europeisk transportpolitikk
Language of examination: Norwegian, English
Language of instruction: Norwegian, English
Startup: 2017 Autumn
Assessment semester: 2017 Autumn

Recommended previous knowledge

A basic course in transport economics is advantageous.

Course content

Major issues of Focus will be on European Union transport policies with particular focus on commercial and freight transport within individual modes of transport. In the course major policy challenges, goals and means, conflicting interests, and policy impacts nationally and on a European level, are discussed. Key themes are Internal Market, competition, charging and taxation, transport infrastructure, transport and environment, as well as organisation and participation in transport policy-making. particular, the trans-European network (TEN) and EU transport policy documents. The course covers the transport of both passengers and goods by different modes of transportation. Questions about infrastructure, environment, fees and pricing policies and their impact on Norway will be discussed.

Learning outcome

The course gives an insight into European transport policies with emphasis on EU transport policies. The student will be able to solve transport policy problems and give advices on transport policy issues.

Working and learning activities

6 hours per second week.

MANDATORY COURSEWORK	COURSEWORKS GIVEN	COURSEWORKS REQUIRED	COMMENT
Assignment(s)			

FORM OF ASSESSMENT	GROUPING	DURATION	TYPE OF DURATION	GRADING SCALE	PROPORTION	COMMENT	SUPPORT MATERIAL	SUPPORTED MATERIAL
School assessment	Individual	4	hours	Letter (A - F)	70		Only general dictionary in mother tongue/Norwegian/English in paper version	
Home assessment	Group		-	Letter (A - F)	30		All printed and written supporting material	

TRA410 Transport and Economic Development

Course name in Norwegian Bokmål: Transport og økonomisk utvikling

Course Facts

Credits: 7.5

Fagområde: Logistics

Person in charge: Olav Hauge

Level of study: Bachelor

Program of study: Bachelor i logistikk og SCM

Campus: Molde

Course name in Norwegian Nynorsk: Transport og økonomisk utvikling

Language of examination: Norwegian, English

Language of instruction: English

Startup: 2018 Spring

Assessment semester: 2018 Spring

Recommended previous knowledge

Knowledge of basic microeconomics and transport economics

Course content

The first part of the course will be an introduction to the major economic theories governing the localization of economic activity. The second part of the course presents economic theories and models that focus more specifically on the importance of transport and transport infrastructure. Theories and models are supported by results from field studies.

Learning outcome

You should get an understanding of how economic forces determine the localization of economic activities: businesses, trade, cities, etc. Special attention will be paid to the importance of transport and transport infrastructure as means for regional economic development, and how the economic development effects are measured. At the end of the course, you should be able to advise companies and public authorities about how transportation systems can affect economic development and localisation behaviour. The outcome can roughly be seen as twofold:

1. The student should become able to demand and utilize relevant R&D information about this topic as input for strategic planning purposes (e.g. when designing land use and transport plans, or location planning of specific companies).
2. The course should give a basis for further studies within this field

Working and learning activities

3 hours of lectures per week

FORM OF ASSESSMENT	GROUPING	DURATION	TYPE OF DURATION	GRADING SCALE	PROPORTION	COMMENT	SUPPORT MATERIAL	SUPPORTED MATERIAL
School assessment	Individual	4	hours	Letter (A - F)	60		All printed and written supporting material + calculator with empty memory	
Home assessment	Individual		-	Letter (A - F)	40		All printed and written supporting material + calculator with empty memory	

Exchange Study Programme Bachelor's level

Fakta om programmet

Studiepoeng: 30

Varighet: 1 semester

Studiemodus: Heltid

Stuedsted: Molde

Studienivå: 1. syklus (bachelor)

Kull: 2017

Studieprogram: Exchange Programme Bachelor's level

Fakultet: Logistikk

Studieplanansvarlig: Olav Hauge, Anette Kristin Myrstad

Informasjon om studiet

The international Bachelor's level programme is aiming at offering international students an opportunity to integrate one or two semesters, i.e. 30 or 60 ECTS credits, into their own studies at home. The courses are selected from the 2nd or 3rd year level of our Bachelor's programmes in Business Administration, Logistics and Supply Chain Management, and Business Informatics. Instead of offering very basic and general courses, we have chosen to focus most on our specialities by offering courses that you will not find everywhere.

Students are free to combine the courses offered under this programme, but it is the responsibility of each exchange student to make sure the combination is approved by their sending institution through a signed learning agreement. A full semester should comprise courses totalling at least 30 credits, and equivalently a full academic year must comprise at least 60 credits.

The available courses make it possible to choose a specialization in Business Informatics or in Logistics and Supply Chain Management.

Målgruppe

International students at the Bachelor's level.

This programme is only open for exchange students. If you as an exchange student have any questions about admission, prerequisites etc, please contact the International Coordinator: post@himolde.no

Opptakskrav og rangering

Most of the courses will be available to all students having completed basic courses in business administration, economics and mathematics. **It is the responsibility of the student to check the prerequisites listed in the course description, and to find a suitable course combination.**

Oppbygning og sammensetning

Most classes are taught over a full semester. A typical course will have between 2 and 6 lecture hours per week, and may have additional group work and assignments/course work. The assessment will partly be based on compulsory coursework and examinations. All grades are either passed/not passed or ECTS letter grades (A through F).

Exchange Study Programme Bachelor's level

EMNE	2017 HØST	2018 VÅR
Available courses autumn semester		
IDR207 Idrettens samfunnsansvar	7.5	
IDR210 Adventure Management	7.5	
IDR302 Leadership in Performance Organizations	7.5	
IDR303 International Business of Sport	7.5	
IDR306 Spillteori og sportsøkonomi	7.5	
LOG500 Styringsmodeller og operasjonsanalyse	7.5	
SCM305 Applied Management Science	7.5	
SCM500 Internasjonale transporter og forsyningskjeder	7.5	
SPR315 Norsk I - språk og kultur	7.5	
TRA500 Europeisk transportpolitikk	7.5	
Available courses spring semester		
IDR100 Idrettens organisering og ledelse I		7.5
IDR501 Idrettens organisering og ledelse II		7.5
LOG206 Elektronisk handel		7.5
LOG530 Distribusjonsplanlegging		7.5
SPR315 Norsk I - språk og kultur		7.5
SØK640 Internasjonal handel		7.5
TRA410 Transport og økonomisk utvikling		7.5
Sum (0 total)	0	0

IDR207 Managing Sport for Development

Fakta om emnet

Studiepoeng: 7.5

Fakultet: Idrett

Emneansvarlig: Solveig Straume, Geir Oterhals

Studienivå: 1. syklus (bachelor)

Studieprogram: Bachelor i Sport Management (idrettsledelse)

Stuedsted: Molde

Kursnavn på engelsk: Managing Sport for Development

Språk for eksamen: Engelsk

Undervisningsspråk: Engelsk

Startsemester: 2017 Høst

Eksamenssemester: 2017 Høst

Anbefalte forkunnskaper

None in particular

Emneinnhold

- Sport development vs. Sport for Development
- Sport for Development theory
- Sport for Development policy
- Sport for Development practice
- Managing Sport for Development organizations
- Monitoring and evaluating Sport for Development

This course is part of the throughline in *research and team work* in the BSc in Sport Management. Description of throughlines available in the [program description](#)

Forventet læringsutbytte

Completing this course the candidate should be able to:

- Demonstrate knowledge of central principles and concepts in the Sport for Development literature
- Critically assess different Sport for Development projects and initiatives
- Demonstrate Sport for Development activities in practice
- Demonstrate knowledge of how different leadership strategies applies in different cultural contexts
- Demonstrate different leadership strategies' relevancy in Sport for development organizations
- Work with/in a Sport for Development organization

Arbeids- og læringsaktiviteter

3-6 hours of lectures weekly. Combination of regular lectures, group work, group assignments and presentations, which requires the students to actively contribute to own learning.

OBLIGATORISK ARBEIDSKRAV	ANTALL ARBEIDSKRAV	PÅKREVDE ARBEIDSKRAV	KOMMENTAR
Oppgave(r)	4	4	Four individual assignments (max 1000 words). The assignments will form the basis of group work, discussions and presentations.

VURDERINGSFORM	GRUPPERING	VARIGHET	VARIGHETSTYPE	KARAKTERSKALA	ANDEL	KOMMENTAR	HJELPEMIDLER	HJELPEMIDLER
Hjemmeeksamen	Gruppe	1	uker	Bokstavkarakter (A - F)	100	Groups of two students. Essay with given topic.	Alle trykte og skrevne hjelpemidler	

IDR210 Adventure Management

Fakta om emnet

Studiepoeng: 7.5

Fakultet: Idrett

Emneansvarlig: Geir Oterhals

Studienivå: 1. syklus (bachelor)

Studieprogram: Bachelor i Sport Management (idrettsledelse)

Stuedsted: Molde

Kursnavn på engelsk: Adventure Tourism Management

Språk for eksamen: Norsk

Undervisningsspråk: Norsk

Startsemester: 2017 Høst

Eksamenssemester: 2017 Høst

Emneinnhold

This course investigates key principles and practices involved in the management of sport events and adventures. The main focus of the course is then on how sport events and adventures are developed and managed. For instance, entrepreneurship and strategic approaches to events and adventures.

Forventet læringsutbytte

Students should....:

- know the basics in event and adventure planning and operations management
- know the role of event marketing and market research, and be able to do a market analysis
- understand key elements of the event and adventure tourism experiences and how they can be developed, marketed and managed
- be able to digest the content of lectures and literature to develop a new event and adventure tourism experience

Arbeids- og læringsaktiviteter

2-3 hours per week, with some full day seminars.

VURDERINGSFORM	GRUPPERING	VARIGHET	VARIGHETSTYPE	KARAKTERSKALA	ANDEL	KOMMENTAR	HJELPEMIDLER	HJELPEMIDLER
Hjemmeeksamen	Gruppe	-		Bokstavkarakter (A - F)	75		Alle trykte og skrevne hjelpemidler	
Muntlig skoleeksamen	Gruppe	-		Bokstavkarakter (A - F)	25		Alle trykte og skrevne hjelpemidler	

IDR302 Leadership in Performance Organizations

Fakta om emnet

Studiepoeng: 7.5

Fakultet: Idrett

Emneansvarlig: Kjell Marius Herskedal

Studienivå: 1. syklus (bachelor)

Studieprogram: Bachelor i Sport Management (idrettsledelse)

Stuedsted: Molde

Kursnavn på engelsk: Leadership in Performance Organizations

Kursnavn på nynorsk: Leadership in Performance Organizations

Språk for eksamen: Engelsk

Undervisningsspråk: Engelsk

Startsemester: 2017 Høst

Eksamenssemester: 2017 Høst

forkunnskapskrav, emneliste: ADM100 Organisasjonsteori og -psykologi
IDR310 Prestasjonspsykologi

Emneinnhold

- Performance leadership
- Performance management
- Organisational culture
- Integrated communication
- Teamwork

This course is part of the throughlines in *personal development, research and team work* in the BSc in Sport Management. Description of throughlines available in the [program description](#).

Forventet læringsutbytte

After the completion of the course, the students will acquire in-depth understandings related to:

- Performance Cultures
- Leading in performance organizations
- Self and collective development
- Teamwork

After the completion of the course, the students will acquire skills in:

- Explaining terminology and theoretical approaches within leadership
- Work with real cases and presenting them
- Working in groups

Arbeids- og læringsaktiviteter

Three seminars during the semester consisting of lectures, group work, group assignments, and group presentations.

Evaluering

The candidates are individually evaluated on the basis of three equally counting group assignments/presentations. Peer evaluations might be employed.

Godkjent av: Kjell Marius Herskedal

OBLIGATORISK ARBEIDSKRAV	ANTALL ARBEIDSKRAV	PÅKREVDE ARBEIDSKRAV	KOMMENTAR
Oppgave(r)	1	Yes	4-5 group assignments

VURDERINGSFORM	GRUPPERING	VARIGHET	VARIGHETSTYPE	KARAKTERSKALA	ANDEL	KOMMENTAR	HJELPEMIDLER	HJELPEMIDLER
Hjemmeeksamen	Gruppe	-		Bokstavkarakter (A - F)	100		Alle trykte og skrevne hjelpemidler	

IDR303 International Business of Sport

Fakta om emnet

Studiepoeng: 7.5

Fakultet: Idrett

Emneansvarlig: Geir Oterhals

Studienivå: 1. syklus (bachelor)

Studieprogram: Bachelor i Sport Management (idrettsledelse)

Stuedsted: Molde

Kursnavn på engelsk: International Business of Sport

Kursnavn på nynorsk: International Business of Sport

Språk for eksamen: Engelsk

Undervisningsspråk: Engelsk

Startsemester: 2017 Høst

Eksamenssemester: 2017 Høst

Emneinnhold

In this course on the international business of sport students will explore:

- The forces driving globalization, international business and sport;
- The cultural environments facing business;
- Types of strategy and the organization of international business;
- Approaches to value creation: global integration versus local responsiveness;
- Strategic positioning and branding;
- Managing international collaborations;
- International human resources management;
- Research tools in international business research and analysis.

This course is part of a throughline in *research* in the BSc in Sport Management. Description of throughlines available in the [program description](#).

Forventet læringsutbytte

Upon completion of the course the student will be able to:

- Understand the global significance and the distinctive nature of the international business of sport;
- Evaluate industry structure, corporate strategy and value creation in the sports and sports-related industries;
- Identify factors affecting modes of international operation in the sports industry;
- Analyse the major causes of cultural differences and change;
- Explain the ideas of global integration and local responsiveness;
- Grasp why international collaborative arrangements succeed or fail;
- Illustrate the different ways how sport businesses can accomplish their global objectives;
- Apply and communicate this understanding to real cases and problems using appropriate international business theories.

Arbeids- og læringsaktiviteter

Lectures and seminars. The course builds on team and individual projects that aim at synthesizing knowledge and understanding.

OBLIGATORISK ARBEIDSKRAV	ANTALL ARBEIDSKRAV	PÅKREVDE ARBEIDSKRAV	KOMMENTAR
Oppgave(r)		Ja	Mandatory team assignment(s) during the course, where everybody is expected to participate. The team work's final presentation has to be presented in class. Students receiving a "Fail" on the team assignment(s) are not eligible to take the final course exam.

VURDERINGSFORM	GRUPPERING	VARIGHET	VARIGHETSTYPE	KARAKTERSKALA	ANDEL	KOMMENTAR	HJELPEMIDLER	HJELPEMIDLER
Skoleeksamen	Individuell	5	timer	Bokstavkarakter (A - F)	60		Kun generell ordbok morsmål/norsk/engelsk i papirformat	
Hjemmeeksamen	Gruppe		-	Bokstavkarakter (A - F)	40		Alle trykte og skrevne hjelpemidler	

IDR306 Spillteori og sportsøkonomi

Fakta om emnet

Studiepoeng: 7.5

Fakultet: Idrett

Emneansvarlig: Kjetil Haugen

Studienivå: 1. syklus (bachelor)

Studieprogram: Bachelor i Sport Management (idrettsledelse)

Stuedsted: Molde

Kursnavn på engelsk: Game Theory and Sports Economics

Kursnavn på nynorsk: Spillteori og sportsøkonomi

Språk for eksamen: Norsk, Engelsk

Undervisningsspråk: Norsk, Engelsk

Startsemester: 2017 Høst

Eksamenssemester: 2017 Høst

Anbefalte forkunnskaper

Ingen spesielle, men grunnlag i økonomiske fag vil være en fordel

Emneinnhold

Følgende tema omhandles:

- Nash likevekt
- Spillteori og informasjon
- Simultane/Sekvensielle spill
- Dominante Strategier
- Dominerte Strategier

Forventet læringsutbytte

Gi en introduksjon til spillteori med hovedvekt på anvendelser innen fotballøkonomi, fotballstrategi og fotballmanagement. Hensikten med kurset er altså å belyse hvordan moderne spillteori kan anvendes på fotballøkonomiske problemstillinger i bred forstand.

