AALBORG UNIVERSITY
DENMARK

The Faculty of Engineering and Science
The Study Board of Industry and Global Business Development

Curriculum for the Master's Programme in Operations and Innovation Management

(Cand.tech.)

Aalborg University

September 2017

Godkendt d. 6/4 17

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dekan

Campus Copenhagen

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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 Operations and Innovation Management 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.

Contents

Chapter 1: Legal Basis of the Curriculum, etc.

1.1 Basis in Ministerial Orders

The Master's programme in Operations and Innovation Management 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 of Science and Technology programme falls under the Faculty of Engineering and Science, Aalborg University.

1.3 Board of Studies Affiliation

The Master of Science and Technology programme falls under the Board of Studies of Industry and Global Business Development under the School of Engineering and Science.

1.4 Board of External Examiners

The Master's programme falls under the External Examiner Corps of higher education of engineering (mechanical engineering).

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

2.1 Admission

Applicants with a legal claim to admission (retskrav):

- None

Applicants with one of the following degrees are entitled to admission:

- Bachelor of Science in Business Administration – CBS
- Bachelor of Engineering in Chemistry and Business Economy – DTU
- Bachelor of Engineering in Manufacturing and Management – DTU
- Bachelor of Engineering in Process and Innovation – DTU
- Bachelor of Engineering in IT - AU
- Bachelor of Engineering in Interaction Design - SDU
- Bachelor of Engineering in Global Management and Manufacturing – SDU
- Bachelor of Engineering in Business Development Engineer – AU
- Bachelor of Science in Product Development and innovation - SDU
- Bachelor of Science in Innovation and Business – SDU
- Bachelor of Science in Product Development and Innovation - SDU
- Bachelor of Science in Global Business Informatics – ITU
- Bachelor of Science in Global Business Engineering – AAU
- Bachelor of Science in Design and Innovation - DTU

Applicants without a legal claim to admission:
Students with another Bachelor degree may, upon application to the Board of Studies, be admitted upon a specific academic assessment if the applicant is considered as having comparable educational prerequisites. The University may stipulate requirements concerning conducting additional exams prior to the start of study.

2.2 Degree Designation in Danish and English

Students completing the specialisation in Media Management entitle the graduate to the Danish designation cand.tech. (candidatus/candidata technologiae) i værdikæder og innovationsledelse med specialisering i medieledelse. The English designation is: Master of Science in Technology (Operations and Innovation Management with specialisation in Media Management).

Students completing the specialisation in Global Management entitle the graduate to the Danish designation cand.tech. (candidatus/candidata technologiae) i værdikæder og innovationsledelse med specialisering i global ledelse. The English designation is: Master of Science in Technology (Operations and Innovation Management with specialisation in Global Management).

2.3 The Programme's Specification in ECTS Credits

The Master of Science and Technology programme is a 2-year, research-based, full-time study programme. The programme is set to 120 ECTS credits.

2.4 Competence Profile in the Diploma

The following competence profile will appear in the diploma**:**

A graduate of the Master of Science and Technology programme has competencies acquired through an educational programme that has taken place in a research environment.

The graduate of the Master's programme can perform highly qualified functions on the labour market on basis of the educational programme. Moreover, the graduate has prerequisites for research (a PhD programme). Compared to the Bachelor's degree, the graduate of the Master of Science and Technology programme has developed her/his academic knowledge and independence, so that the graduate is able to independently apply scientific theory and method in both an academic and occupational/professional context.

2.5 Competence Profile of the Programme

2.5.1 Competence Profile of Media Management

The graduate of the Master of Science and Technology programme with a specialisation in media management exhibits the following characteristics:

Knowledge

- Has knowledge in the following subject areas that, in selected areas, is based on the highest international research in a subject area
    - Management of media firms
    - Creativity in media firms
    - Creation of media clusters
    - Media and technological convergence
    - Global management
    - Methods and concepts for global business creation
    - Innovation and Change Management
    - Methods and concepts for analysing and researching global business creation
    - Key management systems in the global company
- Can understand, apply and, on a scientific basis, reflect over the subject area's(s') knowledge and identify scientific problems.

Skills

- Excels in Analysing Complex Business Problems and Designing New Innovative Business Solutions for Media firms using scientific methods and tools and general skills related to employment within management of media firms.
- Can evaluate and select among the subject area's(s') scientific theories, methods, tools and general skills and, on a scientific basis, advance new analyses and solutions
- Can communicate research-based knowledge and discuss professional and scientific problems with both peers and non-specialists.
- Can apply theories, methods and concepts in different empirical settings.

Competencies

- Can manage work and development in complex and unpredictable situations requiring new solutions
- Can independently initiate and implement discipline-specific and interdisciplinary cooperation and assume professional responsibility
- Can independently take responsibility for own professional development and specialisation
- Will become skilled in managing media firms, project within media firms and/or leading media projects within other industries.

