# Syllabi

for

# The Bachelor of
# Maritime Transport and Ship Management

(Ship's Officer Training Programme)

Version 6.10, 1 February 2022

# Overview of syllabi:

## Junior Officer

| No. | Subject area | BJ1 | BJ2 | BJ3 | BJ4 | BJ5 | BJ6 | BJ7 | BJ8 |
|---|---|---|---|---|---|---|---|---|---|
| 30100 | Workshop Training, Safety and Seamanship (BJ) | X | X | | | | | | |
| 30200 | On Board Training (BJ) | | X | | | | X | X | X |
| 30300 | Nautical Science (BJ) | | X | X | X | | X | | X |
| 30400 | Technology (BJ) | | X | X | X | X | X | | |
| 30600 | Management (BJ) | | | X | | X | | | X |
| 30700 | Interdisciplinary Elements and Methodology (BJ) | | | X | | X | | | X |
| 3-4-800 | Elective Subjects (BJ+SE) | | | | | X | X | | |

# BJ - Subject Syllabus

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| **Subject area:** | **30100** | **Workshop Training, Safety and Seamanship (BJ)** | | |
| **Subject(s):** | | Introduction and First Aid Courses | BJ1 | |
| | 30111 | Welding and Material Understanding | BJ1 | 5 ECTS |
| | 30112 | Machining and Technical Drawing | BJ1 | 5 ECTS |
| | 30113 | Electrical and Electronic Machinery | BJ1 | 5 ECTS |
| | 30114 | Thermal Machinery and Systems | BJ1 | 5 ECTS |
| | 30115 | Interdisciplinary module | BJ1 | 10 ECTS |
| | | Introduction course | BJ2 | |
| | 30121 | Safety and Seamanship | BJ2 | 15 ECTS |
| **Admission criteria:** | | None for subject area Workshop Training, Safety and Seamanship. | | |
| **Semester:** | BJ1 +BJ2 | | | |
| **ECTS credits:** | 45 | | | |
| **Course Regulations:** | • Ship Officer (BJ+SE) version 6.10 of 1 February 2022 | | | |
| **Orders:** | • Order on the professional bachelor training programme for Ship Officer - Danish order no. 1350 of 23 November 2018 as amended.<br>• Order on tests in the maritime training programmes – Danish order no 1585 of 13 December 2016, as amended.<br>• Order on grading scale and other examination – Danish order no 114 of 3 February 2015, as amended.<br>• Order on certificate of proficiency tests et cetera – Danish order no 184 26 March 1999, as amended.<br>• Order on training programme and refresh training programme for safety at sea and firefighting on board ships – Danish order no 226 of 2 March 2015, as amended.<br>• Order on training programme for Tanker Operations – Danish order no 1165 of 2 November 2014, as amended.<br>• Order on training programme for operation of survival craft and rescue boat other than fast rescue boats – Danish order no 1207 of 23 October 2015, as amended.<br>• Order on training programme and refresher training programme for operation of fast rescue boats – Danish order no 658 12 May 2015, as amended.<br>• Order on training programme in Maritime Security of Ships – Danish order no 1279 of 7 November 2013, as amended.<br>• Order on measures for prevention of cancer risk by working with substances and materials (§17 course) – Danish order no 1795 of 18 December 2016, as amended. | | | |
| **STCW:** | *STCW Code, as amended: Part A, chapter II - Master and deck department:*<br>Section A-II/1 – Operational level<br>*STCW Code, as amended: Part A, chapter VI - Emergency, safety, security:*<br>Section A-VI/1, paragraph 2<br>• Personal survival techniques as set in table A-VI/1-1<br>• Fire prevention and fire-fighting as set in table A-VI/1-2 | | | |

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| | • Elementary first aid as set in table A-VI/1-3<br>• Personal safety and social responsibilities as set in table A-VI/1-4<br>Section A-VI/2, paragraph 1 to 12<br>• Proficiency in survival craft and rescue boats other than fast rescue boats as set in table A-VI/2-1.<br>• Proficiency in fast rescue boats as set in table A-VI/2-2.<br>Section A-VI/2-2, paragraph 7 to 12<br>• Proficiency in fast rescue boats as set in table A-VI/2-2.<br>Section A-VI/4, paragraph 1 to 3<br>• Medical first aid as set in table A-VI/4-1<br>Section A-VI/6, paragraph 6 to 8<br>• Designated Security Duties as set in tablet A-VI/6-2<br>*STCW Code, as amended: Part A, chapter V - Special training requirements:*<br>Section A-V/1-1-1<br>• Basic training for oil and chemical tanker as set in table A-V/1-1-1.<br>Section A-V/1-2-1<br>• Basic training for gas tanker as set in table A-V/1-2-1 |
| **Certificate(s):** | *Certificate of Proficiency Basic Safety Training* is issued upon completion of the training programme prescribed in Regulation VI/1 and STCW Code; section A-VI/2 of the STCW Convention of 1978, as amended.<br>*Certificate of Proficiency in Medical First Aid* is issued upon completion of the training programme prescribed in Regulation VI/4, paragraph 1 of the STCW Convention of 1978, as amended.<br>*Certificate of Proficiency for Designated Security Duties* is issued upon completion of the specialized training programme prescribed in Regulation VI/6, paragraph 4 to 6 of the STCW Convention of 1978, as amended and the Danish order no 1279 of 7 November 2013, as amended.<br>*Course Certificate of Basic Training for Oil, Chemical and Gas Tanker Cargo Operations* is issued upon completion of the training programme prescribed in Regulation V/1-1, paragraph 2.2 and Regulation V/1-2, paragraph 2.2 of the STCW Convention of 1978, as amended and the Danish order no 1165 2 November 2014, as amended. (”Carry out fire-fighting operations” as set in table A-V/1-1-1 and 1-2-1 of STCW Convention of 1978, as amended.)<br>*Course Certificate of Safety and Health Training in Welding and Thermal Cutting* is issued upon completion of the training programme prescribed in the Danish order no. 1795 of 18 December 2015, as amended - (paragraph 17 training programme).<br>*Course Certificate in survival craft and rescue boat other than fast rescue boats* is issued upon completion of the training programme prescribed in Regulation VI/2, paragraph 1.3 of the STCW Convention of 1978, as amended and the Danish order no 1207 23 October 2015, as amended.<br>*Certificate of Proficiency in survival craft and rescue boat other than fast rescue boats* is issued upon completion of at least 6 months relevant seagoing service is proved and completed the training programme prescribed in Regulation VI/2, paragraph 1 of the STCW Convention of 1978, as amended and the Danish order no 1207 23 October 2015, as amended. |

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| | *Course Certificate in Fast Rescue Boats* is issued upon completion of the training programme prescribed in Regulation VI/2, paragraph 2.3 of the STCW Convention of 1978, as amended and the Danish order no 658 12 May 2015, as amended.<br><br>*Certificate of Proficiency in Fast Rescue Boats* is issued when a holder of Certificate of Proficiency in survival craft and rescue boat other than fast rescue boats has completed the training programme prescribed in Regulation VI/2, paragraph 2 of the STCW Convention of 1978, as amended and the Danish order no 658 12 May 2015, as amended. |
| **Qualification prerequisites for professors/instructors etc.** | Associate professors, assistant professors or instructors intended to be used in qualifying for certification under the STCW convention of 1978 as amended shall:<br>• have a qualification level that is the same or higher than the level of learning objectives for the subject<br>and<br>• have a full understanding of the subject-training programme and the specified objectives for each type of training being conducted.<br><br>If conducting training using a simulator the instructor shall:<br>• have received appropriate guidance in instructional techniques involving the use of the simulator<br>and<br>• have gained practical operational experience on the particular type of simulator being used<br><br>Associate professors intended to be used in qualifying for certification under the STCW convention of 1978 as amended shall:<br>• have a qualification level that is higher than the level of learning objectives for the subject<br>and<br>• have a full understanding of the subject-training programme and the specified objectives for each type of training being conducted.<br>Assistant professors can act as bachelor supervisors when they are on the final part of their master's degree. |
| **Core literature** | |
| **Responsible:** | Subject Manager |
| **Valid from:** | 2022-1 EIN |
| **Expired:** | |
| **Remarks:** | |

## Purpose — BJ1

The student must completed a professional training and education to obtain the craftsman's skills that are necessary for an engineer, so the student can independently collaboration with other, apply these skills both in planning and in execution of their craft including electro-technical maintenance and repair. The performed tasks shall take into account environmental and safety regulations. The student shall develop his/her understanding and insight in the relevant workmanship for an engineer, as well as the ability to assess the quality of the work performed. The student must gain an understanding of general occupational safety and environmental issues, as well as the use of personal protective equipment. During this Subject, the students will be presented with various oral and written assignments, the purpose of which is to enhance their knowledge and understanding of technical and maritime English.

## Introduction and First Aid Courses — BJ1

### Content:

The introduction course introduces the program, giving the student a basic maritime knowledge and language. Furthermore, the course will introduce study techniques and SIMAC specific educational learning platforms.
The first aid course gives the student the competencies to administer first aid.

### Learning objectives:

- To **demonstrate** the competences of Elementary first aid. (CA)
- To **demonstrate** the competences of Working environment and safety during welding and thermal cutting - Danish order no. 1795 of 18 December 2015, as amended - (paragraph 17 training programme). (CA)
- To **use** SIMAC's educational support platforms such as Moodle, Untis and Wiseflow etc.
- To **list** the content and structure of the program including subject syllabi and curriculum.
  To **understand** study techniques for further use in the program.

### Learning activities:

- **Situation:** Large class. Large class activities take place in the classroom setting and consist of a varying mix of lecturing, tutorials, and student activity.
- **Student centered activities:** The student-centered activities are aimed at the study groups. The function of the groups may vary during the course such as buzz groups, learning cells, etc.

| Welding and Material Understanding | BJ1 |
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**Content:**

The student can select the most suitable welding methods based on a given material. Can perform simple welds, as well as soldering in a safe manner. Have a basic understanding of materials for heat generation, as well as corrosion protection. Can perform technical documentation and organize simple tasks within Welding.

**Learning objectives:**

After completion of this subject, the student will be able to:

- demonstrate the use of welders in a safe manner, as well as handling the use of compressed gases.
- explain the function, as well as use MMA, TIG, MIG / MAG and soldering techniques.
- have knowledge of suitable joining methods, including different types of welders, for different materials and tasks.
- explain how the composition, heat treatment and surface treatment of the material affect its resistance to external influences
- have knowledge of non-destructive and destructive material testing and material control

**Learning activities:**

- Theory in classrooms or online on Teams, group work, self-study, and practical assignments in the workshop and document portfolio.

| Machining and Technical Drawing | BJ1 |
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**Content:**

Safety when working with rotating tools. The construction and the safe use of the lathe and the milling machine. Operate a lathe in a safe manner. Calculation of the rotating speed of a rotating tool. Tolerances and other quality measures used in manufacturing, repairing and maintenance. Be familiar with general regulations for drawings and general drawing entries (goal, tolerances, edges, texture, etc.) in order to understand mechanical engineering drawings and be able to produce simple Production drawings. Sharpen cutting tools. Plan smaller tasks. Manufacture and repair items on the lathe.

**Learning objectives:**

After completion of this subject, the student will be able to:

- explain the function, as well as be able to use lathes, milling machines, drills, and rotating tools.
- demonstrate the use of lathes, milling cutters, drills, and rotating tools in a safe manner, as well as select the correct personal protective equipment.
- select, demonstrate and use the use of correct measuring tools
- construct simple 3D models in CAD program, as well as prepare technical documentation according to Dansk Standard
- judge the craftsmanship quality of work done in machining

**Learning activities:**

- Theory / classroom teaching within subjects
- Practical work in workshop, make items with progression in difficulty
- Independent work, create documentation portfolio
- Group work, make group product, pump stand / motor

| Electrical and Electronic Machinery | BJ1 |
|---|---|

**Content:**

**Learning objectives:**

After completion of this subject, the student will be able to:

- explain and exemplify principles for equipment used in power generating equipment, transmission, and electricity consumers, for example lighting, heating, electric motors etc.
- explain and exemplify electrotecnical documentation published in English
- demonstrate minor electrotechnical estimates
- assess the safety culture concerning the construction and operation of electrical installations and facilities
- participate in the daily operation and maintenance of ship and industrial electrical installations as an intern

**Learning activities:**

- **Situation:** Large Class:
  Large class activities takes place in classroom setting or online in TEAMS and consist of lecturing and student activities in between.
- **Student-centred activity:** (SCA)
  SCA is primarily theoretical problem solving in study groups and work experiences in the workshops

| Thermal Machinery and Systems | BJ1 |
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**Content:**

Use appropriate hand tools for repairs and maintenance on engines. Understand general technical documentation, in the form of PI-diagrams that can be found on a ship. Understand how proper tightening is performed to the correct specified torque. Construction and operation of various types of diesel engines and their main components. The various auxiliary systems found on a merchant vessel, including boilers, air compressors, pumps, and air conditioning units. Know the importance of filtration and filter technology i hydraulics. Being able to assist in minor repairs and maintenance in hydraulic power systems.

**Learning objectives:**

After completion of this subject, the student will be able to:

- identify all main components of 2- and 4-stroke engines, as well as explain the function of these.
- undertake a safe start-up on a smaller marine diesel engine and hydraulic systems.
- build and assemble a simple hydraulic system, and be able to account for the operation and function of the individual components.
- flush a hydraulic system, as well as be able to explain the importance of cleaning and filtration in hydraulic systems.
- read and understand PI diagrams, including auxiliary systems for internal combustion engines and boiler systems as well as symbol reading for hydraulics.

**Learning activities:**

- Through interdisciplinary case with EEM, as well as theoretical assignments. Practical exercises / tasks in the workshop for disassembly and assembly of engines
- Each individual student must be able to undertake a safe start-up of the 5 cyl. As well as associated auxiliary systems. Hydraulics: Perform risk assessment on the lab equipment and exercises before commencing.
- Group-based assignments in the laboratory, as well as theoretical introduction
- By performing the described learning activities practically in the workshop

| Interdisciplinary Module | BJ1 |
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**Content:**

Develop skills in collaboration around an interdisciplinary project that goes across the individual modules on BJ1. Gain knowledge of project planning.