Studenten skal etter fullført emne:

- ha grunnleggende kunnskap i (enkel) spillteori
- kunne anvende og forstå anvendelser av spillteori innenfor idrettsstrategiske problemstillinger
- være i stand til å reflektere over, (og i noen grad) forstå og diskutere sentrale strategisk-økonomiske problemstillinger innen norsk og internasjonal idrett

Arbeids- og læringsaktiviteter

Se egen forelesningsplan

VURDERINGSFORM	GRUPPERING	VARIGHET	VARIGHETSTYPE	KARAKTERSKALA	ANDEL	KOMMENTAR	HJELPEMIDLER	HJELPEMIDL
Skoleeksamen	Individuell	4	timer	Bokstavkarakter (A - F)	100		Kalkulator med tomt minne+generell ordbok morsmål/norsk/engelsk i papirformat	

LOG500 Styringsmodeller og operasjonsanalyse

Fakta om emnet

Studiepoeng: 7.5

Fakultet: Logistikk

Emneansvarlig: Arild Hoff

Studienivå: 1. syklus (bachelor)

Studieprogram: Bachelor i logistikk og SCM

Studiested: Molde, Kristiansund

Kursnavn på engelsk: Management Models and Operations Research

Kursnavn på nynorsk: Styringsmodeller og operasjonsanalyse

Språk for eksamen: Norsk, Engelsk

Undervisningsspråk: Engelsk

Startsemester: 2017 Høst

Eksamenssemester: 2017 Høst

Anbefalte forkunnskaper

2-årig økonomisk-administrativt studium eller tilsvarende og SCM200 - Lager- og produksjonsplanlegging - eller tilsvarende. Det vil være hensiktsmessig å kunne bruke regneark for å løse øvelser og oppgaver.

Emneinnhold

Emnet er en videreføring av temaer behandlet i SCM200. Modeller for styring av de enkelte leddene i verdikjedene vil stå sentralt. Det vil bli lagt særlig vekt på problemer innenfor prognoser, distribusjon, lager og produksjon. Innenfor produksjon vil produksjonshovedplanlegging samt styringprinsippene i MRP I (nettobehovsberegning) bli behandlet. Innenfor aggregert produksjonsstyring behandles de enkleste situasjonene. I denne sammenheng brukes enkle operasjonsanalytiske metoder og eget verktøy. Innenfor lagerstyring behandles deterministiske modeller for familier av varer, begrensinger av ressurser, rabatter og noen stokastiske lagermodeller. Videre behandles lot sizing som eget tema, prognoser med enkle prognosemodeller og enkle tilfeller av tidsplanlegging. En rekke kvantitative modeller for de nevnte områdene vil bli presentert og brukt eksplisitt i formulering og løsning av aktuelle problemstillinger.

Forventet læringsutbytte

Emnet tar sikte på å beskrive enkle modeller for ulike deler i verdikjeden til en bedrift.

Studenten skal ved fullført emne ha kjennskap til og kunne benytte modeller for:

- prognoser
- aggregert planlegging
- lager og produksjonsstyring ved deterministisk og usikker etterspørsel
- lot sizing
- tidsplanlegging av operasjoner

Arbeids- og læringsaktiviteter

3 timer forelesning per uke.

OBLIGATORISK ARBEIDSKRAV	ANTALL ARBEIDSKRAV	PÅKREVDE ARBEIDSKRAV	KOMMENTAR
Oppgave(r)	3	3	Obligatoriske arbeidskrav må være godkjent for å kunne gå opp til eksamen. Arbeidskrav må utføres i samme semester som emnet foreleses, og gir da tilgang til ordinær eksamen. Godkjente arbeidskrav gir også tilgang til første "Ny og utsatt eksamen" dersom slik eksamen arrangeres. Arbeidskrav er ikke gyldige lenger fram i tid. Det betyr at studenter som tar emnet på nytt, må gjøre obligatorisk arbeidskrav på nytt.

VURDERINGSFORM	GRUPPERING	VARIGHET	VARIGHETSTYPE	KARAKTERSKALA	ANDEL	KOMMENTAR	HJELPEMIDLER	HJELPEMIDLER
Skoleeksamen	Individuell	5	timer	Bokstavkarakter (A - F)	80		Alle trykte og skrevne hjelpemidler + kalkulator som kan inneholde data	
Hjemmeeksamen	Gruppe	-		Bokstavkarakter (A - F)	10		Alle trykte og skrevne hjelpemidler + kalkulator som kan inneholde data	

VURDERINGSFORM	GRUPPERING	VARIGHET	VARIGHETSTYPE	KARAKTERSKALA	ANDEL	KOMMENTAR	HJELPEMIDLER	HJELPEMIDLER
Hjemmeeksamen	Gruppe	-		Bokstavkarakter (A - F)	10		Alle trykte og skrevne hjelpemidler + kalkulator som kan inneholde data	

EMNE	VEKTINGSREDUKSJON
LOG502	7,5
BØK350	3,5

SCM305 Anvendt beslutningsanalyse

Fakta om emnet

Studiepoeng: 7.5

Fakultet: Logistikk

Studienivå: 1. syklus (bachelor)

Studieprogram: Bachelor i logistikk og SCM

Studiested: Molde

Kursnavn på engelsk: Applied Management Science

Språk for eksamen: Engelsk

Undervisningsspråk: Engelsk

Startsemester: 2017 Høst

Eksamenssemester: 2017 Høst

Anbefalte forkunnskaper

Kjennskap til regneark (Excel) er en fordel.

Emneinnhold

I dette kurset legges det vekt på praktisk problemløsning og hvordan vi kan anvende Excel og annen åpent tilgjengelig programvare til å løse virkelighetsnære problemstillinger innen logistikk og bedriftsøkonomi. Noen eksempler på tema som berøres er analyse og overvåking av en innkjøpsportefølje, analyse av en bedrifts arbeidskapitalutvikling, lønnsomhets- og risikovurdering i forbindelse med valg mellom ulike løsninger og analyse av flaskehals i driftsprosesser.

Forventet læringsutbytte

Studenten skal etter fullført emne:

- styrke evnen til praktisk og virkelighetsnær problemløsning
- opparbeide evne til å vurdere datakvalitet
- anvende regneark og annen programvare til beslutningsstøtt

Arbeids- og læringsaktiviteter

Samlingsbasert med 2 fulle dager på pc-lab hver gang som avsluttes med innlevering av en samlingsrapport. 2 av disse vil bli gradert med bokstavkarakter, øvrige vil være bestått/ikke-bestått.

OBLIGATORISK ARBEIDSKRAV	ANTALL ARBEIDSKRAV	PÅKREVDE ARBEIDSKRAV	KOMMENTAR
			Obligatoriske arbeidskrav må være godkjent for å kunne gå opp til eksamen. Arbeidskrav må utføres i samme semester som emnet foreleses, og gir da tilgang til ordinær eksamen. Godkjente arbeidskrav gir også tilgang til første "Ny og utsatt eksamen" dersom slik eksamen arrangeres. Arbeidskrav er ikke gyldige lenger fram i tid. Det betyr at studenter som tar emnet på nytt, må gjøre obligatorisk arbeidskrav på nytt.
Oppgave(r)			

VURDERINGSFORM	GRUPPERING	VARIGHET	VARIGHETSTYPE	KARAKTERSKALA	ANDEL	KOMMENTAR	HJELPEMIDLER	HJELPEMIDLER
Hjemmeeksamen	Individuell	-		Bokstavkarakter (A - F)	10		Alle trykte og skrevne hjelpemidler + kalkulator som kan inneholde data	
Hjemmeeksamen	Individuell	-		Bokstavkarakter (A - F)	10		Alle trykte og skrevne hjelpemidler + kalkulator som kan inneholde data	
-	Individuell	5	timer	Bokstavkarakter (A - F)	80		Alle trykte og skrevne hjelpemidler + kalkulator som kan inneholde data	

SCM500 Internasjonale transporter og forsyningskjeder

Fakta om emnet

Studiepoeng: 7.5

Fakultet: Logistikk

Emneansvarlig: Svein Bråthen

Studienivå: 1. syklus (bachelor)

Studieprogram: Bachelor i logistikk og SCM

Stuedsted: Molde

Kursnavn på engelsk: International Transportation and Distribution

Kursnavn på nynorsk: Internasjonale transporter og forsyningskjeder

Språk for eksamen: Norsk, Engelsk

Startsemester: 2017 Høst

Eksamenssemester: 2017 Høst

Anbefalte forkunnskaper

Det anbefales at man har gjennomført grunnleggende kurs i økonomi, og grunnleggende kjennskap til logistikk er en fordel.

Emneinnhold

Kurset dekker følgende emner: Internasjonale varestrømmer. Innføring i teori rundt internasjonal handel. Introduksjon til internasjonal logistikk og Supply Chain Management. Leverings- og betalingsbetingelser. Internasjonale transporter med ulike transportmodi, eksempelvis flyfrakt og sjøtransport. Dokumentasjon og forsikring i internasjonal transport.

Forventet læringsutbytte

Etter fullført emne skal studenten:

- ha kjennskap til tema som har betydning for styring/koordinering av internasjonal transport med vekt på internasjonal handel og hvordan transportnettverkene er laget for å kunne møte den etterspørsel slik handel skaper.
- ha kjennskap til dokumentasjon og forsikring.

Arbeids- og læringsaktiviteter

3 timer forelesninger per uke.

VURDERINGSFORM	GRUPPERING	VARIGHET	VARIGHETSTYPE	KARAKTERSKALA	ANDEL	KOMMENTAR	HJELPEMIDLER	HJELPEMIDLER
Skoleeksamen	Individuell	4	timer	Bokstavkarakter (A - F)	60		Alle trykte og skrevne hjelpemidler	
Hjemmeeksamen	-	-	-	Bokstavkarakter (A - F)	40		Alle trykte og skrevne hjelpemidler	

SPR315 Norsk I - språk og kultur

Fakta om emnet

Studiepoeng: 7.5

Fakultet: Språk

Studienivå: 1. syklus (bachelor)

Studieprogram: Bachelor i logistikk og SCM

Studiested: Molde

Kursnavn på engelsk: Norwegian I Language and Culture

Kursnavn på nynorsk: Norsk I - språk og kultur

Språk for eksamen: Norsk

Undervisningsspråk: Norsk, Engelsk

Startsemester: 2017 Høst

Eksamenssemester: 2017 Høst, 2018 Vår

Anbefalte forkunnskaper

Ingen spesielle

Emneinnhold

Begynneropplæring i grunnleggende norsk grammatikk og ordforråd, med utgangspunkt i egen lærebok og arbeidsbok. I tillegg vil det bli benyttet kompendier med tekster og temaer hentet fra lokalt næringsliv, kultur og historie, samt praktiske øvelser i kommunikasjon i timene. Gjennom gruppediskusjoner over utvalgte aktuelle emner vil studenten bli kjent med viktige sider ved det norske samfunnet, med utgangspunkt i studie- og lokalmiljøet. Både lærebok og de utvalgte tekstene vil danne grunnlag for skriftlige og muntlige øvinger.

Forventet læringsutbytte

Studenten skal etter fullført emne:

- Være kjent med norsk språk, både grammatikk og ordforråd.
- Kunne forstå norsk dagligtale, og kunne kommunisere både muntlig og skriftlig på norsk, såvel som å lese enkle norske tekster.

Det legges vekt på interkulturell læring, der studenten skal få kjennskap til grunnleggende trekk ved det norske samfunn, med utgangspunkt i egen kommune og fylkets næringsliv, geografi og natur, det norske politiske system, helse- og velferdspolitik, og kjente sosiale og kulturelle forhold.

Arbeids- og læringsaktiviteter

3 hours per week.

A textbook and exercise book will be used to give elementary training in basic Norwegian grammar and vocabulary. In addition, a compendium with text and topics taken from local businesses, culture and history, along with practice exercises in communication in and outside of the classroom. Through group discussions of selected topics the student will learn about Norwegian society, starting with school and local surroundings. Both the textbook and selected texts will be the basis for written and oral training.

VURDERINGSFORM	GRUPPERING	VARIGHET	VARIGHETSTYPE	KARAKTERSKALA	ANDEL	KOMMENTAR	HJELPEMIDLER	HJELPEMIDLER
Skoleeksamen	Individuell	4	timer	Bokstavkarakter (A - F)	100	-		

AKTIVITET	VARIGHET	VARIGHETSTYPE	KOMMENTAR
Forelesninger	3	timer	

TRA500 Europeisk transportpolitikk

Fakta om emnet

Studiepoeng: 7.5

Fakultet: Logistikk

Emneansvarlig: Olav Hauge

Studienivå: 1. syklus (bachelor)

Studieprogram: Bachelor i logistikk og SCM

Stuedsted: Molde

Kursnavn på engelsk: European Transport Policies

Kursnavn på nynorsk: Europeisk transportpolitikk

Språk for eksamen: Norsk, Engelsk

Undervisningsspråk: Norsk, Engelsk

Startsemester: 2017 Høst

Eksamenssemester: 2017 Høst

Anbefalte forkunnskaper

Det er en fordel med forkunnskaper tilsvarende TRA310 Transportøkonomi

Emneinnhold

Hovedlinjer i europeisk transportpolitikk med vekt på transeuropeiske nettverk (TEN) og EUs transportpolitiske dokumenter. Kurset dekker både passasjer og godstransport innenfor de ulike transportformer. Infrastrukturspørsmål, miljøspørsmål, avgifts- og prispolitikk og virkninger for Norge diskuteres.

Forventet læringsutbytte

Studenten skal etter fullført emne:

- kjenne til ulike forhold om europeisk transportpolitikk både innen og utenfor EU.
- være i stand til en kritisk gjennomgang av transportpolitikk og peke på andre løsninger som kan gi en bedre eller mer effektiv politikk for å løse transportutfordringer i ulike europeiske land.
- kjenne til nyere forskningsresultater på feltet som peker på alternative løsninger og andre måter å organisere transport på som kan takle nærings- og miljøutfordringer.
- være i stand til på egenhånd å skaffe informasjon og forskningsbaserte utfordringer som europeiske transportselskaper og –organisasjoner må finne løsninger på.

