



AALBORG UNIVERSITET

CURRICULUM FOR THE MASTER OF SCIENCE IN TECHNOLOGY IN RISK AND SAFETY MANAGEMENT, 2018, VERSION 2

MASTER OF SCIENCE (MSC) IN TECHNOLOGY
ESBJERG

MODULES INCLUDED IN THE CURRICULUM

TABLE OF CONTENTS

Lovgivning og standarder i industrien 2018/2019	3
Systems Engineering 2018/2019	5
Anvendt statistik og sandsynlighedsteori 2018/2019	7
Risikoanalyse 2018/2019	9
Risikoanalyse og -styring 2018/2019	11
Risikostyring 2018/2019	13
Beslutningstagning 2018/2019	15
Operativ risikohåndtering i projekter 2018/2019	17
Simulering af nødsituationer 2018/2019	19
Håndtering af nødsituationer 2018/2019	21
Kandidatspeciale 2018/2019	23
Vedligeholdelsesplanlægning 2018/2019	25
Risiko kommunikation 2018/2019	27
Risiko og sikkerhed af konstruktioner 2018/2019	29
Sundheds- og sikkerhedsstyring 2018/2019	31

LOVGIVNING OG STANDARDER I INDUSTRIEN

2018/2019

FORUDSÆTNINGER/ANBEFALEDE FORUDSÆTNINGER FOR AT DELTAGE I MODULET

Admission to the program according to 2.1.

MODULETS INDHOLD, FORLØB OG PÆDAGOGIK

Objective:

Students who complete the module:

LÆRINGSMÅL

VIDEN

Knowledge:

- know how the legislation is organised in the field of a given project
- have a basic understanding of the jurisdiction of authorities in the field

FÆRDIGHEDER

Skills:

- Sare able to identify and describe problems related to a project
- can identify the relevant legislation and standards for a given project
- can organize project work to comply with legislation and industry standards

KOMPETENCER

Competencies:

- must be able to apply project work as a study form
- must be able to contribute successfully to teamwork within the problem area and make a common presentation of the result of the project work
- must be able to communicate the results of the project work in a project report

UNDERVISNINGSFORM

Type of instruction:

Project work with supervision supplemented with instructions, workshops, presentation seminars, lab tests, etc.

OMFANG OG FORVENTET ARBEJDSINDSAT

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

EKSAMEN

PRØVER

Prøvens navn	Lovgivning og standarder i industrien
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Prøveform	Mundtlig pba. projekt Exam format: Oral exam based on presentation seminar and project report.
ECTS	15
Bedømmelsesform	7-trins-skala
Censur	Intern prøve
Vurderingskriterier	Are stated in the Joint Programme Regulations. http://www.engineering.aau.dk/digitalAssets/332/332984_faellesbestemmelser_230617.pdf

FAKTA OM MODULET

Engelsk titel	Industry Standards and Legislation
Modulkode	B-RSK-K1-4
Modultype	Projekt
Varighed	1 semester
Semester	Forår
ECTS	15
Undervisningssprog	Engelsk
Undervisningssted	Campus Esbjerg
Modulansvarlig	Lars Damkilde
Censornorm	B

ORGANISATION

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

SYSTEMS ENGINEERING

2018/2019

FORUDSÆTNINGER/ANBEFALEDE FORUDSÆTNINGER FOR AT DELTAGE I MODULET

Admission to the program according to 2.1.

MODULETS INDHOLD, FORLØB OG PÆDAGOGIK

Objective:

Students who complete the module:

LÆRINGSMÅL

VIDEN

Knowledge:

- know different models and tools for systems engineering
- understand the concept of product lifecycle
- understand the interaction of different engineering disciplines comprising systems engineering

FÆRDIGHEDER

Skills:

- can apply tools to manage the complexity of a project in a systems engineering framework
- can account for the theory behind applied models
- are able use methods that allow early detection of possible failures
- can modify system design to mitigate potential risk of failures

KOMPETENCER

Competencies:

- are able to use correct professional terminology
- are able to acquire additional knowledge in the field

UNDERVISNINGSFORM

Type of instruction:

Lectures, etc. supplemented with project work, workshops, presentation seminars.

