AALBORG UNIVERSITET

STUDIEORDNING FOR KANDIDATUDDANNELSEN (CAND.TECH.) I BYGGELEDELSE, 2012.

CAND.TECH.
AALBORG

MODULER SOM INDGÅR I STUDIEORDNINGEN

INDHOLDSFORTEGNELSE

PROJEKTERING OG UDFØRELSE AF BYGNINGSKONSTRUKTIONER

2018/2019

FORUDSÆTNINGER/ANBEFALEDE FORUDSÆTNINGER FOR AT DELTAGE I MODULET

Prerequisites:

In accordance with the admission requirements

MODULETS INDHOLD, FORLØB OG PÆDAGOGIK

Goal:

Students who complete the module must have acquired the following knowledge, skills and competencies:

LÆRINGSMÅL

VIDEN

Knowledge - The student must have knowledge of the theories that describe the following subject areas:

- Must have knowledge of the interaction between design and construction of buildings.
- Must have knowledge of civil engineering including the timing and financial impact of different construction methods.
- Must have knowledge of basic foundation and concrete structures.

FÆRDIGHEDER

Skills – The student must be able to:

- Describe the alternative shapes of selective structural elements, including foundation design.
- Explain alternative material types and construction methods and specify criteria for choosing between alternatives.
- Analyze the time required for a construction project and set schedules, for example as bar charts, network diagrams and cyclograms.
- Analyze the cost of construction of a building project and plan tender calculations in regards to the chosen construction methods.
- Analyze the client and contractor payments and deposits and create similar financial statement for the project.
- Analyze requirements and design a site that is appropriate for the building project.
- Develop a project organization that specifies the legal relations between the parties in the construction project and an organization deemed appropriate for management of the construction project.
- Explain the process that semester the group has gone through.
- Document project work and its results in a well-structured report.
- Plan and carry out a presentation of the project.

KOMPETENCER

Competencies

- Should in the future be able to manage a construction based on an understanding of the technical and organizational relationships between design and execution.
- Should be able to compare technical disciplines with the practical execution of construction.
- Must be able to communicate results obtained from project work in project reports.
- Must be able to work around the problem field project and make a joint presentation of the project results.

UNDERVISNINGSFORM

Teaching methods:

Project work with teacher feedback supplemented with lectures, workshops, presentation seminars and more.

OMFANG OG FORVENTET ARBEJDSINDSATS

The module is 15 ECTS which is corresponding to 450 hours of study.

EKSAMEN

PRØVER

Prøvens navn	Projektering og udførelse af bygningskonstruktioner
Prøveform	Mundtlig pba. projekt Exam format: Oral examination based on presentation seminar and project report.
ECTS	15
Bedømmelsesform	7-trins-skala
Censur	Intern prøve
Vurderingskriterier	Evaluation criteria: As described in the Framework Provisions. http://www.engineering.aau.dk/digitalAssets/332/332984_faellesbestemmelser_230617.pdf

FAKTA OM MODULET

Engelsk titel	Design and Construction of Buildings
Modulkode	B-BLX-K1-1
Modultype	Projekt
Varighed	1 semester
Semester	Efterår
ECTS	15
Undervisningssprog	Dansk og engelsk
Undervisningssted	Campus Aalborg
Modulansvarlig	Arne Peter Rasmussen

ORGANISATION

Studienævn	Studienævnet for Byggeri og Anlæg
Institut	Institut for Byggeri og Anlæg
Fakultet	Det Ingeniør- og Naturvidenskabelige Fakultet

PROJEKTLEDELSE OG ØKONOMI

2018/2019

FORUDSÆTNINGER/ANBEFALEDE FORUDSÆTNINGER FOR AT DELTAGE I MODULET

Prerequisites:

No specific prerequisites necessary

MODULETS INDHOLD, FORLØB OG PÆDAGOGIK

Goal:

Students who complete the module must have acquired the following knowledge, skills and competencies:

LÆRINGSMÅL

VIDEN

Knowledge – The student must have knowledge of the theories that describe the following areas:

- Must have knowledge of economic conditions for the construction industry
- Must have knowledge of operating, investing and financing calculations.
- Must have knowledge of budgeting and financial reporting.
- Must have knowledge of general project management models.
- Must have knowledge of basic project planning tools such as time and resource plans.
- Must have knowledge of general organizational and motivational and communication theories.
- Must have knowledge of working environment and safety and health on construction projects.

FÆRDIGHEDER

Skills:

- Must be able to use the usual methods for calculation of costs in manufacturing companies.
- Must be able to use the usual methods for the assessment of investment attractiveness.
- Must be able to use the usual methods of budgeting of business operations.
- Must be able to identify and evaluate the usual sources for financing the investments and operations of a manufacturing company.
- Must be able to prepare and analyze accounts and accordingly assess the economic situation.
- Must be able to argue for usual models of motivation, communication and management and use of models in less complex cases.
- Must be able to explain the traditional models of organization of construction projects as well as classical and modern forms of cooperation in such projects.
- Must be able to design appropriate time and resource plans based on among other things the principles of "lean construction".
- Must be able to assess specific cases for the purposes of health and safety tools.

KOMPETENCER

Competencies:

- Must be able to explain the impact of project activities on the financial circumstances of the company as well as the managerial tasks in project management, including assignments related to organizational health and safety.

UNDERVISNINGSFORM

Teaching methods:

Lectures supplemented with workshops, presentation seminars and more.

