Curriculum for the Master’s Programme in Geography

(samt tofagsstudieordning for gymnasierlæreruddannelsen – centralt fag eller sidefag i geografi)

Aalborg University
September 2017
Preface

Pursuant to Act 261 of March 18, 2015 on Universities (the University Act) with subsequent changes, the following curriculum for the Master's programme in Geography is stipulated. The programme also follows the Joint Programme Regulations and the Examination Policies and Procedures for The Technical Faculty of IT and Design, The Faculty of Engineering and Science, and The Faculty of Medicine

This curriculum takes effect as from September 1, 2017 – from 1st semester (only).
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Chapter 1: Legal Basis of the Curriculum, etc.

1.1 Basis in Ministerial Orders
The Master’s programme in Geography is organised in accordance with the Ministry of Higher Education and Science’s Order no. 1061 of June 30, 2016 on Bachelor’s and Master’s Programmes at Universities (the Ministerial Order of the Study Programmes) and Ministerial Order no. 1062 of June 30, 2016 on University Examinations (the Examination Order). Further reference is made to Ministerial Order no. 258 of March 18, 2015 (the Admission Order) and Ministerial Order no. 114 of February 3, 2015 (the Grading Scale Order) with subsequent changes.

1.2 Faculty Affiliation
The master’s programme falls under The Technical Faculty of IT and Design, Aalborg University.

1.3 Study Board Affiliation
The master’s programme falls under the Study Board of Planning, Geography and Surveying, that falls under the School of Architecture, Design and Planning.

1.4 Censorship
The Master’s program falls under the Danish “censorkorps for Geografi”

Chapter 2: Admission, Degree Designation, Programme Duration and Competence Profile

2.1 Admission
All students applying must document English language qualifications comparable to an 'English B level' in the Danish upper secondary school (minimum average grade 02).

Applicants with a legal claim to admission (retnskrav):
- Bachelor of Science (BSc) in Geography, Aalborg University

Applicants without legal claim to admission:
Students with another Bachelor's degree, upon application to the Study Board of Planning, Geography and Surveying, will be admitted after a specific academic assessment if the applicant is deemed to have comparable educational prerequisites. The University can stipulate requirements concerning conducting additional exams prior to the start of study.

2.2 Degree Designation in Danish and English
The Master’s programme entitles the graduate to the designation:

Cand.scient. (candidatus/candidata scientiarum) i geografi. The English designation is: Master of Science (MSc) in Geography.

or

Cand.scient. (candidatus/candidata scientiarum) i geografi og [sidefag]. The English designation is: Master of Science (MSc) in Geography and [other subject].

2.3 The Programme’s Specification in ECTS Credits
The Master’s programme is a 2-year, research-based, full-time study programme. The programme is set to 120 ECTS credits.
2.4 Competence Profile on the Diploma
The following competence profile will appear on the diploma:

A Candidatus graduate has the following competency profile:

A Candidatus graduate has competencies that have been acquired via a course of study that has taken place in a research environment.

A Candidatus graduate is qualified for employment on the labour market on the basis of his or her academic discipline as well as for further research (PhD programmes). A Candidatus graduate has, compared to a Bachelor, developed his or her academic knowledge and independence so as to be able to apply scientific theory and method on an independent basis within both an academic and a professional context.

2.5 Competence Profile of the Programme:

The graduate of the Master's programme:

Knowledge

- Has insight into the latest national and international geographic research and its importance and relevance for the study of place and space
- Must have advanced knowledge of analytical approaches to physical and human aspects of space and time
- Must have knowledge of theories of science and the methodological foundation of various theories of geography
- Must have extensive knowledge of the development in place and space based on the best international research within geography
- Must have ability to perform scientific reflection on relevant geographic theories and methods and to identify scientific problems within development in place and space
- Ability to understand, explain and reflect on the potentials and limitations of relevant theories and methods of geography
- Has knowledge of the implications of research ethics
- Possesses insight into and understanding of the sociocultural conditions under which strategies, plans and projects within geography are implemented.