**Learning objectives:**

After completion of this subject, the student will be able to:

- demonstrate understanding of and implement planning of interdisciplinary project in collaboration with other students
- demonstrate safe behavior in the workshop across disciplines
- manufacture functional sub-components, based on relevant data sheets, cf. Dansk Standard.
- demonstrate correct assembly, as well as the use of interdisciplinary assignment in collaboration with study group.
- perform technical documentation of interdisciplinary project.

**Learning activities:**

- Work in study groups, portfolio and practical work in workshop.

| Examination | BJ1 |
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| Examination name: | Workshop Training |
| Examination type: | Portfolio<br>Internal oral test<br>Individual |
| Grade scale: | 7-point scale |
| Preparation time: | None |
| Duration: | 30 minutes |
| Aids allowed: | Portfolio with four topics |
| Important information: | At the examination, the student presents his/her portfolio with focus on either the<br>▪ Welding and material understanding,<br>▪ Machining and technical drawing,<br>▪ Electrical and Electronic Machinery<br>or<br>▪ Thermal Machinery and Systems aspects.<br>Each student is randomly assigned their focus by the Student Services and the student is informed of focus at the start of examination.<br>The portfolio presentation should have a duration of about 10 minutes.<br>The remainder of the time is for cross-examination of the assigned portfolio focus.<br>The student will receive one grade based upon the student's presentation and performance at the exam.<br>The portfolio must include a summary written in English.<br>The maximum scope of the total portfolio is 40 pages as per SIMAC norm.<br>The learning objectives of the certifying activities are not included in this examination. |
| Prerequisites for examination: | Counting activities in the Welding and material understanding, Machining and technical drawing, Electrical and Electronic Machinery and Thermal Machinery and Systems are completed<br>Description of counting activities and requirements for completion are described in the lesson plan. |

| Certifying Activities | BJ1 |
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| Certificate name: | Elementary First Aid |
| Examination type: | Ongoing assessment |
| Grade scale: | Passed/not passed |
| Preparation time: | N/A |
| Duration: | N/A |
| Aids allowed: | N/A |
| Important information: | The course consists of both theory and practical exercises.<br>This certifying activity must be passed prior on board training in BJ2. |
| Prerequisites for certifying activity: | |

# BJ - Subject Syllabus

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| Certificate name: | Safety and Health Training in Welding and Thermal Cutting (paragraph 17) |
| Examination Type | Ongoing assessment |
| Grade scale: | Passes/not passed |
| Preparation time: | N/A |
| Duration: | N/A |
| Aids allowed: | N/A |
| Important information: | This certifying activity must be passed prior on board training in BJ2. |
| Prerequisites for certifying activity: | |
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| Purpose | BJ2 |
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| Upon successful completion of this semester subjects, the student will be able to sign on a merchant vessel as an apprentice in hers/his onboard training and be prepared for the practical work on board a merchant vessel. | |

| Safety and Seamanship | BJ2 |
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**Content:**

**Learning objectives:**

- To **identify** the different ship types, their shapes, and general structural elements
- To **explain** the use of navigational marks in IALA-A and IALA-B
- To **distinguish** between common navigational lights and day signals used according to the collision avoidance rules
- To **recite** the commonly used collision avoidance rules.
- To **determine** a ships position by the means of terrestrial navigation
- To demonstrate the competences of the requirements of STCW basic training for oil and chemical tanker operations as set in table A-V/1-1-1 and A-V/1-2-1 (CA)
- To demonstrate the start-up, mooring, properly executed rudder orders, and communicate as both helmsman and lookout using nautical terms relating to the ship's heading and steering.
- To describe the seafarer's conditions of employment, and describe hers/his rights and obligations according to the relevant legislation
- To explain the content of the international safety management code and the use of the safety management system including the correct use of personal protective equipment
- To demonstrate the competences of the requirements of STCW:
    - Proficiency in survival craft and rescue boats other than fast rescue boats as set in table A-VI/2-1 (CA)
    - Proficiency in fast rescue boats as set in table A-VI/2-2 (CA)
    - Personal survival techniques as set in table A-VI/1-1(CA)
    - Fire prevention and fire fighting as set in table A-VI/1-2 (CA)
    - Designated Security Duties as set in table A-VI/6-2 (CA)

**Learning activities:**

- **Situation:** Large class. Large class activities take place in the classroom setting and consist of a varying mix of lecturing, tutorials and student activity.
- **Situation:** Practical sailing. The sailing exercises are designed to supplement the learning objectives on start up, mooring and manoeuvring a small boat. The exercises partly consist of counting activities.
- **Situation:** Practical survival training. The exercises are designed to supplement the learning objectives of STCW Basic safety training requirements. The exercises partly consist of counting activities.

- **Student centred activities:** The student centred activities are aimed mainly at the study groups. The function of the groups may vary during the subject such as buzz groups, learning cells, etc. For student centred activities the instructor(s) are available for tutoring, professional guidance, and formative feedback.
    - Individual reading and answering of study questions
    - Workplace learning designed to supplement the learning objectives on basic mooring equipment and arrangement on merchant ships.
    - Interdisciplinary portfolio. The students are to work in their study groups on an interdisciplinary portfolio covering the learning objectives from all the subjects of the semester.
    - Individual and group presentations

## Examination:

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| Examination name: | Safety and Seamanship |
| Examination type: | Portfolio<br>Internal Oral Test<br>Individual |
| Grade scale: | 7-point scale |
| Preparation time: | None |
| Duration: | 30 minutes |
| Aids allowed: | Portfolio |
| Important information: | At the examination, the student presents hers/his portfolio.<br>The presentation of the portfolio should have a duration of about 10 minutes and the remainder of the time is for cross-examination of the portfolio.<br>The learning objectives of the certifying activities are not included in this examination. |
| Prerequisites for examination: | Counting activities in Safety and Seamanship are completed<br>Description of the counting activities and requirements for completion are described in the lesson plan. |

| **Certifying Activities** | **BJ2** |
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| Certificate name: | Basic Training in Chemical and Oil Tanker Cargo Operations<br>Basic Training in Liquefied Gas Tanker Cargo Operations |
| Examination type: | Ongoing assessment |
| Grade scale: | Passed/not passed |
| Preparation time: | N/A |
| Duration: | N/A |
| Aids allowed: | N/A |
| Important information: | This certifying activity must be passed prior on board training in BJ2. |
| Prerequisites for certifying activity: | To obtain certification in Basic Training in Chemical and Oil Tanker Cargo Operations and Basic Training in Liquefied Gas Tanker Cargo Operations, the certifying activity in Fire Prevention and Fire Fighting must also be passed. |

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| Certificate name: | Proficiency in Survival Craft and Rescue Boats other than Fast Rescue Boat |
| Examination type: | Ongoing assessment |
| Grade scale: | Passed/not passed |

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| Preparation time: | N/A |
| Duration: | N/A |
| Aids allowed: | N/A |
| Important information: | The course consists of both theory and practical exercises.<br>This certifying activity must be passed prior on board training in BJ2. |
| Prerequisites for certifying activity: | |
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| Certificate name: | Proficiency in Fast Rescue Boat |
| Examination type: | Ongoing assessment |
| Grade scale: | Passed/not passed |
| Preparation time: | N/A |
| Duration: | N/A |
| Aids allowed: | N/A |
| Important information: | The course consists of practical exercises.<br>This certifying activity must be passed prior on board training in BJ2. |
| Prerequisites for certifying activity: | |
| | |
| Certificate name: | Personal Survival Techniques |
| Examination type: | Ongoing assessment |
| Grade scale: | Passed/not passed |
| Preparation time: | N/A |
| Duration: | N/A |
| Aids allowed: | N/A |
| Important information: | The course consists of theory and practical exercises.<br>This certifying activity must be passed prior on board training in BJ2. |
| Prerequisites for certifying activity: | |
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| Certificate name: | Fire Prevention and Fire Fighting |
| Examination type: | Theory: Individual written test or multiple choice<br>Course: Ongoing assessment |
| Grade scale: | Passed/not passed |
| Preparation time: | N/A |
| Duration: | N/A |
| Aids allowed: | N/A |
| Important information: | The Theory must be passed prior participation in the basic fire fighting course.<br>Prerequisites for participation in the basic fire fighting course is a valid health certificate.<br>This certifying activity must be passed prior on board training in BJ2. |
| Prerequisites for certifying activity: | |
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| Certificate name: | Designated Security Duties |
| Examination type: | Ongoing assessment |
| Grade scale: | Passed/not passed |
| Preparation time: | N/A |

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| Duration: | N/A |
| Aids allowed: | N/A |
| Important information: | This certifying activity must be passed prior on board training in BJ2. |
| Prerequisites for certifying activity: | |
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# BJ - Subject Syllabus

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| **Subject area:** | **30200** | **On Board Training (BJ)** | | |
| **Subject(s):** | 30221 | On Board Training BJ2 | BJ2 | 15 ECTS |
| | 30261 | On Board Training BJ6 | BJ6 | 15 ECTS |
| | 30271 | On Board Training BJ7 | BJ7 | 30 ECTS |
| | 30281 | On Board Training BJ8 | BJ8 | 15 ECTS |
| | | | | |
| **Admission criteria:** | On Board Training BJ2 | The BJ student must have passed Workshop Training (BJ1) and Safety and Seamanship (BJ2) in accordance with the course regulation for Ship Officer. | | |
| | On board training BJ6, BJ7 & BJ8 | The BJ student must have passed all subjects in BJ1, BJ2, BJ3, BJ4, BJ5 and BJ6 in accordance with the course regulation for Ship Officer. | | |
| **Semester:** | BJ2 + BJ6 + BJ7+BJ8 | | | |
| **ECTS credits:** | 75 | | | |
| **Course Regulations:** | • Ship Officer (BJ) version 6.10, 1 February 2022. | | | |
| **Orders:** | • Order on the professional bachelor training programme for Ship Officer - Danish order no. 1350 of 23 November 2018 as amended.<br>• Order on tests in the maritime training programmes – Danish order no 1585 of 13 December 2016, as amended..<br>• Order on grading scale and other examination – Danish order no 114 of 3 February 2015, as amended.<br>• Order on watchkeeping onboard ships – Danish order no 1758 of 22 December 2006, as amended. | | | |
| **STCW:** | *STCW Code, as amended: Part A, chapter II - Master and deck department:*<br>Section A-II/4.<br>• Navigational at the support level.<br>*STCW Code, as amended: Part A, chapter III - Engine department:*<br>Section A-III/4<br>• Marine engineering at the support level. | | | |
| **Certificate(s):** | *Course Certificate of Navigational Watchkeeping* is issued upon completion of at least 2 months relevant seagoing service is proved and completed the training programme prescribed in Regulation II/4, paragraph 1 to 3 of the STCW Convention, as amended | | | |
| **Qualification prerequisites for professors/instructors etc.** | Associate professors, assistant professors or instructors intended to be used in qualifying for certification under the STCW convention of 1978 as amended shall:<br>• have a qualification level that is the same or higher than the level of learning objectives for the subject<br>and<br>• have a full understanding of the subject-training programme and the specified objectives for each type of training being conducted. | | | |

# BJ - Subject Syllabus

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| **Core literature** | | | |
| **Responsible:** | Subject Manager | | |
| **Valid from:** | 2022-1 | EIN | |
| **Expired:** | | | |
| **Remarks:** | 12 months = 365 calendar days<br>6 months = 183 calendar days<br>4½ months = 137 calendar days | | 3 months = 91 calendar days<br>2 months = 61 calendar days |
| **Prerequisites for Service at sea** | • The duration of the on board training in BJ2, BJ6 & BJ7 (subjects: 30221+30261+30271) equaling 60 ECTS credits and the duration of the on board training in BJ8 (subject: 30281) equaling 15 ECTS credits is considered fulfilled when the effective service at sea amounts to a minimum of 12 months (365 calendar days).<br>• The on board training in BJ8 (subject; 30281) must have a duration of a minimum of 3 months (91 calendar days) effective service at sea.<br>• The on board training in BJ8 (subject: 30281) cannot be replaced by other service at sea or merit from another education.<br>• Earned service at sea in ferries must be documented by showing a service at sea certificate. If this is not possible, the service at sea will count for 50%. | | |
| **Change of study program from BJ to BM:** | • By change of program from BJ to BM education, the student can transfer earned service at sea from the on board training in BJ2 (subject: 30221) in the relation 1:1, though a maximum of 3 months (91 calendar days) of service at sea can be transferred.<br>• From the on board training in BJ6 & BJ7 (subjects: 30261+30271) the student can get 50% of the earned service at sea transferred to the introductory work experience at sea in the BM education.<br>• The total transfer from the on board training in BM education cannot exceed 6 (183 calendar days) months efficient service at sea<br>• If a change of study causes an inconvenient study program, the student can apply for dispensation and get a part of the on bard training postponed. However, the service at sea must at minimum be 4 months and 15 days (137 calendar days) in the on board training in BM2 & BM3 (subjects: 20221+20231).<br>• The approved Training Record Book from the introductory work experience at sea in the BJ education is replaced with the green Training Record Book for Marine Engineers | | |
| **Change of study program from BJ to BJ** | • By change of program from BJ to BS education the student can transfer earned service at sea from the on board training (subject: 30221) in the relation 1:1, though a maximum of 3 months (91 calendar days) of service at sea can be transferred to the on board training in the BS education. | | |

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| | • From the on board training in BJ6 & BJ7 (subjects: 30261 & 30271) the student can get 50% of the earned service at sea transferred to the on board training in the BS education.<br>• The total transfer from the on board training in BS education cannot exceed 6 (183 calendar days) months efficient service at sea |

# BJ - Subject Syllabus

## Purpose: BJ

During on board training of 6 months = 183 calendar days, the student must also be part of the navigational watch keeping under supervision of a qualified officer in order to acquire a watchkeeping certificate in accordance with the STCW conventions regulation II/4.
The navigational watch duty should be planned such that the student also gets the opportunity to stand watch by canal passages, sailing in trafficked waters and under maneuver. Emphasis must be put on understanding the necessity of following good discipline on the bridge and in the engine room, see STCW convention chapter VIII.
The student must have completed a minimum of 6 months = 183 calendar days of navigational watch supervised by the Master or another qualified officer in accordance with STCW convention – regulation II/1.
In the on board training, the student shall learn to work in a development-oriented and problem solving way with the profession as Master. The student will draw links between experiences and theoretical knowledge here by being able to identify and analyze subjects, fields and problems that are central in relation to the profession as Master.
The work experience shall lead to the exchange of knowledge, skills and values between education and profession/industry and the establishment of a network.