Arbeids- og læringsaktiviteter

6 timer forelesning annen hver uke (med forbehold om mulige endringer)

OBLIGATORISK ARBEIDSKRAV		ANTALL ARBEIDSKRAV			PÅKREVDE ARBEIDSKRAV		KOMMENTAR	
Oppgave(r)								
VURDERINGSFORM	GRUPPERING	VARIGHET	VARIGHETSTYPE	KARAKTERSKALA	ANDEL	KOMMENTAR	HJELPEMIDLER	HJELPEMIDLER
Skoleeksamen	Individuell	4	timer	Bokstavkarakter (A - F)	70		Kun generell ordbok morsmål/norsk/engelsk i papirformat	
Hjemmeeksamen	Gruppe	-		Bokstavkarakter (A - F)	30		Alle trykte og skrevne hjelpemidler	

IDR100 Idrettens organisering og ledelse I

Fakta om emnet

Studiepoeng: 7.5

Fakultet: Idrett

Emneansvarlig: Solveig Straume

Studienivå: 1. syklus (bachelor)

Studieprogram: Bachelor i Sport Management (idrettsledelse)

Stuedsted: Molde

Kursnavn på engelsk: Idrettens organisering og ledelse I

Kursnavn på nynorsk: Idrettens organisering og ledelse I

Språk for eksamen: Norsk

Undervisningsspråk: Norsk

Startsemester: 2018 Vår

Eksamenssemester: 2018 Vår

Anbefalte forkunnskaper

Ingen spesielle

Emneinnhold

- idrettshistorie
- idrettssosiologi
- idrettens organisering i Norge
- idrettspolitikk
- idrett og media
- idrett, globalisering og kommersialisering

Dette emnet er del av gjennomgående tråder om *forskning og arbeid i team* i bachelorprogrammet i sport management. Se [programbeskrivelsen](#) for en beskrivelse av trådene

Forventet læringsutbytte

Studenten skal etter fullført emne:

- kunne redegjøre for og vise forståelse for idrettens plass i ulike kulturer som den greske antikken, Storbritannia på 1800-tallet og Norge fra 1850 og til i dag
- kjenne til noen sentrale teoretiske perspektiv for å forstå og forklare idretten sosiologisk
- kunne gjøre rede for idrettens rolle som frivillig organisasjon i Norge og historiske endringer i forhold til andre samfunnsinstitusjoner som stat og marked
- kjenne til og forstå hvordan idrettens ulike nasjonale organisasjoner og institusjoner er organisert og ledet og hvordan disse organisasjonene forholder seg til hverandre
- kunne redegjøre for statlig og organisasjoners idrettspolitikk og utforming av denne, samt kjenne til noen sentrale teorier for politikkdannelse
- kjenne noen sentrale perspektiver for å forstå og forklare hvilken rolle media og kommersielle aktører spiller ovenfor (norsk) idrett
- ha kjennskap til og kunne diskutere idrettens skyggesider

Arbeids- og læringsaktiviteter

3 timer forelesning pr. uke med fokus på studentaktiv læring. I tillegg vil det arrangeres gjesteforelesninger og besøk til ulike idrettsorganisasjoner i lokalsamfunnet i og rundt Molde.

OBLIGATORISK ARBEIDSKRAV	ANTALL ARBEIDSKRAV	PÅKREVDE ARBEIDSKRAV	KOMMENTAR
Oppgave(r)	2	2	Obligatoriske arbeidskrav må være godkjent for å kunne gå opp til eksamen. Arbeidskrav må utføres i samme semester som emnet foreleses, og gir da tilgang til ordinær eksamen. Godkjente arbeidskrav gir også tilgang til første "Ny og utsatt eksamen" dersom slik eksamen arrangeres. Arbeidskrav er ikke gyldige lenger fram i tid. Det betyr at studenter som tar emnet på nytt, må gjøre obligatorisk arbeidskrav på nytt.

VURDERINGSFORM	GRUPPERING	VARIGHET	VARIGHETSTYPE	KARAKTERSKALA	ANDEL	KOMMENTAR	HJELPEMIDLER	HJELPEMIDLER
Hjemmeeksamen	Gruppe	1	semester	Bokstavkarakter (A - F)	60		Alle trykte og skrevne hjelpemidler	
Digital skoleeksamen - Inpera	Individuell	2	timer	Bokstavkarakter (A - F)	40		-	

IDR501 Idrettens organisering og ledelse II

Fakta om emnet

Studiepoeng: 7.5

Fakultet: Idrett

Emneansvarlig: Geir Oterhals

Studienivå: 1. syklus (bachelor)

Studieprogram: Bachelor i Sport Management (idrettsledelse)

Stuedsted: Molde

Kursnavn på engelsk: The Organisation of Sport II

Kursnavn på nynorsk: Idrettens organisering og ledelse II

Språk for eksamen: Engelsk

Undervisningsspråk: Engelsk

Startsemester: 2018 Vår

Eksamenssemester: 2018 Vår

Anbefalte forkunnskaper

IDR100 Idrettens organisering og ledelse I, ADM100 Organisasjon I og enten ADM201 Innføring i samfunnsvitenskapelig metode eller ADM205 Organisasjon II

Emneinnhold

- Idretten som en institusjon i samfunnet
- Idrettens forhold til markedets og statens institusjoner
- Endringsprosesser i idrettens organisasjoner
- Ledelse i idretten
- Modernisering og transnasjonalisering i internasjonal idrett

Dette emnet er del av en gjennomgående tråd om *forskning* i bachelorprogrammet i sport management. Se [programbeskrivelsen](#) for en beskrivelse av tråden.

Forventet læringsutbytte

Studenten skal ved fullført kurs:

- Redegjøre for sosiologiske og organisasjonsteoretiske perspektiver på idrettens egenart og samspill med andre organisasjoner i samfunnet
- Kunne analysere idrettens organisasjoner ut fra sosiologiske og organisasjonsteoretiske perspektiver

Arbeids- og læringsaktiviteter

Se egen forelesningsplan

VURDERINGSFORM	GRUPPERING	VARIGHET	VARIGHETSTYPE	KARAKTERSKALA	ANDEL	KOMMENTAR	HJELPEMIDLER	HJELPEMIDL
Hjemmeeksamen	Individuell	-		Bokstavkarakter (A - F)	60		Kun generell ordbok morsmål/norsk/engelsk i papirformat	
Hjemmeeksamen	Gruppe	-		Bokstavkarakter (A - F)	40		-	

Fakta om emnet

Studiepoeng: 7.5

Fakultet: Logistikk

Emneansvarlig: Judith Molka-Danielsen

Studienivå: 1. syklus (bachelor)

Studieprogram: Bachelor i logistikk og SCM

Stuedsted: Molde

Kursnavn på engelsk: e-Business

Språk for eksamen: Norsk, Engelsk

Undervisningsspråk: Engelsk

Startsemester: 2018 Vår

Eksamenssemester: 2018 Vår

Anbefalte forkunnskaper

None

Emneinnhold

The course covers the transition from traditional to electron business. The following concepts are discussed:

- Incentives and problems in e-business
- Transition strategies for e-business
- Legal rights and problems and technical standards for cooperation
- Trade and trade channels: buyer, seller, distributors, competitors, network economics, lock-in
- New business structures: within companies, between companies, virtual business, models for trade between companies (B2B) and between companies and customers (B2C)
- Customer relations management (CRM)
- Supply chain management (SCM)
- Electronic document exchange
- Electronic payment, security
- Network infrastructure and internet technologies for e-business
- Pricing policies pricing of services
- Planning e-business to generate value increases

A required project must be handed in. The groups can consist of 1-2 students. The groups will be give a list of topics to choice from – only one topic per group. At least one person from each group will present the project. Projects may be reviewed by peer-review.

Forventet læringsutbytte

The course will give an overview of the incentives and opportunities resulting from the development of e-business. Furthermore, there will be a discussion of relevant economic concepts, the character of organizations, participation in this new market place and use of information technology, which has caused a transition from traditional to electronic for the purpose of creating larger and faster increases in the value chain.

The successful candidate shall with fulfillment of this course:

- have knowledge in the subject area
- can evaluate the appropriateness and application of various methods in the use of ICT in an e-Business project
- can make their own or evaluate a strategic plan for the use of ICT in business

Arbeids- og læringsaktiviteter

4 hours (2 + 2) of lecture per week.

OBLIGATORISK ARBEIDSKRAV	ANTALL ARBEIDSKRAV	PÅKREVDE ARBEIDSKRAV	KOMMENTAR					
Oppgave(r)			Compulsory exercises within given deadlines.					
VURDERINGSFORM	GRUPPERING	VARIGHET	VARIGHETSTYPE	KARAKTERSKALA	ANDEL	KOMMENTAR	HJELPEMIDLER	HJELPEMIDI
Skoleeksamen	Individuell	4	timer	Bokstavkarakter (A - F)	100		Kun generell ordbok morsmål/norsk/engelsk i papirformat	

LOG530 Distribusjonsplanlegging

Fakta om emnet

Studiepoeng: 7.5

Fakultet: Logistikk

Emneansvarlig: Arild Hoff

Studienivå: 1. syklus (bachelor)

Studieprogram: Bachelor i logistikk og SCM

Studiested: Molde

Kursnavn på engelsk: Distribution Planning

Språk for eksamen: Engelsk

Undervisningsspråk: Engelsk

Startsemester: 2018 Vår

Eksamenssemester: 2018 Vår

Emneinnhold

Emnet behandler følgende tema:

- transport og transhipmentsituasjoner/-modeller
- lokaliserings- og tilordningsproblem
- ulike nettverksproblemer
- spesielle problemer som Postman Problem, The Travelling Salesman Problem, Minimal Span

Ved gjennomgang av de enkelte emneområdene legges det vekt på øvelser hvor man benytter programpakker.

Forventet læringsutbytte

Studenten skal etter fullført emne:

- ha kunnskap om modeller for fysisk distribusjon i ulike logistikksituasjoner
- være i stand til å formulere og løse modeller i logistikk ved hjelp av dataverktøy

Arbeids- og læringsaktiviteter

3 timer forelesning per uke

VURDERINGSFORM	GRUPPERING	VARIGHET	VARIGHETSTYPE	KARAKTERSKALA	ANDEL	KOMMENTAR	HJELPEMIDLER	HJELPEMIDLER
Skoleeksamen	Individuell	4	timer	Bokstavkarakter (A - F)	60		Alle trykte og skrevne hjelpemidler + kalkulator som kan inneholde data	
Hjemmeeksamen	Individuell	-		Bokstavkarakter (A - F)	20		Alle trykte og skrevne hjelpemidler	
Hjemmeeksamen	Gruppe	-		Bokstavkarakter (A - F)	10	Gjennomføres tidlig i februar	Alle trykte og skrevne hjelpemidler	
Hjemmeeksamen	Gruppe	-		Bokstavkarakter (A - F)	10	Gjennomføres i slutten av mars.	Alle trykte og skrevne hjelpemidler	

SPR315 Norwegian I Language and Culture

Fakta om emnet

Studiepoeng: 7.5

Fakultet: Språk

Emneansvarlig: Anette Kristin Myrstad

Studienivå: 1. syklus (bachelor)

Studieprogram: Bachelor i logistikk og SCM

Stuedsted: Molde

Kursnavn på engelsk: Norwegian I Language and Culture

Kursnavn på nynorsk: Norsk I - språk og kultur

Språk for eksamen: Norsk

Undervisningsspråk: Norsk, Engelsk

Startsemester: 2024 Vår

Eksamenssemester: 2024 Vår

Anbefalte forkunnskaper

None. The target group for this course is foreign students with some knowledge of English.

Emneinnhold

To teach students Norwegian, both the grammar and vocabulary.

Forventet læringsutbytte

Students should be able to understand everyday conversations and be able to communicate orally and in writing, so that they can read simple Norwegian text. Emphasis will be placed on intercultural training where students will receive an introduction to Norwegian society, particularly the local and county business settings, geography and nature, political system, health and welfare policies and social and cultural conditions.

Arbeids- og læringsaktiviteter

3 hours per week.

A textbook and exercise book will be used to give elementary training in basic Norwegian grammar and vocabulary. In addition, a compendium with text and topics taken from local businesses, culture and history, along with practice exercises in communication in and outside of the classroom. Through group discussions of selected topics the student will learn about Norwegian society, starting with school and local surroundings. Both the textbook and selected texts will be the basis for written and oral training.

VURDERINGSFORM	GRUPPERING	VARIGHET	VARIGHETSTYPE	KARAKTERSKALA	ANDEL	KOMMENTAR	HJELPEMIDLER	HJELPEMIDLER
Skoleeksamen	Individuell	4	timer	Bokstavkarakter (A - F)	100	-		

AKTIVITET	VARIGHET	VARIGHETSTYPE	KOMMENTAR
Forelesninger	3	timer	

SØK640 Internasjonal handel

Fakta om emnet

Studiepoeng: 7.5

Fakultet: Logistikk

Emneansvarlig: Olav Hauge

Studienivå: 1. syklus (bachelor)

Studieprogram: Bachelor i logistikk og SCM

Studiested: Molde

Kursnavn på engelsk: International trade

Kursnavn på nynorsk: Internasjonal handel

Språk for eksamen: Norsk, Engelsk

Undervisningsspråk: Engelsk

Startsemester: 2018 Vår

Eksamenssemester: 2018 Vår

Anbefalte forkunnskaper

Grunnleggjande innsikt i samfunnsøkonomi

Forventet læringsutbytte

Studenten skal etter fullført emne:

- kunne forklare hvorfor land handler med hverandre
- kunne definere hva som forstås med komparative fortrinn
- kunne presentere ulike handelsmodeller
- ved hjelp av analytiske modeller å forklare hvordan handelsmønster skapes og utvikles
- kunne identifisere faktorer som forklarer utviklingen i handelsmønster
- kunne påvise sammenhenger mellom bytteforhold og handelsmønster
- kunne drøfte effekter av ulike typer handelspolitikk
- kunne drøfte hvordan ulike handelspolitiske påvirker handelen
- kunne påvise vinnere og tapere når en stat velger å sette inn handelspolitiske tiltak

Arbeids- og læringsaktiviteter

3 timer forelesning per uke.

VURDERINGSFORM	GRUPPERING	VARIGHET	VARIGHETSTYPE	KARAKTERSKALA	ANDEL	KOMMENTAR	HJELPEMIDLER	HJELPEMIDLER
Skoleeksamen	Individuell	4	timer	Bokstavkarakter (A - F)	100		Kun generell ordbok morsmål/norsk/engelsk i papirformat	

TRA410 Transport og økonomisk utvikling

Fakta om emnet

Studiepoeng: 7.5

Fakultet: Logistikk

Emneansvarlig: Olav Hauge

Studienivå: 1. syklus (bachelor)

Studieprogram: Bachelor i logistikk og SCM

Stuedsted: Molde

Kursnavn på engelsk: Transport and Economic Development

Kursnavn på nynorsk: Transport og økonomisk utvikling

Språk for eksamen: Norsk, Engelsk

Undervisningsspråk: Engelsk

Startsemester: 2018 Vår

Eksamenssemester: 2018 Vår

Anbefalte forkunnskaper

Grunnleggende mikroøkonomi tilsvarende SØK200 og transportøkonomi tilsvarende TRA310 er en fordel.

Emneinnhold

I første del av kurset gis en innføring i sentrale økonomiske teorier og modeller for sammenhengen mellom transport og økonomisk aktivitet, med en viss vekt på lokalisering av virksomheter. I andre del av kurset presenteres økonomiske teorier og modeller som mer spesifikt fokuserer på betydningen av transport og transportinfrastruktur. Teoriene og modellene suppleres med erfaringer fra gjennomførte studier på feltet.

Forventet læringsutbytte

Å gi studenten en forståelse for hvilke økonomiske krefter som er bestemmende for lokalisering av økonomisk aktivitet; bedrifter, næringer, byer etc. Det vil særlig bli fokusert på betydningen av transport og transportinfrastruktur som regionaløkonomisk virkemiddel.

Studenten skal etter fullført emne:

- kunne både etterspørre informasjon og være i stand til å forstå informasjon gitt i FoU-arbeider innen dette temaet
- anvende informasjon i strategisk rettet arbeid innen offentlig og privat sektor (f eks. utforming av areal- og transportplaner, arbeid med lokalisering av bedrifter).
- ha kunnskap som gir en plattform for videre studier innen feltet.