OMFANG OG FORVENTET ARBEJDSINDSAT

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

EKSAMEN

PRØVER

Prøvens navn	Systems Engineering
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Prøveform	Skriftlig Written exam based on a case.
ECTS	5
Bedømmelsesform	Bestået/ikke bestået
Censur	Intern prøve
Vurderingskriterier	Are stated in the Joint Programme Regulations. http://www.engineering.aau.dk/digitalAssets/332/332984_faellesbestemmelser_230617.pdf

FAKTA OM MODULET

Engelsk titel	Systems Engineering
Modulkode	B-RSK-K1-1
Modultype	Kursus
Varighed	1 semester
Semester	Forår
ECTS	5
Undervisningsprog	Engelsk
Undervisningssted	Campus Esbjerg
Modulansvarlig	Anders Schmidt Kristensen

ORGANISATION

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

ANVENDT STATISTIK OG SANDSYNLIGHEDSTEORI

2018/2019

FORUDSÆTNINGER/ANBEFALEDE FORUDSÆTNINGER FOR AT DELTAGE I MODULET

Admission to the program according to 2.1.

MODULETS INDHOLD, FORLØB OG PÆDAGOGIK

Objective:

Students who complete the module:

LÆRINGSMÅL

VIDEN

Knowledge:

- have a basic understanding of probability, uncertainty, stochastic processes and independent and conditional probabilities
- know basic probability and statistical models for uncertainties
- have knowledge of discrete and continuous probability distributions and their application
- know of the basic principles of statistical analysis, including data collection
- have knowledge about statistical inferens and hypothesis testing
- know the principles of Markov chains and Monte Carlo methods to simulate probability distributions
- Understands the limitations of models/tools within risk/safety, especially in relation to the input data's validity and credibility

FÆRDIGHEDER

Skills:

- are able to use probability distributions to describe stochastic processes
- can estimate statistical parameters from a dataset
- can compute confidence intervals
- can account for the theory behind applied models
- are able to use relevant statistical software to approximate *a posteriori* probability distributions

KOMPETENCER

Competencies:

- can assess the applicability of probability theory in a given situation
- are able to use correct professional terminology
- are able to acquire additional knowledge in the field

UNDERVISNINGSFORM

Type og instruction:

Lectures, etc. supplemented with project work, workshops, presentation seminars.

OMFANG OG FORVENTET ARBEJDSINDSATS

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

EKSAMEN

PRØVER

Prøvens navn	Anvendt statistik og sandsynlighedsteori
Prøveform	Skriftlig Exam format: Written exam based on a case.
ECTS	5
Bedømmelsesform	7-trins-skala
Censur	Intern prøve
Vurderingskriterier	Are stated in the Joint Programme Regulations. http://www.engineering.aau.dk/digitalAssets/332/332984_faellesbestemmelser_230617.pdf

FAKTA OM MODULET

Engelsk titel	Applied statistics and Probability Theory
Modulkode	B-RSK-K1-2
Modultype	Kursus
Varighed	1 semester
Semester	Forår
ECTS	5
Undervisningssprog	Engelsk
Undervisningssted	Campus Esbjerg
Modulansvarlig	Anders Schmidt Kristensen

ORGANISATION

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

RISIKOANALYSE

2018/2019

FORUDSÆTNINGER/ANBEFALEDE FORUDSÆTNINGER FOR AT DELTA I MODULET

The module adds to the knowledge obtained in Applied statistics and probability theory and Systems engineering

MODULETS INDHOLD, FORLØB OG PÆDAGOGIK

Objective:

Students who complete the module:

LÆRINGSMÅL

VIDEN

Knowledge:

- understand the process of risk analysis and its relation to risk management
- know qualitative and quantitative methods for risk analysis including cost-benefit analysis, HAZID/HAZOP, FMEA, FTA og SIL.
- have knowledge of influence of organizational factors and human errors

FÆRDIGHEDER

Skills:

- are able to perform risk analysis of various types of problems and systems
- are able to interpret and use the results from a risk analysis in a decision making process of risk management

KOMPETENCER

Competencies:

- are able to model, calculate and communicate risk

UNDERVISNINGSFORM

Type og instruction:

Lectures, discussion, group-based project work, student presentations.