OMFANG OG FORVENTET ARBEJDSINDSATS

The module is 5 ECTS which is corresponding to 150 hours of study.

EKSAMEN

PRØVER

Prøvens navn	Projektledelse og økonomi
Prøveform	Skriftlig eller mundtlig Exam format: Individual oral or written examination. The exam form is determined at the beginning of the semester.
ECTS	5
Bedømmelsesform	7-trins-skala
Censur	Intern prøve
Vurderingskriterier	Evaluation criteria: As described in the Framework Provisions. http://www.engineering.aau.dk/digitalAssets/332/332984_faellesbestemmelser_230617.pdf

FAKTA OM MODULET

Engelsk titel	Project Management and Economics
Modulkode	B-BLX-K1-2
Modultype	Kursus
Varighed	1 semester
Semester	Efterår
ECTS	5
Undervisningssprog	Engelsk
Undervisningssted	Campus Aalborg
Modulansvarlig	Arne Peter Rasmussen

ORGANISATION

Studienævn	Studienævnet for Byggeri og Anlæg
Institut	Institut for Byggeri og Anlæg
Fakultet	Det Ingeniør- og Naturvidenskabelige Fakultet

GRUNDLÆGGENDE GEOTEKNIK OG FUNDERING

2018/2019

FORUDSÆTNINGER/ANBEFALEDE FORUDSÆTNINGER FOR AT DELTAGE I MODULET

Prerequisites:

Admission to the program.

MODULETS INDHOLD, FORLØB OG PÆDAGOGIK

Objectives:

The course will provide an understanding of typical Danish soil types and their geotechnical properties, including characteristic material, strength and setting parameters. Geotechnics must be applied. Insight into the foundation methods, field and laboratory investigation methods must be achieved and understanding of geotechnical reports.

LÆRINGSMÅL

VIDEN

Knowledge

- Must have knowledge of Danish soil types and their geotechnical properties.
- Must have knowledge of field survey methods.
- Must have knowledge of laboratory testing methods.
- Must be able to understand and explain geostatic.
- Must be able to manage and account for the foundation principles of simple structures.
- Must be able to understand and explain a geotechnical report.

FÆRDIGHEDER

Skills

- Must be able to apply methods for engineering geological description of the Danish landscape and soil types.
- Must be able to use geostatic of geotechnical structures.
- Must be able to determine sentences and the critical load for simple direct-based constructions
- Must be able to assess sentences timing and assess measures against the sentences.
- Must be able to perform and assess geotechnical classification tests.
- Must be able to use geotechnical drilling profiles and geotechnical reports.

KOMPETENCER

Competencies

- Must be able to use the correct terminology in geotechnics and foundation.
- Must be able to assess foundation methods in relation to Danish soil conditions.
- Must be able to assess Danish soil types and apply geotechnical reporting.

UNDERVISNINGSFORM

Teaching methods:

Lectures supplemented with workshops, presentation seminars, laboratory visits and more.

OMFANG OG FORVENTET ARBEJDSINDSATS

The module is 5 ECTS which is corresponding to 150 hours of study.

EKSAMEN

PRØVER

Prøvens navn	Grundlæggende geoteknik og fundering
Prøveform	Skriftlig eller mundtlig Exam form: Individual oral or written examination. The exam form is determined at the beginning of the semester.
ECTS	5
Bedømmelsesform	7-trins-skala
Censur	Intern prøve
Vurderingskriterier	Evaluation criteria: As described in the Framework Provisions. http://www.engineering.aau.dk/digitalAssets/332/332984_faellesbestemmelser_230617.pdf

FAKTA OM MODULET

Engelsk titel	Geotechnics and Foundation
Modulkode	B-BLX-K1-3
Modultype	Kursus
Varighed	1 semester
Semester	Efterår
ECTS	5
Undervisningssprog	Engelsk
Undervisningssted	Campus Aalborg
Modulansvarlig	Arne Peter Rasmussen

ORGANISATION

Studienævn	Studienævnet for Byggeri og Anlæg
Institut	Institut for Byggeri og Anlæg
Fakultet	Det Ingeniør- og Naturvidenskabelige Fakultet

PROBLEMORIENTERET LÆRING OG INTRODUKTION TIL STATIK

2018/2019

FORUDSÆTNINGER/ANBEFALEDE FORUDSÆTNINGER FOR AT DELTAGE I MODULET

Prerequisites:

Admission to the programme

MODULETS INDHOLD, FORLØB OG PÆDAGOGIK

Goal:

Students who complete the module must have acquired the following knowledge, skills and competencies:

LÆRINGSMÅL

VIDEN

Knowledge

- Must have knowledge about basic design elements and construction types
- Must have knowledge about of the modeling of loads and supports
- Must have knowledge about forces and moments
- Must be able to understand equilibrium equations
- Must be able to understand the concepts of static determinacy and in-determinacy
- Must have knowledge of common building materials: steel, wood and concrete.
- Must be able to explain the learning theories that underlie problem based learning
- Must be able to explain the Aalborg model approach to problem based learning.
- Must be able to explain the various techniques for planning and management of the group-based project work.