Skills

- Can use and employ the methods and tools of geography as well as general skills connected with occupation within the field
- Can assess and select the appropriate geographical theories, methods, tools and general skills, and on a scientific basis draw upon new modes of analysis and solutions
- Can reflect on ethical matters in connection with professional practice
- Can independently make and motivate professionally related decisions and when necessary carry out investigations to procure sufficient information for the basis of decisions
- Can critically assess development work from a scientific perspective
• Can represent data in time and space based on data generated by field measurements or numerical models
• Must be able to assess theoretical and practical problems in connected and disconnected places and to select and motivate relevant projects on the basis of scientific methods
• Must be able to apply theories, methods and tools within physical and human geography on a scientific basis
• Ability to identify theories, methods, techniques and tools and create research within physical and human geographies of place and space
• Ability to assess and critically evaluate theoretical and practical problems in the field of geography of place and space
• Ability to communicate research-based knowledge and discuss scientific problems in relation to connected and disconnected places with peers and non-specialists alike

Competencies

• Can qualify to be part of public organisations as well as private firms, including NGOs
• Ability to understand geographical problems related to connected and disconnected places and spaces
• Ability to initiate and implement new interdisciplinary research and collaborations between the multifarious professions
• Ability to manage complicated and unpredictable situations in relation to research and planning of work development of connected and disconnected places
• Ability to contribute to continued professional development and innovation in the field of Geographies of connected and disconnected spaces
• Can be part of interdisciplinary teams within the field of geography working with the implementation of plans and strategies of relevance in Danish and/or international contexts
• Can contribute to the development of the profession through conducting research within the field of geography
• Can maintain focus and reflect on the literature and methods used to develop the scientific basis of the geographical problem studied
• Can evaluate the scientific progress independently and select and include additional literature, experiments or data when needed in order to maintain a scientific basis for the project
• Can independently develop own competencies and specialisation

Chapter 3: Content and Organisation of the Programme

The programme is structured in modules and organised as a problem-based study. A module is a programme element or a group of programme elements, which aims to give students a set of professional skills within a fixed time frame specified in ECTS credits, and concluding with one or more examinations within specific exam periods that are defined in the curriculum.
The programme is based on a combination of academic, problem-based and interdisciplinary approaches and organized based on the following work and evaluation methods that combine skills and reflection:

- project work
- lectures
- classroom instructions
- study groups
- workshop
- exercises
- laboratory tests
- measurements and testing in the field
- field work
- portfolio work
- independent study
- Etc.

3.1 Overview of the Master’s Programme:

The table below presents an overview of project modules and course modules at the four semesters of the master’s programme.

All modules are assessed through individual grading according to the 7-point scale or Pass/Fail (P/F). All modules are assessed by external examination (external grading) (E) or internal examination (internal grading or by assessment by the supervisor only) (I).

<table>
<thead>
<tr>
<th>Semester</th>
<th>Module</th>
<th>ECTS</th>
<th>Type</th>
<th>Grading</th>
<th>Exam</th>
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<td>Project</td>
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</table>

*This is a joint course with the master’s programme in Urban, Energy and Environmental Planning (specialisation in Urban Planning and Management).

**This is a joint course with the master’s programme in Urban Design (specialisation in Mobilities and Urban Studies).

***This is a joint course with the master’s programme in Urban, Energy and Environmental Planning (specialisation in Environmental Management and Sustainability Science).

****This is a joint course with the master’s programme in Biology.

*****This is a joint course with the master's programme in Water and Environment.

****** These courses can be chosen from existing master’s programmes, e.g. Water and Environment, Biology, Urban Planning and Management, Environmental Management and Sustainability Science.
At the 3rd semester the student can choose freely between carrying through the semester as 1) Project semester – with or without integrated, project-oriented internship and with or without two additional courses at existing master’s programmes, eg. Water and Environment, Biology, Urban Planning and Management, Environmental Management and Sustainability Science. 2) A 1st semester at Urban, Energy and Environmental master’s programme. 3) International or national credit. 4) Extended master’s thesis (cf. the project module description of the 4th semester).

The programme is taught in English.