OMFANG OG FORVENTET ARBEJDSINDSAT

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

EKSAMEN

PRØVER

Prøvens navn	Risikoanalyse
Prøveform	Skriftlig Written exam based on a case.

ECTS	5
Bedømmelsesform	Bestået/ikke bestået
Censur	Intern prøve
Vurderingskriterier	Are stated in the Joint Programme Regulations. http://www.engineering.aau.dk/digitalAssets/332/332984_faellesbestemmelser_230617.pdf

FAKTA OM MODULET

Engelsk titel	Risk Analysis
Modulkode	B-RSK-K1-3
Modultype	Kursus
Varighed	1 semester
Semester	Forår
ECTS	5
Undervisningsprog	Engelsk
Undervisningssted	Campus Esbjerg
Modulansvarlig	Sigurdur Blöndal

ORGANISATION

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

RISIKOANALYSE OG -STYRING

2018/2019

FORUDSÆTNINGER/ANBEFALEDE FORUDSÆTNINGER FOR AT DELTA I MODULET

The module adds to the knowledge obtained in the 1st semester.

MODULETS INDHOLD, FORLØB OG PÆDAGOGIK

Objective:

Students who complete the module:

LÆRINGSMÅL

VIDEN

Knowledge:

- must have knowledge about the main methods to deal with risk in a management framework
- understand the methods for risk analysis and assessment

FÆRDIGHEDER

Skills:

- are able to apply the principles behind risk management to independently identify risk and possible response strategies
- are able to perform practical risk analysis for identification, structuring and modelling risk
- are able to apply the analysis methods in the various situations related to risk
- are able to assess model parameters used in project risk management
- can formulate alternative solutions for risk mitigation based on identified risks
- are able to choose between alternatives using an appropriate decision making process

KOMPETENCER

Competencies:

- must be able to apply proper terminology in oral, written and graphical communication and documentation of problems and solutions within risk analysis and management
- must be able to communicate the results of risk analyses and risk management decisions performed in the project work in a project report
- must be able to contribute successfully to teamwork within risk analysis and management including the decision making process in the problem area and make a common presentation of the result of the project work

UNDERVISNINGSFORM

Type og instruction:

Project work with supervision supplemented with instructions, workshops, presentation seminars, lab tests, etc.

OMFANG OG FORVENTET ARBEJDSINDSAT

The module is 5 ECTS which is corresponding to 450 hours of study.

EKSAMEN

PRØVER

Prøvens navn	Risikoanalyse og -styring
Prøveform	Mundtlig pba. projekt Exam format: Oral exam based on presentation seminar and project report.
ECTS	15
Bedømmelsesform	7-trins-skala
Censur	Ekstern prøve
Vurderingskriterier	Are stated in the Joint Programme Regulations. http://www.engineering.aau.dk/digitalAssets/332/332984_faellesbestemmelser_230617.pdf

FAKTA OM MODULET

Engelsk titel	Risk Analysis and Management
Modulkode	B-RSK-K2-9
Modultype	Projekt
Varighed	1 semester
Semester	Efterår
ECTS	15
Undervisningsprog	Engelsk
Undervisningssted	Campus Esbjerg
Modulansvarlig	Lars Damkilde , Sigurdur Blöndal
Censornorm	B

ORGANISATION

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

RISIKOSTYRING

2018/2019

FORUDSÆTNINGER/ANBEFALEDE FORUDSÆTNINGER FOR AT DELTAGE I MODULET

The module adds to the knowledge obtained in Risk analysis.

MODULETS INDHOLD, FORLØB OG PÆDAGOGIK

Objective:

Students who complete the module:

LÆRINGSMÅL

VIDEN

Knowledge:

- know the basic principles of risk management
- know the definitions of risk (and uncertainty)
- have knowledge about qualitative and quantitative assessment of risk
- have a basic knowledge of probability theory related to risk
- understand basic concepts such as thresholds and acceptable risk
- have an understanding for risk management plans.
- understand the basic mechanisms behind different risk perceptions and its implications for risk management and risk communication.
- understand the importance of risk assessment and understand the importance of economic considerations regarding risk management.