Arbeids- og læringsaktiviteter

3 timer forelesning pr. uke samt øvinger

VURDERINGSFORM	GRUPPERING	VARIGHET	VARIGHETSTYPE	KARAKTERSKALA	ANDEL	KOMMENTAR	HJELPEMIDLER	HJELPEMIDLER
Skoleeksamen	Individuell	4	timer	Bokstavkarakter (A - F)	60		Alle trykte og skrevne hjelpemidler + kalkulator med tomt minne	
Hjemmeeksamen	Individuell	-		Bokstavkarakter (A - F)	40		Alle trykte og skrevne hjelpemidler + kalkulator med tomt minne	

MSc in Logistics / master i logistikk

Study Facts

Credits: 120

Duration: 4 semesters

Study mode: Full-time

Campus: Molde

Level of study: Master

Year: 2017

Program of study: Master of Science in Logistics

Faculty: Logistics

Person in charge: Arnt Buvik

Introduction

Logistics entails organizing the flow of products, services and information from raw materials to the end user. For a large number of industrial and business companies, achieving high quality logistics operations will be the key competitive factor for future success. There is therefore a considerable focus on logistics in the business world. Accordingly, the job market for students with a master's degree in logistics is generally good.

The program aims to give a thorough analysis and understanding of problems, challenges and solutions associated with all parts of the value chains: purchasing and supply, production planning, inventory management and distribution planning, including the management of transport services. Understanding the relations between different value chains, (Supply Chain Management) is also a major focus in the program.

The approaches to problem solving in logistics requires a broad understanding of the subject matter in order to arrive at satisfactory solutions on the basis of an analysis of alternatives. Logistics as a scientific discipline thus rests on a broad spectrum of disciplines, such as economics, information/communication technology, business administration, organization and management, as well as quantitative methods based on mathematics, operations research and statistics. The involvement of all these topics in logistics makes it exciting and challenging to study logistics at this level.

Students in the program will choose one of the three main specializations, called *Operation Management (OM)*, *Supply Chain Management (SCM)* and *Logistics Analytics (LA)*. Students choosing the SCM-variant must – before the second semester starts – choose between three different sub-variants: Advanced Supply chain management, Information systems, and Transportation In SCM.

Operation Management is meant for students interested in quantitative methods for planning and management of activities involved in procurement, production, inventory and distribution within and across companies. Ideal backgrounds are logistics, business administration, engineering, mathematics and computer science, but most important is an interest and ability in the use of quantitative methods and models.

Supply Chain Management is suited for students with an interest in organization, business and to some extent social science. Although mathematics and statistics is used, the focus is more on the qualitative aspects involved in the management of the value chain. Suitable backgrounds include supply chain management, economics, business administration, among others.

Logistics Analytics - new autumn 2017 - is meant for students interested in quantitative methods for analyzing, planning and management of activities involved in procurement, production, inventory and distribution within and across companies. Modern topics as big data, visual analytics and robotisation will be covered. Ideal backgrounds are (quantitative) logistics, mathematics and computer science.

The program is taught entirely in English and currently includes students from more than 10 different countries, many outside Europe. This means that those participating in the program will have the benefit of belonging to a truly international group of students and to enhance their language skills, making them ready for logistics careers in an ever more globalized economy

Learning outcome

After completing the program, the successful candidate is expected to:

General Competence

- be able to communicate about professional issues relevant to SCM and logistics, on an expert- as well as a common level
- be able to apply acquired knowledge and skills within new areas of research and applications
- be able to read scientific papers and other academic work with a critical view

Knowledge

- have advanced knowledge about supply chains and logistics in general
- have specialized knowledge about selected topics when dealing with different types of supply chains
- have extensive knowledge of scientific theories and methods relevant to managing supply chains and operations within such chains
- have advanced knowledge of the relations between supply chains and relevant theories within economics and business administration
- have advanced knowledge about logistics, operations research and operations management in general

Skills

- be able to use advanced theory and methods to identify inefficiencies in supply chains
- be able to propose improving organizational/structural changes and suggest ways of implementing such changes in a supply chain.
- be capable of performing a limited supervised research project within a supply chain in line with ruling academic standards of the field
- be able to identify operational challenges/problems in supply chains and logistics systems and to assert the relevance of models and methods to resolve these
- be able to select relevant models and methods for approaching a given logistical problem.
- be able to choose and use relevant software and technology in implementing computer-assisted solution methods

Target audience

The program targets a wide variety of highly motivated students with an interest for studying logistics in an international environment.

Required prerequisite knowledge

A bachelor's degree equivalent to 180 ECTS credits is required. At least 80 ECTS of the bachelor's degree should be related to a specialization relevant to logistics or applicants should have a strong background in one or more of the main methodologies used in the study program like mathematics, statistics, organization or marketing. Applicants from some countries will be required to document a recognized test in English language. See "Information for international applicants" at the English home page - www.himolde.no/english

Work- and learn methods

The program courses use a wide range of teaching and study methods. Standard courses run over one semester with classes once or twice per week. Students have homework in terms of exercises, computer lab work, case studies and essays, both individually and in groups. The one- or two-weeks seminars in the third semester are intensive courses with a mix of lectures, homework, discussions and student presentations. Students finalize the degree by carrying out a supervised research project and write their thesis on basis of this. Students enrolled in the program are expected to do at least 40 hours of study work per week. The program is not suited for distance learning.

Examination and assessment methods

Student assessment is made on basis of monitored exams, essays, written case study reports and oral presentations.

Required progression

An achievement of at least 75% of nominal study progression during an academic year is required in order to maintain the place in the study programme.

Internationalisation

The program offers students the possibility to go on exchange in the second semester. They can also write the master thesis at a university abroad. This gives international students the opportunity to work on master projects related to their home country. Students interested in doing so should contact the program coordinator early in their studies.

Further studies

The Master's degree will qualify the candidate for admission to the PhD program in logistics at Molde University College, as well as other PhD programs in Norway or abroad. Admission to the PhD programs via the MSc program is dependent on excellent academic performance.

Content structure

In the first semester there will only be mandatory courses. There will be one common course for the two main varieties. In the second semester the SCM-students have to choose between 3 different sub-variants. There will be a mix of mandatory courses and elective courses. The latter can be chosen from a list of courses. The third and fourth semesters are structurally the same for all specializations. The series of one- or two weeks seminars in the third semester requires that each student follows at least ten seminars (10 weeks) selected from a set of more than 20 available topics. In addition all students have to write a proposal which is the starting point for the master thesis which is written in the fourth semester.

Some additional information about the MSc program can be found on [the MSc logistics program homepage](#).

MSc in Logistics - Operation Management

Course plan for Operation Management

COURSE	2017 AUTUMN	2018 SPRING	2018 AUTUMN	2019 SPRING
LOG711 Supply Chain Management 1	7.5			
LOG713 Models for Production Management	7.5			
LOG716 Mathematical Modelling in Logistics	7.5			
LOG722 Inventory Management	7.5			
LOG733 Exact Optimization Methods in Logistics		7.5		
LOG820 Vehicle Routing with Heuristics		7.5		
Elective courses (see table below)		15		
LOG904 Seminars in Logistics			30	
LOG950 Master's Degree Thesis				30
Elective courses second semester (spring)				
IDA710 Business processes and information modelling		7.5		
IDA715 Discrete Event Simulation		7.5		
LOG734 Heuristics in Analytics		7.5		
LOG765 Project Planning and Control		7.5		
Courses from any of the other varieties in the master programs in logistics can also be chosen as an elective course				
Sum (120 total)	30	30	30	30

MSc in Logistics - Supply Chain Management

Course plan for Supply Chain Management

COURSE	2017 AUTUMN	2018 SPRING	2018 AUTUMN	2019 SPRING
LOG708 Applied Statistics	7.5			
LOG711 Supply Chain Management 1	7.5			
SCM702 Purchasing and Supply Theory	7.5			
SØK710 Industrial Organization	7.5			
Three subvariants (see table below)		30		
LOG904 Seminars in Logistics			30	
LOG950 Master's Degree Thesis				30
Advanced Supply Chain Management - Subvariant nr.1				
LOG715 Business cases in SCM		7.5		
SCM703 Applied Supply Chain Management		7.5		
SCM705 Cost Management in SC		7.5		
Transportation in Supply Chain Management - Subvariant nr.2				
LOG715 Business cases in SCM		7.5		
TRA816 Maritime Transportation		7.5		
TRA820 Air Transport Economics		7.5		
Information systems in supply Chain Management - Subvariant nr.3				
IBE700 Enterprise Resource Planning (ERP) with SAP		7.5		
IDA710 Business processes and information modelling		7.5		
IDA715 Discrete Event Simulation		7.5		
Elective courses second semester (spring):				
JUR710 Contract Law		7.5		
LOG734 Heuristics in Analytics		7.5		
LOG765 Project Planning and Control		7.5		
TRA700 Transportation Infrastructure Assessment		7.5		
TRA705 Urban Freight Logistics		7.5		
Courses from any of the other varieties in the master programs in logistics can also be chosen as an elective course				
Sum (120 total)	30	30	30	30

MSc in Logistics - Logistics Analytics

Course plan for Logistics Analytics

First and second semester contains ordinary courses. Third semester is seminars and fourth semester is master thesis. See table below for detailed description.

Compulsory seminar series third semester:

1. Research design
2. Integer optimization models in logistics
3. Cost engineering
4. Distributed statistical modelling and inference
5. Integration of business processes in ERP systems
6. Supply chain optimization with ERP tools
7. Big data driven supply chain management
8. Co-logistical data analysis
9. Visual analytics for business intelligence
10. Robotized logistics

In addition, the seminar LOG904-100 Proposal (5 credits) which is a plan for the master's thesis, is compulsory. The students should work out the proposal in close collaboration with their supervisor. The proposal includes the preparation and presentation (written and oral) of the actual thesis in the fourth semester. The seminar "Proposal" will always be presented at the end of the semester, after the other LOG904-PET seminars.

COURSE	2017 AUTUMN	2018 SPRING	2018 AUTUMN	2019 SPRING
LOG708 Applied Statistics	7.5			
LOG713 Models for Production Management	7.5			
LOG716 Mathematical Modelling in Logistics	7.5			
LOG722 Inventory Management	7.5			
Elective courses first semester (autumn):				
LOG731 Networks Logistics	7.5			
IDA710 Business processes and information modelling		7.5		
IDA715 Discrete Event Simulation		7.5		
LOG734 Heuristics in Analytics		7.5		
LOG820 Vehicle Routing with Heuristics		7.5		
LOG904 Seminars in Logistics			30	
LOG950 Master's Degree Thesis				30
Sum (120 total)	30	30	30	30

LOG708 Applied Statistics with SPSS

Course name in Norwegian Bokmål: Applied Statistics

Course Facts

Credits: 7.5

Fagområde: Logistics

Person in charge: Halvard Arntzen

Level of study: Master

Program of study: Master of Science in Logistics

Campus: Molde

Course name in Norwegian Nynorsk: Applied Statistics

Language of examination: English

Language of instruction: English

Startup: 2017 Autumn

Assessment semester: 2017 Autumn

Recommended previous knowledge

A standard bachelor's level course in statistics is considered a highly recommended prerequisite.

Course content

Random variables and probability distributions. Samples and populations, estimation and inference. Confidence intervals. Testing of statistical hypotheses. Significance levels and P - values.

Methods: T – tests, Z – test for proportions, basic regression analysis, nonlinear regression models, simple forecasting. Other statistical methods may also be treated.

SPSS: Managing data, descriptive statistics, performing analyzes, interpreting output.

Learning outcome

After finishing the course, the students should have knowledge and skills enabling them to do simple practical empirical work, using software tools, e.g. SPSS. Specifically, the students should be able to

- use basic probability distributions for simple modeling and to find probabilities and moments
- use statistical software (SPSS) to effectively organize and present information extracted from data
- compute confidence intervals for central population parameters such as means, variances and proportions
- perform tests of statistical hypotheses regarding central population parameters
- perform simple and multiple regression analysis with statistical software
- give practical interpretations and present the results of statistical analyses in nontechnical terms

Working and learning activities

Two hours of lectures per week, two hours of exercises per week

MANDATORY COURSEWORK	COURSEWORKS GIVEN	COURSEWORKS REQUIRED	COMMENT
Assignment(s)	3	3	

FORM OF ASSESSMENT	GROUPING	DURATION	TYPE OF DURATION	GRADING SCALE	PROPORTION	COMMENT	SUPPORT MATERIAL	SUPPORTED MATERIAL
School assessment	Individual	4	hours	Letter (A - F)	100		All printed and written supporting material + calculator that may contain data	Kompendium: Log 708 Applied Statistics with SPSS. Kalkulator (A+KD) Ordbok i papirformat.

LOG713 Models for Production Management

Course name in Norwegian Bokmål: Production Management

Course Facts

Credits: 7.5

Fagområde: Logistics

Person in charge: Lars Magnus Hvattum

Level of study: Master

Program of study: Master of Science in Logistics

Campus: Molde

Course name in Norwegian Nynorsk: Models for Production Management

Language of examination: English

Language of instruction: English

Startup: 2017 Autumn

Assessment semester: 2017 Autumn

Recommended previous knowledge

None, apart from being a master student in logistics accepted into the OM-variant.

Course content

Different topics concerning production planning will be treated like Little's law, scheduling problems with different objectives, line balancing and lot sizing. In a more general setting production philosophies like MRP, OPT/TOC, Lean /JIT and agile production are discussed.

Learning outcome

After having completed the course, the students should be able to:

- Present the different levels of production planning and control, and which decisions are made at each level
- Create aggregated production plans based on both chase and level strategies
- Present how materials requirement planning (MRP) works, and create MRP records based on verbal descriptions
- Describe the concepts just-in-time, kanban, optimized production technology, and the theory of constraints
- Solve instances of the lot-sizing problem using a range of heuristics, as well as the Wagner-Whitin method
- Define and use several different sequencing rules for single machine scheduling, and give an account of which rules are optimal with respect to which criteria
- Calculate best case, worst case, and practical worst case performance for cycle time and throughput of a given production line
- Formulate the line balancing problem and execute a heuristic for solving it

Working and learning activities

3 hours of lectures per week.

MANDATORY COURSEWORK	COURSEWORKS GIVEN	COURSEWORKS REQUIRED	COMMENT
Assignment(s)	2	2	

FORM OF ASSESSMENT	GROUPING	DURATION	TYPE OF DURATION	GRADING SCALE	PROPORTION	COMMENT	SUPPORT MATERIAL	SUPPORTED MATERIAL
School assessment	Individual	4	hours	Letter (A - F)	100		Calculator with empty memory + general dictionary in mother tongue/Norwegian/English in paper version	

LOG716 Mathematical Modelling in Logistics

Course name in Norwegian Bokmål: Mathematical Modelling in Logistics

Course Facts

Credits: 7.5

Fagområde: Logistics

Person in charge: Irina Gribkovskaia

Level of study: Master

Program of study: Master of Science in Logistics

Campus: Molde

Course name in Norwegian Nynorsk: Mathematical Modelling in Logistics

Language of examination: English

Language of instruction: English

Startup: 2017 Autumn

Assessment semester: 2017 Autumn

Recommended previous knowledge

A quantitative background is required.

Course content

The mathematical models will be related to logistics problems taken from production planning, distribution planning, and combinations of these. The course also deals with logistic relations and the use of discrete variables in modelling. During this semester, the software programme, AMPL with CPLEX, will be used. The course is a combination of selected topics in logistics and an introduction to the use of software programmes.

Learning outcome

After completing the course the student will

- become familiar with using software to solve linear models
- get experience and training in developing and solving mathematical models, and to analyze the result.

Working and learning activities

3 hours of lectures per week plus exercises in computer class.