3.2 Oversigt over tofagsforløbet med geografi som centrat fag

For studerende med centrat fag i geografi gælder følgende forløb, hvor de geografifaglige moduler alle hentes i bachelorstudieordningen (for de konkrete modulbeskrivelser, se bachelorstudieordningen i geografi på [http://www.sadp.aau.dk/rules-curricula/bsc-curriculum/]:

<table>
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<tr>
<th>Semester</th>
<th>Dansk titel</th>
<th>ECTS</th>
<th>Bedømmelse</th>
<th>Prøve</th>
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<td>Problembaseret læring i videnskab, teknologi og samfund</td>
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<td>Matematik og naturvidenskab</td>
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<tr>
<td>2.</td>
<td>Natur- og kulturgeografiske problemstillinger i et lokalt perspektiv (P2)</td>
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<td>Anvendt statistik</td>
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<td>Geografisk informationsvidenskab &amp; teknologi</td>
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<td>Bypolitik og planlægning</td>
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<td>Hydrologi og klimatologi</td>
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<td>Landskabsudvikling</td>
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<td>Globale økologiske processer og naturressourcer*</td>
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* De med stjerne markerede moduler er fra bachelorstudieordningen, og idet de læses på kandidatniveau gælder der ekstra kompetencemål, som kan ses på: [http://www.teknat.aau.dk/uddannelse/studieadministration/](http://www.teknat.aau.dk/uddannelse/studieadministration/).
### 3.3 Oversigt over tofagsforløbet med geografi som sidefag

For studerende med sidefag i geografi gælder følgende forløb, hvor de geografifaglige moduler alle hentes i bachelorstudieordningen (for de konkrete modulbeskrivelser, se bachelorstudieordningen i geografi på [http://www.sadp.aau.dk/rules-curricula/bsc-curriculum/](http://www.sadp.aau.dk/rules-curricula/bsc-curriculum/)):

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* De med stjerne markerede moduler er fra bachelorstudieordningen, og idet de læses på kandidatniveau gælder der ekstra kompetencemål, som kan ses på: [http://www.teknat.aau.dk/uddannelse/studieadministration/](http://www.teknat.aau.dk/uddannelse/studieadministration/).
1st Semester: Project Module

Title: Disconnected Places – Geographies of Peripheral Areas (Perifære områders geografi)

Objectives: Students completing the module acquire the following:

Knowledge:

- Understanding of the dynamics of the selected geographical problems and how these are contextualised in disconnected places
- Knowledge of selected theories of physical and socio-cultural geography in order to identify, analyse and evaluate selected geographical problems and their effects on the dynamics in place and space
- Knowledge of research designs, theories of science and research methods relevant for conducting research within physical and socio-cultural geography
- Knowledge of the scientific controversies in the selected field of research
- Knowledge of the fundamental principles of Problem Based Learning (PBL) as implemented in the Aalborg PBL model at The Technical Faculty of IT and Design

Skills:

- Can identify, analyse and conceptualise selected geographical problems and their complex interactions and effects in place and space
- Can apply relevant theories, research design and methods in order to research and analyse geographical problems and their effects in place and space
- Can justify and substantiate the relevance of the chosen research problem, based on geographical theories
- Can structure project management activities based on a well-formulated problem formulation

Competencies:

- Can plan and implement a scientific research of the chosen geographical problem
- Can independently start and carry out subject specific and interdisciplinary cooperation and take a professional responsibility for their own research
- Can communicate research to multiple audiences
- Can reflect on, plan and manage a study project in a PBL learning environment

Teaching: Problem-based project work in groups

Examination: Individual oral examination based on the project report. Internal grading, 7-point scale.

Assessment criteria: Stated in the Joint Programme Regulations.
1st Semester: Course Module 1

Title: Theories of Science and Research Design in Geography (Geografisk videnskabsteori)

Objectives: Students completing the module acquire the following:

Knowledge:

- Understanding of the evolution of central theories in geography at an advanced level
- Understanding of the relationships between theories of science, research designs and research methods
- Understanding of the variety of qualitative and quantitative research methods available in geographic field work

Skills:

- Can offer critiques of various scientific theoretical directions within the discipline of geography
- Can employ theories of science, research designs and research methods within own (sub)fields
- Can use and effectively apply the appropriate qualitative and/or quantitative research methods for conducting geographic research, namely during field work
- Can communicate knowledge of theories of science and research designs to specialists as well as non-specialists

Competencies:

- Can reflect critically on choices of qualitative, quantitative and mixed research methods based upon theories of science
- Can demonstrate professional development through acquisition of new knowledge of the development and renewal of theories of science and research designs.

Teaching: Lectures, field work, workshops, seminars, assignments, etc.

Examination: Individual oral or written examination, internal grading, 7-point scale.