2.5.2 Competence Profile of Global Management

The graduate of the Master of Science and Technology programme with a specialisation in global management exhibits the following characteristics:

Knowledge

- Has knowledge in the following subject areas that, in selected areas, is based on the highest international research in a subject area
    - Global engineering management
    - Operations Development and Strategy
    - Organisational Analysis and Design
    - Methods and concepts for global business creation
    - Innovation and Change Management
    - Methods and concepts for analysing and researching global business creation
    - Key management systems in the global company
- Can understand, apply and, on a scientific basis, reflect over the subject area's(s') knowledge and identify scientific problems.
- Has knowledge about how to integrate technological considerations and issues into the design and implementation of global business systems and value chains.

Skills

- Excels in Analysing Complex Business Problems and Designing New Innovative Business Solutions using scientific methods and tools and general skills related to employment within Global Operations and Innovation Management
- Can evaluate and select among the subject area's(s') scientific theories, methods, tools and general skills and, on a scientific basis, advance new analyses and solutions
- Can communicate research-based knowledge and discuss professional and scientific problems with both peers and non-specialists.
- Can apply theories, methods and concepts in different empirical settings.
- Can combine technological insights with market and business related considerations in the design of innovative business systems and value chains.

Competencies

- Can manage work and development in complex and unpredictable situations requiring new solutions
- Can independently initiate and implement discipline-specific and interdisciplinary cooperation and assume professional responsibility
- Can independently take responsibility for own professional development and specialisation
- Will become a Leader of Managing Technological Change and Innovation in a Global Business Context.
- Can give emphasis to the creative deployment and importance of technologies in the creation of global business systems and value chains.

Chapter 3: Content and Organisation of the Programme

The study programme in Operations and Innovation Management with specialisation in Media Management is intended to prepare students for the micro and meso management of media firms and industries including creating growth strategies for especially media firms in a global business context; the programme's main focal points are media management, media and creativity, media clusters, integration and innovation processes, and management and implementation of international organisational and technological change and convergence projects.

The aim of the specialisation is to provide the students with a foundation for designing and implementing integrated business solutions to challenges in a global media organisation and to provide them with a theoretical framework for managing innovation, integration and implementation of change in international media businesses. This will enable the students to manage complicated technological and organisational changes at micro and meso level in a global business context.

The specialisation in Media Management aims at educating media managers with an in-depth professional knowledge and high-level practical skills within the area of media management and media cluster design. To obtain these goals, the programme is organised into modules and laid out as a problem-based, project-organised course of study. Each semester has an overall theme which serves a focal point in both modules and the project work.

The study programme in Operations and Innovation Management with specialisation in Global Management is intended to prepare students for the management of technological changes in a global business context; the programme's main focal points are integration and innovation processes, and management and implementation of international organisational and technological change projects.

The aim of the specialisation in global management is to provide the students with a foundation for designing and engineering integrated business solutions to challenges in a global organisation and to provide them with a theoretical framework for managing innovation, integration and implementation of change in international businesses. This will enable the students to manage complicated technological and organisational change in a global business context.

The specialisation in Global Management aims at educating business engineers with an in-depth professional knowledge and high-level practical skills within the area of business engineering. To obtain these goals, the Master of Science and Technology programme is organised into modules and laid out as a problem-based, project-organised course of study. Each semester has an overall theme which serves a focal point in both modules and the project work.

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 aiming 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-oriented and interdisciplinary approaches and organised based on the following work and evaluation methods that combine skills and reflection:

- Lectures
- Classroom instruction
- Project work
- Workshops
- Exercises (individually and in groups)
- Teacher feedback
- Reflection
- Portfolio work.

The 3rd semester is allocated to gaining practical international experience. The semester will enable students to appreciate theoretical reflective work practice and cultural challenges. The aim of the semester is to

- Gain practical experience within the subject field
- Analyse and reflect on educational experiences and professional practice
- Clarify the Master's Thesis topic.

The 3rd semester project is carried out in collaboration with a company while the student is affiliated to the firm. The purpose of this semester is to design and execute an individual thesis study within the topics of the programme. This will enable student to demonstrate proficiency in innovation and integration processes as well as management and implementation of technological and organisational change projects in global firms.

During the 3rd semester the students may also do a study visit at an educational institution in Denmark or abroad

During the 4th semester, the Master's Thesis is completed. The Master's Thesis may be combined with the 3rd semester in an extended Master's Thesis.

3.1. Overview of the specialisation in Media Management

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

Semester	Module	ECTS	Grading	Exam
1st	Media Management: Designing Global Business Systems (or Integrated Solutions) for Media Firms (Project Module – see section 3.3.1)	15	7-point scale	External
	Methods and Tools for Business Systems Studies (course – see section 3.3.3)	5	7-point scale	Internal
	Managing Global Business Systems and Value Chains (course - see section 3.3.4)	5	7-point scale	Internal
	Media Management, Meso (course – see section 3.3.6)	5	7-point scale	Internal
2nd	Media Management: Innovation and Technology Management in Media Firms (Project module - see section 3.4.1)	15	7-point scale	Internal
	Innovation and Change Management (course - see section 3.4.3)	5	7-point scale	Internal
	Strategy, Organisation and Market Creation (course - see section 3.4.4)	5	7-point scale	Internal
	Media Management, Micro (course - see section 3.4.5)	5	7-point scale	Internal
3rd	Media Management	30	7-point scale	Internal
	Case-Based Project Work in External Organisation	30	7-point scale	Internal
4th	Master's Thesis	30, 60	7-point scale	External