FÆRDIGHEDER

Skills:

- are able to use correct terminology for risk management
- can evaluate existent risk management plans and response strategies
- are able to identify, analyse and prioritize risks

KOMPETENCER

Competencies:

- can apply the principles behind risk management to undertake risk analyses and formulate response strategies

UNDERVISNINGSFORM

Type of instruction:

Lectures, discussion, group-based project work, student presentations.

OMFANG OG FORVENTET ARBEJDSINDSATS

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

EKSAMEN

PRØVER

Prøvens navn	Risikostyring
Prøveform	Skriftlig Exam format: Written exam.
ECTS	5
Bedømmelsesform	Bestået/ikke bestået
Censur	Intern prøve
Vurderingskriterier	Are stated in the Joint Programme Regulations. http://www.engineering.aau.dk/digitalAssets/332/332984_faellesbestemmelser_230617.pdf

FAKTA OM MODULET

Engelsk titel	Risk Management
Modulkode	B-RSK-K2-5
Modultype	Kursus
Varighed	1 semester
Semester	Efterår
ECTS	5
Undervisningsprog	Engelsk
Undervisningssted	Campus Esbjerg
Modulansvarlig	Dewan Ali Ahsan

ORGANISATION

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

BESLUTNINGSTAGNING

2018/2019

FORUDSÆTNINGER/ANBEFALEDE FORUDSÆTNINGER FOR AT DELTAGE I MODULET

The module adds to the knowledge obtained in Risk management and Applied statistics and probability theory.

MODULETS INDHOLD, FORLØB OG PÆDAGOGIK

Objective:

Students who complete the module:

LÆRINGSMÅL

VIDEN

Knowledge:

- know basic concepts behind the decision making process
- know different decision making tools such as Bayesian networks, decision trees, cost benefit analyses and Monte Carlo simulations
- know different normative, descriptive, prescriptive decision making models
- Understand the importance of ethical considerations in relation to applying cost benefit models and decision making tools when considering actions involving health and safety of people

FÆRDIGHEDER

Skills:

- are able to evaluate the applicability of a decision making model for a specific case
- are able to use the different tools present in software packages
- can use the presented tools to support decision making in a risk management framework

KOMPETENCER

Competencies:

- can develop and apply an appropriate decision making process in a specific case in a risk management context
- can select and apply an appropriate decision making model in a specific case

UNDERVISNINGSFORM

Type og instruction:

Lectures, etc. supplemented with assignments, workshops, presentation seminars, lab tests.

OMFANG OG FORVENTET ARBEJDSINDSAT

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

EKSAMEN

PRØVER

Prøvens navn	Beslutningstagning
Prøveform	Mundtlig Exam format: Oral exam.
ECTS	5
Bedømmelsesform	Bestået/ikke bestået
Censur	Intern prøve
Vurderingskriterier	Are stated in the Joint Programme Regulations. http://www.engineering.aau.dk/digitalAssets/332/332984_faellesbestemmelser_230617.pdf

FAKTA OM MODULET

Engelsk titel	Decision Making
Modulkode	B-RSK-K2-6
Modultype	Kursus
Varighed	1 semester
Semester	Efterår
ECTS	5
Undervisningsprog	Engelsk
Undervisningssted	Campus Esbjerg
Modulansvarlig	Anders Schmidt Kristensen

ORGANISATION

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

OPERATIV RISIKOHÅNDBTERING I PROJEKTER

2018/2019

FORUDSÆTNINGER/ANBEFALEDE FORUDSÆTNINGER FOR AT DELTAGE I MODULET

The module adds to the knowledge obtained in the 1st and 2nd semester.

MODULETS INDHOLD, FORLØB OG PÆDAGOGIK

Objective:

Students who complete the module:

LÆRINGSMÅL

VIDEN

Knowledge:

- have knowledge about methods to identify possible risk and hazards
- understand the factors that influence risk and hazards
- understand the methods for preventing and handling emergencies

FÆRDIGHEDER

Skills:

- are able to apply the principles behind emergency management to independently identify emergency scenarios
- are able to plan and perform simulations of emergency scenarios
- are able to formulate plans to handle different hazards and emergency scenarios in a project setting
- can develop alternatives to critical processes in a project using the principles of risk management

KOMPETENCER

Competencies:

- must be able to apply proper terminology in oral, written and graphical communication and documentation of problems and solutions within operational risk management
- must be able to communicate the results of the project work in a project report
- must be able to contribute successfully to teamwork within the problem area and make a common presentation of the result of the project work

UNDERVISNINGSFORM

Type of lecture:

Project work with supervision supplemented with instructions, workshops, presentation seminars, lab tests, etc.