## On Board Training BJ2 BJ2

### Content:

### Learning objectives:

Knowledge:

- the maritime organization with a focus on communication, safety and cooperation

Skills:

- apply the skills learned at the training school in a ship organization
- conduct work safety and environmental considerations correctly

Competencies:

- communicate and collaborate on a ship
- utilize the most appropriate work method considering quality, time, material, safety and environment

### Learning activities:

### Examination:

| | |
|---|---|
| Examination name: | On board training BJ2 |
| Examination type: | Ongoing assessment |
| Grade scale: | Passed or Not Passed |
| Preparation time: | None |
| Duration: | N/A |
| Aids allowed: | N/A |

| | |
|---|---|
| Important information: | The Student Services supervises and ensures that the formal requirements in the Training Record Book are followed. If there is uncertainty or disagreements, the course is investigated by the Vice President (Academics) in collaboration with the student's shipping company. Ultimately the decision about which initiatives need to be further applied in order to receive the grading given, is decided by the Vice President (Academics).<br>The student must also show documentation for the service achieved at sea, which must be approved by the Student Services. |
| Prerequisites for examination: | None |

## On Board Training BJ6, BJ7 & BJ8 — BJ6+BJ7+BJ8

**Content:**

**Learning objectives:**

Knowledge:

- the master's ordinary administrative routines
- the theory underlying the areas that the master deals with
- practical selection and application of tools and measuring equipment
- the typical ways of communication in a ship organization

Skills:

- handle practical situations occurring in the daily work
- apply the theory learned through the lessons
- deal with a selection of problems with a possible interdisciplinary background

Competencies:

**Learning activities:**

- plan and complete smaller tasks belonging to the ship's field of action
- participate in the ordinary administrative routines occurring on the ship
- work in an interdisciplinary way with subjects belonging to the master education
- work in a development-oriented manner

**Examination:**

| | |
|---|---|
| Examination name: | On Board Training BJ6, BJ7 & BJ8 |
| Examination type: | Ongoing assessment |
| Grade scale: | Passed or Not Passed |
| Preparation time: | None |
| Duration: | N/A |
| Aids allowed: | N/A |
| Important information: | The Student Services supervises and ensures that the formal requirements in the Training Record Book are followed. If there is uncertainty or disagreements, the course is investigated by the Vice President (Academics) in collaboration with the student's shipping company. Ultimately the decision which initiatives need to be further applied in order to receive the grading given is decided by the Vice President (Academics).<br>The student must show documentation for the service achieved at sea, which must be approved by the Student Services. |
| Prerequisites for examination: | None |

# BJ - Subject Syllabus

| | | | | |
|---|---|---|---|---|
| **Subject area:** | **30300** | **Nautical Science (BJ)** | | |
| **Subject(s):** | 30321 | Nautical Science<br>(info – Safety and Seamanship – BJ2) | BJ2 | See 30121 |
| | 30331 | Nautical Science I<br>Operational Simulation I (OPS-SIM I) | BJ3 | 10 ECTS |
| | 30341 | Nautical Science, Operational Level<br>Operational Simulation (OPS-SIM II) | BJ4 | 10 ECTS |
| | 30361 | Nautical Science, Tactical Level<br>Tactical Simulation (TAC-SIM)<br>GOC (GMDSS) | BJ6 | 5 ECTS |
| | 30381 | Bridge Watchkeeping Duty (FMB Simulator Assessment) | BJ8 | |
| | | | | |
| **Admission criteria:** | | | | |
| **Semester:** | BJ2 + BJ3 + BJ4 + BJ6 + BJ8 | | | |
| **ECTS credits:** | 25 ECTS | | | |
| **Course Regulations:** | • Ship Officer (BJ+SE) version 6.10 of 1 February 2022 | | | |
| **Orders:** | • Order on the professional bachelor training programme for Ship Officer - Danish order no. 1350 of 23 November 2018 as amended.<br>• Order on tests in the maritime training programmes – Danish order no 1585 of 13 December 2016, as amended.<br>• Order on grading scale and other examination – Danish order no 114 of 3 February 2015, as amended.<br>• Order on tests in Radio Communication and certificate of GMDSS – Danish order no 939 of 29 August 2011, as amended.<br>• Order on training programme and certificates for service on ships operating in Polar Waters – Danish order no 762 of 11 June 2018, as amended. | | | |
| **Certificate(s):** | *Certificate of Competence for GMDSS radio operators* is issued upon completion of the training programme prescribed in Regulation IV/2, paragraph 1 to 2 of the STCW Convention of 1978, as amended and the Danish order no 939 of 29 August 2011, as amended.<br><br>*Course Certificate of training in the use of ARPA* is issued upon completion of the training programme prescribed in STCW-Convention of 1978, as amended: Part A, Chapter II – Master and deck department – Table A-II/1 and Table A-II/2.<br><br>*Course Certificate of training in the use of generic ECDIS* is issued upon completion of the training programme prescribed in STCW Convention of 1978, as amended: Part A, Chapter II – Master and deck department – Table A-II/1 and Table A-II/2 | | | |

| | | |
|---|---|---|
| | *Certificate of proficiency in basic training for service on Ships operating in Polar Waters* is issued upon completion of the training programme prescribed in Regulation V/4, paragraph 2 of the STCW Convention of 1978, as amended and the Danish order no 762 of 11 June 2018, as amended. | |
| **Qualification prerequisites for professors/instructors etc.** | Associate professors, assistant professors or instructors intended to be used in qualifying for certification under the STCW convention of 1978 as amended shall:<br>• have a qualification level that is the same or higher than the level of learning objectives for the subject<br>and<br>• have a full understanding of the subject-training programme and the specified objectives for each type of training being conducted.<br><br>If conducting training using a simulator the instructor shall:<br>• have received appropriate guidance in instructional techniques involving the use of the simulator<br>and<br>• have gained practical operational experience on the particular type of simulator being used<br><br>Associate professors intended to be used in qualifying for certification under the STCW convention of 1978 as amended shall:<br>• have a qualification level that is higher than the level of learning objectives for the subject<br>and<br>• have a full understanding of the subject-training programme and the specified objectives for each type of training being conducted.<br>Assistant professors can act as bachelor supervisors when they are on the final part of their master's degree. | |
| **Core literature** | | |
| **Responsible:** | Robert Rickmann | |
| **Valid from:** | 2022-1 | EIN |
| **Expired:** | | |
| **Remarks:** | | |

| Purpose | BJ |
|---|---|
| | |
| | |
| **Nautical Science I** | **BJ3** |

**Content:**

**Learning objectives:**

- To **implement** terms and definition in the nautical professional language
- To **explain** various weather phenomena's and **distinguish** between the basic meteorological elements and definitions
- To **interpret and utilize** hydrographic information and charts
- To **explain and distinguish** between various navigational methods and calculations
- To **conduct and compute** nautical calculations in accordance with a ships voyage
- To **identify and classify** all types of vessel based on lights, day signals and sound signals
- To **role play** realistic watchkeeping duties, tasks, scenarios, and **use** relevant equipment (OPS-SIM I) (CA)

**Learning activities:**

- Situation: Large class. Large class activities take place in the classroom setting and consist of a varying mix of lecturing, tutorials, and student activity.
- Situation: Simulator – workplace learning. The OPS-SIM I exercises are designed to supplement and enhance the student's reflection on the learning objectives:
    - Radar/ARPA – theory and use
    - Technical equipment – theory and use
    - Practical seamanship
    - ColReg and watchkeeping duties
- Student centred activities. The student centred activities are aimed mainly at the study groups. The function of the groups may vary during the subject such as buzz groups, learning cells, etc. For student centred activities the assistant or associate professor(s) are available for tutoring, professional guidance, and formative feedback.
    - Individual reading and answering of study questions
    - Individual and group presentations
    - Workplace learning by utilizing simulations of the tools of a global maritime professional.
    - Subject documentation. The subject documentation is the student's reflection on how the learning objectives are reached and is a compilation of theory, workplace practice and context. Some core topics of the subject documentation are counting activities and are mandatory to complete.
    - Interdisciplinary case. The students are to work in their study groups on an interdisciplinary case covering the learning objectives from all the subjects of the semester.

**Examination:**

| | |
|---|---|
| Examination name: | Nautical Science & Maritime Transport I |
| Examination type: | Case (Nautical, Technology or Management) |

| | |
|---|---|
| | Internal oral test<br>Individual |
| Grade scale: | 7-point scale |
| Preparation time: | None |
| Duration: | 30 minutes |
| Aids allowed: | Interdisciplinary case |
| Important information: | At the examination, the student presents his/her case with focus on either the nautical, technology or management aspects. Each student is randomly assigned their focus by the Student Services and the student is informed of focus at the start of examination.<br>The case presentation should have a duration of about 7 minutes, maximum 10 minutes.<br>The remainder of the time is for cross-examination of the assigned case focus and or the relevant subject documentation with focus on the counting activities.<br>The interdisciplinary case must contain an exclusive summary written in English.<br>The maximum scope of the interdisciplinary case is 50 pages as per SIMAC norm.<br>The subject documentation is the student's reflection on how the learning objectives are reached and is a compilation of theory, workplace practice and context.<br>The learning objectives of the certifying activities are not included in this examination. |
| Prerequisites for examination: | Counting activities in the nautical, technology, and management are completed.<br>Description of counting activities and requirements for completion are described in the lesson plan.<br>The case handed in as described in the lesson plan. |

**Certifying Activity:**

| | |
|---|---|
| Certificate name: | Radar/ARPA (1/3 – OPS-SIM I) |
| Examination type: | Ongoing Assessment |
| Grade scale: | Passes/Not passed |
| Preparation time: | None |
| Duration: | N/A |
| Aids allowed: | N/A |
| Important information: | This certifying activity must be passed prior on board training in BJ6. |
| Prerequisites for certifying activity: | Relevant instrument studies and passage planning. |

## Nautical Science, Operational Level — BJ4

### Content:

### Learning objectives:

- To **interpret and appraise** all nautical information from nautical charts/ECDIS and other relevant publications
- To **determine** the ships position and progress using appropriate navigational methods and **evaluate** the accuracy
- To **interpret** readouts from and **operate** navigational equipment and control systems
- To **obtain, interpret and verify** data on meteorological and oceanographic conditions from sources such as weather charts, ice charts, wave charts, shipborne meteorological instruments, and navigational warnings.
- To **identify and analyse** close quarter situations and **conduct** correct action according to the International Collision Avoidance Rules with the **use** and **validation** of relevant equipment
- To **demonstrate** proper **use** of navigational equipment, incl. ECDIS and Radar/ARPA to **determine** the risk of collision and the **monitoring** of the ship progress based on prior planning (OPS SIM I + II) (CA)

### Learning activities:

- Situation: Large class. Large class activities take place in the classroom setting and consist of a varying mix of lecturing, tutorials, and student activity.
- Situation: Simulator – workplace learning. The OPS-SIM II exercises are designed to supplement and enhance the student's reflection on the learning objectives:
  - Radar/ARPA – theory and use
  - Technical equipment – theory and use
  - Practical seamanship
  - ColReg and watchkeeping duties
- Student centred activities. The student centred activities are aimed mainly at the study groups. The function of the groups may vary during the subject such as buzz groups, learning cells, etc. For student centred activities the assistant or associate professor(s) are available for tutoring, professional guidance, and formative feedback.
  - Individual reading and answering of study questions
  - Individual and group presentations
  - Workplace learning by utilizing simulations of the tools of a global maritime professional.
  - Subject documentation. The subject documentation is the student's reflection on how the learning objectives are reached and is a compilation of theory, workplace practice and context. Some core topics of the subject documentation are counting activities and are mandatory to complete.
  - Nautical case. The students are to work in their study groups on a nautical case covering the learning objectives from all the subjects of the semester.

### Examination:

| | |
|---|---|
| Examination name: | Nautical Science, Operational Level |
| Examination type: | Case (Nautical) |

| | |
|---|---|
| | External oral exam<br>Individual |
| Grade scale: | 7-point scale |
| Preparation time: | None |
| Duration: | 30 minutes |
| Aids allowed: | Nautical Case |
| Important information: | At the examination, the student presents his/her case<br>The case presentation should have a duration of about 7 minutes, maximum 10 minutes.<br>The remainder of the time is for cross-examination of the case and or the relevant subject documentation with focus on the counting activities.<br>The nautical case must contain an exclusive summary written in English. The maximum scope of the interdisciplinary case is 17 pages as per SIMAC norm.<br>The subject documentation is the student's reflection on how the learning objectives are reached and is a compilation of theory, workplace practice and context.<br>The learning objectives of the certifying activities are not included in this examination. |
| Prerequisites for examination: | Counting activities are completed.<br>Description of counting activities and requirements for completion are described in the lesson plan.<br>The case handed in as described in the lesson plan. |
| **Certifying Activity:** | |
| Certificate name: | Radar/ARPA (2/3 – OPS-SIM II)<br>Generic ECDIS course certificate (1/2) |
| Examination type: | Ongoing Assessment |
| Grade scale: | Passes/Not passed |
| Preparation time: | None |
| Duration: | N/A |
| Aids allowed: | N/A |
| Important information: | This certifying activity must be passed prior on board training in BJ6. |
| Prerequisites for certifying activity: | Relevant instrument studies and passage planning. |

## Nautical Science, Tactical Level — BJ6

### Content:

### Learning objectives:

- To **plan** and **monitor a ship progress** in various situations and **execute** proper use of navigational equipment, incl. ECDIS and Radar/ARPA to determine the risk of collision and the safe navigation of the ship – incl. assessment and validation of equipment
- To **conduct** radio watch and service in any given situation on radio equipment in any sea area (GOC - GMDSS)

### Learning activities:

- Situation: Large class. Large class activities take place in the classroom setting and consist of a varying mix of lecturing, tutorials, and student activity.
- Situation: Simulator – workplace learning. The TAC-SIM exercises are designed to supplement and enhance the student's reflection on the learning objectives:
    - Radar/ARPA – theory and use
    - Technical equipment – theory, use and validation
    - Practical seamanship
    - ColReg and watchkeeping duties
    - Workplace learning by utilizing simulations of the tools of a global maritime professional.