MANDATORY COURSEWORK	COURSEWORKS GIVEN	COURSEWORKS REQUIRED	COMMENT
Assignment(s)			Several home assignments

FORM OF ASSESSMENT	GROUPING	DURATION	TYPE OF DURATION	GRADING SCALE	PROPORTION	COMMENT	SUPPORT MATERIAL	SUPPORTED MATERIAL
Oral school assessment	Individual		-	Letter (A - F)	100	Oral exam based on several home assignments and one case with presentation.	Separate list, see below	

LOG722 Inventory Management

Course name in Norwegian Bokmål: Inventory Management

Course Facts

Credits: 7.5

Fagområde: Logistics

Person in charge: Arild Hoff

Level of study: Master

Program of study: Master of Science in Logistics

Campus: Molde

Course name in Norwegian Nynorsk: Inventory Management

Language of examination: English

Language of instruction: English

Startup: 2017 Autumn

Assessment semester: 2017 Autumn

Recommended previous knowledge

The same as for the MSc program in logistics

Course content

Different inventory management principles and models for deterministic and stochastic demands including the Newsboy problem will be discussed. Emphasis will be placed on the differentiation of products in connection with inventory management and its consequences, more specifically different approaches for treating slow-moving articles.

Learning outcome

There will be emphasis placed on problems in management of inventory. Extensive quantitative models will be presented and used specifically in the formulation and solution of logistical problems.

The successful student is expected to be able to identify, analyse and solve problems within the mentioned field and also be able to evaluate the solutions to such problems.

Working and learning activities

3 hours of lectures per week.

MANDATORY COURSEWORK	COURSEWORKS GIVEN	COURSEWORKS REQUIRED	COMMENT
Assignment(s)	2	2	

FORM OF ASSESSMENT	GROUPING	DURATION	TYPE OF DURATION	GRADING SCALE	PROPORTION	COMMENT	SUPPORT MATERIAL	SUPPORTED MATERIAL
School assessment	Individual	5	hours	Letter (A - F)	80		Calculator that may contain data + general dictionary in mother tongue/Norwegian/English in paper version	
Home assessment	Group		-	Letter (A - F)	10		All printed and written supporting material + calculator that may contain data	
Home assessment	Group		-	Letter (A - F)	10		All printed and written supporting material + calculator that may contain data	

LOG731 Networks Logistics

Course name in Norwegian Bokmål: Networks Logistics

Course Facts

Credits: 7.5

Fagområde: Logistics

Person in charge: Irina Gribkovskaia

Level of study: Master

Program of study: Master of Science in Sustainable Energy Logistics

Campus: Molde

Course name in Norwegian Nynorsk: Networks Logistics

Language of examination: English

Language of instruction: English

Startup: 2017 Autumn

Assessment semester: 2017 Autumn

Required prerequisite knowledge

Equivalent to requirements for the MSc program in logistics, a quantitative background is required

Course content

The course covers the following subject areas:

- Introduction to logistics networks (logistics activities, material and information flows, objectives of logistics, typical logistics planning problems on networks)
- Introduction to logistics (management of logistics systems, inventory management, production management)
- Flow planning in logistics networks (transportation problem, transshipment problem, network flow problems - minimum cost flow, maximum flow, shortest path, critical path)
- Logistics network design (supplier selection, facility location, assignment problem, minimal spanning tree, network design)
- Routing flows in networks (arc routing, vehicle routing)

Learning outcome

After having completed the course students will know different structures of logistics networks, main logistics activities and flows in logistics networks, fundamentals of inventory-, production- and supply chain management, how to design logistics networks and plan flows and routes in networks.

Working and learning activities

3 hours of lectures per week.

Evaluation

Required reading list is given in fronter at the semester start

Relevant literature:

Written final examination counting 50% of the final grade and several home assignments counting in total 50% of the final grade.

MANDATORY COURSEWORK	COURSEWORKS GIVEN	COURSEWORKS REQUIRED	COMMENT
Assignment(s)			Several home assignments

FORM OF ASSESSMENT	GROUPING	DURATION	TYPE OF DURATION	GRADING SCALE	PROPORTION	COMMENT	SUPPORT MATERIAL	SUPPORTED MATERIAL
Home assessment	Individual	4	hours	Letter (A - F)	50	Home exam based on several assignments	All printed and written supporting material	
School assessment	Individual	4	hours	Letter (A - F)	50		Separate list, see below	One A4 sheet with own notes

IDA710 Business processes and information modelling

Course name in Norwegian Bokmål: Business processes and information modelling

Course Facts

Credits: 7.5

Fagområde: IT/Mathematics

Person in charge: Yury Redutskiy

Level of study: Master

Program of study: Master of Science in Logistics

Campus: Molde

Course name in Norwegian Nynorsk: Business processes and information modelling

Language of examination: English

Language of instruction: English

Startup: 2018 Spring

Assessment semester: 2018 Spring

Recommended previous knowledge

Equivalent to requirements for the MSc programme in Logistics.

Course content

This course covers various perspectives on the *modelling* of human activity or related artefacts (machines, inventory, infrastructure, etc.). *Analytic modelling* helps us understand organizations, its actors and activities well enough to be able to make reasonable and useful changes. *Design models* are representations of elements of change, for instance, Information Systems, which directly support an activity or an organization, or employ a *meta-model* so that the properties of the activities and organizations may be investigated dynamically.

This course will be presenting the most important data, process, *object-oriented* and organizational model types using example techniques. As part of this, *concepts of stakeholders and strategic governance* will also be lectured.

Quality management will be taught as an important part of organizational governance, which also relies on understanding the modelling concepts, procedures, techniques, and methods that enable progression evaluation, engineering work products reviews, improvement procedures and effective testing.

Managing innovation is another application of models for patenting, attracting funds and partnerships, recruiting staff and handling the products in the market. The course contents emphasize transparency and communication using models for innovation.

Basics of various modelling techniques relevant for the data analysis in business processes will be taught in this course. Such approaches as time series analysis, decision trees, scenario trees, event trees, Markov analysis and others, will be presented by clear and straightforward examples.

Even more advanced topics will be addressed using cutting-edge research articles, which the students themselves contribute to present and discuss in the lectures. Generally, the content is going to be presented as interactively as possible and lively participation in exercises and arguments are expected.

Learning outcome

Upon completing this course students will know what is implied by information systems-related *governance* principles and strategic alignment of pertaining technology. They will be able to recognize the organizational stakeholders, options and solution spaces for relevant use contexts, i.e., work and leisure-based activities for which the Information and Communication technology (ICT) can make a difference. The students will be able to understand and operationalize the ICT in innovation processes as a supporting technology, as well as a catalyst of disruptive change in the marketplace. In order to do this, the students will learn how to build representative models of organizations, their data and their processes. They will recognize supply chain models, data and process models, object-oriented models and finally, models of socio-technical systems. All of these are traditionally used in software engineering, but the outcome of this course will be that the students know how to use them for intervention and organizational change processes, managing innovation and quality control as well as *meta-modelling*.

An important outcome is learning about the development of the ICT as a *social as well as technical enterprise*, for which requirements specifications, *development* and *deployment* **entirely depend on the models used in the project**. The students will learn to recognize the fundamental differences between various *development life-cycle models* and appreciate their strengths and weaknesses for various purposes. The students will understand the role and the importance of the information systems in value chains. They will be able to critically think and apply the information systems to efficiently organize the innovative processes, and understand the implications of trade-offs.

Upon finishing the course, the students will have the knowledge and skills to organize, structure, store, model and represent various data. They will be able to recognize the appropriate software tools to obtain/extract the data, operate, visualize and interpret it, and also, to draw their own conclusions from the obtained results. The students will be able to access, explore and analyse the data with a viewpoint of business process monitoring, obtain new insights to improve business planning and boost future performance.

Working and learning activities

3 hours of lecturing per week, one mandatory assignment. There may also be optional group-work with assignments and self-study activities, that will comprise elements of the exam curricula, even if participation is not compulsory. Students who do not participate in the activities are themselves responsible

to acquire equivalent material and knowledge.

MANDATORY COURSEWORK	COURSEWORKS GIVEN	COURSEWORKS REQUIRED	COMMENT
Assignment(s)	1	1	The assignment has to be completed and handed in by specified deadline, after which the submission is void and the work will not count as passed. The task has to be completed and submitted in the same semester as the examination.

FORM OF ASSESSMENT	GROUPING	DURATION	TYPE OF DURATION	GRADING SCALE	PROPORTION	COMMENT	SUPPORT MATERIAL	SUPPORTED MATERIAL
Digital school assessment - Inspira	Individual	4	hours	Letter (A - F)	100		Calculator that may contain data + general dictionary in mother tongue/Norwegian/English in paper version	

IDA715 Discrete Event Simulation

Course name in Norwegian Bokmål: Discrete Event Simulation

Course Facts

Credits: 7.5

Fagområde: IT/Mathematics

Person in charge: Ketil Danielsen

Level of study: Master

Program of study: Master of Science in Logistics

Campus: Molde

Course name in Norwegian Nynorsk: Discrete Event Simulation

Language of examination: English

Language of instruction: English

Startup: 2018 Spring

Assessment semester: 2018 Spring

Required prerequisite knowledge

Basic statistics

Course content

Discrete events (random, deterministic), event scheduling and handling. Queues, queue scheduling and queueing networks. Input analysis/calibration (source arrivals, node service/failures, branching). Output analysis, performance metrics (response time, throughput, utilization). Flow management (classification, delay, storage/hold, routing). Requirements analysis and model design. Implementation using simulation software. Model verification and validation. Transient removal, stopping criteria, replications. Simulation as a tool in optimization (experimental design, comparing alternatives). Logistics case studies (transportation, supply chains, hospitals, manufacturing).

Learning outcome

The student will know how to use discrete event simulation for studying the performance of a distribution system.

Working and learning activities

3 hours of lectures per week

MANDATORY COURSEWORK	COURSEWORKS GIVEN	COURSEWORKS REQUIRED	COMMENT
Assignment(s)			Submitted at specified times

FORM OF ASSESSMENT	GROUPING	DURATION	TYPE OF DURATION	GRADING SCALE	PROPORTION	COMMENT	SUPPORT MATERIAL	SUPPORTED MATERIAL
School assessment	Individual	4	hours	Letter (A - F)	100		Only general dictionary in mother tongue/Norwegian/English in paper version	

LOG734 Heuristics in Analytics

Course Facts

Credits: 7.5

Fagområde: Logistics

Person in charge: Lars Magnus Hvattum

Level of study: Master

Program of study: Master of Science in Logistics

Campus: Molde

Language of examination: English

Language of instruction: English

Startup: 2018 Spring

Assessment semester: 2018 Spring

Recommended previous knowledge

LOG716 Mathematical modelling in logistics is highly recommended. Some knowledge of exact optimization methods is highly recommended, for example by taking LOG733 in parallel.

Course content

The course focuses on using heuristic optimization methods to solve computationally challenging optimization problems, with use both in prescriptive and predictive analytics. An understanding of heuristics is built from the ground up, starting from classical construction heuristics and improvement heuristics. The course then proceeds with a thorough treaty of metaheuristics. Formal definitions are used to clarify the structure of the algorithms, and examples are given regarding their use to solve well-known optimization problems. Attention is drawn towards the implementation of heuristics using a suitable programming language. Examples of using heuristics in prescriptive analytics (solving hard combinatorial optimization problems) and in predictive analytics (using metaheuristics for classification and prediction problems in data mining) are discussed at the end of the course.

Learning outcome

After having completed the course, the students should be able to:

- Explain the difference between exact algorithms, approximation algorithms, and heuristic algorithms
- Define what is meant by primal and dual bounds and how they can be obtained
- Give an account of how construction heuristics work, and give examples of known construction heuristics
- Explain what is meant by a greedy construction heuristic, and contrast this with regret based heuristics
- Give an account of how improvement heuristics work, based on the concept of neighborhoods
- State a definition of metaheuristics, and discuss the different meanings that this term may have
- Describe and define local search based metaheuristics, including simulated annealing and tabu search
- Describe and define construction based metaheuristics, including grasp and squeaky wheel optimization
- Describe and define population based metaheuristics, including genetic algorithms and scatter search
- Discuss the dangers of using metaphors when working with metaheuristics, and to give an account of the historical significance that metaphors have played for metaheuristics
- Design and implement a metaheuristic for a given optimization problem and evaluate the appropriateness of choices made during design and implementation
- Discuss the concepts of intensification and diversification, and classify known components of metaheuristics in relation to those two concepts
- Explain the concept of matheuristics and to provide examples of how they have been used to solve combinatorial optimization problems
- Present the challenges associated to parameter tuning and how they can be handled, both on-line (hyper-heuristics and robust heuristics) and off-line (using iRace, SMAC, or ParamILS)
- Discuss how metaheuristics can be analyzed and improved using target analysis and fitness landscape analysis
- Implement efficient heuristics in a programming language such as C++

Working and learning activities

Three hours of lectures per week

Sensor system

Oral examination.

Evaluation

There will be three mandatory assignments, together accounting for 30 % of the final grade.

FORM OF ASSESSMENT	GROUPING	DURATION	TYPE OF DURATION	GRADING SCALE	PROPORTION	COMMENT	SUPPORT MATERIAL	SUPPORTED MATERIAL
Oral school assessment	Individual	-		Letter (A - F)	100	Consists of three mandatory assignments that each count 10 % of the final grade. A final oral examination counts for the remaining 70 % of the grade.	Separate list, see below	All written and printed aids allowed for the mandatory assignments. In the final oral examination, the students are allowed only to bring their reports written for the mandatory assignments.

WORKLOAD ACTIVITY	DURATION	TYPE OF DURATION	COMMENT
Lectures	3	hours	

LOG820 Vehicle Routing with Heuristics

Course name in Norwegian Bokmål: Vehicle Routing

Course Facts

Credits: 7.5

Fagområde: Logistics

Person in charge: Irina Gribkovskaia

Level of study: Master

Program of study: Master of Science in Logistics

Campus: Molde

Course name in Norwegian Nynorsk: Vehicle Routing with Heuristics

Language of examination: English

Language of instruction: English

Startup: 2018 Spring

Assessment semester: 2018 Spring

Recommended previous knowledge

Equivalent to requirements for the MSc program in Logistics, quantitative background is recommended.

Course content

The course covers the following subject areas:

- arc routing problem
- traveling salesman problem
- vehicle routing problem
- variants of vehicle routing problem

For these topics, emphasis will be placed on solving problems with the classical construction heuristics and the two-phase heuristics using mathematical models

Learning outcome

By completing the course student will get in-depth knowledge of methods and techniques for routing vehicles serving customers in various logistics settings.

Working and learning activities

Three hours of lectures per week.

MANDATORY COURSEWORK	COURSEWORKS GIVEN	COURSEWORKS REQUIRED	COMMENT
Assignment(s)			Oral exam based on several home assignments

FORM OF ASSESSMENT	GROUPING	DURATION	TYPE OF DURATION	GRADING SCALE	PROPORTION	COMMENT	SUPPORT MATERIAL	SUPPORTED MATERIAL
School assessment	Individual	4	hours	Letter (A - F)	50	4 hours written class exam counting 50% of the final grade.	Separate list, see below	One A4 two-side sheet with own notes+calculator with empty memory + general dictionary in mother tongue/Norwegian/English in paper version.
Home assessment	Individual	1	semester	Letter (A - F)	50	Oral exam based on home assignments counting in total 50% of the final grade.	All printed and written supporting material	

LOG904 Seminars in Logistics

Course name in Norwegian Bokmål: Seminars in Logistics

Course Facts

Credits: 30

Fagområde: Logistics

Person in charge: Berit Iren Helgheim

Level of study: Master

Program of study: Master of Science in Logistics

Campus: Molde

Course name in Norwegian Nynorsk: Seminars in Logistics

Language of examination: English

Language of instruction: English

Startup: 2018 Autumn

Assessment semester: 2018 Autumn

Course content

There are two types of seminars. Some cover themes that are important to logistics, but that for some reason have not been covered in other courses. Other seminars are very specialized, covering theoretical or practical aspects of themes already well covered in other courses. This way the seminar series brings both depth and width to the student's knowledge.