FÆRDIGHEDER

Skills

- Must be able to set static models for planar truss, beam and frame structures
- Must be able to perform calculations of reactions in statically determinate truss, beam and frame structures
- Must be able to perform calculations of section forces and stresses in statically determinate truss, beam and frame structures

- Must be able to use the notation and terminology in the field area.
- Must be able to plan and manage a problem-based and project-organized study project carried out by a project group.
- Must be able to communicate project results and processes in a coherent, structured and understandable manner, both in writing, verbally and graphically.
- Must be able to analyze the project group's organization of the group cooperation with a view to identifying strengths and weaknesses, and based on the analysis make suggestions for how cooperation in future groups can be improved.
- Must be able to reflect on the causes and propose possible solutions to any group conflicts.
- Must be able to analyze and evaluate own study efforts and learning in relation to a problem-based group work with a view to continued professional development.
- Must be able to analyze and evaluate collective learning processes for joint knowledge development and exchange of experience.

KOMPETENCER

Competencies

- Must be able to engage in a dialogue on technical issues in which a basic knowledge of statics is assumed.
- Must be able to engage in, reflect on and optimize own participation in a group-based project.
- Must be able to consciously reflect on and develop own learning.
- Must be able to engage in, reflect on and optimize collective learning processes in relation to specific technological projects.

UNDERVISNINGSFORM

Teaching methods:

Lectures supplemented with workshops, presentation seminars, laboratory visits and more.

OMFANG OG FORVENTET ARBEJDSINDSATS

The module is 5 ECTS which is corresponding to 150 hours of study.

EKSAMEN

PRØVER

Prøvens navn	Problemorienteret læring og introduktion til statik
Prøveform	Skriftlig eller mundtlig Exam format: Individual oral or written examination. The exam form is determined at the beginning of the semester.
ECTS	5
Bedømmelsesform	Bestået/ikke bestået
Censur	Intern prøve
Vurderingskriterier	Evaluation criteria: As described in the Framework Provisions. http://www.engineering.aau.dk/digitalAssets/332/332984_faellesbestemmelser_230617.pdf

FAKTA OM MODULET

Engelsk titel	Problem Based Learning and Introduction to Statics
Modulkode	B-BLX-K1-4
Modultype	Kursus
Varighed	1 semester
Semester	Efterår
ECTS	5
Undervisningssprog	Engelsk
Undervisningssted	Campus Aalborg
Modulansvarlig	Arne Peter Rasmussen

ORGANISATION

Studienævn	Studienævnet for Byggeri og Anlæg
Institut	Institut for Byggeri og Anlæg
Fakultet	Det Ingeniør- og Naturvidenskabelige Fakultet

PROJEKTLEDELSE OG PRODUKTION I BYGGERIET

2018/2019

FORUDSÆTNINGER/ANBEFALEDE FORUDSÆTNINGER FOR AT DELTAGE I MODULET

Prerequisites:

Project Management and Economics

MODULETS INDHOLD, FORLØB OG PÆDAGOGIK

Goal:

Students complete the module must have acquired the following knowledge, skills and competencies:

LÆRINGSMÅL

VIDEN

Knowledge – The student must have knowledge of the theories that describe the following areas:

- Must have knowledge of the collection and analysis of empirical data.
- Must have knowledge of analytical methods for contracting order process.
- Must have knowledge of project management theories and methods.
- Must have knowledge of modeling processes.

FÆRDIGHEDER

Skills – The student must be able to:

- Analyze a construction order process with emphasis on design and manufacturing issues.
- Process empirical project data.
- Explain the production, quality and cost issues in the order process.
- Interpret the relationship between activities in production through the construction of whole models and detailed models that describe these conditions.
- Analyze process flows and value creation.
- Reasoning between the project and the organization's structural, technical and resource building.
- Interpret the interaction between the parties involved in a project or contract manufacturing company's various organizational units.
- Argue by using precise production-related terminology.

KOMPETENCER

Competencies

- Must be able to assess the proposed systems and their sensitivity to changes in e.g. customer demands, regulatory, quality, etc.
- Must be able to establish operational production models. The models can be based on a deterministic, stochastic or heuristic basis.
- Skal kunne vurdere betydningen for virksomheden eller projektet af at ændre de nuværende forhold og indføre de foreslåede ændringer skal eksempelvis vurderes ud fra økonomiske, organisatoriske, sociale og tekniske konsekvenser.
- Must be able to assess the importance for the company or the project of changing the current situation and introduce the proposed amendment, which must be assessed from e.g. economic, organizational, social and technical consequences.
- Must be able to prepare and reflect on concrete implementation plans

- Must be able to communicate the results obtained from the project work in a project report.
- Must be able to work around the problem field project and make a joint presentation of the project results.

UNDERVISNINGSFORM

Teaching methods:

Project work with teacher feedback supplemented with lectures, workshops, presentation seminars and more.

OMFANG OG FORVENTET ARBEJDSINDSATS

The module is 15 ECTS which is corresponding to 450 hours of study.

EKSAMEN

PRØVER

Prøvens navn	Projektledelse og produktion i byggeriet
Prøveform	Mundtlig pba. projekt Exam format: Oral examination based on presentation seminar and project report.
ECTS	15
Bedømmelsesform	7-trins-skala
Censur	Ekstern prøve
Vurderingskriterier	Evaluation criteria: As described in the Framework Provisions http://www.engineering.aau.dk/digitalAssets/332/332984_faellesbestemmelser_230617.pdf

FAKTA OM MODULET

Engelsk titel	Project management and Production in Construction
Modulkode	B-BLX-K2-5
Modultype	Projekt
Varighed	1 semester
Semester	Forår
ECTS	15
Undervisningssprog	Dansk og engelsk
Undervisningssted	Campus Aalborg
Modulansvarlig	Arne Peter Rasmussen
Censornorm	B