OMFANG OG FORVENTET ARBEJDSINDSATS

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

EKSAMEN

PRØVER

Prøvens navn	Operativ risikohåndtering i projekter
Prøveform	Mundtlig pba. projekt Exam format: Oral exam based on presentation seminar and project report.
ECTS	15
Bedømmelsesform	7-trins-skala
Censur	Intern prøve
Vurderingskriterier	Are stated in the Joint Programme Regulations. http://www.engineering.aau.dk/digitalAssets/332/332984_faellesbestemmelser_230617.pdf

FAKTA OM MODULET

Engelsk titel	Operational Risk Management in Projects
Modulkode	B-RSK-K3-14
Modultype	Projekt
Varighed	1 semester
Semester	Forår
ECTS	15
Undervisningssprog	Engelsk
Undervisningssted	Campus Esbjerg
Modulansvarlig	Lars Damkilde

ORGANISATION

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

SIMULERING AF NØDSITUATIONER

2018/2019

FORUDSÆTNINGER/ANBEFALEDE FORUDSÆTNINGER FOR AT DELTAGE I MODULET

The module adds to the knowledge obtained in Applied statistics and probability theory, Risk management, and Risk analysis.

MODULETS INDHOLD, FORLØB OG PÆDAGOGIK

Objective:

Students who complete the module:

LÆRINGSMÅL

VIDEN

Knowledge:

- must have knowledge about evacuation strategies
- must have knowledge about the principles and models behind evacuation simulation software (like Simulex, Step, Exodus etc.)
- understand the influence of human behavior in emergencies

FÆRDIGHEDER

Skills:

- must be able to use software to simulate evacuation routes in case of emergencies
- are able to estimate the evacuation time of a building, area or vessel
- are able to identify possibilities and limitations related to simulations

KOMPETENCER

Competencies:

- can critically evaluate and report results from an evacuation simulation

UNDERVISNINGSFORM

Type og instruction:

Lectures, discussion, group-based project work, student presentations.

OMFANG OG FORVENTET ARBEJDSINDSAT

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

EKSAMEN

PRØVER

Prøvens navn	Simulering af nødsituationer
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Prøveform	Skriftlig Exam format: Written exam based on a case.
ECTS	5
Bedømmelsesform	Bestået/ikke bestået
Censur	Intern prøve
Vurderingskriterier	Are stated in the Joint Programme Regulations. http://www.engineering.aau.dk/digitalAssets/332/332984_faellesbestemmelser_230617.pdf

FAKTA OM MODULET

Engelsk titel	Simulation of Emergencies
Modulkode	B-RSK-K3-10
Modultype	Kursus
Varighed	1 semester
Semester	Forår
ECTS	5
Undervisningsprog	Engelsk
Undervisningssted	Campus Esbjerg
Modulansvarlig	Anders Schmidt Kristensen

ORGANISATION

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

HÅNDTERING AF NØDSITUATIONER

2018/2019

FORUDSÆTNINGER/ANBEFALEDE FORUDSÆTNINGER FOR AT DELTAGE I MODULET

The module adds to the knowledge obtained in Risk management and Decision making.

MODULETS INDHOLD, FORLØB OG PÆDAGOGIK

Objective:

Students who complete the module:

LÆRINGSMÅL

VIDEN

Knowledge:

- have knowledge of the various stages of emergency management, mitigation, preparedness, response and recovery, and their mutual relation
- understand methods for developing and implementing contingency plans

FÆRDIGHEDER

Skills:

- are able to identify possible emergency scenarios
- are able to decide between different strategies in a given scenario
- are able to apply appropriate methods within each stage of emergency management to a given scenario

KOMPETENCER

Competencies:

- are able to use correct professional terminology
- can critically develop and evaluate contingency plans

UNDERVISNINGSFORM

Type of instruction:

Lectures, etc. supplemented with project work, workshops, presentation seminars.