Examples of possible topics in this seminar:

- Optimization models
- Business games
- Cross cultural management
- Port logistics
- Product variety
- Productivity analysis
- Distribution management
- Scheduling models and algorithms

Basically the students can choose any seminars freely with two exceptions. The first exception is a seminar called "Research Design" – LOG904-101. The second one is the so called proposal.

The proposal is a draft for the master thesis and there will be no instructions or lectures given for this, but the students should work in close cooperation with their supervisors. The proposal gives 5 study points. "Proposal" includes the preparation and presentation (written and oral) of a proposal for the actual thesis to be done in Semester 4. The seminar "Proposal" will always be at the end of LOG904. However, the students are expected to spend all the time not spent on seminars on the preparation of their proposal and thesis. Hence, from a practical viewpoint, the proposal covers a substantial part of the third semester. These two seminars related to the master theses are only open to ordinary master degree students.

Note: No other courses can usually be taken during autumns when following LOG904 to a full extent.

For exchange students it will be possible to follow individual seminars covering part of the semester with less than 30 ECTS or the whole semester with 30 ECTS. Students at the Master program in Master in Change and Management may take individual seminars. The exact program for the seminar series will normally be available before semester start at the [MSc in Logistics home page](#)

Credits

Each seminar gives 2.5 study points per week with the exception of the proposal. Hence, each student must take seminars during 10 weeks. In addition the proposal gives 5 study points, all together 30 study points.

The head of the study program will, together with staff members, recommend blocks of seminars for different groups of students. Some seminars may also be blocked for some student groups depending on their back ground from the first year program. This information will be given in the beginning of the third semester or as soon as the seminars are decided.

Learning outcome

After finishing the seminar series, the students will have gained a broader and deeper level of skills and understanding in several subject areas relevant to logistics and supply chain management. On top of the background established through the completion of the first year of the MSc program in logistics, the seminar series will provide additional theoretical and technical capabilities that will help the students in the research process for the master thesis.

Working and learning activities

Each seminar is usually taught Monday to Friday in one week or some seminars run for two weeks in a row or with some weeks in between the two weeks. Usually the instruction will be a mix of lectures, assignments, group work and discussions. Attendance is mandatory to all classes.

FORM OF ASSESSMENT	GROUPING	DURATION	TYPE OF DURATION	GRADING SCALE	PROPORTION	COMMENT	SUPPORT MATERIAL	SUPPORTED MATERIAL
Other assessment form, describe in comment field	-	-	-	Letter (A - F)		The method of evaluation may vary from seminar to seminar, but a letter grade or pass/fail will be given for each seminar. The method used within a given seminar will be announced at the start of the week	Separate list, see below	Various on the different seminars.

LOG950 Master's Degree Thesis

Course name in Norwegian Bokmål: Master's Degree Thesis

Course Facts

Credits: 30

Fagområde: Logistics

Person in charge: Berit Iren Helgheim

Level of study: Master

Program of study: Master of Science in Logistics

Campus: Molde

Course name in Norwegian Nynorsk: Master's Degree Thesis

Language of examination: English

Language of instruction: English

Startup: 2019 Spring

Assessment semester: 2019 Spring

Recommended previous knowledge

Only those students who are enrolled in the MSc program in Logistics can write a thesis under the LOG950 course code. In addition, each candidate must have an approved proposal that has been prepared as part of LOG904. LOG950 must be the last course taken within the MSc program.

Course content

A thesis is an independent, extensive work that is done under the guidance of an advisor/professor in the discipline. Not more than two students can work on the same thesis. Candidates are relatively free to choose topics. A thesis can be either applied, related to a company or an agency/governmental body, or it can be a theoretical investigation.

Learning outcome

After completing the thesis the student will be able to

- work independently in projects work with a strong professional basis,
- combine methods and knowledge from courses and other sources within the logistics profession, and
- analyse and solve complex logistic problems based on scientific methods.

Working and learning activities

The master's thesis is an independent work done by a single student or two students together and supervised by a faculty advisor. It is the duty of each student to obtain a supervisor at the latest in the start of Semester 3. The supervisor will usually also supervise the proposal. Taken together with the master thesis, the student(s) are entitled to have at least 20 hours supervision, but can not expect to have more than 40 hours supervision. The supervision includes all aspects of this process like giving advice, reading drafts and so on.

FORM OF ASSESSMENT	GROUPING	DURATION	TYPE OF DURATION	GRADING SCALE	PROPORTION	COMMENT	SUPPORT MATERIAL	SUPPORTED MATERIAL
Home assessment	-	1	semester	Letter (A - F)	100	Submission of the written thesis and an oral thesis defence are required. The final grade is a combination of grades received on the thesis and the oral presentation. Only one final grade will be presented to the student.	All printed and written supporting material	

MSc in Logistics - Seminars

Fakta om programmet

Studiepoeng: 30

Varighet: 1 semester

Studiemodus: Heltid

Stuedsted: Molde

Studienivå: 2. syklus (master)

Kull: 2017

Engelsk navn: MSc in Logistics - Seminars

Studieprogram: MSc in Logistics - Seminars

Fakultet: Logistikk

Informasjon om studiet

There are two types of seminars. Some cover themes that are important to logistics, but that for some reason have not been covered in other courses. Other seminars are very specialized, covering theoretical or practical aspects of themes already well covered in other courses. This way the seminar series brings both depth and width to the student's knowledge.

Basically the students can choose any seminars freely with two exceptions. The first exception is a seminar called "Research Design" – LOG904-101. The second one is the so called proposal.

The proposal is a draft for the master thesis and there will be no instructions or lectures given for this, but the students should work in close cooperation with their supervisors. The proposal gives 5 study points. "Proposal" includes the preparation and presentation (written and oral) of a proposal for the actual thesis to be done in Semester 4. The seminar "Proposal" will always be at the end of LOG904. However, the students are expected to spend all the time not spent on seminars on the preparation of their proposal and thesis. Hence, from a practical viewpoint, the proposal covers a substantial part of the third semester. These two seminars related to the master theses are only open to ordinary master degree students.

Note: No other courses can usually be taken during autumns when following LOG904 to a full extent.

For exchange students it will be possible to follow individual seminars covering part of the semester with less than 30 ECTS or the whole semester with 30 ECTS. Students at the Master program in Master in Change and Management may take individual seminars.

Credits

Each seminar gives 2.5 study points per week with the exception of the proposal. Hence, each student must take seminars during 10 weeks. In addition the proposal gives 5 study points, all together 30 study points.

The head of the study program will, together with staff members, recommend blocks of seminars for different groups of students. Some seminars may also be blocked for some student groups depending on their back ground from the first year program. This information will be given in the beginning of the third semester or as soon as the seminars are decided.

Arbeidsformer

Each seminar is usually taught Monday to Friday in one week or some seminars run for two weeks in a row or with some weeks in between the two weeks. Usually the instruction will be a mix of lectures, assignments, group work and discussions. Attendance is mandatory to all classes

Oppbygning og sammensetning

General information on the seminars in logistics

Here is some practical information about the seminars in LOG904. This information accompanies the program overview for the series. The program includes the numbering of the seminars that you can use to find the right one in Studentweb. Also, the location of each seminar is given. Changes to the program will always be announced via email to all students of the seminar series.

1. You sign up through Studentweb for each of the seminars you want to participate in. Registration will give you access to the room called LOG904 in Fronter. (May take a day after your first registration.) You can in general register as late as 12.00 on the Thursday before the seminar starts.
2. You sign up for ONE AND ONLY ONE SEMINAR PER WEEK. Remember to delete your registration if you find that you do not want a seminar that you first registered for. Do not sign up for all seminars 'in case' you would like to take them. This makes troubles both for the administration and the seminar holders as they have to plan with an incorrect number of students.
3. Some of the seminars are mandatory for some groups of student. You should also sign up for your mandatory seminars. The proposal presentation in week 49 is not like a seminar, but is treated as such in our administrative system. Make sure to register for this also.
4. In addition to the Research design seminar and the proposal, MSc logistics students need to choose 9 seminars or more. That is 9 or more seminars at your will. Remember, some of the seminars are quantitative, others more qualitative. The program labels the more quantitative ones under Operation Management, the more qualitative are under Supply Chain Management. Choose seminars that suit your background, your interests, and the topic for your master thesis if you have got one.
5. The seminars can be demanding in terms of work, so do not plan for other activities in the weeks you choose. (Monday to Friday afternoon usually.)
6. All seminars start Monday morning at 0915 unless something else is decided. Most of the lecturers will give lectures until 1200, and then give you some assignments for the next day, but there may be exception to this main rule. You must be prepared to use the afternoon and evening (even late) to prepare these assignments. 100% class participation is mandatory in all seminars.
7. Evaluation can be "passed / not passed" or ordinary grades A, B etc. This is decided by the lecturer. However, in most cases the evaluation will consist of a mix of the following three elements: Class participation, assignments (either in groups or individually) and a short final individual written exam during Friday.
8. In the Fronter room for Log 904 there will be a set of document folders, one for each seminar. Here documents for the individual seminars will be located. Most of the information you need will be given in this way, so keep an eye on the files.

MSc in Petroleum Logistics

Study Facts

Credits: 120

Duration: 4 semesters

Study mode: Full-time

Campus: Molde, Moscow

Level of study: Master

Year: 2017

Program of study: Master of Science in Sustainable Energy Logistics

Faculty: Logistics

Person in charge: Irina Gribkovskaia

Introduction

Logistics entails the organization of the flow of products, services and information from raw materials to the end user. For a large number of industrial and business companies, achieving high quality logistics operations will be the key competitive factor for future success. There is therefore a considerable focus on logistics in the business world. Oil and gas companies are no exception from this. The programme aims to give a thorough analysis and understanding of problems, challenges and solutions associated with all parts of the supply chains dealing with the oil and gas industry; on-shore as well as off-shore: exploration, purchasing, production planning, inventory management and downstream distribution planning. In addition the programme will give an understanding of the energy situation in the world, comparing existing renewable energy sources as well as non-renewable sources both in terms of costs, qualities and availability.

Logistics as a scientific area rests on a broad spectrum of disciplines such as economics, information/communication technology, business administration, organization and management, as well as quantitative methods based on mathematics, operations research and statistics. All these topics in logistics makes it a challenging area to study.

The programme is taught entirely in English, and is open to students from all countries. This means that students at the programme will have the benefit of belonging to a truly international group of students, and to enhance their language skills, making them ready for logistical careers in a more globalized economy.

Possibility of double degree

HiMolde can in addition offer the MSc in Petroleum Logistics as a double degree in collaboration with the main oil and gas university in Russia: Gubkin Russian State University of Oil and Gas, Moscow. Students following the double degree option of the MSc programme, must undertake study periods at both institutions. Lectures in the first and third semester will then take place in Molde, and the second semester in Moscow.

Learning outcome

After completing the programme, the successful candidate is expected to:

Knowledge

- have good and general knowledge about logistics and supply chain management (SCM) in general.
- have specialized knowledge about SCM in the petroleum industry.
- have specialized knowledge about different types of energy sources and the relationship between these.
- have extensive knowledge of scientific theories and methods relevant to SCM and operational logistics.
- have advanced knowledge of scientific theories and methods relevant to SCM of the petroleum industry, including a broad knowledge about models and methods in general, and their use in petroleum logistics in particular.

Skills

- be able to use advanced theory and methods to identify inefficiencies in supply chains.
- be able to propose improvements of organizational/structural changes, and suggest ways of implementing such changes in a supply chain.
- be able to understand the specific challenges connected to the different supply chains in the petroleum industry.
- be capable of performing a limited supervised research project within operational logistics, in line with ruling academic standards in the field.

General Competence

- be able to present and communicate professional issues relevant to logistics.
- be able to apply acquired knowledge and skills within new areas of research and education.
- be able to read scientific papers and other scientific work with a critical view.

Target audience

The programme targets a wide variety of highly motivated students with an interest to study petroleum logistics in an international environment.

Required prerequisite knowledge

A bachelor's degree equivalent to 180 ECTS credits is required. At least 80 ECTS of the bachelor's degree should be related to a specialization relevant to logistics or applicants should have a strong background in one or more of the main methodologies used in the study program like mathematics, statistics, informatics or engineering. Applicants from some countries will be required to document a recognized test in English language. See "Information for international applicants" at the English home page - www.himolde.no/english

Work- and learn methods

A wide range of lecturing and study methods are used within the courses. Courses usually run over one semester with lectures once or twice per week. In some cases courses consist of intensive lecturing in one or two weeks during a semester, and more regular lectures once a week in other parts of the semester. Students have homework in terms of exercises, computer lab work, case studies and assignments, both individually and in groups. The seminars in the third semester are intensive courses lasting for one week consisting of lectures, homework, discussions and student presentations. Students enrolled in the programme are expected to have at least a work load of 40 hours per week. The programme is not offered for distance learning.

Further studies

The MSc programme in Petroleum Logistics will qualify to apply for admission to the PhD program in Logistics at Molde University College, as well as other PhD programs.

Content structure

Study in Molde

The study programme includes only compulsory courses. All lectures and exams will take place in Molde. The third semester consists of seminars, all lasting for one week. During this semester, the students should also find a topic for their master's thesis, and write a proposal for this. Here the students should indicate the topic, research methods and methodologies that can be relevant, some preliminary overview of previous research, and literature within the chosen topic. The proposal will be presented orally. In the fourth semester the students are working on their master's thesis. Presentation and examination/ defense of the thesis will take place in June.

Study in Molde and Moscow (Double degree)

The study programme consists of only compulsory courses. In the first semester, all lectures and exams will take place in Molde. In the second semester, the lectures and exams will take place in Gubkin Russian State University of Oil and Gas. The third semester will take place at Molde University College - Specialized University in Logistics. During this semester the students should also find a topic for their master's thesis, and write a proposal for this. The proposal will be presented orally. In the fourth semester students are writing their master's thesis. Presentation and examination/ defense of the master's thesis will take place in June.

MSc in Petroleum Logistics

COURSE	2017	2018	2018	2019
	AUTUMN	SPRING	AUTUMN	SPRING
LOG716 Mathematical Modelling in Logistics	7.5			
LOG730 Basics of Petroleum Logistics	7.5			
LOG731 Networks Logistics	7.5			
SØK710 Industrial Organization	7.5			
IDA715 Discrete Event Simulation		7.5		
LOG740 Advanced Petroleum Logistics		7.5		
LOG820 Vehicle Routing with Heuristics		7.5		
TRA816 Maritime Transportation		7.5		
LOG904 - PET Seminars			30	
LOG953 Master's Degree Thesis				30
Study in Molde and Moscow				
LOG716 Mathematical Modelling in Logistics	7.5			
LOG730 Basics of Petroleum Logistics	7.5			
LOG731 Networks Logistics	7.5			
SØK710 Industrial Organization	7.5			
GSU1 Global Energy		3		
GSU2 Transportation and Forwarding of Hydrocarbons in a Supply Chain		5		
GSU3 International Oil and Gas Logistics		5		
GSU4 Energy Resources Trading on World Market		2		
GSU5 Basics of Oil and Gas Technology		2		
GSU6 Basic Principles of Shelf Field Development		3		
GSU7 Research Practice		10		
LOG904-PET Seminars			30	
LOG953 Master's Degree Thesis				30
Sum (120 total)	30	30	30	30

Seminars in Petroleum Logistics - fall 2017

LOG904-PET Seminars in Petroleum Logistics

There are three blocks of seminars.