Assessment criteria: Stated in the Joint Programme Regulations.
1st Semester: Course Module 2

Title: Human-Environment Interactions (Menneske og miljø)

Objectives: Students completing the module acquire the following:

Knowledge:
- Advanced knowledge of the theories of the patterns and processes that shape human interaction within the built and natural environments
- Knowledge of the range of ways in which humans attempt to regulate interactions with their biophysical environments through governance, management, and policy
- Can be critical toward various perspectives on human-environment interactions and reflect on how differing human values influence human uses and relations to the environment

Skills:
- Can apply theories of human-environmental interactions seen through global change
- Can assess the value and reliability of others’ research and methodology in relation to the patterns and processes that shape human interactions with the built and natural environments
- Can articulate and critique the place and space dimensions of patterns and processes that shape human interactions with the built and natural environments

Competencies:
- Can demonstrate continuous professional development through acquisition of new knowledge of patterns and processes that shape human interaction with the built and natural environments
- Can construct an analytical-theoretical understanding of the local dimensions of global change
- Can appreciate commonalities and diversity in the local expressions of global change processes
- Can reflect on the power relations and structural dimensions embedded in human-environment interactions

Teaching: Lectures, field work, workshops, seminars, assignments, etc.

Examination: Individual oral or written examination, internal grading, 7-point scale

Assessment criteria: Stated in the Joint Programme Regulations.
2nd Semester: Project Module

Title: Connected Places – Geographical Linkages in Space and Time (Forbundne steder – geografiske interaktioner i tid og rum)

Objectives: Students completing the module acquire the following:

Knowledge:
- Understanding of differentiating influences of space and time on connected places and their development
- Knowledge of spatial and temporal influences on natural and socio-cultural resources
- Knowledge of physical and socio-cultural theories to identify, analyse and evaluate geographical problems and their effects in space and time
- Knowledge of advanced methods, research designs and science theories and how they contribute to development of new knowledge within the chosen research topic

Skills:
- Can identify, analyse and conceptualise selected geographical problems and their complex interactions and effects in space and time
- Can apply relevant theories, research designs and advanced methods in the analyses of selected geographical problems and their dynamics and effects in space and time
- Can independently and critically develop concepts and methods for analysis of geographical connections

Competencies:
- Can develop an independent and critical contribution to the scientific research within the geography research field
- Can independently start and carry out subject specific and interdisciplinary cooperation and take a professional responsibility for their own research
- Can communicate research to multiple audiences

Teaching: Problem-based project work in groups.

Examination: Individual oral examination on the basis of the project report. External grading, 7-point scale.

Assessment criteria: Stated in the Joint Programme Regulations.
**2\textsuperscript{nd} Semester: Course Module**

**Title:** Advanced Methods in Geography (Avancerede geografiske metoder)

**Objectives:** Students completing the module acquire the following:

**Knowledge:**
- Knowledge of emerging data collection and data analysis methods in geography
- Knowledge of advanced geo-statistical analysis and advanced spatial modelling
- Knowledge of data collection and analysis methods applied to advanced qualitative geographical concepts
- Knowledge of advanced visualisations and methods to produce and analyse these

**Skills:**
- can combine advanced geographical theories, science theories and methods in order to establish a data collection protocol for complex geographical problems and related ethical dilemmas
- can apply numerical and spatial analysis tools in the analysis of geographical data collected on a scientific basis
- can apply qualitative and interpretive methods and tools in the analysis of geographical concepts on a scientific basis

**Competencies:**
- Can independently and critically apply advanced geographical research methods and analytical tools to complex geographical problems
- Can independently and critically apply relevant advanced geographical science theories to the analysis of complex geographical problems
- Can professionally communicate and discuss geographical analyses and issues with multiple audiences

**Teaching:** Lectures, field work, workshops, seminars, assignments, etc.

**Examination:** Individual oral or written examination, internal grading, pass/fail.

**Assessment criteria:** Stated in the Joint Programme Regulations.
2nd Semester: Course Module 1 (Urban Package)

Title: Planning Theory (Planlægningsteori)

Objectives: Students completing the module acquire the following:

Knowledge:
- Knowledge of a broad spectrum of international planning theories
- Knowledge of the intellectual origins and value foundations of different planning theories
- Understanding of one or more planning theories on an international academic level
- Understanding of the difference between theories in and theories of planning
- Knowledge and understanding of the role(s) of planning in society
- Knowledge and understanding of the role(s) of the planner in society

Skills:
- Can assess the relevance of different planning theories in different planning contexts
- Can on a scientific basis evaluate the strengths and weaknesses of different planning theories
- Can relate international planning theory to contemporary planning problems and the practices of planning
- Can communicate research-based planning theory, and discuss professional and scientific problems related to planning theory with professionals as well as non-professionals.