- Student centred activities. The student centred activities are aimed mainly at the study groups. The function of the groups may vary during the subject such as buzz groups, learning cells, etc. For student centred activities the assistant or associate professor(s) are available for tutoring, professional guidance, and formative feedback.
    - Individual reading and answering of study questions
    - Workplace learning by utilizing simulations of the tools of a global maritime professional.

### Examination:

| | |
|---|---|
| Examination name: | Nautical Science, Tactical Level (GOC - GMDSS) |
| Examination type: | External oral exam<br>Individual |
| Grade scale: | Passed/Not Passed |
| Preparation time: | None |
| Duration: | 45 minutes |
| Aids allowed: | N/A |
| Important information: | This examination only covers the competence required to obtain the Certificate of Competences for GMDSS radio operators, GOC. |
| Prerequisites for examination: | |

### Examination:

| | |
|---|---|
| Examination name: | Nautical Science, Tactical Level III |

| | |
|---|---|
| Examination type: | Ongoing Assessment |
| Grade scale: | Passed/Not Passed |
| Preparation time: | None |
| Duration: | |
| Aids allowed: | |
| Important information: | This examination covers the remainder of the learning objectives which are not part of the Course Certificate of training in the use of ARPA and the Course Certificate of training in the use of generic ECDIS and Transas type specific ECDIS. |
| Prerequisites for examination: | Counting activities in Nautical Science, Tactical Level completed.<br>Description of counting activities and requirements for completion are described in the lesson plan. |
| **Certifying Activity:** | |
| Certificate name: | Radar/ARPA (3/3 – TAC-SIM)<br>Generic ECDIS course certificate (2/2)<br>Transas Type specific ECDIS course |
| Examination type: | Ongoing Assessment |
| Grade scale: | Passes/Not passed |
| Preparation time: | None |
| Duration: | N/A |
| Aids allowed: | N/A |
| Important information: | In order to obtain the Radar/ARPA certification the certifying activities Radar/ARPA 1/3, 2/3 and 3/3 must be passed.<br>In order to obtain the Generic ECDIS course certificate the certifying activity Generic ECDIS course certificate ½ and 2/2 must be passed.<br>This certifying activity must be passed prior on board training in BJ6. |
| Prerequisites for certifying activity: | Relevant instrument studies and passage planning. |

## Bridge Watchkeeping Duty (FMB Simulator Assessment) — BJ8

### Content:

The Full Mission Assessment is simulator-based and requires the student to demonstrates the accumulative learning outcome of the entire program by completing a series of navigational watches, both as part of a bridge team and in charge of a bridge team.

### Examination:

| | |
|---|---|
| Examination name: | **Bridge Watchkeeping Duty (FMB Simulator Assessment)** |
| Examination type: | Internal<br>Ongoing assessment |
| Grade scale: | Passed/Not Passed |
| Preparation time: | Minimum 1 week prior to the FMB Simulator Assessment details required to conduct the voyage planning will be made available to the student. |
| Duration: | 5 navigational watches:<br>• 3 navigational watches as a supportive officer of the bridge team and<br>• 2 navigational watches as the officer in charge of the bridge team. |
| Aids allowed: | All aids allowed. |
| Important information: | The FMB Simulator Assessment focuses on the student's ability to perform a safe navigational bridge watch in all situations in accordance with STCW A-VIII standards regarding watchkeeping, as well as demonstrating relevant competencies as officer in charge of the navigational watch according to STCW table A-II/1. Learning objectives from the entire program syllabus can be included in the assessment. |
| Prerequisites for examination: | Voyage planning prepared. |

# BJ - Subject Syllabus

| | | | | |
|---|---|---|---|---|
| **Subject area:** | **30400** | **Technology (BJ)** | | |
| **Subject(s):** | 30421 | Ship Technology<br>(Info – Workshop Training, Safety and Seamanship – BJ2) | BJ2 | See 30100 |
| | 30431 | Ship Technology I | BJ3 | 10 ECTS |
| | 30441 | Electronical and Electronic Machinery I | BJ4 | 10 ECTS |
| | 30442 | Thermal Machinery I | BJ4 | 10 ECTS |
| | 30451 | Ship Technology II | BJ5 | 5 ECTS |
| | 30452 | Process Analysis and Automation | BJ5 | 5 ECTS |
| | 30453 | Thermal Machinery II | BJ5 | 5 ECTS |
| | 30461 | Electronical and Electronic Machinery II | BJ6 | 5 ECTS |
| | | | | |
| **Admission criteria:** | | | | |
| **Semester:** | BJ2 + BJ3 + BJ4 + BJ5 + BJ6 | | | |
| **ECTS credits:** | 50 ECTS | | | |
| **Course Regulations:** | • Ship Officer (BJ+SE) version 6.10 of 1 February 2022 | | | |
| **Orders:** | • Order on the professional bachelor training programme for Ship Officer - Danish order no. 1350 of 23 November 2018 as amended.<br>• Order on tests in the maritime training programmes – Danish order no 1585 of 13 December 2016, as amended.<br>• Order on grading scale and other examination – Danish order no 114 of 3 February 2015, as amended.<br>• Order on training programme and certificates for service on ships operating in Polar Waters – Danish order no 762 of 11 June 2018, as amended.<br>• Order on training programme and refresh training programme for advanced fire-fighting on board ships – Danish order no 1466 of 8 December 2015, as amended. | | | |
| **STCW:** | *STCW Code, as amended: Part A, chapter II - Master and deck department:*<br>Section A-II/1<br>• Cargo handling and stowage at the operational level<br>• Controlling the operation of the ship and care for persons on board at the operational level<br>• Navigation at the operational level:.<br>○ Manouvre the ship.<br><br>*STCW Code, as amended: Part A, chapter III - Engine department:*<br>Section A-III/1 – Operational level.<br><br>*STCW Code, as amended: Part A, chapter V – Special training requirements*<br>Section A-V/4 | | | |

| | | |
|---|---|---|
| | Basic training for ships operation in polar waters as set in table A-V/4-1.<br><br>*STCW Code, as amended: Part A, chapter VI - Emergency, safety, security:*<br>Section A-VI/3, paragraph 1 to 6<br>• Advanced fire-fighting as set in table A-VI/3 | |
| **Certificate(s):** | *Certificate of proficiency in basic training for service on Ships operating in Polar Waters* is issued upon completion of the training programme prescribed in Regulation V/4, paragraph 2 of the STCW Convention of 1978, as amended and the Danish order no 762 of 11 June 2018, as amended.<br><br>*Certificate of Proficiency in Advanced Fire Fighting on board Ships* is issued upon completion of the training programme prescribed in Regulation VI/3 of the STCW Convention of 1978, as amended and the Danish order no 1466 of 8 December 2015, as amended. | |
| **Qualification prerequisites for professors/instructors etc.** | Associate professors, assistant professors or instructors intended to be used in qualifying for certification under the STCW convention of 1978 as amended shall:<br>• have a qualification level that is the same or higher than the level of learning objectives for the subject<br>and<br>• have a full understanding of the subject-training programme and the specified objectives for each type of training being conducted.<br><br>If conducting training using a simulator the instructor shall:<br>have received appropriate guidance in instructional techniques involving the use of the simulator<br>and<br>have gained practical operational experience on the particular type of simulator being used<br><br>Associate professors intended to be used in qualifying for certification under the STCW convention of 1978 as amended shall:<br>• have a qualification level that is higher than the level of learning objectives for the subject<br>and<br>• have a full understanding of the subject-training programme and the specified objectives for each type of training being conducted.<br>Assistant professors can act as bachelor supervisors when they are on the final part of their master's degree. | |
| **Core literature** | | |
| **Responsible:** | Subject Manager | |
| **Valid from:** | 2022-1 | EIN |
| **Expired:** | | |
| **Remarks:** | | |

| Purpose | BJ |
|---|---|
| | |
| | |
| **Ship Technology I** | **BJ3** |

**Content:**

**Learning objectives:**

- To **identify** factors affecting draughts, trim, list, and stability of a ship and **compute** the condition of a ship through manual calculation.
- To **assess** a draught and stability condition against relevant legislation and **show** how the condition can become seaworthy.
- To **identify** forces affecting the hull and **analyse** a loading condition for local and global hull stress, and **explain** how to mitigate stress levels.
- To **interpret** the results of an inclining experiment.
- To **discuss** the various maintenance theories and systems and **select** appropriate methods of maintenance for a system or piece of equipment.
- To **explain** the technical configuration and operational and environmental challenges of the ballast and bilge systems.

**Learning activities:**

- Situation: Large class. Large class activities take place in the classroom setting and consist of a varying mix of lecturing, tutorials and student activity.
- Situation: Laboratory. The lab exercise is designed to supplement the learning objectives on hull geometry and internal weight distribution on static stability through a model experiment.
- Student centred activities. The student centred activities are aimed mainly at the study groups. The function of the groups may vary during the subject such as buzz groups, learning cells, etc.. For student centred activities the assistant or associate professor(s) are available for tutoring, professional guidance, and formative feedback.
  - Individual reading and answering of study questions
  - Workplace learning by utilizing simulations of the tools of a global maritime professional.
  - Subject documentation. The subject documentation is the student's reflection on how the learning objectives are reached and is a compilation of theory, workplace practice and context. Some core topics of the subject documentation are counting activities and are mandatory to complete.
  - Interdisciplinary case. The students are to work in their study groups on an interdisciplinary case covering the learning objectives from all the subjects of the semester.

**Examination:**

| | |
|---|---|
| Examination name: | Nautical Science and Maritime Transport I |
| Examination type: | Case (Nautical, Technology or Management)<br>Internal oral test<br>Individual |
| Grade scale: | 7-point scale |
| Preparation time: | None |

| | |
|---|---|
| Duration: | 30 minutes |
| Aids allowed: | Interdisciplinary case |
| Important information: | At the examination, the student presents his/her case with focus on either the nautical, technology or management aspects. Each student is randomly assigned their focus by the Student Services and the student is informed of focus at the start of examination.<br>The case presentation should have a duration of about 7 minutes, maximum 10 minutes.<br>The remainder of the time is for cross-examination of the assigned case focus and or the relevant subject documentation with focus on the counting activities.<br>The interdisciplinary case must contain an exclusive summary written in English.<br>The maximum scope of the interdisciplinary case is 50 pages as per SIMAC norm.<br>The subject documentation is the student's reflection on how the learning objectives are reached and is a compilation of theory, workplace practice and context. |
| Prerequisites for examination: | Counting activities in the nautical, technology, and management are completed.<br>Description of counting activities and requirements for completion are described in the lesson plan.<br>The case handed in as described in the lesson plan. |

| Purpose | BJ |
|---|---|

## Electrical and Electronic Machinery I — BJ4

**Content:**

**Learning objectives:**

**EEM 1:**

Knowledge:

- Explain the characteristic of electrical 1, 2 and 3 phase systems
- Preparation of electro technical documentation

Skills:

- Perform calculations relating to voltage, current and resistance
- Use of English electro-technical terminology and concepts for communication purpose

Competencies:

- Solve, measure, and analyze electro technical calculations in AC circuits
- Communicate and present information effective written in a collaborative environment

**EEM 2:**

Knowledge:

- Describe relation between electrical and magnetic theory
- Identify and describe construction and function of electrical motors, generators, and transformers (simple form) and evaluate general operation

Skills:

- Identify and interpret electrical component data and electrical documentation
- Use electrical documentation to construct relay control systems

Competencies:

- Practice general measurements in electrical systems
- Communicate and present information effective in written and electronic formats in a collaborative environment

**Learning activities:**

**EEM 1 & 2:**

- **Situation:** Large Class:
  Large class activities takes place in classroom setting or online in TEAMS and consist of lecturing and student activities in between.
- **Student-centered activity (SCA)**
  SCA is a project that utilizes the subject material of the course to construct an electrical relay control system. Students are expected to work in teams to design a relay control system and construct a solution a solution of it.

- **Situation:** Laboratory and simulator
  The lab and simulation exercises are designed to supplement the taught materials such as evaluation operation and function of electrical motors, generators, and transformers with guidance from teacher/tutor.
- **Portfolio:** Documentation of achievement of learning objectives and students' reflection on own progress
- **Counting Activates:** Mandatory laboratory assignments

## Examination:

| | |
|---|---|
| Examination name: | Operation of Maritime Machinery |
| Examination type: | Portfolio (TMA or EEM)<br>Internal oral test<br>Individual |
| Grade scale: | 7-point scale |
| Preparation time: | None |
| Duration: | 30 minutes |
| Aids allowed: | All |
| Important information: | At the examination, the student presents his/her portfolio with focus on either the<br>▪ Thermal Machinery I (TMA I) or<br>▪ Electrical and electronic machinery I (EEM I)<br><br>Each student is randomly assigned their focus by the Student Services, and the student is informed of focus at the start of examination.<br>The presentation of the portfolio should have a duration of about 5 minutes.<br>The remainder of the time is for cross-examination of the relevant part of the portfolio and the student's reflections based on the portfolio.<br>The student will receive one grade based upon the student's presentation and performance at the exam. |
| Prerequisites for examination: | Counting activities are completed.<br>Description of counting activities and requirements for completion are described in the lesson plan. |

## Thermal Machinery I | BJ4

### Content:

The overall scope of TMA I is to enable the student to operate different marine thermal systems such as combustion engines, steam plants and cooling plants.

### Learning objectives:

On completion of this subject, students must be able to:

Knowledge:

- Present proper terminology, define terms and recall function, construction and properties of the main thermal energy machinery and systems in marine engine rooms.
- Recall the principles of operation and adjustment of the main thermal energy systems in the engine room such as cooling plants, steam and boilers, engines and the relevant auxiliary systems.
- Present the theoretical circuit process-cooling and steam systems with evaporation and condensation, including enthalpies for liquid, saturated steam and superheated steam.
- List the various static and dynamic load types and their impact on materials, including how external forces and degrees of torque affect the stress within the material.