3.2. Overview of the specialisation in Global Management

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

Semester	Module	ECTS	Grading	Exam
1st	Designing Global Business Systems and Value Chains (or Integrated Solutions) (Project module – see section 3.3.2)	15	7-point scale	External
	Methods and Tools for Business Systems Studies (course - see section 3.3.3)	5	7-point scale	Internal
	Managing Global Business Systems and Value Chains (course - see section 3.3.4)	5	7-point scale	Internal
	Operations Development and Strategy (course - see section 3.3.6)	5	7-point scale	Internal
2nd	Global Innovation and Technology Management (Project module - see section 3.4.2)	15	7-point scale	Internal
	Innovation and Change Management (course - see section 3.4.3)	5	7-point scale	Internal
	Strategy, Organisation and Market Creation (course - see section 3.4.4)	5	7-point scale	Internal
	Engineering Key Processes (course - see section 3.4.6)	5	7-point scale	Internal
3rd	Operations and Innovation Management	30	7-point scale	Internal
	Case-Based Project Work in External Organisation	30	7-point scale	Internal
4th	Master's Thesis	30, 60	7-point scale	External

3.3 Courses 1st Semester

3.3. 0 Problem Based Learning and Project Management

Title: Problem Based Learning and Project Management (Problembaseret læring og projektledelse)

Objective: The objective is to make newly started Master students coming from institutions other than AAU prepared to enter the problem based learning environment at AAU and manage study projects in close collaboration with peers.

Type of instruction: Three half day workshops centered around the individual student working with an individual challenge or curiosity in relation to using a PBL approach. Peer learning is also a hallmark, since the students will discuss and reflect their individual challenges/curiosities in a peer learning group.

Learning outcomes: After completion of the course the student should be able to

Day 1:

- describe and discuss the Aalborg PBL model based on the three key words: group work, project work, problem orientation
- identify an initial individual challenge when using a PBL approach

Day2:

- develop and practice peer feedback skills
- practice collaborative learning in a group
- design a plan of action to deal with an initial individual PBL challenge or curiosity

Day 3:

- practice presentation skills
- practice critical skills when giving feedback to peers
- reflect on own and peer skills in relation to PBL practice

Form of examination: Internal assessment during the course/class participation according to the rules in the Examination Policies and Procedures of Faculty of Engineering and Science, Aalborg University. In this case the assessment is primarily based on the oral performance during the course, which means that the student has to be active during the course time and participate in discussions. The course is an integrated part of the project for those not acquainted to the Aalborg PBL model, and is a precondition for participation in the project examination. In this

way there will be no diploma for the course and it will not be visible on the academic transcripts.

Evaluation criteria: Passed/not passed as stated in the Joint Programme Regulations

3.3.1 Media Management: Designing Global Business Systems (or Integrated Solutions) for Media Firms

Title: Media Management: Designing Global Business Systems (or Integrated Solutions) for Media Firms (15 ECTS) (Medieledelse: Design af globale forretningssystemer eller integrerede løsninger)

Objective: Students who complete the module are expected to:

Knowledge

- Have deepened their understanding of the theories taught on this semester by applying these theories in practice.

Skills

- Be able to analyse, and develop an integrated solution to a practical problem concerning the design of business systems or clusters within the context of the media industries or analysing home or host country effects, usually in the form of a project developed in and together with an organisation/firms. The project theme is designing Business Systems in media firms and normally requires:
    - Demarcation and analysis of the empirical background to the problem
    - Develop an operationalisation of a relevant and researchable research problem/project objective, using theory taught on this semester, but usually going beyond that.
    - Development of an adequate research/project design, including:
        - Detailed questions/objectives
        - An account of the data collection and data validation methods, data sources
        - An account of the analytical methods used and methods used to validate the findings
        - An account of the (design) methods used to develop recommendations/solutions to resolve the research problem/ achieve the project objective.
- Presentation and validation of data
- Presentation, validation and discussion of analytical findings
- Presentation and validation of recommendations/solutions
- Evaluation of the findings and recommendations/solutions, methods and, if relevant, considerations regarding the limitations and generalisability of the study.

Competencies

- Be able to work together as a team to analyse and develop integrated and feasible solution(s) to a practical organisational problem in a media firm.
- Be able to work together with an organisation in an academically yet practically adequate manner.

Type of instruction: The module is carried out as group-based, problem-oriented project work. The group work is carried out as an independent work process in which the students themselves organise and coordinate their workload in collaboration with a supervisor. The project is carried out in groups with normally no more than 6 members.

Exam format: Oral examination based on a written report.

Evaluation criteria: Are stated in the Joint Programme Regulations.