Competencies:
- Can independently and critically apply planning theory to work and development situations that are complex, unpredictable and require new solutions
- Can independently apply planning theory in subject specific and interdisciplinary cooperation
- Can independently take responsibility for own professional development and specialisation

Teaching: Lectures, workshops, seminars, assignments, etc.

Examination: Individual oral or written examination, internal grading, 7-point-scale.

Assessment criteria: Stated in the Joint Programme Regulations.
Title: The Deliberative Planner (Den refleksive planlægger)

Objectives: Students completing the module acquire the following:

Knowledge:

- Knowledge and understanding of the institutional context and power relations within which the planner is working in practice
- Knowledge and understanding of professional values, democratic legitimacy, and the roles of the planner in an international and local context
- Understanding of professional individual conduct, actions and ethical frames in and for practices of the planner
- Thorough knowledge of the deliberative practices of the planner in dealing with conflict, and in managing the planning process through various and changing situations and differences in planning goals, agents and resources

Skills:

- Can identify central challenges in professional planning practice
- Can make use of relevant theories, concepts and methods to analyse the practice of planning and critically evaluate the need for the planner to intervene in different contexts
- Can identify the core challenges in designing and managing deliberative planning processes to deal with power dynamics, conflicts and different interests

Competencies:

- Can design and engage with complex planning processes in order to manage conflicts and different interests
- Can reflect on and develop own professional ethics and procedures
- Can facilitate interdisciplinary collaboration and cooperation in a planning context and be able to reflect in action while assuming professional responsibility

Teaching: Lectures, workshops, seminars, assignments, etc.

Examination: Individual oral or written examination, internal grading, pass/fail.

Assessment criteria: Stated in the Joint Programme Regulations.
2\textsuperscript{nd} Semester: Course Module 1 (Mobility Package)

Title: Mobilities: Policy, Branding and Place Management (Mobiliteter: Politik, branding og steder)

Objective: Students completing the module acquire the following:

Knowledge:

- Must have knowledge of theories and methods in the field of place theory, management, branding and policymaking in relation to the new mobilities turn.
- Must have knowledge of the strengths and weaknesses of methods and tools related to policy, branding and place management
- Must have an understanding of the relationships between spatial development, management, policies and branding
- Must have knowledge of the relationships between societal developments and mobility policies, mobility management, travel management and meetings management
- Must have knowledge of the economic implications of place, branding, policies and management
- Must have knowledge of governmentality and regulatory frameworks

Skills:

- Must be able to apply relevant scientific theories and methods related to policy, branding and place management
- Must be able to evaluate, on the basis of state-of-the-art theories, both private and public sector mobility policies, plans, programmes and strategies
- Must be able to independently prepare place and mobility policies, plans, programmes and strategies
- Must be able to combine conventional tools from transport planning and travel management with new concepts, technologies, methods and theories in the field of place and mobilities research
- Must be able to analyse empirical cases in relation to policy, branding and place management
- Must be able to evaluate spatial development in relation to place management and branding

Competencies:

- Must be able to professionally communicate results and concepts related to policy, branding and place management
- Must be able to work in cross-disciplinary contexts in the field of mobility policy, mobility management, travel management and meetings management
- Must have the necessary competencies in developing models and concepts that capture the relationships between spatial development and the theoretical and methodological aspects of policy, branding and place management
Teaching: Lectures supplemented with seminars, field trips, study circles and workshops

Examination: Regular and active participation. Internal grading, pass/fail.

Assessment criteria: Stated in the Joint Programme Regulations
2\textsuperscript{nd} Semester: Course Module 2 (Mobility Package)

**Title:** Mobile Culture and Communication (Mobilkultur og –kommunikation)

**Objective:** Students completing the module acquire the following:

**Knowledge:**
- Must have a profound knowledge of contemporary information and communication technologies and their application in mobile cultures and systems
- Must have an understanding of the technological as well as cultural factors that are shaping and enabling mobilities systems

**Skills:**
- Must be able to apply theories of information and communication technology and relevant cultural theories to the analysis of mobilities cultures and systems
- Must be able to evaluate the relevance and impact of information and communication technologies on mobilities cultures and systems