Skills:

- Identify relevant data in thermal energy systems and perform basic calculations of heat and energy balances and consumption.
- Operate marine thermal energy systems taking personal safety, operational safety and environmental safety into account.
- Explain basic terms of maintenance in thermal energy systems and components, including the main material test methods, destructive.
- Demonstrate application of relevant documentation and diagrams, monitoring equipment and instrumentation in thermal energy systems.

Competencies:

- Communicate and present information effective orally in a collaborative environment
- Operate marine thermal energy systems, supervise the operational mode and act upon abnormal operation

### Learning activities:

- Situation: Large class. Large class activities take place in the classroom setting and consist of a varying mix of lecturing, tutorials and student activity.
- Situation: Laboratory. The lab exercise is designed to supplement the learning objectives
- Student centered activities. The student centered activities are aimed at the study groups. The function of the groups may vary during the course such as buzz qroups, learning cells, etc.. For student centered activities the instructor(s) are available for tutoring, professional guidance, and formative feedback.
    - Workplace:
      Learning by utilizing engine room simulators.

- Portfolio:
  The portfolio is the student's reflection on how the learning objectives are reached and is a compilation of theory, workplace practice and context. Some core topics of the subject are counting activities and are mandatory to hand in. Description of counting activities and requirements for completion are described in the lesson plan.
- Interdiscplinary case:
  The students are to work in their study groups on an interdisciplinary project covering the learning objectives from all the subjects of the semester.

**Examination:**

| | |
|---|---|
| Examination name: | Operation of Maritime Machinery |
| Examination type: | Portfolio (TMA or EEM)<br>Internal oral test<br>Individual |
| Grade scale: | 7-point scale |
| Preparation time: | None |
| Duration: | 30 minutes |
| Aids allowed: | All |
| Important information: | At the examination, the student presents his/her portfolio with focus on either the<br>▪ Thermal Machinery I (TMA I) or<br>▪ Electrical and electronic machinery I (EEM I)<br><br>Each student is randomly assigned their focus by the Student Services, and the student is informed of focus at the start of examination.<br>The presentation of the portfolio should have a duration of about 5 minutes.<br>The remainder of the time is for cross-examination of the relevant part of the portfolio and the student's reflections based on the portfolio.<br>The student will receive one grade based upon the student's presentation and performance at the exam. |
| Prerequisites for examination: | Counting activities are completed.<br>Description of counting activities and requirements for completion are described in the lesson plan. |

## Ship Technology II — BJ5

### Content:

### Learning objectives:

- To **assess** reported defects and damage to cargo spaces, hatch covers, and ballast tanks and **take** appropriate action.
- To **plan** and **monitor** safe cargo operations using relevant on board systems and applying appropriate cargo related legislation.
- To **distinguish** between various cargo types and hazards and **select** the appropriate precautions in cargo handling and safe cargo stowage and securing using the relevant international guidelines and legislation.
- To **compute** amount of cargo loaded/discharged in various trades.
- To **explain** ship type specific intact and damage stability requirements and **assess** whether the ship complies with relevant legislation.
- To **control** fire fighting operations aboard ships, **train** and **organize** fire parties, **inspect** and **maintain** fire detection and fire extinguishing systems and equipment, **investigate** and **compile** reports on incidents involving fire as set per table A-VI/3 of the STCW. (CA)

### Learning activities:

- Situation: Large class. Large class activities take place in the classroom setting and consist of a varying mix of lecturing, tutorials and student activity.
- Student centred activities. The student centred activities are aimed mainly at the study groups. The function of the groups may vary during the subject such as buzz groups, learning cells, etc.. For student centred activities the assistant or associate professor(s) are available for tutoring, professional guidance, and formative feedback.
  - Individual reading and answering of study questions
  - Individual and group presentation
  - Workplace learning by utilizing simulations of the tools of a global maritime professional.
  - Playing the action in handling DG document and stowage, segregating, loading and discharging DG on a model ship.
  - Subject documentation. The subject documentation is the student's reflection on how the learning objectives are reached and is a compilation of theory, workplace practice and context. Some core topics of the subject documentation are counting activities and are mandatory to completed.
  - Interdisciplinary technical project. The students are to work in their study groups on an interdisciplinary case covering the learning objectives from the interdisciplinary and methodology, technology, and thermal machinery subjects of the semester.

### Examination:

| | |
|---|---|
| Examination name: | Technical Operation and Cargo Handling |
| Examination type: | Project<br>External Oral Exam<br>Individual |
| Grade scale: | 7-point scale |

| | |
|---|---|
| Preparation time: | None |
| Duration: | 45 minutes |
| Aids allowed: | Interdisciplinary technical project |
| Important information: | The examination covers the learning objectives of the interdisciplinary and methodology, technology, and thermal machinery subjects and is based on an interdisciplinary technical project.<br>At the examination, the student presents his/her project.<br>The project presentation should have a duration of about 10 minutes, maximum 15 minutes.<br>The remainder of the time is for cross-examination of project and the syllabus of the subjects.<br>The project must contain an exclusive summary written in English. The maximum scope of the interdisciplinary technical project is 20 pages as per SIMAC norm.<br>The project is included in the grade.<br>The learning objectives of the certifying activity are not included in this examination. |
| Prerequisites for examination: | Counting activities in the interdisciplinary & methodology, technology, and thermal machinery subjects are completed.<br>Description of counting activities and requirements for completion are described in the lesson plan.<br>The project handed in as described in the lesson plan. |

**Certifying Activity:**

| | |
|---|---|
| Certification name: | Advanced Fire Fighting |
| Examination type: | Theory: Individual written test or multiple choice<br>Course: Ongoing assessment |
| Grade scale: | Passed/not passed |
| Preparation time: | None |
| Duration: | Theory: 30 minutes<br>Course: N/A |
| Aids allowed: | Theory: All<br>Course: N/A |
| Important information: | The Theory must be passed prior participation in the advanced fire fighting course.<br>This certifying activity must be passed prior on board training in BJ6. |
| Prerequisites for certifying activity: | |

## Purpose

The student should acquire the necessary professional skills and knowledge so that he/she can perform tasks in the areas of process analysis, optimization of operations , equipment selection , troubleshooting, and maintenance requirements for automation of technological processes within transport, power plants, production and environmental technology.
The student must also obtain the necessary professional skills in data acquisition, data logging, control and management techniques to act rationally and correctly by monitoring and operating of ship control systems

Key subjects:

A. Monitoring of process plants
B. Control and control loops of plant
C. Process analysis and optimization
D. Integrated Control Systems

## Proces Analysis and Automation — BJ5

### Content:

The purpose of this subject is for students to develop basic skills in optimization of automation processes, equipment selection and troubleshooting and maintenance requirements for automation of technological processes within transport, power plants, production and environmental technology.

### Learning objectives (LO.):

On completion of this course, students will be able to:

- **Present** proper terminology, **define** terms and **recall** function and properties of automation components (LO 1.1)
- **Demonstrate** application of documentation, sensors, transmitters, controllers and actuators in automation systems and **apply** principles of single-loop control of an automation process. (LO 1.2)
- **Chose** and **apply** instrumentation and control of an automation process (LO 1.3)
- **Operate** and **interpret** readouts from integrated control systems and **identify** common components and structure of integrated control systems (LO 1.4)
- **Communicate** and **present** information related to an automation process effective orally in a collaborative environment (LO 1.5)

### Learning activities:

**Situation: Large Class**
Large class activities takes place in classroom setting or online in TEAMS and consist of lecturing and student activities in between.
Major focus: LO 1.1, LO 1.2 and LO 1.3

**Situation: Group work/Laboratory work**
The group work exercises are designed to supplement the taught materials, such as principles of instrumentation and control as well as operation of integrated control systems. The learning activities are based on practical work with guidance from instructor/teacher
Major focus: LO 1.1, LO 1.2, LO 1.3 and LO 1.4

**Student-centered activity (SCA)**
SCA is a project where the student, as part of a team, develops a solution for practical regulation and instrumentation of a process
Major focus: LO 1.1, LO 1.2, LO 1.3 and LO 1.5

## Examination:

| | |
|---|---|
| Examination name: | Process Analysis and Automation |
| Examination type: | Portfolio<br>External oral exam<br>Individual |
| Grade scale: | 7-point scale |
| Preparation time: | None |
| Duration: | 30 minutes |
| Aids allowed: | All |
| Important information: | At the examination, the student presents his/her portfolio.<br>The presentation of the portfolio should have a duration of about 5 minutes. The remainder of the time is for cross-examination of the relevant part of the portfolio and the student's reflections based on the portfolio.<br>The student will receive one grade based upon the student's presentation and performance at the exam. |
| Prerequisites for examination: | Counting activities are completed.<br>Description of counting activities and requirements for completion are described in the lesson plan. |

## Purpose

## Thermal Machinery II | BJ5

**Content:**

The overall scope of TMA II is to enable the student to operate different thermal systems such as environmental facilities, pumps, cooling and ventilation systems and pneumatic and hydraulics.

**Learning objectives:**

- Demonstrate proper terminology, define terms and describe function and properties of environmental facilities, components and systems.
- Present the causes and consequences of water and air pollution, and the consequences of the disposal of residues and contamination products in nature.
- Present the main principles, construction and methods of building climate and ventilation systems, taking indoor climate on human comfort and hygiene into consideration.
- Recall the principles of operation and adjustment of hydraulics and pneumatics systems.
- Explain the methods for purification of water and air including organic water treatment plants and sludge treatment plant's construction.
- Describe the principles, construction and design of systems transporting liquids and air, and demonstrate application of documentation including relevant diagrams, monitoring equipment and instrumentation.
- Communicate and present information effective in written and electronic formats in a collaborative environment

**Learning activities:**

- Situation: Large class. Large class activities take place in the classroom setting and consist of a varying mix of lecturing, tutorials and student activity.
- Situation: Laboratory. The lab exercise is designed to supplement the learning objectives
- Student centered activities. The student centered activities are aimed at the study groups. The function of the groups may vary during the course such as buzz qroups, learning cells, etc.. For student centered activities the instructor(s) are available for tutoring, professional guidance, and formative feedback.
  - Workplace:
    Learning by utilizing engine room simulators.
  - Interdiscplinary case:
    The students are to work in their study groups on an interdisciplinary project covering the learning objectives from all the subjects of the semester.

| **Examination:** | |
|---|---|
| Examination name: | Technical Operation and Cargo Handling |
| Examination type: | Project<br>External Oral Exam<br>Individual |
| Grade scale: | 7-point scale |
| Preparation time: | None |
| Duration: | 45 minutes |
| Aids allowed: | Interdisciplinary technical project |
| Important information: | The examination covers the learning objectives of the interdisciplinary and methodology, technology, and thermal machinery subjects and is based on an interdisciplinary technical project.<br>At the examination, the student presents his/her project.<br>The project presentation should have a duration of about 10 minutes, maximum 15 minutes.<br>The remainder of the time is for cross-examination of project and the syllabus of the subjects.<br>The project must contain an exclusive summary written in English. The maximum scope of the interdisciplinary technical project is 20 pages as per SIMAC norm.<br>The project is included in the grade.<br>The learning objectives of the certifying activity are not included in this examination. |
| Prerequisites for examination: | Counting activities in the interdisciplinary & methodology, technology, and thermal machinery subjects are completed.<br>Description of counting activities and requirements for completion are described in the lesson plan.<br>The project handed in as described in the lesson plan. |

| Purpose | |
|---|---|
| | |
| | |
| **Electrical and Electronic Machinery II** | **BJ6** |
| **Content:** | |
| | |
| **Learning objectives:** | |
| | |
| **Learning activities:** | |
| | |
| **Examination:** | |

| | |
|---|---|
| Examination name: | |
| Examination type: | Internal/External (select the relevant option)<br>Oral/Written/Practical (select the relevant option)<br>Test/Exam/-Ongoing assessment (select the relevant option) |
| Grade scale: | 7-point scale or Passed/Not Passed (select the relevant option)<br>(If grades are weighted, the weights are stated - skip if not applicable) |
| Preparation time: | (Write preparation time if any. Write "none" for oral tests/exams. Erase the point for written tests or exams.) |
| Duration: | (Write the duration of the test/exam in hours/minutes) |
| Aids allowed: | Describe the aids allowed, e.g. "all" or "none" (Remember that "all" means that PC may be used and this means access to the internet) |
| Important information: | |
| Prerequisites for examination: | |