3.3.2 Designing Global Business Systems and Value Chains (or Integrated Solutions)

Title: Designing Global Business Systems and Value Chains (or Integrated Solutions) (15 ECTS)
(Design af globale forretningssystemer og værdikæder eller integrerede løsninger)

Objective: Students who complete the module are expected to:

Knowledge

- Have deepened their understanding of the theories taught on this semester by applying these theories in practice.
- Have developed an understanding of the role of technology in global organisation.

Skills

- Be able to analyse, and develop an integrated solution to a practical problem concerning the design of a global value chain and/or business system, usually in the form of a project developed in and together with an organisation. The project theme is designing Global Value Chains and Business Systems and normally requires:
    - Demarcation and analysis of the empirical background to the problem
    - Develop an operationalisation of a relevant and researchable research problem/project objective, using theory taught on this semester, but usually going beyond that.
    - Development of an adequate research/project design, including:
        - Detailed questions/objectives
        - An account of the data collection and data validation methods, data sources
        - An account of the analytical methods used and methods used to validate the findings
        - An account of the (design) methods used to develop recommendations/solutions to resolve the research problem/ achieve the project objective.
- Presentation and validation of data
- Presentation, validation and discussion of analytical findings
- Presentation and validation of recommendations/solutions
- Evaluation of the findings and recommendations/solutions, methods and, if relevant, considerations regarding the limitations and generalisability of the study.
- Be able to integrate technological considerations in to the design of global business systems and value chains.

Competencies

- Be able to work together as a team to analyse and develop integrated and feasible solution(s) to a practical organisational problem
- Be able to work together with an organisation in an academically yet practically adequate manner.

Type of instruction: The module is carried out as group-based, problem-oriented project work. The group work is carried out as an independent work process in which the students themselves

organise and coordinate their workload in collaboration with a supervisor. The project is carried out in groups with normally no more than 6 members.

Exam format: Oral examination based on a written report.

Evaluation criteria: Are stated in the Joint Programme Regulations.

3.3.3 Methods and Tools for Business Systems Studies

Title: **Methods and Tools for Business Systems Studies(5 ECTS)**
(Metoder og værktøjer til studier af forretningssystemer)

Objective: Students who complete the module are expected to have:

Knowledge

- A coherent and profound understanding methodological approaches and tools for studying global value chains and business systems
- Understanding of the key methodological trade-offs between different methods when studying global value chains and business systems.
- Understanding the key approaches to increase the quality of data collection
- Knowledge of different methods to describe, analyse and improve global value chains.
- Knowledge of how to describe and understand business processes in the global organisation.

Skills

- Developed skills that enable the student to apply different research methods necessary for analysing and improving global business processes.
- Developed skills in evaluating different strategies and approaches for data collection and analysis.
- Developed skills in analysing and understanding global and processes.

Competencies

- Be able to select and operationalise appropriate approaches to data collection and analysis
- Be able to collect reliable and valid data.
- Be able to model and analyse value chains and processes in the globalized organisation.

Type of instruction: The teaching is organized in accordance with the general forms of teaching, see chapter 3.

Exam format: Internal oral/written examination

Evaluation criteria: Are stated in the Joint Programme Regulations.

3.3.4 Managing Global Business Systems and Value Chains

Title: **Managing Global Business Systems and Value Chains (5 ECTS)**
(Ledelse af globale forretningssystemer og værdikæder)

Objective: Students who complete the module are expected to have:

Knowledge

- A coherent and profound understanding of how and why organizations globalise, including an in-depth knowledge of the associated theories and strategies
- A profound understanding of the different theoretical perspectives on management in the global organization and how these different perspectives can be operationalised when analysing management in the global organization.
- Knowledge of different strategic configuration of organizations, including network structures, as well as an understanding of the key management challenges and issues associated with managing the global organization.
- Knowledge about strategic innovation in a global context.

Skills

- Developed skills in applying the different theoretical perspectives
- Developed skills to evaluate different options and argue for specific choices for strategic design of global value chains and business systems, the development of appropriate strategies, including recognising competitive opportunities, configuring global capabilities as well as organisational value chains and designs
- Developed relevant skills to apply theories and methods to the improvement and reorganisation of global value chains and business systems
- Developed skills to identify and implement options for reorganisation and improvements in the context of global value chain and business systems.

Competencies

- Be able to discuss the complex of problems associated with globalisation of organisations to outline the different paths and strategies an organization may choose to globalize value chains and business systems
- Develop abilities to craft and implement relevant organizational set-ups in the global organisation.

Type of instruction: The teaching is organized in accordance with the general forms of teaching, see chapter 3.

Exam format: Internal oral/written examination

Evaluation criteria: Are stated in the Joint Programme Regulations.

3.3.5 Media Management, Meso

Title: **Media Management, Meso (5 ECTS)**
(Medieledelse)

Objective: Students who complete the module are expected to:

Knowledge

- Have gained knowledge and understanding how media industries are organised spatially and what their social effects are – Including knowledge about
  - Media and globalisation including globalisation of media conglomerates
  - Outsourcing/offshoring and media production
  - Outsourcing/offshoring and spillover-effects
  - Media economics (e.g. Hollywood economics)
  - Construction of media clusters
  - Media in society and related policy issues

Skills

- Be able to understand why media firms globalise in particular ways and what the implication of their globalization is for the home and host societies.
- Be able to understand the principles behind media economics
- Understand the role of policy in constructing media clusters
- Be able to grasp controversies related to media's role in society

Competencies

- Design and create analytical frameworks for assessment the drivers behind media firms' globalisation strategies and their local implications using multiple perspectives
- Reflect on the how to create media clusters
- Navigate in discussions related to media's role in society.