**Competencies:**
- Must have competencies in analysing on a theoretically level mobilities cultures and systems and their integration with communication technologies
- Must have competencies in professional communication in relation to both professional and lay audiences

**Teaching:** Lectures supplemented with seminars, study circles, workshops and field work

**Examination:** Regular and active participation. Internal grading, 7-point scale.

**Assessment criteria:** Stated in the Joint Programme Regulations
2nd Semester: Course Module 1 (Environmental Package)

Title: Natural Resource Management (Forvaltning af naturressourcer)

Objectives: Students completing the module acquire the following:

Knowledge:
- Knowledge of relevant national and international legislation for specific natural resources
- Understanding of measurement and indicator techniques for specific resource types
- Knowledge and understanding of rights, access and ownership models to natural resources (commons, leasing etc.)

Skills:
- Can describe and explain the technologies used to extract and use specific natural resources
- Can discuss possible innovations and their applicability depending on framework conditions
- Can describe existing natural resource management approaches that are applied to use, protect and/or restore specific natural resources
- Can explain principles of sustainable use of marine, terrestrial and other resources

Competencies:
- Can analyse interrelated market dynamics between different resources using calculation models
- Can assess sustainability of specific management and consumption practices
- Can compare problems and strategies used in management of different natural resources in different settings

Teaching: Lectures, workshops, seminars, assignments, etc.

Examination: Individual oral or written examination, internal grading, pass/fail.

Assessment criteria: Stated in the Joint Programme Regulations.
2nd Semester: Course Module 2 (Environmental Package)

Title: Sustainability Assessment and Societal Decision Processes
(Bæredygtighedsvurderinger og samfundsmæssige beslutningsprocesser)

Objectives: Students completing the module, acquire the following:

Knowledge:
- Knowledge of different technical impact tools and methodologies applied for ex-ante sustainability assessment
- Knowledge and understanding about the socio-technical context in which ex-ante impact assessment is developed and used
- Knowledge and understanding of how impact assessment connects to societal decision-making on e.g. large infrastructures, technologies or spatial developments
- Can understand and reflect on decision-making theories

Skills:
- Can choose impact assessment methods and tools for ex-ante sustainability assessment
- Can integrate technical analyses of bio-physical and social variables in the assessments and decision-making processes
- Can analyse and assess theoretical and practical problems, and develop and assess solutions that favour sustainable development
- Can communicate results of assessments to both other peers and non-specialists

Competencies:
- Can handle complex assessment situations
- Can participate critically and reflexively in impact assessment to secure more sustainable planning and decision-making at societal level

Teaching: Lectures, workshops, seminars, assignments, etc.

Examination: Individual oral or written examination, internal grading, 7-point scale

Assessment criteria: Stated in the Joint Programme Regulations.
2nd Semester: Course Module 1 (Nature – Open Land Package)

Title: Danish Biotypes (Danske naturtyper)

Objectives: Students completing the module acquire the following:

Knowledge:

- On the general geology of the Danish landscape and regional differences in soil characteristics, climate and the resulting biotypes
- On the characteristic Danish biotypes and the most unique nature sites in the Danish landscape
- On the Danish flora and its dependence on the environmental conditions
- On the most common Danish mammals, birds, reptiles and amphibians and their distribution in the Danish landscape
- On the most common Danish insects and other invertebrates
- On the floral and faunistic succession in the Danish landscape
- On the Environmental Protection Act and other laws and regulations focusing on the protection and management of the Danish nature
- On the most important environmental problems in Denmark, including eutrophication, habitat fragmentation, reduced biodiversity as well as conflicts on interests in Danish nature management (e.g. angling, cultivation, hunting, urban development)

Skills:

- Capable of identifying biotypes based on the vegetation, fauna and geology
- Identify the level of protection of a given site based on existing laws and regulations

Teaching: Excursions, field work, group work and lectures.

Examination: Active participation and approval of written report, internal grading, pass/fail.