OMFANG OG FORVENTET ARBEJDSINDSAT

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

EKSAMEN

PRØVER

Prøvens navn	Håndtering af nødsituationer
Prøveform	Mundtlig

	Exam format: Oral exam.
ECTS	5
Bedømmelsesform	Bestået/ikke bestået
Censur	Intern prøve
Vurderingskriterier	Are stated in the Joint Programme Regulations. http://www.engineering.aau.dk/digitalAssets/332/332984_faellesbestemmelser_230617.pdf

FAKTA OM MODULET

Engelsk titel	Emergency Management
Modulkode	B-RSK-K3-11
Modultype	Kursus
Varighed	1 semester
Semester	Forår
ECTS	5
Undervisningssprog	Engelsk
Undervisningssted	Campus Esbjerg
Modulansvarlig	Anders Schmidt Kristensen

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

The module adds to the knowledge obtained in the first three semesters of the master programme.

MODULETS INDHOLD, FORLØB OG PÆDAGOGIK

Objective:

Students who complete the module:

LÆRINGSMÅL

VIDEN

Knowledge:

After completion of the project, the student should within the following topics:

- have knowledge and comprehension within the field of risk and safety management at the highest international level
- be able to critically evaluate knowledge and identify new scientific problems within risk and safety management
- have understanding of implications within the related research area including research ethics

FÆRDIGHEDER

Skills:

After completion of the project, the student should within the following topics:

- independently explain choice of scientific theoretical and/or experimental methods to solve a risk and safety management problem
- during the project, and when finalising it, make an independent and critical estimation of the chosen theories and methods as well as the analyses, results and conclusions
- be able to apply a wide range of engineering methods in research and development in the field of risk and safety management
- be able to, if necessary, develop new methods for solving a specific problem in the field of risk and safety management
- be able to communicate relevant scientific and professional aspects of project work in a clear and systematic way both to specialists and the public

KOMPETENCER

Competencies:

After completion of the project, the student should within the following topics:

- be able to work independently with a project on a specific problem within risk and safety management at the highest international level
- Independently be able to define and analyse scientific problems and based on that make and state the reasons for the decisions made
- be competent to solve new and complicated technical problems by the use of advanced mathematics, scientific and technological knowledge
- be able to evaluate the progress of the project independently and select and include additional literature, experiments or data when needed in order to maintain a scientific basis for the project
- be able to control complex and unexpected working situations and be able to develop new solutions
- must be able to communicate the results of the project work in a project report

UNDERVISNINGSFORM

Type of instruction:

Project work with supervision supplemented with instructions, workshops, presentation seminars, lab tests, etc.

OMFANG OG FORVENTET ARBEJDSINDSAT

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

EKSAMEN

PRØVER

Prøvens navn	Kandidatspeciale
Prøveform	Speciale/afgangsprojekt Exam format: Oral exam based on presentation seminar and the thesis.
ECTS	30
Bedømmelsesform	7-trins-skala
Censur	Ekstern prøve
Vurderingskriterier	Are stated in the Joint Programme Regulations. http://www.engineering.aau.dk/digitalAssets/332/332984_faellesbestemmelser_230617.pdf

FAKTA OM MODULET

Engelsk titel	Master's Thesis
Modulkode	B-RSK-K4-15
Modultype	Projekt
Varighed	1 semester
Semester	Efterår
ECTS	30
Undervisningssprog	Dansk og engelsk
Undervisningssted	Campus Esbjerg
Modulansvarlig	Anders Schmidt Kristensen
Censornorm	D

ORGANISATION

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

VEDLIGEHOELDESEPLANLÆGNING

2018/2019

FORUDSÆTNINGER/ANBEFALEDE FORUDSÆTNINGER FOR AT DELTA GE I MODULET

The module adds to the knowledge obtained in Applied statistics and probability theory.