Type of instruction: The teaching is organized in accordance with the general forms of teaching, see chapter 3.

Exam format: Internal, oral/written examination

Evaluation criteria: Are stated in the Joint Programme Regulations.

3.3.6 Operations Development and Strategy

Title: **Operations Development and Strategy (5 ECTS)**
(Global produktionsudvikling og -strategi)

Objective: Students who complete the module are expected to have:

Knowledge

- A coherent and profound understanding of how and why operations globalise, including an in-depth knowledge of the associated theories and strategies
- Insight into the strategic analysis and synthesis of global operations footprints including the understanding of; the strategic situation; the process of globalisation; and the theory-based conceptualisation of operations strategy
- Knowledge of strategic configuration of operations, including structures and infrastructures, the extended operations system and strategic capabilities
- Knowledge about strategic innovation in an operations system context.

Skills

- Developed skills to evaluate different options and argue for specific choices for strategic design of global operations systems and operations development strategies, including recognising of competitive opportunities, configuring operations capabilities, organisational processes and organisational designs
- Developed relevant skills to apply theories and methods to the improvement and reorganisation of global operations
- Developed skills to identify and implement options for reorganisation and improvements in the context of global operations.

Competencies

- Be able to discuss the complex of problems associated with globalisation of operations to outline the different paths and strategies a company may choose
- Develop abilities to craft and implement relevant operations strategies.

Type of instruction: The teaching is organized in accordance with the general forms of teaching, see chapter 3.

Exam format: Internal oral/written examination

Evaluation criteria: Are stated in the Joint Programme Regulations.

3.4 Courses, 2nd Semester

3.4.1 Media Management: Innovation and Technology Management in Media Firms

Title: **Media Management: Innovation and Technology Management in Media Firms (15 ECTS)**

(Medieledelse: Innovations- og teknologiledelse)

Objective: Students who complete the module are expected to:

Knowledge

- Have deepened their understanding of the theories taught on this semester by applying these theories in practice.

Skills

- Be able to analyse, and develop an integrated solution to a practical problem concerning technology and innovation leadership/management within the media industries, usually in the form of a project developed in and together with an organisation. The project theme is Media Management and Innovation and Technology management and normally requires:
    - Demarcation and analysis of the empirical background to the problem
    - Develop an operationalisation of a relevant and researchable research problem/project objective, using theory taught on this semester, but usually going beyond that.
    - Development of an adequate research/project design, including:
        - Detailed questions/objectives
        - An account of the data collection and data validation methods, data sources
        - An account of the analytical methods used and methods used to validate the findings
        - An account of the (design) methods used to develop recommendations/solutions to resolve the research problem/ achieve the project objective.
- Presentation and validation of data
- Presentation, validation and discussion of analytical findings
- Presentation and validation of recommendations/solutions
- Evaluation of the findings and recommendations/solutions, methods and, if relevant, considerations regarding the limitations and generalisability of the study.

Competencies

- Be able to work together as a team to analyse and develop integrated and feasible solution(s) to a practical organisational problem in media firms.
- Be able to work together with an organisation in an academically yet practically adequate manner.

Type of instruction: The module is carried out as group-based, problem-oriented project work. The group work is carried out as an independent work process in which the students themselves organise and coordinate their workload in collaboration with a supervisor. The project is carried out in groups with normally no more than 6 members.

Exam format: Oral examination based on a written report.

Evaluation criteria: Are stated in the Joint Programme Regulations.

3.4.2 Global Innovation and Technology Management

Title: **Global Innovation and Technology Management (15 ECTS)**
(Global innovations- og teknologiledelse)

Objective: Students who complete the module are expected to:

Knowledge

- Have deepened their understanding of the theories taught on this semester by applying these theories in practice.
- Have developed and understanding of the role of technology in global organisation.

Skills

- Be able to analyse, and develop an integrated solution to a practical problem concerning the design of a global value chain and/or business system, usually in the form of a project developed in and together with an organisation. The project theme is global innovation and technology management and normally requires:
    - Demarcation and analysis of the empirical background to the problem
    - Develop an operationalisation of a relevant and researchable research problem/project objective, using theory taught on this semester, but usually going beyond that.
    - Development of an adequate research/project design, including:
        - Detailed questions/objectives
        - An account of the data collection and data validation methods, data sources
        - An account of the analytical methods used and methods used to validate the findings
        - An account of the (design) methods used to develop recommendations/solutions to resolve the research problem/ achieve the project objective.
- Presentation and validation of data
- Presentation, validation and discussion of analytical findings
- Presentation and validation of recommendations/solutions
- Evaluation of the findings and recommendations/solutions, methods and, if relevant, considerations regarding the limitations and generalisability of the study.
- Be able to integrate technological considerations in to the design of global business systems and value chains.