ORGANISATION

Studienævn	Studienævnet for Byggeri og Anlæg
Institut	Institut for Byggeri og Anlæg

Fakultet	Det Ingeniør- og Naturvidenskabelige Fakultet

BYGGEPROCESSENS STYRINGSOMRÅDER

2018/2019

FORUDSÆTNINGER/ANBEFALEDE FORUDSÆTNINGER FOR AT DELTAGE I MODULET

Prerequisites:

Project Management and Business Economics

MODULETS INDHOLD, FORLØB OG PÆDAGOGIK

Objectives:

Students who complete the module must have acquired the following knowledge, skills and competencies:

LÆRINGSMÅL

VIDEN

Knowledge - The course introduces the students to the various management roles in building projects and for the communication and collaboration needs which is the prerequisite for achieving effective construction process. The students must have knowledge of the theories that describe the following areas:

- Must have knowledge of management roles and management areas, including the authorities.
- Must have knowledge of proactive and reactive conflict
- Must have knowledge of basic logistics for the construction of building projects.
- Must have knowledge of quality and environmental management works carried out at construction sites.
- Must have knowledge of advanced project financial management.
- Must have knowledge of facilities management

FÆRDIGHEDER

Skills

- Must be able to compare different management roles in a construction project and relate these to the phases of the building process.
- Must be able to account for the authorities, in connection with the construction of building and construction projects
- Must be able to use various conflict resolution models.
- Must be able to integrate logistical optimization in the management of building and construction projects.
- Must be able to explain the quality and environmental management systems.
- Must be able to analyze various economic problems in building and construction projects.
- Must be able to integrate facilities management theories in the construction process.

KOMPETENCER

Competencies:

- Must be able to understand the different analysis models and have a solid knowledge of the management tasks that occur during the building process.
- Must master a wide range of management areas for both large and small projects. Knowledge gained in this module must be used as skills in project management areas of logistics, economics, risk management, quality and environmental management and facilities management.

UNDERVISNINGSFORM

Teaching methods:

Lectures supplemented with workshops, presentation seminars and more.

OMFANG OG FORVENTET ARBEJDSINDSATS

The module is 5 ECTS which is corresponding to 150 hours of study.

EKSAMEN

PRØVER

Prøvens navn	Byggeprocessens styringsområder
Prøveform	Skriftlig eller mundtlig Exam form: Individual oral or written examination. The exam form is determined at the beginning of the semester.
ECTS	5
Bedømmelsesform	7-trins-skala
Censur	Intern prøve
Vurderingskriterier	Evaluation criteria: As described in the Framework Provisions. http://www.engineering.aau.dk/digitalAssets/332/332984_faellesbestemmelser_230617.pdf

FAKTA OM MODULET

Engelsk titel	Management of the Construction Process
Modulkode	B-BLX-K2-6
Modultype	Kursus
Varighed	1 semester
Semester	Forår
ECTS	5
Undervisningssprog	Engelsk
Undervisningssted	Campus Aalborg
Modulansvarlig	Arne Peter Rasmussen

ORGANISATION

Studienævn	Studienævnet for Byggeri og Anlæg
Institut	Institut for Byggeri og Anlæg
Fakultet	Det Ingeniør- og Naturvidenskabelige Fakultet

BYGGERIETS RAMMEBETINGELSER

2018/2019

FORUDSÆTNINGER/ANBEFALEDE FORUDSÆTNINGER FOR AT DELTAGE I MODULET

Prerequisites:

No specific prerequisites necessary

MODULETS INDHOLD, FORLØB OG PÆDAGOGIK

Objectives:

Students who complete the module must have acquired the following knowledge, skills and competencies:

LÆRINGSMÅL

VIDEN

Knowledge - The students must have knowledge of the theories that describe the following areas:

- Must have knowledge of national and international legislation and contractual relations in connection with the execution of building and construction works.
- Must have knowledge of work environment, including health and safety in the building and construction industry.

FÆRDIGHEDER

Skills

- Must be able to demonstrate knowledge of the use of AB92, ABT93, ABR89 and AB Consumer as basic national agreement between the construction parties
- Must be able to demonstrate understanding of different performance descriptions and explain their use.
- Must be able to explain the current national regulation and associated guidelines for quality assurance
- Must be able to demonstrate knowledge of FIDIC, NL92 and NLM94 as basic international agreement between construction parties.
- Must be able to describe national and international (EU) legislation on inviting tenders and award of contract in connection with the construction.
- Must be able to describe the building's historic development and ongoing development initiatives including OPP, partnering and use of indicators.
- Must be able to analyze the construction context in connection with general societal trends
- Must be able to use the guidelines and rules about working in construction.
- Must be able to explain labor law.

KOMPETENCER

Competencies:

- Must be able to explain the framework of construction.
- Must be able to relate a given project to the framework of construction including the work environment.

UNDERVISNINGSFORM

Teaching methods:

Lectures supplemented with workshops, presentation seminars and more.

OMFANG OG FORVENTET ARBEJDSINDSATS

The module is 5 ECTS which is corresponding to 150 hours of study.