Assessment criteria: Stated in the Joint Programme Regulations.
2\textsuperscript{nd} Semester: Course Module 2 (Nature – Open Land Package)

Title: Limnology (Limnologi)

Objectives: Students completing the module acquire the following:

Knowledge:
- Describe key components of freshwater ecosystems
- Describe relevant theory for physical, chemical and biological processes in freshwater ecosystems
- Describe the dominant anthropogenic types of pollution affecting freshwater ecosystems

Skills:
- Differentiate between major types of streams, rivers and lakes
- Understand the exchange of matter between aquatic and terrestrial environments
- Explain lake and river ecosystem dependence on light, temperature, nutrients and organic matter
- Understand primary production, respiration and re-oxidation in freshwater ecosystems
- Determine the significance of hydraulic conditions on chemical and biological dynamics in lakes and rivers
- Analyse oxygen dynamics in freshwater environments
- Analyse impacts of pollution on biotic communities
- Use existing pollution indicators for running waters and lakes to assess the pollution of a given location
- Account for current river and lake restoration methods

Competencies:
- Work with and analyse biological communities in relation to nutrient dynamics and organic matter cycling in lake and river ecosystems
- Describe important organic and inorganic pollutants and pollution effects in freshwater ecosystems
- Evaluate methods to prevent and alleviate anthropogenic perturbations in freshwater ecosystems using existing technologies

Teaching: Lectures supplemented with project work, workshops, presentation seminars, lab tests, and field work.

Examination: Individual oral or written examination, internal grading, 7-point scale

Assessment criteria: Stated in the Joint Programme Regulations.
3rd Semester: Project Module

Title: Geography in Practice (Geografi i praksis)

At the 3rd Semester the student can choose between several options:

Option 1: Project Semester – with or without Integrated Internship

The students can choose to carry through a traditional project semester which normally carries on the subject knowledge in which the student has specialized at the 1st and 2nd semesters and/or prepare for the subject about which the student wishes to write his/her thesis. The semester comprises the preparation of a project report or a scientific article.

The student can choose to integrate an internship either in Denmark or abroad in his/her project semester. The internship is typically of 3 months’ duration and has to be approved by the semester coordinator on behalf of the Study Board of Planning, Geography and Surveying in advance. For each individual internship, specific learning goals have to be drawn up, clearly reflecting the professional problem of the project. The specific learning goals have to be approved by the semester coordinator.

Students who choose not to integrate an internship can combine a 20 ECTS project module with 2 x 5 ECTS course modules, chosen from existing master’s programmes, eg. Water and Environment, Biology, Urban Planning and Management, Environmental Management and Sustainability Science.

Objectives: Students completing the project module acquire the following:

Knowledge:
- Conceptual and professional knowledge based on international research of relevance to geography
- Knowledge of the analytical methods used in geography
- Can understand and relate critically to the knowledge of the field and be able to identify practical geographical problems in a given complex context

Skills:
- Can master the scientific methods and tools of geography in relation to the solution of the chosen geographical problem
- Can identify a relevant and specific geographical focus for the chosen subject
- Can work independently and discuss professional and scientific problems with both colleagues and communicate these to non-specialists

Competencies:
- Can describe a specific geographical problem and apply relevant solution models based on relevant geographical tools and data
- Can participate in professional and interdisciplinary cooperation of geographical problems
- Can carry out academic reflections on the chosen geographical subject and implement the attained knowledge in models
• Can take responsibility for own professional development and specialisation

Teaching: Problem-based project work, possibly with internship integrated.

Examination: Individual oral examination based on the project report or an academic paper, internal grading, 7-point scale.

Option 2: A UEEP 1st Semester

A student who has followed 1st semester under the Geography programme may choose to follow a 1st semester under the Urban, Energy and Environmental Planning master’s programme. In that case the student follows the course and project modules at this semester and acquires the knowledge, skills and competencies which are stated in the curriculum for the concerned semester. A 5 ECTS assignment must be prepared as replacement for the course module “Theories of Science and Research Designs” to meet the 30 ECTS semester load.

Option 3: International or National Credit

After previous approval by the Study Board, the 3rd semester may be transferred to another educational institution in Denmark or abroad. Previous approval (pre-credit) may be expected if the studies at another educational institution can give the student appropriate knowledge, skills and competencies.