Competencies

- Be able to work together as a team to analyse and develop integrated and feasible solution(s) to a practical organisational problem
- Be able to work together with an organisation in an academically yet practically adequate manner.

Type of instruction: The module is carried out as group-based, problem-oriented project work. The group work is carried out as an independent work process in which the students themselves

organise and coordinate their workload in collaboration with a supervisor. The project is carried out in groups with normally no more than 6 members.

Exam format: Oral examination based on a written report.

Evaluation criteria: Are stated in the Joint Programme Regulations.

3.4.3 Innovation and Change Management

Title: **Innovation and Change Management (5 ECTS)**
(Innovations- og forandringsledelse)

Objective: Students who complete the module are expected to:

Knowledge

- Have gained knowledge and understanding of the role of technology, innovation, and change in businesses
- Have gained knowledge about innovation and technology management in established businesses
- Have gained knowledge about incremental innovation and continuous improvement
- Have gained insight into disruptive and radical innovation
- Have gained knowledge about entrepreneurship, including corporate entrepreneurship, corporate venturing, the pitching of a new idea and business planning
- Have gained knowledge about organisational change strategies and process models
- Have gained insight into organising for change (including aspects for culture, power and politics)
- Have gained knowledge about leading change
- Have gained knowledge about enablers and disablers of change.

Skills

- Be able to understand the characteristics and drivers of innovation and change, as well as the practical means of handling them in an engineering business context
- Be able to understand the range, scope and complexity of challenges related to the management of technology, innovation and change
- Be able to describe, analyse and redesign innovation- and change management processes
- Be able to identify and analyse the field of innovation and change management including the value position of stakeholders; customers, suppliers and other network partners
- Be able to analyse and identify a variety of business models and models for innovation of business models
- Be able to design, evaluate and audit the innovative capabilities and change management of a business organisation
- Be able to apply principles of business model innovation and risk management to suggest redesign and improvement of business models.

Competencies

- Be able to design and evaluate innovation- and change management
- Be able to realise and implement innovation- and change management initiatives, including the implementation and design innovation- and change management processes in projects, companies and networks of companies, as well as relating practical innovation- and change management experiences to conceptual understanding of innovation leadership and change management.

Type of instruction: The teaching is organized in accordance with the general forms of teaching, see chapter 3.

Exam format: Internal, oral/written examination

Evaluation criteria: Are stated in the Joint Programme Regulations.

3.4.4 Strategy, Organisation and Market Creation

Title: **Strategy, Organisation and Market Creation (5 ECTS)**
(Strategi, organisation og markedsskabelse)

Objective: Students who complete the module are expected to:

Knowledge

- Have gained insights into different concepts for strategy and their significance for the firm's ability to seize opportunities and create new markets.
- Have knowledge about possible strategies in the global organisation
- Have knowledge about possible organizational designs in the global organisation
- Have knowledge about the possible configuration of innovative business models and understanding their importance for businesses
- Have knowledge about the challenges in the development of global markets and their possible solutions.
- Have knowledge about current trends influencing the contemporary organisation.

Skills

- Be able to understand the characteristics and drivers of market creation and development, as well as the practical means of handling them in an engineering business context
- Be able to understand the range, scope and complexity of challenges related to the management in creating and realizing global markets
- Be able to work with different organizational set-ups and configurations in the global organization and be able to understand their importance for market and business creation.
- Be able to configure and design global networks and value chains for market creation and realization.
- Be able to understand the complexities involved in creating global markets.

Competencies

- Be able to design and evaluate the strengths and weaknesses of different organisational configurations (including network structures) and their possible contributions for the creation of global markets.
- Be able to craft strategies for market creation in the global firm

Type of instruction: The teaching is organized in accordance with the general forms of teaching, see chapter 3.

Exam format: Internal, oral/written examination

Evaluation criteria: Are stated in the Joint Programme Regulations.

3.4.5 Media Management, Micro

Title: **Media Management, Micro (5 ECTS)**
(Medieledelse, mikro)

Objective: Students who complete the module are expected to have:

Knowledge

- A coherent and profound knowledge of how and why media firms organise their creative processes in particular ways and how they can be improved including how users might be integrated
- Insight into project management in media firms including their industry specific differences
- Knowledge of IP and contractual issues of relevance for media firms including Creative Commons.
- Knowledge about technological convergence and the related managerial challenges media firms face
- Insights in strategic accounting management

Skills

- Developed skills to evaluate the organization of creative practises in media firms and argue for specific choices in connection to improvement of and changes in the organization of the creative processes
- Developed relevant skills to apply theories and methods to assess implications of IP rights and contracts incentive structures for the firms' choice of strategy.
- Developed skills to identify and implement options for reorganisation and improvements in the context of global operations.

Competencies

- Be able to discuss the complex of problems associated with organization and improvement of creativity in media firms and suggest alternatives
- Develop abilities to account for IP rights and their implications for media firms
- Be able to read and use financial accounts for strategic choices in media firms.