EKSAMEN

PRØVER

Prøvens navn	Byggeriets rammebetingelser
Prøveform	Skriftlig eller mundtlig Exam form: Individual oral or written examination. The exam form is determined at the beginning of the semester.
ECTS	5
Bedømmelsesform	7-trins-skala
Censur	Intern prøve
Vurderingskriterier	Evaluation criteria: As described in the Framework Provisions. http://www.engineering.aau.dk/digitalAssets/332/332984_faellesbestemmelser_230617.pdf

FAKTA OM MODULET

Engelsk titel	Framework Conditions of Construction
Modulkode	B-BLX-K2-7
Modultype	Kursus
Varighed	1 semester
Semester	Forår
ECTS	5
Undervisningssprog	Engelsk
Undervisningssted	Campus Aalborg
Modulansvarlig	Arne Peter Rasmussen

ORGANISATION

Studienævn	Studienævnet for Byggeri og Anlæg
Institut	Institut for Byggeri og Anlæg
Fakultet	Det Ingeniør- og Naturvidenskabelige Fakultet

UDVIKLING AF KVALITETS- OG PROJEKTSTYRINGSSYSTEMER

2018/2019

FORUDSÆTNINGER/ANBEFALEDE FORUDSÆTNINGER FOR AT DELTAGE I MODULET

Prerequisites:

Business Economics

MODULETS INDHOLD, FORLØB OG PÆDAGOGIK

Goal:

Students who complete the module must have acquired the following knowledge, skills and competencies:

LÆRINGSMÅL

VIDEN

Knowledge - The students must have knowledge of the theories that describe the following areas:

- Quality management - business processes and supply chain.
- Project planning and control methods and techniques.
- Financial management of activities in companies with production orders and long production time.

FÆRDIGHEDER

Skills – The student must be able to:

- Understand quality management in relation to business processes and analyze the organization's need for quality management with a focus on supply chain, and suggest changes and improvements to all or parts of the system.
- Understand the financial management of activities in companies with production orders. Including cash management, financial capacity management and calculations for planning and follow-up on the company's order-based production.
- Understand resource-limited project management problems and plan the execution of projects with regards to this.

KOMPETENCER

Competencies

- Must be able to understand the relation between quality management, project management, and financial management and the company's other management systems and relation with suppliers and customers in the value chain.
- Must be able to apply his/hers knowledge to build quality and project management systems in companies with order-based production. This is carried out in terms of how such systems interact with the company's core business and the company's other systems, particularly the company's financial management.
- Must be able to apply his/hers acquired knowledge on techniques and management systems for contract manufacturing companies.
- Must be able to apply his/hers knowledge gained on how to specify projects and the challenges that may arise in project-driven businesses.
- Must be able to apply his/hers knowledge gained about how companies develop quality management systems.

UNDERVISNINGSFORM

Teaching methods:

Lectures supplemented with workshops, presentation seminars and more.

OMFANG OG FORVENTET ARBEJDSINDSATS

The module is 5 ECTS which is corresponding to 150 hours of study.

EKSAMEN

PRØVER

Prøvens navn	Udvikling af kvalitets- og projektstyringssystemer
Prøveform	Skriftlig eller mundtlig Exam form: Individual oral or written examination. The exam form is determined at the beginning of the semester.
ECTS	5
Bedømmelsesform	Bestået/ikke bestået
Censur	Intern prøve
Vurderingskriterier	Evaluation criteria: As described in the Framework Provisions. http://www.engineering.aau.dk/digitalAssets/332/332984_faellesbestemmelser_230617.pdf

FAKTA OM MODULET

Engelsk titel	Development of Project and Quality Management Systems
Modulkode	B-BLX-K2-8
Modultype	Kursus
Varighed	1 semester
Semester	Forår
ECTS	5
Undervisningssprog	Engelsk
Undervisningssted	Campus Aalborg
Modulansvarlig	Arne Peter Rasmussen

ORGANISATION

Studienævn	Studienævnet for Byggeri og Anlæg
Institut	Institut for Byggeri og Anlæg
Fakultet	Det Ingeniør- og Naturvidenskabelige Fakultet

INFORMATIONSTEKNOLOGI OG BYGNINGSMODELLERING

2018/2019

FORUDSÆTNINGER/ANBEFALEDE FORUDSÆTNINGER FOR AT DELTAGE I MODULET

Prerequisites:

No specific prerequisites necessary

MODULETS INDHOLD, FORLØB OG PÆDAGOGIK

Objectives:

Students who complete the module must have acquired the following knowledge, skills and competencies:

LÆRINGSMÅL

VIDEN

Knowledge - The students must have knowledge of the theories that describe the following areas:

- Concepts, technologies and methods to analyze and develop models that describe a building's functional systems and components as well as processes in construction.
- Concepts, techniques and methods to develop product and process models in construction
- Methods for management of knowledge and information in construction, including different types of model and data representation.

FÆRDIGHEDER

Skills – The student must be able to:

- Explain the fundamental differences between various types of building models and process models, including 3D and 4D models
- Demonstrate knowledge of essential standards in the field, including classification systems
- Demonstrate knowledge of significant national and international initiatives regarding the use of information technology in the construction industry.
- Explain central issues related to model supported collaboration between actors of the construction process.
- Explain the properties of different knowledge representations and their suitability for modeling of different systems.

KOMPETENCER

Competencies

- The course provides students with a number of basic skills to participate in the implementation of ICT-based systems in construction business.

UNDERVISNINGSFORM

Teaching methods:

Lectures and exercises in groups supplemented with workshops, presentation seminars and more.

OMFANG OG FORVENTET ARBEJDSINDSATS

The module is 5 ECTS which is corresponding to 150 hours of study.