MODULETS INDHOLD, FORLØB OG PÆDAGOGIK

Objective:

Students who complete the module:

LÆRINGSMÅL

VIDEN

Knowledge:

- have knowledge about basic maintenance planning and concepts
- understand the principles of maintenance optimization in relation to dependability, quality and safety

FÆRDIGHEDER

Skills:

- are able to apply the concepts to a given system to optimize maintenance plans
- can apply modern methods like CMMS to organize maintenance plans

KOMPETENCER

Competencies:

- are able to apply adequate terminology in oral and written communication
- are able to critically discuss different methods for maintenance planning

UNDERVISNINGSFORM

Type of instruction:

Lectures, discussion, group-based project work, student presentations.

OMFANG OG FORVENTET ARBEJDSINDSAT

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

EKSAMEN

PRØVER

Prøvens navn	Vedligeholdelsesplanlægning
Prøveform	Mundtlig pba. projekt Exam format: Written group assignment and oral exam based upon the written assignment.

ECTS	5
Bedømmelsesform	Bestået/ikke bestået
Censur	Intern prøve
Vurderingskriterier	Are stated in the Joint Programme Regulations. http://www.engineering.aau.dk/digitalAssets/332/332984_faellesbestemmelser_230617.pdf

FAKTA OM MODULET

Engelsk titel	Maintenance Management
Modulkode	B-RSK-K2-8
Modultype	Kursus
Varighed	1 semester
Semester	Efterår
ECTS	5
Undervisningsprog	Engelsk
Undervisningssted	Campus Esbjerg
Modulansvarlig	Anders Schmidt Kristensen

ORGANISATION

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

RISIKO KOMMUNIKATION

2018/2019

FORUDSÆTNINGER/ANBEFALEDE FORUDSÆTNINGER FOR AT DELTAGE I MODULET

The module adds to the knowledge obtained in Risk management.

MODULETS INDHOLD, FORLØB OG PÆDAGOGIK

Objective:

Students who complete the module:

LÆRINGSMÅL

VIDEN

Knowledge:

- know about and understand the contextual challenges of risk communication
- know about and understand the cognitive and emotional processes of risk perception which should guide the development of risk communication strategies
- know about and understand theoretical approaches towards risk communication
- know about and understand evidence-based strategies and methods of risk communication

FÆRDIGHEDER

Skills:

- be able to identify, describe and discuss the different theoretical and strategic approaches to risk communication
- be able to analyze the effectiveness of communication strategies and processes in different risk management contexts
- be able to apply different risk communication strategies and methods to develop effective risk communication messages to facilitate risk management in projects

KOMPETENCER

Competencies:

- be able to apply adequate terminology in oral and written communication
- be able to critically reflect and discuss different risk communication strategies in a management framework
- be able to present the communication strategies developed in the project work in an oral presentation/written report

UNDERVISNINGSFORM

Type og instruction:

Lectures, discussion, group-based project work, student presentations.

OMFANG OG FORVENTET ARBEJDSINDSAT

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

EKSAMEN

PRØVER

Prøvens navn	Risiko kommunikation
Prøveform	Skriftlig eller mundtlig Exam format: Oral or written exam. Exam format is decided on by start of semester.
ECTS	5
Bedømmelsesform	7-trins-skala
Censur	Intern prøve
Vurderingskriterier	Are stated in the Joint Programme Regulations. http://www.engineering.aau.dk/digitalAssets/332/332984_faellesbestemmelser_230617.pdf

FAKTA OM MODULET

Engelsk titel	Risk Communication
Modulkode	B-RSK-K2-7
Modultype	Kursus
Varighed	1 semester
Semester	Efterår
ECTS	5
Undervisningssprog	Engelsk
Undervisningssted	Campus Esbjerg
Modulansvarlig	Anders Schmidt Kristensen

ORGANISATION

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

RISIKO OG SIKKERHED AF KONSTRUKTIONER

2018/2019

FORUDSÆTNINGER/ANBEFALEDE FORUDSÆTNINGER FOR AT DELTAĞE I MODULET

The module adds to the knowledge obtained in Applied statistics and probability theory.