Type of instruction: The teaching is organized in accordance with the general forms of teaching, see chapter 3.

Exam format: Internal oral/written examination

Evaluation criteria: Are stated in the Joint Programme Regulations.

3.4.6 Engineering Key Processes

Title: **Engineering Key Processes (5 ECTS)**
(Udvikling og forbedring af nøgle processer)

Objective: Students who complete the module are expected to:

Knowledge

- Have gained knowledge and understanding different management systems and processes in the global organization – Including
  - Knowledge management systems
  - Financial systems with a special emphasis on the evaluation of new innovative ideas
  - Different perspectives for analysing the business system (for example the balanced scorecard)
  - Business Intelligence systems
  - Project management systems
  - Market intelligence systems
- Have knowledge about the key components of management systems such as decision support systems, information systems and databases.
- Have knowledge about the role of IT-systems in the global organization
- Have knowledge about technology as a key enabler in the global organisation.

Skills

- Be able to understand the significance of management systems for the effective and efficient management in the global organisation
- Be able to evaluate a business system or idea in a structured and systematic manner
- Be able to access the role and significance of IT-systems in the global organisation.

Competencies

- Design and create analytical frameworks for the assessment of business ideas and systems using multiple perspectives
- Reflect on the appropriate design of management systems in the global organisation.
- Integrate technological considerations into the design of management systems.

Type of instruction: The teaching is organized in accordance with the general forms of teaching, see chapter 3.

Exam format: Internal, oral/written examination

Evaluation criteria: Are stated in the Joint Programme Regulations.

3.5 3rd Semester

3.5.1 Media Management

Title: **Media Management (30 ECTS)**
(Medieledelse)

Prerequisites: This module is based on knowledge obtained at the 2nd semester of the Master of Science and Technology programme in Operations and Innovation Management with specialisation in Media Management

Goal: Students who complete the module are expected to:

Knowledge

- Have gained knowledge and understanding of theoretical reflective work in the context of media firms/industries
- Have gained insight into management and/or growth of media firms/industries as well as insights into the practical organization of content production.

Skills

- Be able to describe the problem solved and the criteria applied for its solution
- Be able to evaluate the concepts, theories and methodologies applied in the solution of the problem
- Be able to account for the choices made during the solution of the problem, and to substantiate that these are made on a high professional level
- Be able to assess the limitations of the concepts, theories and methodologies applied in the solution of the problem.

Competences

- Be able to analyse and solve an actual problem of relevance for media firms/industries through application of systematic research and development processes.

Teaching Method: The project work is carried out as an independent work process in which the students themselves organise and coordinate their workload in collaboration with a supervisor. The project may be carried out individually or in groups. The project may be finalized with a project report or in the form of a scientific paper with supporting appendices.

Form of examination: Internal, oral examination based on a written report.

Evaluation criteria: As stated in the Joint Programme Regulations.

3.5.2 Academic Internship - Media Management

Title: **Academic Internship - Media Management (30 ECTS)**
(Projektorienteret forløb I en virksomhed - Medieledelse)

Prerequisites: This module is based on knowledge obtained at the 2nd semester of the Master of Science and Technology programme in Operations and Innovation Management with specialisation in Media Management

Goal: Students who complete the module are expected to:

Knowledge

- Have gained knowledge and understanding of theoretical reflective work in the context of media firms/industries
- Have gained insight into management and/or growth of media firms/industries as well as insights into the practical organization of content production.

Skills

- Be able to describe the problem solved and the criteria applied for its solution
- Be able to evaluate the concepts, theories and methodologies applied in the solution of the problem
- Be able to account for the choices made during the solution of the problem, and to substantiate that these are made on a high professional level
- Be able to assess the limitations of the concepts, theories and methodologies applied in the solution of the problem.

Competences

- Be able to analyse and solve an actual problem of relevance for media firms/industries through application of systematic research and development processes.

Teaching Method: The student is included in the company's daily work and carry out independent project work on an industrial problem relevant for the company. Concurrent to the work in the company, the student makes a project report, which is evaluated after the ending of the internship.

Form of examination: Internal, oral examination based on a written report

Evaluation criteria: As stated in the Joint Programme Regulations.

3.5.3 Operations and Innovation Management

Title: **Operations and Innovation Management (30 ECTS)**
(Værdikæder og innovationsledelse)

Prerequisites: This module is based on knowledge obtained at the 2nd semester of the Master's programme in Operations and Innovation Management with specialisation in Global Management

Goal: Students who complete the module are expected to:

Knowledge

- Have gained knowledge and understanding of theoretical reflective work
- Have developed an understanding of the role of technology in global organisation.

Skills

- Be able to describe the problem solved and the criteria applied for its solution
- Be able to evaluate the concepts, theories and methodologies applied in the solution of the problem
- Be able to account for the choices made during the solution of the problem, and to substantiate that these are made on a high professional level
- Be able to assess the limitations of the concepts, theories and methodologies applied in the solution of the problem.
- Can combine technological insights with market and business related considerations in the design of innovative business systems and value chains.