EKSAMEN

PRØVER

Prøvens navn	Informationsteknologi og bygningsmodellering
Prøveform	Skriftlig eller mundtlig Exam form: Individual oral or written examination. The exam form is determined at the beginning of the semester.
ECTS	5
Bedømmelsesform	Bestået/ikke bestået
Censur	Intern prøve
Vurderingskriterier	Evaluation criteria: As described in the Framework Provisions. http://www.engineering.aau.dk/digitalAssets/332/332984_faellesbestemmelser_230617.pdf

FAKTA OM MODULET

Engelsk titel	Information Technology and Building Modelling
Modulkode	B-BLX-K3-11
Modultype	Kursus
Varighed	1 semester
Semester	Efterår
ECTS	5
Undervisningssprog	Engelsk
Undervisningssted	Campus Aalborg
Modulansvarlig	Arne Peter Rasmussen

ORGANISATION

Studienævn	Studienævnet for Byggeri og Anlæg
Institut	Institut for Byggeri og Anlæg
Fakultet	Det Ingeniør- og Naturvidenskabelige Fakultet

UDVIKLING AF AVANCEREDE KVALITETS- OG PROJEKTSTYRINGSSYSTEMER

2018/2019

FORUDSÆTNINGER/ANBEFALEDE FORUDSÆTNINGER FOR AT DELTAGE I MODULET

Prerequisites:

Development of Advanced Project and Quality Management Systems or similar and business economics.

MODULETS INDHOLD, FORLØB OG PÆDAGOGIK

Goal:

Students who complete the module must have acquired the following knowledge, skills and competencies:

LÆRINGSMÅL

VIDEN

Knowledge - The course presents the student for selected models and methods used in connection with corporate quality and project management systems. Emphasis is placed on the elements targeting the company's development as a whole.

The student must have knowledge of the theories that describe the following areas:

- Planning and management in multi-project environments
- Models, methods and tools for the development of advanced quality and environmental and project management systems.
- Risk management and performance measurement.

The course supports the students in gaining knowledge of how quality, project management and financial management systems can be included as a strategic element in the organization overall. Also how quality, project management and financial management systems can be integrated with the organization's other systems. Finally, the focus is on enterprise risk identification and management of order-based production, including how risk management can be used as a strategic business advantage.

FÆRDIGHEDER

Skills – The student must be able to:

- Analyze the organization's need for quality and project management overall both internally and in relation to its customers and suppliers.
- Analyze a group of projects for simultaneous execution and complete an evaluation of an existing portfolio of projects.
- Apply advanced methods and models to develop proposals to improve the organization's existing quality and project management systems.
- Identify and analyze risk factors for the company's project portfolio and understand risk management systems and the use of risk management for strategic purposes.
- Assess the effect of implementing the proposed methods and models.

KOMPETENCER

Competencies

- Must be able to apply the acquired knowledge of models and methods for the organization’s development of quality and project management systems. Furthermore, to define and understand systems for project management with multiple conflicting success criteria when projects share limited resources and a limited budget. The emphasis is on seeing the quality and project management systems as a strategic parameter - integrated into the organization's overall profile.
- Must be able to analyze risk factors for the company's project portfolio and understand risk management systems and the use of risk management in connection with the organization's strategy development process.

UNDERVISNINGSFORM

Teaching methods:

Lectures supplemented with workshops, presentation seminars and more.

OMFANG OG FORVENTET ARBEJDSINDSATS

The module is 5 ECTS which is corresponding to 150 hours of study.

EKSAMEN

PRØVER

Prøvens navn	Udvikling af avancerede kvalitets- og projektstyringssystemer
Prøveform	Skriftlig eller mundtlig Exam format: Individual oral or written examination. The exam form is determined at the beginning of the semester.
ECTS	5
Bedømmelsesform	7-trins-skala
Censur	Intern prøve
Vurderingskriterier	Evaluation criteria: As described in the Framework Provisions. http://www.engineering.aau.dk/digitalAssets/332/332984_faellesbestemmelser_230617.pdf

FAKTA OM MODULET

Engelsk titel	Development of Advanced Project and Quality Management Systems
Modulkode	B-BLX-K3-12
Modultype	Kursus
Varighed	1 semester
Semester	Efterår
ECTS	5
Undervisningssprog	Engelsk
Undervisningssted	Campus Aalborg

Modulansvarlig	Arne Peter Rasmussen

ORGANISATION

Studienævn	Studienævnet for Byggeri og Anlæg
Institut	Institut for Byggeri og Anlæg
Fakultet	Det Ingeniør- og Naturvidenskabelige Fakultet

STRATEGI OG PERFORMANCE MEASUREMENTS

2018/2019

FORUDSÆTNINGER/ANBEFALEDE FORUDSÆTNINGER FOR AT DELTAGE I MODULET

Prerequisites:

No specific prerequisites necessary

MODULETS INDHOLD, FORLØB OG PÆDAGOGIK

Goal:

Students who complete the module must have acquired the following knowledge, skills and competencies:

LÆRINGSMÅL

VIDEN

Knowledge

- Must have knowledge of concepts, theories and methods for analysis, development and implementation of the strategy; including the ability to performance measure this by a combination of both economic and non-economic performance of the organization.

FÆRDIGHEDER

Skills – The student, should with the proper use of management concepts, be able to:

- Apply the learned theories and methods to understand and analyze the company's choice of strategy and performance measurements.
- Assess theoretical and practical problems by developing and implementing changing strategies in established organizations.
- Communicate such issues to other participants of occurring development projects.