MODULETS INDHOLD, FORLØB OG PÆDAGOGIK

Objective:

Students who complete the module:

LÆRINGSMÅL

VIDEN

Knowledge:

- understand the concepts risk, uncertainty, reliability and safety
- know statistical methods for modeling physical, model, statistical and measurement uncertainties
- know methods for assessment of reliability of structural systems using probabilistic methods
- know methods for systems reliability for non-structural components and its applications in engineering

FÆRDIGHEDER

Skills:

- be able to model physical, statistical, model and measurement uncertainties
- be able to use failure rates and hazard functions to model failures in systems reliability for non-structural components
- be able to model uncertainties for loads and strengths
- be able to estimate the reliability by FORM/SORM methods (reliability index method) and by simulation
- be able to model system behavior and estimate the reliability of series and parallel systems
- understand basic concepts of stochastic processes and timevariant reliability methods
- be able to estimate characteristic and design values for strength parameters and load bearing capacities, and for environmental loads and load effects using test data and measurements
- be able to calibrate partial safety factors and load combination factors
- be able to apply Bayesian statistical methods
- be able to apply risk & reliability methods for probabilistic design of engineering structures such as buildings, bridges, offshore structures, costal structures, wind turbines etc.
- use correct professional terminology

KOMPETENCER

Competencies:

- be able to participate in a dialog on modeling of uncertainties, risk analysis and assessment of reliability of structural and nonstructural components and systems
- be able to model, calculate and communicate risk analysis, modeling of uncertainties and assessment of reliabilities for engineering problems.

UNDERVISNINGSFORM

Type of instruction:

Lectures, etc. supplemented with project work, workshops, presentation seminars, lab tests.

OMFANG OG FORVENTET ARBEJDSINDSAT

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

EKSAMEN

PRØVER

Prøvens navn	Risiko og sikkerhed af konstruktioner
Prøveform	Skriftlig eller mundtlig Exam format: Oral or written exam. Exam format is decided on by start of semester.
ECTS	5
Bedømmelsesform	Bestået/ikke bestået
Censur	Intern prøve
Vurderingskriterier	Are stated in the Joint Programme Regulations. http://www.engineering.aau.dk/digitalAssets/332/332984_faellesbestemmelser_230617.pdf

FAKTA OM MODULET

Engelsk titel	Risk and Reliability in Engineering
Modulkode	B-RSK-K3-12
Modultype	Kursus
Varighed	1 semester
Semester	Forår
ECTS	5
Undervisningssprog	Engelsk
Undervisningssted	Campus Esbjerg
Modulansvarlig	Anders Schmidt Kristensen

ORGANISATION

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

SUNDHEDS- OG SIKKERHEDSSTYRING

2018/2019

FORUDSÆTNINGER/ANBEFALEDE FORUDSÆTNINGER FOR AT DELTAGE I MODULET

Admission to the program according to 2.1.

MODULETS INDHOLD, FORLØB OG PÆDAGOGIK

Objective:

Students who complete the module:

LÆRINGSMÅL

VIDEN

Knowledge:

- know principles and methods for identification and analysis of accident risk
- know methods to reduce occupational risk in complex operations
- understand the mechanisms behind experience feedback and learning

FÆRDIGHEDER

Skills:

- are able to identify and manage health and safety hazards in operations
- are able to identify organisational and individual obstacles to an efficient learning from experiences on accidents and identify possible strategies to mitigate the effect of these obstacles
- are able to apply tools for HSE performance and monitoring

KOMPETENCER

Competencies:

- can systematically apply methods for identifying and managing accidents in operations

UNDERVISNINGSFORM

Type of instruction:

Lectures, discussion, group-based project work, student presentations.

OMFANG OG FORVENTET ARBEJDSINDSATS

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

EKSAMEN

PRØVER

Prøvens navn	Sundheds- og sikkerhedsstyring
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Prøveform	Skriftlig eller mundtlig Exam format: Oral or written exam. Exam format is decided on by start of semester.
ECTS	5
Bedømmelsesform	Bestået/ikke bestået
Censur	Intern prøve
Vurderingskriterier	Are stated in the Joint Programme Regulations. http://www.engineering.aau.dk/digitalAssets/332/332984_faellesbestemmelser_230617.pdf

FAKTA OM MODULET

Engelsk titel	Health and Safety Management
Modulkode	B-RSK-K3-13
Modultype	Kursus
Varighed	1 semester
Semester	Forår
ECTS	5
Undervisningssprog	Engelsk
Undervisningssted	Campus Esbjerg
Modulansvarlig	Hanna Barbara Rasmussen

ORGANISATION

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