There are three blocks of seminars. The first block of seminars, LOG904-PTA "Research Methods in Logistics" covers theoretical topics that have not been covered in other courses, namely:

- Integer Optimization Models in Logistics
- Game Theory
- Research Design

In the second block called LOG904-PTB "Basic problems of Petroleum Logistics", the seminars are very specialized, covering basic topics related to different parts of the petroleum and energy supply chain such as:

- Energy Logistics
- Logistics in Petroleum Production
- Gas Transportation Infrastructure Planning
- Simulation in Petroleum Logistics

The third block, LOG904-PTC "Offshore Oil and Gas Logistics", covers theoretical or practical aspects of topics that are important to offshore oil and gas logistics:

- Upstream Offshore Oil and Gas Logistics
- Supply Base Management
- Health, Safety and Environment for the Offshore Oil and Gas Industry

The ten seminars in these blocks are compulsory for master's degree students.

In addition, the seminar LOG904-100 Proposal (5 credits) which is a plan for the master's thesis, is compulsory. The students should work out the proposal in close collaboration with their supervisor. The proposal includes the preparation and presentation (written and oral) of the actual thesis in the fourth semester. The seminar "Proposal" will always be presented at the end of the semester, after the other LOG904-PET seminars.

After finishing the seminar series, the students will obtain a broader and deeper level of skills and understanding in several subject areas relevant to petroleum logistics planning and management. Beyond the background established through the completion of the first year of the MSc program in logistics, the seminar series will provide additional theoretical and applied knowledge that will help the students in the research part for the master's thesis.

Each seminar is usually taught Monday to Friday in one week. Usually, the instruction will consist of lectures, assignments, group work and discussions. Attendance is mandatory to all classes.

There will be hand-outs and special material for each seminar. This will be decided by the lecturer responsible for each seminar. The method of evaluation may vary from seminar to seminar, but a letter grade or pass/fail will be given for each seminar. The method used within a given seminar will be announced at the start of the week. For the proposal the evaluation will be individual oral exam.

COURSE	2017 AUTUMN
Mandatory seminars for Petroleum Logistics students	
LOG904-100 Proposal	5.0
LOG904-101 Research Design	2.5
LOG904-114 Game Theory	2.5
LOG904-115 Integer Optimization Models in Logistics	2.5
LOG904-116 Offshore Upstream Logistics	2.5
LOG904-129 Risk Management	2.5
LOG904-139 Energy Logistics	2.5
LOG904-141 Simulation Models in Logistics	2.5
LOG904-146 Supply Base Logistics in the Oil and Gas industry	2.5
LOG904-149 Arctic Logistics	2.5
LOG904-152 Oil, gas and renewable energy logistics planning under uncertainty	2.5
Sum (0 total)	0

LOG904-100 Proposal

Course Facts

Credits: 5.0

Fagområde: Logistics

Person in charge: Arild Hoff

Level of study: Master

Program of study: MSc in Logistics - Seminars

Campus: Molde

Language of examination: English

Language of instruction: English

Startup: 2023 Autumn

Assessment semester: 2023 Autumn

Required prerequisite courses: LOG904-101 Research Design

Required prerequisite knowledge

Finalized the mandatory courses in the study program.

Course content

The proposal is the preparatory study for the master thesis. It should show the type of research design and method the students plan for their thesis. The written proposal is a report which should include an introduction, problem considered, theoretical framework, case description and method, data necessary, in addition to a detailed plan about how to conduct the research.

The proposal and the following master thesis can be written individually or by two students together. The proposal should be defended orally with a 15-minute presentation from the students and up to 30 minutes discussion based on questions from the supervisor and a grader.

Learning outcome

Knowledge:

- How to formulate a research problem
- Choosing relevant theory for a research project
- Evaluating what data material which is necessary for answering the problem on hand
- Planning and organizing the project considered in the master thesis

Skills:

- Writing a project plan for a master thesis
- Presenting a research project for an academic audience

General competence:

- Ability to plan and organize a larger academic project like a master thesis.

Evaluation

Written assignments and oral exam. Pass/Non pass. All lectures are mandatory.

FORM OF ASSESSMENT	GROUPING	DURATION	TYPE OF DURATION	GRADING SCALE	PROPORTION	COMMENT	SUPPORT MATERIAL	SUPPORTED MATERIAL
Home assessment	Group		semester	Pass/fail	100%		All printed and written supporting material	
Oral school assessment	Group		semester	It will not be graded in this topic		Oral examination of the proposal	All printed and written supporting material	

LOG904-101 Research Design

Course Facts

Credits: 2.5

Fagområde: Logistics

Level of study: Master

Program of study: MSc in Logistics - Seminars

Campus: Molde

Language of examination: English

Language of instruction: English

Startup: 2017 Autumn

Assessment semester: 2017 Autumn

Course content

Mandatory for MSc Logistics

Framework or appropriate plan for a study (research) used for formulating research problems, administration of data and analysis.

Learning objectives:

- Improve your ability to formulate and structure a research problem for your master thesis
- To ensure that your study is relevant to the research problem
- To ensure that the study use relevant and economical procedures
- To learn more about research methods and data collection methods

Professor Buvik gives introduction lectures to the course based on long experiences in advising Master students and PHD students.

Professor Thorstenson goes more specifically into research opportunities and research methods in quantitative logistics.

The library will instruct students about literature search, and several research projects will be presented by the college staff.

LOG904-114 Game Theory

Course Facts

Credits: 2.5

Fagområde: Logistics

Person in charge: Berit Iren Helgheim

Level of study: Master

Program of study: MSc in Logistics - Seminars

Campus: Molde

Language of examination: English

Language of instruction: English

Startup: 2018 Autumn

Assessment semester: 2018 Autumn

Recommended previous knowledge

Basic knowledge of calculus and probability theory is an advantage. Participation in SØK710 Industrial Organization can be a benefit, but not a prerequisite.

Course content

This course will provide understanding of the main concepts of Game Theory and its applications in the oil and gas market research. The lectures will combine theoretical concepts with real market applications. A considerable attention will be paid to the newest research directions in the area of petroleum market modelling and analysis. Depending on the distribution of interests in the group, the focus may be placed either on the non-technical analysis of interactions of the market participants or on the numerical equilibrium modelling (mixed complementarity problems with GAMS).

Topics covered: normal-form games, extensive-form games, main solution concepts (Nash equilibrium, Pareto optimality, etc.), routing games, coalitional games, basic elements of mechanism design and auction theory. Overview of the petroleum markets in Europe and Norway. Application of the game-theoretic concepts in the research on oil and gas markets.

Learning outcome

The students will be able to understand and analyse the game-theoretic approaches used in the contemporary research on petroleum markets; and use and apply game theory to modelling and analysis of interactions between parties in other markets.

Working and learning activities

The seminar will consist of three hours lecturing every day, with in-class problem solving and discussions. The home assignments will include exercises, based on the material covered in the lectures, and analysis of research papers.

FORM OF ASSESSMENT	GROUPING	DURATION	TYPE OF DURATION	GRADING SCALE	PROPORTION	COMMENT	SUPPORT MATERIAL	SUPPORTED MATERIAL
Home assessment	Individual		-	Letter (A - F)	40	Home assessment without presentation 1 - Deadline for submission: Wednesday;	All printed and written supporting material	
Home assessment	Individual		-	Letter (A - F)	60	Home assessment without presentation 2 – Deadline for submission: Friday	All printed and written supporting material	

LOG904-115 Integer Optimization Models in Logistics.

Course Facts

Credits: 2.5

Fagområde: Logistics

Person in charge: Irina Gribkovskaia

Level of study: Master

Program of study: MSc in Logistics - Seminars

Campus: Molde

Language of examination: English

Language of instruction: English

Startup: 2017 Autumn

Assessment semester: 2017 Autumn

Course content

The course focuses on training in developing and solving integer programming optimization models for logistics problems taken from distribution planning such as facility location, vehicle routing, combined location-routing, and network design. The course deals with logic relations and the use of binary variables in modelling. Prerequisite is completed LOG716 Mathematical Modelling in Logistics course and LOG820 Vehicle Routing course or practical experience in AMPL/CPLEX software.

Learning outcome

The successful student will have a considerable hands-on AMPL modeling experience and will be able to develop optimization models with integer variables for various logistics problems and conduct analysis of results.

Working and learning activities

One week of full day teaching and practical training in computer lab.

Topics: Integer models in logistics. Location and Network design models. Vehicle routing models. Variants of Vehicle routing models. Location-routing models. Modelling logical conditions with binary variables.

FORM OF ASSESSMENT	GROUPING	DURATION	TYPE OF DURATION	GRADING SCALE	PROPORTION	COMMENT	SUPPORT MATERIAL	SUPPORTED MATERIAL
Oral school assessment	-	-	-	Letter (A - F)	100	Oral examination (Individual or in groups of two) is based on several home assignments on selected topics	-	-

LOG904-116 Offshore Upstream Logistics.

Course Facts

Credits: 2.5

Fagområde: Logistics

Person in charge: Irina Gribkovskaia

Level of study: Master

Program of study: MSc in Logistics - Seminars

Campus: Molde

Language of examination: English

Language of instruction: English

Startup: 2017 Autumn

Assessment semester: 2017 Autumn

Course content

The seminar gives outline of the offshore oil and gas supply chain, and gives an overview of offshore upstream logistics activities, including their planning and operations. The main focus of the seminar will be on decision support tools for planning of cargo and personnel transportation to and from offshore installations using platform supply vessels and helicopters. Seminar gives an overview of the existing scientific publications within upstream offshore logistics and presents research activities at Molde University College in this field. The seminar is aimed for students in petroleum logistics and operation management who have practical experience in mathematical modelling, vehicle routing, and optimization software.

Learning outcome

The students will learn about offshore upstream logistics typical planning problems, how they can be formulated as optimization models, and how to implement them to use for the decision making and analyses.

Working and learning activities

Monday:

Typical offshore upstream logistics activities. Supply vessel routing.

Tuesday:

Periodic supply vessel planning.

Wednesday:

Helicopter transportation of personnel to offshore installations.

Thursday:

Work on modelling assignments and presentations.

Friday:

Presentation of papers and assignments.

FORM OF ASSESSMENT	GROUPING	DURATION	TYPE OF DURATION	GRADING SCALE	PROPORTION	COMMENT	SUPPORT MATERIAL	SUPPORTED MATERIAL
Home assessment	Group	-	-	Letter (A - F)	60	Each assignment will be related to one of the planning problems from the literature studied during the course, which should be modelled and solved with AMPL/CPLEX on a small instance. Comment : Home exam is a short paper about literature review on the given topic	All printed and written supporting material	
Oral school assessment	-	-	-	Letter (A - F)	40	The evaluation will be based on one assignment (home exam counting for 60% of the final grade) and	All printed and written supporting material	

FORM OF ASSESSMENT	GROUPING	DURATION	TYPE OF DURATION	GRADING SCALE	PROPORTION	COMMENT	SUPPORT MATERIAL	SUPPORTED MATERIAL
						its presentation in class (oral exam counting for 40% of the final grade).		

LOG904-129 Risk Management

Course Facts

Credits: 2.5

Fagområde: Logistics

Level of study: Master

Program of study: MSc in Logistics - Seminars

Campus: Molde

Language of examination: English

Language of instruction: English

Startup: 2017 Autumn

Assessment semester: 2017 Autumn

Course content

Day 1 Basics of Risk Assessment and Risk Management

Day 2 Health, Safety and Environmental Risk Management

Day 3 Decision Making under Risk

Day 4 Decision Making under Uncertainty

Day 5 Risk of Investments

Learning outcome

After completing the seminar the students will be able to:

- Describe basic notions, concepts, principles and methods used in Risk Analysis and Risk Management
- Describe risk acceptance criteria
- Apply the basics of economic appraisal of risk reduction
- Measures
- Understand the major health, safety and environmental challenges of the offshore industry

LOG904-139 Energy Logistics

Course Facts

Credits: 2.5

Fagområde: Logistics

Level of study: Master

Program of study: MSc in Logistics - Seminars

Campus: Molde

Language of examination: English

Language of instruction: English

Startup: 2017 Autumn

Assessment semester: 2017 Autumn

Course content

The course gives basic understanding and concepts of undergoing process of global energy transition to a low-carbon economy and changes in energy strategies of energy dependent as well as oil exporting countries. Among the main topics are: the key drivers of future energy demand, supply and prices; availability of resources and investments; the environmental constraints on energy resources; advantages and disadvantages of each type of energy sources; inter-fuel competition in power generation; innovative technologies and energy efficiency in industry, commerce and built environment. The renewable energy sources and technologies (solar energy, wind power, hydropower and geothermal energy) applicable to electricity generation (solar, wind, geothermal, biomass) and transportation applications (biofuels) - market potential, costs, financing and regulation; production, storability and transport of renewables; power production mix; electricity transmission and infrastructure; integration of renewable sources of energy into electricity supply schemes (smart grids). Short, medium, and long-term scenarios for global energy demand growth and future energy mix.

Learning outcome

To the end of the course the students gain up-to-date information and will be able to analyze trends and challenges on the global energy market, overview various renewable energy technologies and their applications and advantages, as well as understand international energy policies and state support mechanisms for innovative renewable technologies and their use in power generation and industry.

Working and learning activities

3 hours lectures per day in one week

FORM OF ASSESSMENT	GROUPING	DURATION	TYPE OF DURATION	GRADING SCALE	PROPORTION	COMMENT	SUPPORT MATERIAL	SUPPORTED MATERIAL
Home assessment	Group		-	Letter (A - F)	30	One home exam (grouping 1-2 persons)	All printed and written supporting material	
School assessment	Individual	2	hours	Letter (A - F)	70	one written class exam (2 hour)	Only general dictionary in mother tongue/Norwegian/English in paper version	

LOG904-141 Simulation in Petroleum Logistics

Course Facts

Credits: 2.5

Fagområde: Logistics

Level of study: Master

Program of study: MSc in Logistics - Seminars

Campus: Molde

Language of examination: English

Language of instruction: English

Startup: 2017 Autumn

Assessment semester: 2017 Autumn

Course content

Simulation is a widely used computer technique for system's analysis used in many areas of logistics. Discrete event simulation is one of the simulation approaches often used in different real-life applications. The purpose of the seminar is to introduce to students ARENA discrete-event simulation software and selected applications within logistics.

Learning outcome

The students will learn how to build a simulation model and implement it in ARENA, design and conduct computational experiments, and analyze the results to answer what-if questions on the studied logistics system that raised the need of the simulation study.