KOMPETENCER

Competencies:

- Must be able to apply the learned knowledge elements and skills as a staff employee in strategy development projects.
- Must be able to independently contribute constructively and professionally in strategy investigation and development with other professionals.
- Must on the basis of the acquired identify their own needs for further learning and to implement the appropriate organization hereof.

UNDERVISNINGSFORM

Teaching methods:

Lectures supplemented with workshops, presentation seminars and more.

OMFANG OG FORVENTET ARBEJDSINDSATS

The module is 5 ECTS which is corresponding to 150 hours of study.

EKSAMEN

PRØVER

Prøvens navn	Strategi og performance measurements
Prøveform	Skriftlig eller mundtlig Exam format: Individual oral or written examination. The exam form is determined at the beginning of the semester.
ECTS	5
Bedømmelsesform	7-trins-skala
Censur	Intern prøve
Vurderingskriterier	Evaluation criteria: As described in the Framework Provisions. http://www.engineering.aau.dk/digitalAssets/332/332984_faellesbestemmelser_230617.pdf

FAKTA OM MODULET

Engelsk titel	Strategy and Performance Measurements
Modulkode	B-BLX-K3-13
Modultype	Kursus
Varighed	1 semester
Semester	Efterår
ECTS	5
Undervisningssprog	Engelsk
Undervisningssted	Campus Aalborg
Modulansvarlig	Arne Peter Rasmussen

ORGANISATION

Studienævn	Studienævnet for Byggeri og Anlæg
Institut	Institut for Byggeri og Anlæg
Fakultet	Det Ingeniør- og Naturvidenskabelige Fakultet

KANDIDATSPECIALE

2018/2019

FORUDSÆTNINGER/ANBEFALEDE FORUDSÆTNINGER FOR AT DELTAGE I MODULET

Prerequisites:

Must have completed 1st – 3rd semester on the Master's programme

MODULETS INDHOLD, FORLØB OG PÆDAGOGIK

Objectives:

- The module will give the student the opportunity to demonstrate knowledge, skills and competence at a master level.
- The student him/herself formulates the problem addressed, but the problem formulation must be approved by the supervisor and study director before the project begins.

Students who complete the module must have acquired the following knowledge, skills and competencies:

LÆRINGSMÅL

VIDEN

Skills

- Must have knowledge and be able to understand the specialization subjects at the highest international level.
- Must be able to critically assess knowledge and identify emerging scientific issues within the specialization area.
- Must be able to understand the terms of specialization of the research area including research ethics.

FÆRDIGHEDER

Knowledge

- Must be able to independently explain the choice of scientific theoretical and / or experimental methods.
- Must via the project and at the end of it be able to provide an independent and critical assessment of the chosen theories and methods as well as of the analyzes, results and conclusions.
- Must be able to use a broad spectrum of engineering methods for research and development in the specialization area.
- Must be able to communicate relevant scientific and engineering professional aspects of the project work in a clear and systematic way to both peers and to the public.

KOMPETENCER

Competencies

- Must independently be able to problem formulate, implement, document, reflect on and communicate results of a project that deals with a complex work and development situation in the central topics of the Master's programme.
- Must be able to evaluate, select and translate academic knowledge, skills and scientific theories, methods and tools on a scientific basis to develop relevant new analytical approaches and justify its choice.
- Must be able to provide solid time and work plans for their own project, independently and critically assess progress, and to select and incorporate relevant literature, experiments or relevant data in order to maintain the scientific basis.
- Must be able to handle complex and unpredictable work situations and be able to develop new solutions.
- Must independently and with professional and scientific approach engage in dialogue with peers and professional stakeholders in relation to the Master's programme.

- Must be able to communicate the results obtained from the project work in a project report.
- Must be able to work around the project of the problem field and make a joint presentation of the project results.

UNDERVISNINGSFORM

Teaching methods:

Project work with teacher feedback and more.

OMFANG OG FORVENTET ARBEJDSINDSATS

The module is 30 ECTS which is corresponding to 900 hours of study.

EKSAMEN

PRØVER

Prøvens navn	Kandidatspeciale
Prøveform	Speciale/afgangsprojekt Exam form: Oral examination based on the presentation seminar and project report.
ECTS	30
Bedømmelsesform	7-trins-skala
Censur	Ekstern prøve
Vurderingskriterier	Evaluation criteria: As described in the Framework Provisions. http://www.engineering.aau.dk/digitalAssets/332/332984_faellesbestemmelser_230617.pdf

FAKTA OM MODULET

Engelsk titel	Master’s Thesis
Modulkode	B-BLX-K3-14
Modultype	Projekt
Varighed	1 semester
Semester	Forår
ECTS	30
Undervisningssprog	Dansk og engelsk
Undervisningssted	Campus Aalborg
Modulansvarlig	Arne Peter Rasmussen
Censornorm	D

ORGANISATION

Studienævn	Studienævnet for Byggeri og Anlæg
Institut	Institut for Byggeri og Anlæg

Fakultet	Det Ingeniør- og Naturvidenskabelige Fakultet

LEDELSESSYSTEMER I BYGGERIETS VIRKSOMHEDER

2018/2019

FORUDSÆTNINGER/ANBEFALEDE FORUDSÆTNINGER FOR AT DELTAGE I MODULET

Prerequisites:

Must have completed 2nd semester

MODULETS INDHOLD, FORLØB OG PÆDAGOGIK

Objectives:

Students who complete the module must have acquired the following knowledge, skills and competencies:

LÆRINGSMÅL

VIDEN

Knowledge - The students must have knowledge of the theories that describe the following areas:

- Must have knowledge of management of construction, both technical, economic, social and organizational.
- Must have knowledge of the theoretical and practical basis for the company's longer-term development.
- Must have knowledge of coherent business systems and development plans at different management levels.