# BJ - Subject Syllabus

| | | | | |
|---|---|---|---|---|
| **Subject area:** | **30600** | **Management (BJ)** | | |
| **Subject(s):** | 30631 | Maritime Law I and HSEQ | BJ3 | 7,5 ECTS |
| | 30651 | Maritime Law II | BJ5 | 2,5 ECTS |
| | 30681 | Watchkeeping Duty in Engine Room (FMM Simulator Assessment) | BJ8 | |
| | | | | |
| **Admission criteria:** | | | | |
| **Semester:** | BJ3 + BJ5 + BJ8 | | | |
| **ECTS credits:** | 10 | | | |
| **Course Regulations:** | • Ship Officer (BJ+SE) version 6.10 of 1 February 2022 | | | |
| **Orders:** | • Order on the professional bachelor training programme for Ship Officer - Danish order no. 1350 of 23 November 2018 as amended.<br>• Order on tests in the maritime training programmes – Danish order no 1585 of 13 December 2016, as amended.<br>• Order on grading scale and other examination – Danish order no 114 of 3 February 2015, as amended.<br>• Order on training programme for maritime security of ships – Danish order no 1279 of 7 November 2013, as amended.<br>• Order on occupational health training for members of the safety group in merchant ships and on occupational health teacher training issued by the Danish Maritime Authority – Danish order no. 795 of 22 June 2017.<br>• Order on training programme and certificates for service on ships operating in Polar Waters – Danish order no 762 of 11 June 2018, as amended | | | |
| **STCW:** | *STCW Code, as amended: Part A, chapter II - Master and deck department:*<br>Section A-II/1 – Operational level<br>• Controlling the operation of the ship and care for persons on board at the operational level<br>Section A-II/2 – Management level<br>• Controlling the operation of the ship and care for persons on board at the management level<br>*STCW Code, as amended: Part A, chapter VI -Emergency, Safety, Security:*<br>Section A-VI/5, paragraph 1 to 4<br>• Ship Security Officers as set in tablet A-VI/5<br>*STCW Code, as amended: Part A, chapter III – Engine department:*<br>• Section A-III/1 - Marine engineering at the operational level as set in table A-III/1<br>• Section A-III/6 – Electrical, electronic and control engineering at the operational level as set in table A-III/6 where use of simulator training is relevant.<br>*STCW Code, as amended: Part A, chapter VIII - Watchkeeping:*<br>• Section A-VIII/1 – Fitness for duty. | | | |

| | | |
|---|---|---|
| | • Section A-VIII/2 – Watchkeeping arrangement and principles to be observed.<br>*STCW Code, as amended: Part A, chapter V – Special training requirements*<br>Section A-V/4<br>Basic training for ships operation in polar waters as set in table A-V/4-1. | |
| **Certificate(s):** | *Certificate of Proficiency as Ship Security Officers* is issued when experience of at least 12 months relevant seagoing service is proved and completed the specialized training programme prescribed in Regulation VI/5 paragraph 1.2 of the STCW Convention of 1978, as amended and the Danish order no 1279 of 7 November 2013, as amended.<br>*Course Certificate of Training in Safety & Health §16 course* is issued upon completion of the training programme prescribed in the Danish order no. 795 of 2 June 2017, as amended.<br>*Certificate of proficiency in basic training for service on Ships operating in Polar Waters* is issued upon completion of the training programme prescribed in Regulation V/4, paragraph 2 of the STCW Convention of 1978, as amended and the Danish order no 762 of 11 June 2018, as amended. | |
| **Qualification prerequisites for professors/instructors etc.** | Associate professors, assistant professors or instructors intended to be used in qualifying for certification under the STCW convention of 1978 as amended shall:<br>• have a qualification level that is the same or higher than the level of learning objectives for the subject<br>and<br>• have a full understanding of the subject-training programme and the specified objectives for each type of training being conducted.<br><br>If conducting training using a simulator the instructor shall:<br>• have received appropriate guidance in instructional techniques involving the use of the simulator<br>and<br>• have gained practical operational experience on the particular type of simulator being used<br><br>Associate professors intended to be used in qualifying for certification under the STCW convention of 1978 as amended shall:<br>• have a qualification level that is higher than the level of learning objectives for the subject<br>and<br>• have a full understanding of the subject-training programme and the specified objectives for each type of training being conducted.<br>Assistant professors can act as bachelor supervisors when they are on the final part of their master's degree. | |
| **Core literature** | | |
| **Responsible:** | Subject Manager | |
| **Valid from:** | 2022-1 | EIN |
| **Expired:** | | |

# BJ - Subject Syllabus

| Remarks: | |
|---|---|

| Purpose | BJ |
|---|---|
| | |
| | |

| Maritime Law I and HSEQ | BJ3 |
|---|---|

**Content:**

**Learning objectives:**

- To **identify** how various internal or external bodies from within the maritime industry interact with the vessel and her operator's departments
- To **identify** and **apply** the international and national legal framework and regulatory instruments of the maritime industry into the management of a merchant vessel, her crew and operator
- To **apply** the correct Danish and international maritime codes in situations relevant in the role of junior navigating officer
- To **apply** the seafarer's rights and obligations in complex employment situations including the role of the crewing manager in consideration of crew contracts, qualifications and certificates
- To **review, appraise** and **document** compliance within the ISM Code and other quality assurance systems within Health (§16), Safety and Environment (CA)

**Learning activities:**

- Situation: Large class. Large class activities take place in the classroom setting and consist of a varying mix of lecturing, tutorials and student activity.
- Student centred activities. The student centred activities are aimed at the study groups. The function of the groups may vary during the subject such as buzz groups, learning cells, etc.. For student centred activities the assistant or associate professor(s) are available for tutoring, professional guidance, and formative feedback.
    - Individual reading and answering of study questions
    - Role play action in various situations that the officer can face
    - Subject documentation. The subject documentation is the student's reflection on how the learning objectives are reached and is a compilation of theory, workplace practice and context. Some core topics of the subject documentation are counting activities and are mandatory to hand in.
    - Interdisciplinary case. The students are to work in their study groups on an interdisciplinary case covering the learning objectives from all the subjects of the semester.

**Examination:**

| | |
|---|---|
| Examination name: | Nautical Science and Maritime Transport I |
| Examination type: | Case (Nautical, Technology or Management)<br>Internal oral test<br>Individual |
| Grade scale: | 7-point scale |

| | |
|---|---|
| Preparation time: | None |
| Duration: | 30 minutes |
| Aids allowed: | Interdisciplinary case |
| Important information: | At the examination, the student presents his/her case with focus on either the nautical, technology or management aspects. Each student is randomly assigned their focus by the Student Services and the student is informed of focus at the start of examination.<br>The case presentation should have a duration of about 7 minutes, maximum 10 minutes.<br>The remainder of the time is for cross-examination of the assigned case focus and or the relevant subject documentation with focus on the counting activities.<br>The interdisciplinary case must contain an exclusive summary written in English.<br>The maximum scope of the interdisciplinary case is 50 pages as per SIMAC norm.<br>The subject documentation is the student's reflection on how the learning objectives are reached and is a compilation of theory, workplace practice and context.<br>The learning objectives of the certifying activity are not included in this examination. |
| Prerequisites for examination: | Counting activities in the nautical, technology, and management are completed.<br>Description of counting activities and requirements for completion are described in the lesson plan.<br>The case handed in as described in the lesson plan. |

| **Certifying Activity:** | |
|---|---|
| Certificate name: | Safety & Health §16 course |
| Examination type: | Ongoing assessment |
| Grade scale: | Passed/not passed |
| Preparation time: | N/A |
| Duration: | N/A |
| Aids allowed: | N/A |
| Important information: | This certifying activity must be passed prior on board training in BJ6. |
| Prerequisites for certifying activity: | |

## Maritime Law II | BJ5

### Content:

### Learning objectives:

- To **appraise** flag state, class, port state and commercial vessel inspection regimes that ensure maritime compliance
- To **explain** how adherence to governing laws and regulations lead to issuance of ship certificates
- To **carry out** the duties of a Ship Security Officer in cooperation with the CSO, PFSO and ship's master and crew (CA)

### Learning activities:

- Situation: Large class. Large class activities take place in the classroom setting and consist of a varying mix of lecturing, tutorials and student activity.
- Student centred activities. The student centred activities are aimed at the study groups. The function of the groups may vary during the subject such as buzz groups, learning cells, etc.. For student centred activities the assistant or associate professor(s) are available for tutoring, professional guidance, and formative feedback.
    - Individual reading and answering of study questions
    - Subject documentation. The subject documentation is the student's reflection on how the learning objectives are reached and is a compilation of theory, workplace practice and context. Some core topics of the subject documentation are counting activities and are mandatory to hand in.

### Examination:

| | |
|---|---|
| Examination name: | Maritime Law II |
| Examination type: | Internal<br>Ongoing assessment |
| Grade scale: | Passed/not passed |
| Preparation time: | N/A |
| Duration: | N/A |
| Aids allowed: | N/A |
| Important information: | The learning objectives of the certifying activity are not included in this examination. |
| Prerequisites for examination: | Counting activities are completed.<br>Description of counting activities and requirements for completion are described in the lesson plan. |

### Certifying Activity:

| | |
|---|---|
| Certificate name: | Proficiency as Ship Security Officers |
| Examination type: | Ongoing assessment |
| Grade scale: | Passed/not passed |

| | |
|---|---|
| Preparation time: | N/A |
| Duration: | N/A |
| Aids allowed: | N/A |
| Important information: | This certifying activity must be passed prior on board training in BJ6. |
| Prerequisites for certifying activity: | |

| Watchkeeping Duty in Engine Room (FMM Simulator Assessment) | BJ8 |
|---|---|

**Content:**

The FMM Simulator Assessment is simulator-based and requires the student to demonstrates the accumulative learning outcome of the entire program by completing a series of engine room watches, both as part of an engine room team and in charge of a engine room team.

**Examination:**

| | |
|---|---|
| Examination name: | **Watchkeeping Duty in Engine Room (FMM Simulator Assessment)** |
| Examination type: | Internal<br>Ongoing assessment |
| Grade scale: | Passed/Not Passed |
| Preparation time: | Minimum 1 week prior to the FMM Simulator Assessment details relating to the assessment will be made available to the student. |
| Duration: | 3 to 6 engine room watches<br>• Minimum 2 engine room watches as a supportive officer of the engine room team and<br>• Minimum 1 engine room watch as the officer in charge of the engine room team. |
| Aids allowed: | All aids allowed |
| Important information: | The FMM Simulator Assessment focuses on the student's ability to perform a safe engine room watch in various situations in accordance with STCW A-VIII standards regarding watchkeeping as well as demonstrating relevant competencies as officer in charge of an engineering watch according to STCW table A-III/1. Learning objectives from the entire program syllabus can be included in the assessment. |
| Prerequisites for examination: | |

# BJ - Subject Syllabus

| | | | | |
|---|---|---|---|---|
| **Subject area:** | **30700** | **Interdisciplinary Elements and Methodology (BJ)** | | |
| **Subject(s):** | 30731 | Interdisciplinary case I<br>(Nautical Science and Maritime Transport I) | BJ3 | 2½ ECTS |
| | 30752 | Interdisciplinary technical project<br>(Technical Operation and Cargo Handling) | BJ5 | 7½ ECTS |
| | | | | |
| | 30781 | Bachelor project | BJ8 | 15 ECTS |
| | | | | |
| **Admission criteria:** | The final Bachelor Project period in BJ8 | All subjects of the BJ education programme must be passed with accordance to the course regulations for Ship Officer. | | |
| **Semester:** | BJ3 + BJ5 + BJ8 | | | |
| **ECTS credits:** | 10 ECTS - (Interdisciplinary elements and methodology)<br>15 ECTS - (Bachelor Project) | | | |
| **Course Regulations:** | • Ship Officer (BJ+SE) version 6.10 of 1 February 2022 | | | |
| **Orders:** | • Order on the professional bachelor training programme for Ship Officer - Danish order no. 1350 of 23 November 2018 as amended.<br>• Order on tests in the maritime training programmes – Danish order no 1585 of 13 December 2016, as amended.<br>• Order on grading scale and other examination – Danish order no 114 of 3 February 2015, as amended. | | | |
| **STCW:** | None. | | | |
| **Certificate(s):** | *Certificate of proficiency in basic training for service on Ships operating in Polar Waters* is issued upon completion of the training programme prescribed in Regulation V/4, paragraph 2 of the STCW Convention of 1978, as amended and the Danish order no 762 of 11 June 2018, as amended. | | | |
| **Qualification prerequisites for professors/instructors etc.** | Associate professors, assistant professors or instructors intended to be used in qualifying for certification under the STCW convention of 1978 as amended shall:<br>• have a qualification level that is the same or higher than the level of learning objectives for the subject<br>and<br>• have a full understanding of the subject-training programme and the specified objectives for each type of training being conducted.<br><br>If conducting training using a simulator the instructor shall:<br>• have received appropriate guidance in instructional techniques involving the use of the simulator<br>and | | | |

| | | |
|---|---|---|
| | • have gained practical operational experience on the particular type of simulator being used<br><br>Associate professors intended to be used in qualifying for certification under the STCW convention of 1978 as amended shall:<br>• have a qualification level that is higher than the level of learning objectives for the subject<br>and<br>• have a full understanding of the subject-training programme and the specified objectives for each type of training being conducted.<br>Assistant professors can act as bachelor supervisors when they are on the final part of their master's degree. | |
| **Core literature** | | |
| **Responsible:** | Subject Manager | |
| **Valid from:** | 2022-1 | EIN |
| **Expired:** | | |
| **Remarks:** | | |

## Purpose — BJ

The purpose of this subject is to train the ability of the student to gather and process information and to find and utilise relevant theories in order to work with scientific projects based on a self defined problem within the area of the profession. The subject also trains the ability to combine knowledge from various fields within the profession as well as the ability to evaluate the own process of work and the results.

## Interdisciplinary case I => Nautical Science and Maritime Transport I — BJ3

### Content:

### Learning objectives:

- **Distinguish** between basic scientific theories
- **Conduct** a targeted information search
- **Devise** a protocol and documentation
- **Describe** a study design and **explain** the impact of the design on the study's reliability and validity
- To **produce** a structured professional paper in accordance with set academic requirements on relevant professional subjects and problems.