Competences

- Be able to analyse and solve an actual problem of industrial relevance through application of systematic research and development processes, including advanced analytical, experimental, and/or numerical methods and models.
- Can give emphasis to the creative deployment and importance of technologies in the creation of global business systems and value chains.

Teaching Method: The project work is carried out as an independent work process in which the students themselves organise and coordinate their workload in collaboration with a supervisor. The project may be carried out individually or in groups. The project may be finalized with a project report or in the form of a scientific paper with supporting appendices.

Form of examination: Internal, oral examination based on a written report.

Evaluation criteria: As stated in the Joint Programme Regulations.

3.5.4 Academic Internship - Operations and Innovation Management

Title: **Academic Internship - Operations and Innovation Management (30 ECTS)**
(Projektorienteret forløb I en virksomhed - Værdikæder og innovationsledelse)

Prerequisites: This module is based on knowledge obtained at the 2nd semester of the Master's programme in Operations and Innovation Management with specialisation in Global Management

Goal: Students who complete the module are expected to:

Knowledge

- Have gained knowledge and understanding of theoretical reflective work
- Have developed an understanding of the role of technology in global organisation.

Skills

- Be able to describe the problem solved and the criteria applied for its solution
- Be able to evaluate the concepts, theories and methodologies applied in the solution of the problem
- Be able to account for the choices made during the solution of the problem, and to substantiate that these are made on a high professional level
- Be able to assess the limitations of the concepts, theories and methodologies applied in the solution of the problem.
- Can combine technological insights with market and business related considerations in the design of innovative business systems and value chains.

Competences

- Be able to analyse and solve an actual problem of industrial relevance through application of systematic research and development processes, including advanced analytical, experimental, and/or numerical methods and models.
- Can give emphasis to the creative deployment and importance of technologies in the creation of global business systems and value chains.

Teaching Method: The student is included in the company's daily work. Concurrent to the work in the company, the student makes a report which is evaluated after ending the internship.

Form of examination: Internal, oral examination based on a written report

Evaluation criteria: As stated in the Joint Programme Regulations.

3.6 4th Semester - Thesis

3.6.1 Master's Thesis (Media Management)

Title: **Master's Thesis (30, 60 ECTS)**
(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.

Prerequisites: This module is based on knowledge obtained at the first three semesters of the Operations and Innovation Management with specialisation in Media Management programme

Goal: Students who complete the module are expected to:

Knowledge

- Have attained thorough understanding of the specialisation's subject areas.

Skills

- Be able to apply scientific methodology to solving a wide variety of problems within the field of specialisation
- Be able to perform scientific work in relevant topics of the field of the specialisation
- Be able to apply a wide range of engineering methods in research and development projects in the field of specialisation
- Be able to participate in or lead projects within the fields of the specialisation.

Competences

- Be able to work independently with a project on a specific problem within their field of interest on the highest possible level within their specialization in media management.
- Be able to take part in both discipline-specific and interdisciplinary cooperation.

Teaching Method: In this module, the Master's Thesis is carried out. The module constitutes independent project work and concludes the programme. Within the approved topic, the Master's Thesis must document that the level of the programme has been attained.

Form of examination: Oral examination with participation of an external examiner.

Evaluation criteria: As stated in the Joint Programme Regulations.

3.6.2 Master's Thesis (Global Management)

Title: **Master's Thesis (30, 60 ECTS)**
(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.

Prerequisites: This module is based on knowledge obtained at the first three semesters of the Operations and Innovation Management with specialisation in Global Management programme or the like.

Goal: Students who complete the module are expected to:

Knowledge

- Have attained thorough understanding of the specialisation's subject areas.

Skills

- Be able to apply scientific methodology to solving a wide variety of problems within the field of specialisation
- Be able to perform scientific work in relevant topics of the field of the specialisation
- Be able to apply a wide range of engineering methods in research and development projects in the field of specialisation
- Be able to participate in or lead projects within the fields of the specialisation.

Competences

- Be able to work independently with a project on a specific problem within their field of interest on the highest possible level within their specialisation
- Be able to take part in both discipline-specific and interdisciplinary cooperation.

Teaching Method: In this module, the Master's Thesis is carried out. The module constitutes independent project work and concludes the programme. Within the approved topic, the Master's Thesis must document that the level of the programme has been attained.

Form of examination: Oral examination with participation of an external examiner.

Evaluation criteria: As stated in the Joint Programme Regulations.

Chapter 4: Entry into Force, Interim Provisions and Revision

The curriculum is approved by the Dean of the Faculty of Engineering and Science and enters into force as of September 2017.

Students who wish to complete their studies under the previous curriculum from 2012 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 programme at a university in Denmark or abroad

The Board of Studies can approve successfully completed (passed) programme elements from other Master's programmes in lieu of programme elements in this programme (credit transfer). The Board of Studies can also approve successfully completed (passed) programme elements from another Danish programme or a programme outside of Denmark at the same level in lieu of programme 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.

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.

[1] Or another foreign language (upon approval from the Board of Studies.
[2] The Board of Studies can grant exemption from this.

5.5 Rules and requirements for the reading of texts

At programmes 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 programme, including exams.