Working and learning activities

One week with 3 hours lectures and 2 hours ARENA sessions in data lab every day

MANDATORY COURSEWORK	COURSEWORKS GIVEN		COURSEWORKS REQUIRED		COMMENT
Assignment(s)					Set of tutorials

FORM OF ASSESSMENT	GROUPING	DURATION	TYPE OF DURATION	GRADING SCALE	PROPORTION	COMMENT	SUPPORT MATERIAL	SUPPORTED MATERIAL
Other assessment form, describe in comment field	-		-	Letter (A - F)	100	One group assignment and group presentations of papers.	-	

LOG904-146 Supply Base Logistics in the Oil and Gas industry

Course Facts

Credits: 2.5

Fagområde: Logistics

Level of study: Master

Program of study: MSc in Logistics - Seminars

Campus: Molde

Language of examination: English

Language of instruction: English

Startup: 2017 Autumn

Assessment semester: 2016 Autumn, 2017 Autumn

Course content

The seminar concentrates on Supply Base Logistics in the Oil and Gas industry. More precisely, the seminar focuses on logistics challenges on strategic, tactical and operational levels related to supply bases used for supplying offshore oil and gas installations. The seminar gives an introduction to supply base logistics and reviews and analyses logistics problems related to supply base development and supply base operations. The importance of safeguarding health, safety and environment in such operations is emphasized. The seminar also highlights the supply base's role in the paramount offshore upstream logistics supply chain with particular focus on the value of integrated planning and operations. Supply base practices from all over the world will be used as references and cases, and the seminar gives an overview of existing relevant scientific publications.

Learning outcome

The main learning outcome of the course is that students should learn to recognize typical Supply Base Logistics challenges, and how these can be approached in a workable way.

Working and learning activities

Class room lectures. Guest Lecturer.

MANDATORY COURSEWORK	COURSEWORKS GIVEN	COURSEWORKS REQUIRED	COMMENT
Report(s)	1		During the seminar week, the students will have to carry out a group work resulting in a report and an in-class presentation.

FORM OF ASSESSMENT	GROUPING	DURATION	TYPE OF DURATION	GRADING SCALE	PROPORTION	COMMENT	SUPPORT MATERIAL	SUPPORTED MATERIAL
Other assessment form, describe in comment field	Group		-	Letter (A - F)	100	During the seminar week, the students will have to carry out a group work resulting in a report and an in-class presentation.	All printed and written supporting material	

LOG904-149 Arctic Logistics

Course Facts

Credits: 2.5

Fagområde: Logistics

Person in charge: Irina Gribkovskaia

Level of study: Master

Program of study: MSc in Logistics - Seminars

Campus: Molde

Language of examination: English

Language of instruction: English

Startup: 2017 Autumn

Assessment semester: 2017 Autumn

Course content

The academic content of the course will include the logistics challenges during the history of Arctic exploration, the transportation via the Northern Sea Routes, Arctic petroleum resources, logistics of hydrocarbons exploration in the Arctic, offshore oil and gas field development in the Arctic, oil and gas offshore logistics problems in the Arctic, offshore emergency preparedness in the Arctic, environmental protection of the Arctic area, conflicts of interests of countries in disputed territories in the Barents Sea and international negotiations on these territories.

Working and learning activities

3 hours of lectures per day

FORM OF ASSESSMENT	GROUPING	DURATION	TYPE OF DURATION	GRADING SCALE	PROPORTION	COMMENT	SUPPORT MATERIAL	SUPPORTED MATERIAL
Home assessment	Group	-		Pass/fail	100	Grouping: groups of two Comment : Home exam is a short paper about literature review on the given topic	All printed and written supporting material	

LOG904-152 Oil, gas and renewable energy logistics planning under uncertainty

Course Facts

Credits: 2.5

Fagområde: Logistics

Level of study: Master

Program of study: MSc in Logistics - Seminars

Campus: Molde

Language of examination: English

Language of instruction: English

Startup: 2017 Autumn

Assessment semester: 2017 Autumn

Course content

This course aims to discuss the mathematical formulations to some typical supply chain management and logistics problems with uncertainty and their applications to the oil, gas and renewable energy logistics systems. An introduction to stochastic programming, robust optimization and risk models will be given.

Learning outcome

The students will learn about oil, gas and renewable energy logistics planning problems with uncertainty, how to formulate them as stochastic optimization, robust optimization and risk models, and how to solve them using optimization software.

Working and learning activities

3 hours of lectures and exercises in data lab.

MANDATORY COURSEWORK	COURSEWORKS GIVEN	COURSEWORKS REQUIRED	COMMENT
Assignment(s)			Implementation of given modeling exercises in AMPL

FORM OF ASSESSMENT	GROUPING	DURATION	TYPE OF DURATION	GRADING SCALE	PROPORTION	COMMENT	SUPPORT MATERIAL	SUPPORTED MATERIAL
Home assessment	Group		-	Letter (A - F)	100	Comment : Home exam is a short paper about literature review on the given topic Grouping: groups of two	All printed and written supporting material	

MSc in Sport Management

Study Facts

Credits: 120

Duration: 4 semesters

Study mode: Full-time

Campus: Molde

Level of study: Master

Year: 2017

Program of study: Master of Science in Sport Management

Faculty: Sports

Person in charge: Geir Oterhals

Introduction

The MSc in Sport Management is designed to prepare students to work in management positions in the sport and sport-related industry. The programme intends to convey a solid understanding and knowledge about sport management as it is practised in the European context, and introduce the students to legal, ethical, economical, organisational, historical, political, and psychological topics necessary to meet the demands of this growing industry. This means 1) that the main aim of the programme is the open format of team sports more than the closed leagues, which are frequent in some other parts of the world, and 2) that the aim of study is neither sport or business administration, but in fact a combination, which makes the understanding of Sport Management complex. The programme will expose students both to practitioners and scholars. Moreover, they will be challenged on up-to-date problems and conventional understandings or sport myths as they are conveyed by the actors of sport. In the third term students concentrate either in Football Management or in Marketing, Media and Sponsorship based on their chosen seminars and internship.

As prospective councillors or decision-makers, the students should be able to face complex situations in organisations in an analytic and reflective manner. The study programme enables students to find good solutions and to create cooperative environments. By equipping the students with diverse perspectives and knowledge through lectures, assignments, discussions, teamwork and internship, the students should develop an understanding of the complexity, heterogeneity and uncertainty in sport, and the need to listen and be responsive to others. This should enable them to constructively take part in change projects. By working in a sport context and completing their master's thesis, students should develop their capacity as problem-solvers by defining problems and research questions, and by examining, analysing, concluding and defending their conclusions.

An excursion to Germany is mandatory in the course IDR800 Event Organization. Students pay travel and housing expenses

Learning outcome

After completing the program, the successful candidate is expected to:

Knowledge

- have advanced knowledge in economical and organizational theories concerning sport management

- have specialized knowledge about selected topics within the field of sport management
- have extensive knowledge in scientific methods and philosophy of science relevant to the field

Skills

- be able to contribute in finding solutions to organizational problems in sport organizations.
- be able to do independent analytical work and to write scientific texts in an theoretically informed and methodologically sound manner
- be able to acquire new scientific literature in an independent and critical way
- be capable to present work orally and in writing in an academic as well as popular form

General qualifications

- be able to work independently
- have skills and experience in cross cultural and inter-professional team work
- be able to communicate about professional issues relevant to Sport management, on an expert- as well as a common level

Target audience

Students who work or plan to work in sport clubs, sport associations or other types of organisations (agencies, media, event organisers etc.)

Required prerequisite knowledge

Applicants should preferably hold a recognised first degree (BBA, BA, BSc), equivalent to a minimum of 180 ECTS credits, in Sport Management/ Sciences, Business Administration, Social Sciences (Economy, Sociology, Political Science or History) or other relevant academic disciplines to apply for the MSc programme in Sport Management.

Admission to the international MSc programmes at Molde University College, Specialized University in Logistics is highly competitive, and applicants should preferably have completed their bachelor's degree with an average grade of Excellent or Very Good, or at least a minimum average grade of Good/ grade C or equivalent (Like First Class or Second Class Upper Division or equivalent grades). For English language requirements for admission, see more detailed information on our home page: www.himolde.no.

Work- and learn methods

The program courses use a wide range of teaching and study methods. Some courses run over one semester with classes once or twice per week, and in some cases courses are organized as seminars with one-week intensive teaching. Students are expected to work individually between lectures, and especially during the seminars the work load could be intense. During the third term students does an internship.

In many of the courses case studies and writing essays, both individually and in groups, is part of the teaching methods. Students finalize the degree by carrying out a supervised research project and write their thesis on basis of this.

Students enrolled in the program are expected to do at least 40 hours of study work per week. Of these around 10-15 hours are contact hours (teaching, seminars and supervision). During the second year a substantial part of the work is connected to writing the master thesis.

The program is not suited for distance learning

Examination and assessment methods

Student assessment is made on basis of monitored exams, essays, written case study reports, internship and oral presentations.

Required progression

An achievement of at least 75 % of nominal study progression during an academic year is required in order to maintain the place in the study program.

Internationalisation

Students might take their third term abroad at one of our recommended European partner universities.

Further studies

Candidates with an MSc in Sport Management should qualify for a PhD in Sport Management. In most cases this is dependent on excellent academic performances.

MSc in Sport Management

COURSE	2017 AUTUMN	2018 SPRING	2018 AUTUMN	2019 SPRING
ADM715 Essentials in organization and management	7.5			
ADM825 Special Issues in Organization and Management	7.5			
IDR710 Philosophy of Science and Research Methods	7.5			
IDR705 Team Sport History	7.5			
IDR720 Introduction to Sport and Event Economics		7.5		
IDR725 Team Sport Economics		7.5		
IDR805 Sport and Event Marketing		7.5		
IDR810 Event Organization		7.5		
IDR804 - seminar			15	
IDR910 Internship			15	
IDR950 Master`s Degree Thesis				30
Sum (120 total)	30	30	30	30

PhD in Logistics

Study Facts

Credits: 180

Duration: 6 semesters

Study mode: Full-time

Campus: Molde

Level of study: PhD

Year: 2017

Program of study: Philosophiae doctor in Logistics (ph.d)

Faculty: Logistics

Person in charge: Svein Bråthen

Introduction

The doctoral programme at Molde University College is a three-year full-time programme leading to a doctoral degree (PhD) in Logistics. The conferral of the doctoral degree in Logistics signifies that the candidate has attained expert competence in a major field of study. You will normally have one supervisor at Molde University College plus one or more co-supervisors from elsewhere. Suggesting co-supervisors is the duty of your main supervisor, and the Doctoral Degree Committee must approve them.

About one year before you plan to complete your degree, an evaluation committee will be appointed. The committee has three members, including one member from Molde University College and at least one international member. The committee has two major duties: To approve your thesis for its final defence, and to evaluate your defence.

Admission and rating

In order to be eligible for admittance, you must have an excellent academic record with at least a 120 ECTS at master's degree level in a relevant field, or equivalent educational qualifications. For applicants with a Norwegian background, an average grade of B or better from master's-level study is needed. Please read [the detailed regulations](#) governing the programme. Applicants with a non-Norwegian education are assessed based on certificates and other documentation of educational background, provided in English or a Scandinavian language. Individual considerations based on publication records, research proposals, relevant work experience etc. are used if it is impossible to rank applicants (to scholarships or the like) based on degrees.

There are no tuition fees at Molde University College. However, you need to be able to support yourself financially for full-time study. For Norwegians this means a scholarship from Molde University College (which is advertised when available), a scholarship from a Research Council, or direct financing which is legally guaranteed from a private or public source. The Research Council of Norway has special scholarships for citizens of some countries. In addition, non-Norwegians may of course have support from their own countries. In order to be given a student visa by the Norwegian Immigration Authorities, you need to have NOK 112 000 available in a bank account at the beginning of each academic year. This requirement is automatically satisfied if you are financed by Molde University College or the Research Council of Norway.

If financing is in order, you must determine the research topic for your PhD thesis and write a short description of the topic. At this stage it can be more than one topic. Then you must locate a member of the academic staff at Molde University College who is interested in your topic, qualified as a supervisor and willing to supervise you. You can do this in several ways. One possibility is to contact the head of the Doctoral Degree Committee, who will try to help you. If you already know who you would like as a supervisor, you should get in touch with that person. All this can be done before all the financing details are sorted out, but you will not be admitted to the PhD programme before legally guaranteed financing is in place. When you have found a potential supervisor, you should write an application that emphasizes the research topic and methodology, plus the course requirements and a plan for a your PhD studies. This is the major part of your application for admittance. The Doctoral Degree Committee at Molde University College will make the final decision about accepting you as a doctoral candidate. (If you are employed at the University College as scholarship holder, much of this will already be taken care of.)

Read more about the [application process](#).

Work- and learn methods

Expected learning outcome:

A candidate who has completed the PhD programme should obtain the following learning outcomes defined in terms of knowledge, skills and general competence:

Knowledge

- is at the forefront of logistics, mastering scientific theories and methods of logistics research;
- can evaluate and assess various theories, methods and processes in Logistics research and in applied research and development (R&D) projects in an international perspective;
- can contribute to the development of new knowledge, new theories, and methods in Logistics.

Skills

- can formulate research questions for academic research and applied research and development at a recognized international level in Logistics;
- can contribute to new knowledge in Logistics through scientific research that can be published in peer-reviewed national and international scientific journals;
- can handle complexity, create an overview and synthesize established scientific knowledge and practice;
- can critically evaluate and constructively criticize scientific research in Logistics.

General competencies

- can identify relevant ethical issues and conduct research with academic integrity;
- can disseminate research and development through highly ranked national and international channels and participate in debates;
- can identify their own research in Logistics within a wider research area and social context;
- can evaluate the need for renewal, and can initiate and be engaged in innovation.

Content structure

The general structure is as follows: The programme takes three years and includes 45 ECTS with courses and similar activities. There are two obligatory courses: History of Logistics and a course in Philosophy of Science (of minimum 5 ECTS each). The rest of the time is for the thesis. Holders of Norwegian scholarships will in addition normally have one year of required duties for Molde University College. Doctoral students may take one or two semesters abroad, for both course work and thesis work.

Courses are mainly taken from three areas:

1. The MSc program in Logistics at Molde University College
2. Doctoral courses at Molde University College
3. Courses at master's or preferably doctoral level at other (foreign or Norwegian) universities

You must take some courses from areas 2 and 3, but may drop area 1. Courses at PhD level must be a minimum of 25 ECTS.

PhD Courses

- [DRL001 History of Logistics](#) (5 ECTS)
- [DRL007 Cost Benefit Analysis](#) (5 ECTS)

These courses are given from time to time and Molde University College will also offer other PhD courses at irregular intervals. Please find more information about scheduled PhD courses here:

<http://www.himolde.no/english/studier/Sider/PhD-Courses.aspx>

- [Philosophy of Science](#) (min. 5 ECTS) This course is given in Norwegian by Volda University College. You can choose a similar course from other institutions.

Planned courses:

DRL025 Supply Chain Management Performance

DRL026 Grunnleggende økonometri med Stata

The following PhD courses are arranged from time to time, depending on demand (with ECTS in final column):

DRL003 Transaction Cost Analysis - 5 ECTS

DRL004 Game Theory - 10 ECTS

[DRL007 Cost-Benefit Analysis](#) -5 ECTS

DRL008 Interorganizational Issues in Supply Chain Management- 5 ECTS

DRL012 Freight Transportation - 5 ECTS

DRL013 Model Solving in Mathematical Programming - 10 ECTS

DRL015 Service System Design under Uncertainty - 2 ECTS

DRL016 Production Planning and Scheduling -7.5 ECTS

DRL017 Industrial Organization- 7.5 ECTS

DRL018 Local Distribution Planning - 5 ECTS

[DRL019 Advanced Discrete-Event Simulation Modeling](#) - 7.5 ECTS

DRL020 Risk Management - 5 ECTS

DRL021 Academic Writing -2 ECTS

[DRL022 Partial Least Squares Structural Equations Modeling \(PLS-SEM\) Using SmartPLS](#) - 4 ECTS

[DRL023 How to Prepare and Write PhD thesis](#) - 1 ECTS

[DRL024 URBE – Urban Freight and Behavior Change](#) - 5 ECTS