### Learning activities:

- Situation: Large class. Large class activities take place in the classroom setting and consist of a varying mix of lecturing, tutorials and student activity.
- Student centred activities. The student centred activities are aimed mainly at the study groups. The function of the groups may vary during the course such as buzz groups, learning cells, etc.. For student centred activities the assistant or associate professor(s) are available for tutoring, professional guidance, and formative feedback.
    - Interdisciplinary case. The students are to work in their study groups on an interdisciplinary case covering the learning objectives from all the subjects of the semester.
    - Written work. In all subjects of the semester the students are to perform written work in accordance with set academic requirements

### Examination:

| | |
|---|---|
| Examination name: | Nautical Science and Maritime Transport I |
| Examination type: | Case (Nautical, Technology or Management)<br>Internal oral test<br>Individual |
| Grade scale: | 7-point scale |
| Preparation time: | None |
| Duration: | 30 minutes |
| Aids allowed: | Interdisciplinary case |
| Important information: | At the examination, the student presents his/her case with focus on either the nautical, technology or management aspects. Each student is randomly assigned their focus by the Student Services and the student is informed of focus at the start of examination. |

| | |
|---|---|
| | The case presentation should have a duration of about 7 minutes, maximum 10 minutes.<br>The remainder of the time is for cross-examination of the assigned case focus and or the relevant subject documentation with focus on the counting activities.<br>The interdisciplinary case must contain an exclusive summary written in English.<br>The maximum scope of the interdisciplinary case is 50 pages as per SIMAC norm.<br>The subject documentation is the student's reflection on how the learning objectives are reached and is a compilation of theory, workplace practice and context. |
| Prerequisites for examination: | The interdisciplinary case is handed in as per deadline in the lesson plan. |

## Interdisciplinary technical project => Technical Operation and Cargo Handling | BJ5

### Content:

### Learning objectives:

- To **select** the relevant scientific research method and **explain** the prerequisites for different types of data-analysis including multi-causal data analysis and mixed methods approaches.
- To **design** quantitative and qualitative research, **analyse** the result, and **assess** the reliability and validity of the results.
- **Conduct** a study in accordance with relevant scientific methods and standard
- To critical **reflect** and **evaluate** different types of research designs
- To **write** a scientific paper in accordance with academic standards
- **Disseminate** complicated professional issues to professionals in the maritime industry
- To **distinguish** between the various wastes, discharges, and environmentally damaging emission generated on board ships and **outline** the treatment, storage and disposal of these wastes and discharges according to the relevant international legislation.
- To **explain** the technical configuration and operational and environmental challenges of cargo related and engineering systems and services.
- **Operate** organic water treatment plants, sludge treatment plant's construction, cooling and ventilation systems in accordance with laws, regulations and technical requirements.
- **Demonstrate** application of relevant documentation and diagrams, monitoring equipment and instrumentation in environmental facilities and systems.
- **Operate** and **observe** combustion engine power plants, environmental systems and cooling and ventilation systems to optimize plant operation and remedy abnormal operation.
- **Evaluate** the condition of thermal machinery and system components
- **Identify** and **use** data to perform relevant calculations on thermal energy systems.
- To **demonstrate** how ships are constructed to safely navigate polar regions. (CA)
- To **identify** vulnerable engineering and cargo related systems and services in service in polar regions and **outline** protective measures. (CA)

### Learning activities:

- Situation: Large class. Large class activities take place in the classroom setting and consist of a varying mix of lecturing, tutorials and student activity.
- Student centred activities. The student centred activities are aimed mainly at the study groups. The function of the groups may vary during the subject such as buzz groups, learning cells, etc.. For student centred activities the assistant or associate professor (s) are available for tutoring, professional guidance, and formative feedback.
    - Interdisciplinary technical project. The students are to work in their study groups on an interdisciplinary technical project covering the learning objectives from the technical and thermal machinery subjects of the semester.
    - Written work. In all subjects of the semester the students are to perform written work in accordance with set academic requirements

**Examination:**

| | |
|---|---|
| Examination name: | Technical Operation and Cargo Handling |
| Examination type: | Project<br>External Oral Exam<br>Individual |
| Grade scale: | 7-point scale |
| Preparation time: | None |
| Duration: | 45 minutes |
| Aids allowed: | Interdisciplinary technical project |
| Important information: | The examination covers the learning objectives of the interdisciplinary and methodology, technology, and thermal machinery subjects and is based on an interdisciplinary technical project.<br>At the examination, the student presents his/her project.<br>The project presentation should have a duration of about 10 minutes, maximum 15 minutes.<br>The remainder of the time is for cross-examination of project and the syllabus of the subjects.<br>The project must contain an exclusive summary written in English. The maximum scope of the interdisciplinary technical project is 20 pages as per SIMAC norm.<br>The project is included in the grade.<br>The learning objectives of the certifying activity are not included in this examination. |
| Prerequisites for examination: | Counting activities in the interdisciplinary & methodology, technology, and thermal machinery subjects are completed.<br>Description of counting activities and requirements for completion are described in the lesson plan.<br>The project handed in as described in the lesson plan. |

**Certifying Activity:**

| | |
|---|---|
| Certification name: | Basic Training for Service on Ships Operating in Polar Waters |
| Examination type: | Ongoing Assessment |
| Grade Scale: | Passed/Not passed |
| Preparation time: | None |
| Duration: | N/A |
| Aids allowed: | N/A |
| Important Information: | This certifying activity includes relevant learning objectives from Maritime Law I & HSEQ and Nautical Science II.<br>This certifying activity must be passed prior on board training in BJ6. |
| Prerequisites for certifying activity: | |

## Bachelor project — BJ8

### Content:

### Learning objectives:

- To define a relevant research problem within the field of the profession
- To apply relevant scientific research designs and methods to the problem
- To evaluate and discuss the chosen research designs, -methods and the process.
- To evaluate, discuss and disseminate the results and conclusions with professionals in the maritime industry

### Learning activities:

- Situation: Large class. The large class activity takes place in the classroom setting and consists of an introduction to the bachelor project.
- Student centred activities. The student centred activities can be performed on an individual or group basis. Each student or group of students can choose between available assistant and associate professors for tutoring and guidance on the project.
- Bachelor project. The research, analysis work and production of the project is the sole student centred activity of the semester.

### Examination:

| | |
|---|---|
| Examination name: | Bachelor Thesis |
| Examination type: | External oral exam<br>Individual |
| Grade scale: | 7-point scale |
| Preparation time: | None |
| Duration: | 1 hour |
| Aids allowed: | All |
| Important information: | **Exam Language:**<br>• The project can be written in either English or Danish.<br>• The examination will be carried out in either English or Danish at the choice of the student. The student must notify the student administration if the project and the examination will be held in English. Notice is given when handing in the preliminary problem statement.<br>• The ability to formulate and spell is an integral part of the assessment of the academic content.<br><br>**Examination:**<br>• The student starts the examination with a 15 minutes' presentation.<br><br>**Before examination:**<br>• The BA methodology course must be passed before handing in the preliminary problem statement. |

| | |
|---|---|
| | • The preliminary problem statement must be handed in no later than 2 weeks after commencing the project period in accordance with the lesson plan<br>• The final problem statement must be approved by the supervisor and handed in/uploaded as described in the lesson plan no later than 3 weeks before the deadline set for the final hand-in of actual project.<br><br>**After examination:**<br>Students resitting the exam do not need to hand in a preliminary problem statement or a final problem statement, provided it has been approved by the supervisor for re-examination. |
| Prerequisites for examination: | All other subjects and Professional Work Experience of the BJ education programme must be passed in accordance with the course regulations for Ship Officer.<br>The bachelor project problem statement must be approved by the turoring assistant or associate professor prior the the bachelor project hands-in on time in accordance with the lesson plan. |

# Syllabus

| | | | |
|---|---|---|---|
| **Subject area:** | **3-4-800** | **Elective Subjects (BJ+SE)** | |
| **Subject(s):** | 88100 | Elective Subject (BS, BM, **BJ** & **SE**) | |
| | 88104 | Docking - **BJ5+BJ6** | 2 ECTS |
| | 88105 | Operational Optimization and Management Tools - **BJ6** | 3 ECTS |
| | 88109 | Negotiating Skills – **BJ5+BJ6** | 3 ECTS |
| | 88110 | Communication Skills – **BJ5+BJ6** | 2 ECTS |
| | 88120 | Project management – **BJ5+BJ6** | 2 ECTS |
| | 88122 | Pax-RoRo – **BJ5+BJ6** | 2 ECTS |
| | 88123 | Robot I – Basic – **BJ5** | 2 ECTS |
| | 88125 | Shipping and chartering – **BJ5+BJ6** | 2 ECTS |
| | 88129 | Advanced English – **BJ5+BJ6** | 2 ECTS |
| | 88140 | Electrical Maritime Practice – **BJ5** | 2 ECTS |
| | 88143 | Globalization – **BJ5+BJ6** | 2 ECTS |
| | 88146 | Human Factors in Safety – **BJ6** | 5 ECTS |
| | 88148 | Innovation and Entrepreneurship I+II – **BJ5** | 5 ECTS |

# Syllabus

| | | | |
|---|---|---|---|
| **Subject area:** | **88000** | **Elective Subject (BJ/SE)** | |
| **Subject(s):** | 88100 | Elective Subject | |
| | 88104 | Docking | 2 ECTS |
| | | | |
| **Admission criteria:** | | | |
| **Criteria to pass subject** | These assessments make up the subject:<br>1. **None** assessment using the 7-point grade scale.<br>• To pass the average of the assessments must be at least 2.0. (no rounding).<br>2. **One** assessment graded Passed/Not Passed.<br>• This assessment must be graded Passed. | | |
| **Semester:** | BJ5/BJ6 + SE(SKF) + SE(MCH) + SE(SCH) | | |
| **ECTS credits:** | 2 | | |
| **Course Regulations:** | • Ship Officer (BJ+SE) Version 5.80, 1 February 2021.<br>• Ship Officer (BJ) Version 6.10, 1 February 2022 | | |
| **Orders:** | • Order on the professional bachelor training programme for Ship Officer – Danish order no. 1612 of 13 December 2016, as amended.<br>• Order on the professional bachelor training programme for Ship Officer - Danish order no. 1350 of 23 November 2018 as amended. This order is for students who were registered in BJ1, SE1 eller SE2 for first time in the spring of 2019 or later (2019-2, 2020-1 ect.).<br>• Order on tests in the maritime training programmes – Danish order no 1585 of 13 December 2016, as amended.<br>• Order on grading scale and other examination – Danish order no 114 of 3 February 2015, as amended. | | |
| **STCW:** | STCW Code, as amended: Part A, chapter II - Master and deck department<br>Section A-II/1 - Operational level | | |
| **Certificate(s):** | None | | |
| **Responsible:** | Subject Manager | | |
| **Valid from:** | 2022-1 | EIN | |
| **Expired:** | | | |
| **Remarks:** | None | | |

# Syllabus

## Purpose

The purpose of docking is for the student to attain knowledge about standard docking procedures and practices to acquire the necessary skills to communicate and cooperate with shipyard and classification society on an operational and management level.

## Learning objectives

**Docking (88104):**

**Knowledge:**

- Class societies and flag state inspection intervals
- Ship plans including general arrangement, docking plan etc.
- Administrative aspects of docking including sharing of responsibility and accountability during docking with the ship yard and sub-contractors

**Skills:**

- Plan scheduled vessel docking
- Fulfill a docking specification
- Conduct hull and machinery inspections
- Supervise and test maintenance work
- Conduct daily communication, progress meetings etc. with the ship yard and subcontractors
- Coordinate docking with flag state administration, other authorities, classification societies, technical inspectors, insurance companies and other parties during docking
- Apply safe working practices

**Competencies:**

- Planning and execution of docking of a vessel
- Assess the work performed during docking

## Core literature

None

# Syllabus

## Examination

**Docking (88104):**

| | |
|---|---|
| Examination type: | Ongoing assessment |
| Grading scale: | Passed or Not Passed |
| Preparation time: | None |
| Duration: | N/A |
| Aids allowed: | N/A |
| Important Information: | None |
| Prerequisites for Examination: | None |

## Qualification prerequisites for professors/instructors etc.

Associate professors or assistant professors intended to be used in qualifying for certification under the STCW convention of 1978 as amended shall:

- have a qualification level that is the same or higher than the level of learning objectives for the subject
  and
- have a full understanding of the subject-training programme and the specified objectives for each type of training being conducted.

# Syllabus

| | | | |
|---|---|---|---|
| **Subject area:** | **88000** | **Elective Subject (BS+BJ+SE)** | |
| **Subject(s):** | 88100 | Elective Subject | |
| | 88105 | Operational Optimization and Management Tools | 3 ECTS |
| | | | |
| **Admission criteria:** | None | | |
| **Criteria to pass subject** | These assessments make up the subject:<br>1. **None** assessment using the 7-point grade scale.<br>• To pass the average of the assessments must be at least 2.0. (no rounding).<br>2. **One** assessment graded Passed/Not Passed.<br>• This assessment must be graded Passed. | | |
| **Semester:** | BS5 + BS7 + BJ6 + SE(SKF) + SE(MCH) + SE(SCH) | | |
| **ECTS credits:** | 3 | | |
| **Course Regulations:** | • Master Mariner (BS) Version 5.80, 1 February 2021.<br>• Ship Officer (BJ+SE) Version 5.80, 1 February 2021.<br><br>• Master Mariner (BS) Version 6.10, 1 February 2022.<br>• Ship Officer (BJ) Version 6.10, 1 February 2022. | | |
| **Orders:** | • Order on the professional bachelor training programme for Master Mariner – Danish order no. 1611 of 13 December 2016, as amended.<br>• Order on the professional bachelor training programme for Master Mariner - Danish order no. 1349 of 23 November 2018 as amended.<br>• Order on the professional bachelor training programme for Ship Officer – Danish order no. 1612 of 13 December 2016, as amended.<br>• Order on the professional bachelor training programme for Ship Officer - Danish order no. 1350 of 23 November 2018 as amended. This order is for students who were registered in BJ1, SE1 eller SE2 for first time in the spring of 2019 or later (2019-2, 2020-1 ect.).<br>• Order on tests in the maritime training programmes – Danish order no 1585 of 13 December 2016, as amended.<br>• Order on grading scale and other examination – Danish order no 114 of 3 February 2015, as amended. | | |
| **STCW:** | None | | |
| **Certificate(s):** | None | | |
| **Responsible:** | Subject Manager | | |
| **Valid from:** | 2022-1 | EIN | |
| **Expired:** | | | |
| **Remarks:** | None | | |

# Syllabus

## Purpose

The objective of this course is to qualify the student to understand and use different optimizing- and management tools. Upon completion of the course, the student will gain the necessary knowledge, understanding, skills and competences to optimize workflows onboard and ashore.

## Learning objectives

**Operational Optimization and Management Tools (88105):**

**Knowledge:**

- Management tools as LEAN, JIT, SIX SIGMA and KAIZEN.
- Operational optimization influence on organization and economy.

**Skills:**

- None

**Competencies:**

- Implement and use management tools to improve the organization's work environment, safety and economy

## Core literature

None

## Examination

**Operational Optimization and Management Tools (88105):**

| | |
|---|---|
| Examination type: | Ongoing assessment |
| Grading scale: | Passed or Not Passed |
| Preparation time: | None |
| Duration: | N/A |
| Aids allowed: | N/A |
| Important Information: | None |
| Prerequisites for Examination: | None |

## Qualification prerequisites for professors/instructors etc.

Associate professors or assistant professors intended to be used in qualifying for certification under the STCW convention of 1978 as amended shall:

- have a qualification level that is the same or higher than the level of learning objectives for the subject
  and
- have a full understanding of the subject-training programme and the specified objectives for each type of training being conducted.