Option 4: Extended Master’s Thesis

Students may choose to carry through the 3rd and 4th semesters as an extended master’s thesis (60 ECTS). Extended master’s thesis is especially advised to work with project topics, where an extraordinary great generation of data is necessary. Master’s theses have to be approved in advance by the Study Board of Planning, Geography and Surveying, and the student has to fulfil the knowledge, skills and competencies as indicated for master’s theses. See description of 4th semester.
4th Semester: Project Module

Title: Master's Thesis (Kandidatspeciale)

The master thesis can be conducted as a long master thesis using both the 3rd and 4th Semester. If choosing to do a long master thesis, it has to include experimental work and has to be approved by the study board. The amount of experimental work must reflect the allotted ECTS

Requirements: Passed the three first semesters of the Geography programme

Objectives: Students completing the module acquire the following:

Knowledge:

• Can understand and on a scientific basis reflect on the knowledge attained within the geographical subjects studied
• Can identify scientific relevant geographical problems within the subjects studied and reflect on them.
• Knowledge of the scientific-theoretical and methodological embeddedness of the used geographical theories and can reflect on them
• Knowledge of important national and international geographical research in the field

Skills:

• Can independently plan and carry out a geographical project at a high professional level
• Can assess possible theoretical and/or experimental methods for analysis of the research problem and reflect and critically evaluate the chosen methods
• Can make an independent and critical reflection of the chosen theories and methods as well as the analyses, results and conclusions
• Can communicate relevant scientific and professional aspects of project work in a clear and systematic way

Competences:

• Can work independently with a project on a specific geographical problem at the highest international level
• Can define and analyse scientific geographical problems and based on that make and state the reasons for the decisions made
• Can solve new and complicated geographical problems by the use of advanced scientific geographical knowledge
• Can evaluate the progress of the project independently and select and include additional literature, field studies, experiments or supplementary data when needed in order to maintain a scientific basis for the project

Teaching: Problem-based project work with supervision supplemented with instructions, workshops, presentation seminars, lab tests, etc.
Examination: Individual oral examination on the basis of the thesis. External grading, 7-point scale.

Assessment criteria: Stated in the Joint Programme Regulations.

Chapter 4: Entry into Force, Interim Provisions and Revision

This curriculum is approved by the Dean of The Technical Faculty of IT and Design and enters into force as of September 1, 2017 (only 1st semester).

Students who wish to complete their studies under the previous curriculum from 2016 must conclude their education by the summer examination period 2018 at the latest, since examinations under the previous curriculum are not offered after this time.

Chapter 5: Other Provisions

5.1 Rules concerning Written Work, including the Master’s Thesis
In the assessment of all written work, regardless of the language it is written in, weight is also given to the student's spelling and formulation ability, in addition to the academic content. Orthographic and grammatical correctness as well as stylistic proficiency are taken as a basis for the evaluation of language performance. Language performance must always be included as an independent dimension of the total evaluation. However, no examination can be assessed as ‘Pass’ on the basis of good language performance alone; similarly, an examination normally cannot be assessed as ‘Fail’ on the basis of poor language performance alone.

The Board of Studies can grant exemption from this in special cases (e.g., dyslexia or a native language other than Danish).

The Master’s thesis must include an English summary.\(^1\) If the project is written in English, the summary must be in Danish.\(^2\) The summary must be at least 1 page and not more than 2 pages. The summary is included in the evaluation of the project as a whole.

5.2 Rules concerning Credit Transfer (merit), including the Possibility for Choice of Modules that are Part of another Program at a University in Denmark or Abroad
In the individual case, the Board of Studies can approve successfully completed (passed) program elements from other Master’s programs in lieu of program elements in this program (credit transfer). The Board of Studies can also approve successfully completed (passed) program elements from another Danish program or a program outside of Denmark at the same level in lieu of program elements within this curriculum. Decisions on credit transfer are made by the Board of Studies based on an academic assessment. See the Joint Programme Regulations for the rules on credit transfer.

5.3 Rules for Examinations
The rules for examinations are stated in the Examination Policies and Procedures published by The Technical Faculty of IT and Design, The Faculty of Engineering and Science, and the Faculty of Medicine on their website.

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\(^1\) Or another foreign language (upon approval from the Board of Studies).

\(^2\) The Board of Studies can grant exemption from this.
5.4 Exemption
In exceptional circumstances, the Board of Studies study can grant exemption from those parts of the curriculum that are not stipulated by law or ministerial order. Exemption regarding an examination applies to the immediate examination.

5.5 Rules and Requirements for the Reading of Texts
At programmes that are taught in Danish, it is assumed that the student can read academic texts in modern Danish, Norwegian, Swedish and English and use reference works, etc., in other European languages. At programmes taught in English, it is assumed that the student can read academic text and use reference works, etc., in English.

5.6 Additional Information
The current version of the curriculum is published on the Board of Studies' website, including more detailed information about the program, including exams.