FÆRDIGHEDER

Skills

- Must be able to understand the structure of different management of construction for businesses.
- Must be able to analyze business management of constructions for the improvement of companies' operating systems.
- Must be able to understand the structure of support systems for the decision makers of the company.
- Must be able to identify business needs for strategic change and develop strategic plans for this transformation.
- Must be able to identify and assess a company's need for information for budgeting and dissemination of results.

KOMPETENCER

Competencies

- Must be able to be part of the management team in a construction project and in a company in the building and construction sector.
- Must be able to argue for specific strategic development initiatives and how they are implemented in practice.
- Must be able to communicate the results obtained from the project work in a project report
- Must be able to work around the project of the problem field and make a joint presentation of the project results.

UNDERVISNINGSFORM

Teaching methods:

Project work with teacher feedback supplemented with lectures, workshops presentation seminars and more.

OMFANG OG FORVENTET ARBEJDSINDSATS

The module is 15 ECTS which is corresponding to 450 hours of study.

EKSAMEN

PRØVER

Prøvens navn	Ledelsessystemer i byggeriets virksomheder
Prøveform	Mundtlig pba. projekt Exam form: Oral examination based on the presentation seminar and project report.
ECTS	15
Bedømmelsesform	7-trins-skala
Censur	Intern prøve
Vurderingskriterier	Evaluation criteria: As described in the Framework Provisions. http://www.engineering.aau.dk/digitalAssets/332/332984_faellesbestemmelser_230617.pdf

FAKTA OM MODULET

Engelsk titel	Management of Construction Industry Companies
Modulkode	B-BLX-K3-9
Modultype	Projekt
Varighed	1 semester
Semester	Efterår
ECTS	15
Undervisningssprog	Dansk og engelsk
Undervisningssted	Campus Aalborg
Modulansvarlig	Arne Peter Rasmussen

ORGANISATION

Studienævn	Studienævnet for Byggeri og Anlæg
Institut	Institut for Byggeri og Anlæg
Fakultet	Det Ingeniør- og Naturvidenskabelige Fakultet

LEDELSESSYSTEMER I BYGGERIETS FACILITIES MANAGEMENT VIRKSOMHEDER

2018/2019

FORUDSÆTNINGER/ANBEFALEDE FORUDSÆTNINGER FOR AT DELTAGE I MODULET

Prerequisites:

Must have completed 2nd semester

MODULETS INDHOLD, FORLØB OG PÆDAGOGIK

Objectives:

Students who complete the module must have acquired the following knowledge, skills and competencies:

LÆRINGSMÅL

VIDEN

Knowledge - The students must have knowledge of the theories that describe the following areas:

- Must have knowledge of management of constructions, both technical, economic, social, organizational, and thus be able to see through the strategic development and processing of building facilities management suppliers.
- Must have knowledge of the theoretical and practical basis for the company's longer-term development in order to create competitive advantages.
- Must have knowledge of coherent business systems and development plans at different management levels and thus be able to argue for and develop solutions for the implementation of actions both at the strategic, tactical and operational level.

FÆRDIGHEDER

Skills

- Must be able to argue for specific strategic development initiatives and how they are implemented in practice, as set out scenarios, metrics, etc. for business development.
- Must be able to collect existing knowledge of Facilities Management in relation to future major construction projects.

- Must be able to understand the structure of support systems for the decision makers of the company.
- Must be able to identify business needs for strategic change and develop strategic plans for this transformation.
- Must be able to identify and assess a company's need for information for budgeting and dissemination of results.

KOMPETENCER

Competencies

- Must be able to be part of in the management of a construction company in the building and construction sector, with a particular focus on Facilities Management deliveries.
- Must be able to argue for specific strategic development initiatives and how they are implemented in practice.
- Must be able to communicate the results obtained from the project work in a project report
- Must be able to work around the project of the problem field and make a joint presentation of the project results.

UNDERVISNINGSFORM

Teaching methods:

Project work with teacher feedback supplemented with lectures, workshops presentation seminars and more.

OMFANG OG FORVENTET ARBEJDSINDSATS

The module is 15 ECTS which is corresponding to 450 hours of study.

EKSAMEN

PRØVER

Prøvens navn	Ledelsessystemer i byggeriets Facilities Management virksomheder
Prøveform	Mundtlig pba. projekt Exam form: Oral examination based on the presentation seminar and project report.
ECTS	15
Bedømmelsesform	7-trins-skala
Censur	Intern prøve
Vurderingskriterier	Evaluation criteria: As described in the Framework Provisions. http://www.engineering.aau.dk/digitalAssets/332/332984_faellesbestemmelser_230617.pdf

FAKTA OM MODULET

Engelsk titel	Management of Construction Industry Facilities Management Companies
Modulkode	B-BLX-K3-10
Modultype	Projekt
Varighed	1 semester
Semester	Efterår
ECTS	15
Undervisningssprog	Dansk og engelsk
Undervisningssted	Campus Aalborg
Modulansvarlig	Arne Peter Rasmussen

ORGANISATION

Studienævn	Studienævnet for Byggeri og Anlæg
Institut	Institut for Byggeri og Anlæg
Fakultet	Det Ingeniør- og Naturvidenskabelige Fakultet