# Syllabus

| | | | |
|---|---|---|---|
| **Subject area:** | **88000** | **Elective Subject (BS+BM+BJ+SE)** | |
| **Subject(s):** | 88100 | Elective Subject | |
| | 88109 | Negotiating Skills | 3 ECTS |
| | | | |
| **Admission criteria:** | None | | |
| **Criteria to pass subject** | These assessments make up the subject:<br>1. **None** assessment using the 7-point grade scale.<br>• To pass the average of the assessments must be at least 2.0. (no rounding).<br>2. **One** assessment graded Passed/Not Passed.<br>• This assessment must be graded Passed. | | |
| **Semester:** | BS5 + BS7 + BM8 + BJ5/BJ6 + SE(SKF) + SE(MCH) + SE(SCH)<br>BM8 (Specialization: Management) | | |
| **ECTS credits:** | 3 | | |
| **Course Regulations:** | • Master Mariner (BS) Version 5.80, 1 February 2021.<br>• Marine Engineer (BM) Version 5.80, 1 February 2021.<br>• Ship Officer (BJ+SE) Version 5.80, 1 February 2021.<br>•<br>• Master Mariner (BS) Version 6.10, 1 February 2022.<br>• Marine Engineer (BM) Version 6.10, 1 February 2022.<br>• Ship Officer (BJ) Version 6.10, 1 February 2022. | | |
| **Orders:** | • Order on the professional bachelor training programme for Master Mariner – Danish order no. 1611 of 13 December 2016, as amended.<br>• Order on the professional bachelor training programme for Master Mariner - Danish order no. 1349 of 23 November 2018 as amended.<br>• Order on the professional bachelor training programme for Marine Engineer – Danish order no 1610 of 13 December 2016 as amended.<br>• Order on the professional bachelor training programme for Marine Engineer - Danish order no. 1348 of 23 November 2018 as amended. This order is for students who were registered in BM1 for first time in the spring of 2019 or later (2019-2, 2020-1 ect.).<br>• Order on the professional bachelor training programme for Ship Officer – Danish order no. 1612 of 13 December 2016, as amended.<br>• Order on the professional bachelor training programme for Ship Officer - Danish order no. 1350 of 23 November 2018 as amended. This order is for students who were registered in BJ1, SE1 eller SE2 for first time in the spring of 2019 or later (2019-2, 2020-1 ect.).<br>• Order on tests in the maritime training programmes – Danish order no 1585 of 13 December 2016, as amended.<br>• Order on grading scale and other examination – Danish order no 114 of 3 February 2015, as amended. | | |

# Syllabus

| | | |
|---|---|---|
| **STCW:** | None | |
| **Certificate(s):** | None | |
| **Responsible:** | Subject Manager | |
| **Valid from:** | 2022-1 | EIN |
| **Expired:** | | |
| **Remarks:** | None | |

## Purpose

This negotiating skills course will enable students to understand how they can negotiate constructively with principals, colleagues, suppliers and contact negotiations and be able to carry out a negotiation, which creates a win-win outcome for all parties. This course covers all the basics of negotiating in a practical and interactive way.

## Learning objectives

**Negotiating Skills (88109):**

**Knowledge:**

- Your values and how they impact on your negotiations.
- Understanding the nature of the gap between you and the other party.
- Styles and negotiators.
- Understand the structure underlying all negotiations.
- Identify the appropriate skills used in negotiations.
- Creating win-win negotiations.
- Preparing for a negotiation and setting objectives.
- Finding out as much as you can about the other party's needs and aspirations.
- Developing a strategy for success.
- Framing.
- Recognizing and dealing with 'underhand' tactics and manipulation.
- The importance of establishing a productive environment.
- Cross-cultural negotiations – understanding and dealing with different cultures.
- Understanding the meaning and importance of body language.
- Understanding the communication process.

**Skills:**

- Listening skills.
- Assertiveness - how to be assertive, but not aggressive, in negotiations.
- Questioning skills.
- Finding innovative solutions to objections.
- Summarizing and synthesizing skills.

**Competencies:**

- Open a negotiation.
- Conduct a negotiation both in English and in Danish.
- Handle objections.
- Question his or her negotiating partner.

## Core literature

Forhandlingsteknik i teori og praksis af Anne Bay Nordtorp.

## Examination

**Negotiating Skills (88109):**

| | |
|---|---|
| Examination type: | Ongoing assessment |
| Grading scale: | Passed or Not Passed |
| Preparation time: | None |
| Duration: | N/A |
| Aids allowed: | N/A |
| Important Information: | None |
| Prerequisites for Examination: | None |

## Qualification prerequisites for professors/instructors etc.

Associate professors or assistant professors intended to be used in qualifying for certification under the STCW convention of 1978 as amended shall:

- have a qualification level that is the same or higher than the level of learning objectives for the subject
  and
- have a full understanding of the subject-training programme and the specified objectives for each type of training being conducted.

# Syllabus

| | | | |
|---|---|---|---|
| **Subject area:** | **88000** | **Elective Subject (BS+BM+BJ+SE+Tutor)** | |
| **Subject(s):** | 88100 | Elective Subject | |
| | 88110 | Communication Skills | 2 ECTS |
| | | | |
| **Admission criteria:** | None | | |
| **Criteria to pass subject** | These assessments make up the subject:<br>1. **None** assessment using the 7-point grade scale.<br>• To pass the average of the assessments must be at least 2.0. (no rounding).<br>2. **One** assessment graded Passed/Not Passed.<br>• This assessment must be graded Passed. | | |
| **Semester:** | BS5 + BS7 + BM8 + BJ5/BJ6 + SE(SKF) +SE(MCH) +SE(SCH) + Tutor<br>BM8 (Specialization: Management) | | |
| **ECTS credits:** | 2 | | |
| **Course Regulations:** | • Master Mariner (BS) Version 5.80, 1 February 2021.<br>• Marine Engineer (BM) Version 5.80, 1 February 2021.<br>• Ship Officer (BJ+SE) Version 5.80, 1 February 2021.<br><br>• Master Mariner (BS) Version 6.10, 1 February 2022.<br>• Marine Engineer (BM) Version 6.10, 1 February 2022.<br>• Ship Officer (BJ) Version 6.10, 1 February 2022. | | |
| **Orders:** | • Order on the professional bachelor training programme for Master Mariner – Danish order no. 1611 of 13 December 2016, as amended.<br>• Order on the professional bachelor training programme for Master Mariner - Danish order no. 1349 of 23 November 2018 as amended.<br>• Order on the professional bachelor training programme for Marine Engineer – Danish order no1610 of 13 December 2016 as amended.<br>• Order on the professional bachelor training programme for Marine Engineer - Danish order no. 1348 of 23 November 2018 as amended. This order is for students who were registered in BM1 for first time in the spring of 2019 or later (2019-2, 2020-1 ect.).<br>• Order on the professional bachelor training programme for Ship Officer – Danish order no. 1612 of 13 December 2016, as amended.<br>• Order on the professional bachelor training programme for Ship Officer - Danish order no. 1350 of 23 November 2018 as amended. This order is for students who were registered in BJ1, SE! eller SE2 for first time in the spring of 2019 or later (2019-2, 2020-1 ect.).<br>• Order on tests in the maritime training programmes – Danish order no 1585 of 13 December 2016, as amended.<br>• Order on grading scale and other examination – Danish order no 114 of 3 February 2015, as amended. | | |

# Syllabus

| | | |
|---|---|---|
| **STCW:** | None | |
| **Certificate(s):** | None | |
| **Responsible:** | Subject Manager | |
| **Valid from:** | 2022-1 | EIN |
| **Expired:** | | |
| **Remarks:** | None | |

## Purpose

The student will obtain knowledge, skills, and competences for planning, carrying out, and reflecting on the communication of a message by various means.

## Learning objectives

**Communication Skills (88110):**

**Knowledge:**

- The basic terms of communication.
- The background of the participants/receivers.
- The effects of various means of communicating a message and the interaction between the sender and receiver of a message.

**Skills:**

- Plan and carry out the communication of a message by various means and to various target audiences.
- Choose the method to communicate a message.
- Use common technical means to communicate or present a message (e.g. presentation software, A/V equipment).

**Competencies:**

- Reflect on a communication course carried out.
- Estimate which means of communication would be appropriate in a given situation.
- Suggest adjustments based on the evaluation of a communication course.

## Core literature

**None**

## Examination

**Communication Skills (88110):**

| | |
|---|---|
| Examination type: | Ongoing assessment |
| Grading scale: | Passed or Not Passed |
| Preparation time: | None |
| Duration: | N/A |
| Aids allowed: | N/A |
| Important Information: | None |
| Prerequisites for Examination: | None |

## Qualification prerequisites for professors/instructors etc.

Associate professors or assistant professors intended to be used in qualifying for certification under the STCW convention of 1978 as amended shall:

- have a qualification level that is the same or higher than the level of learning objectives for the subject
  and
- have a full understanding of the subject-training programme and the specified objectives for each type of training being conducted.

# Syllabus

| | | | |
|---|---|---|---|
| **Subject area:** | **88000** | **Elective Subject (BS+BJ+SE)** | |
| **Subject(s):** | 88100 | Elective Subject | |
| | 88120 | Project management | 2 ECTS |
| | | | |
| **Admission criteria:** | None | | |
| **Criteria to pass subject** | These assessments make up the subject:<br>1. **None** assessment using the 7-point grade scale.<br>• To pass the average of the assessments must be at least 2.0. (no rounding).<br>2. **One** assessment graded Passed/Not Passed.<br>• This assessment must be graded Passed. | | |
| **Semester:** | BS5 + BS7 + BJ5/BJ6 + SE(SKF+MCH+SCH) | | |
| **ECTS credits:** | 2 | | |
| **Course Regulations:** | • Master Mariner (BS) Version 5.80, 1 February 2021.<br>• Ship Officer (BJ+SE) Version 5.80, 1 February 2021.<br><br>• Master Mariner (BS) Version 6.10, 1 February 2022.<br>• Ship Officer (BJ) Version 6.10, 1 February 2022. | | |
| **Orders:** | • Order on the professional bachelor training programme for Master Mariner – Danish order no. 1611 of 13 December 2016, as amended.<br>• Order on the professional bachelor training programme for Master Mariner - Danish order no. 1349 of 23 November 2018 as amended.<br>• Order on the professional bachelor training programme for Ship Officer – Danish order no. 1612 of 13 December 2016, as amended.<br>• Order on the professional bachelor training programme for Ship Officer - Danish order no. 1350 of 23 November 2018 as amended. This order is for students who were registered in BJ1, SE1 eller SE2 for first time in the spring of 2019 or later (2019-2, 2020-1 ect.).<br>• Order on tests in the maritime training programmes – Danish order no 1585 of 13 December 2016, as amended.<br>• Order on grading scale and other examination – Danish order no 114 of 3 February 2015, as amended. | | |
| **STCW:** | None | | |
| **Certificate(s):** | None | | |
| **Responsible:** | Subject Manager | | |
| **Valid from:** | 2022-1 | EIN | |
| **Expired:** | | | |
| **Remarks:** | None | | |

## Purpose

The objective of this course is to qualify the student to understand and use generally project management tools. Upon completion of the course, the student will have ability and knowledge of the process and activity of planning, organizing, motivating, and controlling resources and procedures to achieve specific goals.

## Learning objectives

**Project management (88120):**

**Knowledge:**

- Basic phases of Project management.
- Methods to achieve specific and measurable goals.
- Management planning and schedule tools like the Gantt chart.
- Roles in Project Management (project manager, project team, project owner).

**Skills:**

- Deal with scope, time, quality and budget of a project.
- Participate in a project team.

**Competencies:**

- Achieve the project goals and objectives.

## Core literature

None

## Examination

**Project management (88120):**

| | |
|---|---|
| Examination type: | Ongoing assessment |
| Grading scale: | Passed or Not Passed |
| Preparation time: | None |
| Duration: | N/A |
| Aids allowed: | N/A |
| Important Information: | None |
| Prerequisites for Examination: | None |

## Qualification prerequisites for professors/instructors etc.

Associate professors or assistant professors intended to be used in qualifying for certification under the STCW convention of 1978 as amended shall:

- have a qualification level that is the same or higher than the level of learning objectives for the subject
  and
- have a full understanding of the subject-training programme and the specified objectives for each type of training being conducted.

# Syllabus

| | | | |
|---|---|---|---|
| **Subject area:** | **88000** | **Elective Subject (BS+BJ+SE)** | |
| **Subject(s):** | 88122 | Pax-RoRo (2 ECTS) | |
| | 88122-1 | §5, Crisis management and crowd control (human behavior) | 1½ ECTS |
| | 88122-2 | §7, Training in organization and execution of lifeboat and fire drills | ½ ECTS |
| | | | |
| **Admission criteria:** | None | | |
| **Criteria to pass subject** | These assessments make up the subject:<br>1. **None** assessment using the 7-point grade scale.<br>• To pass the average of the assessments must be at least 2.0. (no rounding).<br>2. **One** assessment graded Passed/Not Passed.<br>• This assessment must be graded Passed. | | |
| **Semester:** | BS5 + BS7 + BJ5/BJ6 + SE(SKF) + SE(MCH) + SE(SCH) | | |
| **ECTS credits:** | 2 | | |
| **Course Regulations:** | • Master Mariner (BS) Version 5.80, 1 February 2021.<br>• Ship Officer (BJ+SE) Version 5.80, 1 February 2021.<br><br>• Master Mariner (BS) Version 6.10, 1 February 2022.<br>• Ship Officer (BJ) Version 6.10, 1 February 2022. | | |
| **Orders:** | • Order on the professional bachelor training programme for Master Mariner – Danish order no. 1611 of 13 December 2016, as amended.<br>• Order on the professional bachelor training programme for Master Mariner - Danish order no. 1349 of 23 November 2018 as amended.<br>• Order on the professional bachelor training programme for Ship Officer – Danish order no. 1612 of 13 December 2016, as amended.<br>• Order on the professional bachelor training programme for Ship Officer - Danish order no. 1350 of 23 November 2018 as amended. This order is for students who were registered in BJ1, SE1 eller SE2 for first time in the spring of 2019 or later (2019-2, 2020-1 ect.).<br>• Order on tests in the maritime training programmes – Danish order no 1585 of 13 December 2016, as amended.<br>• Order on grading scale and other examination – Danish order no 114 of 3 February 2015, as amended. | | |
| **STCW:** | *Annex to STCW Convention, as amended: Chapter V - Special training requirements:*<br>Regulation V/2, paragraph 6<br>*STCW Code, as amended: Part A, chapter V - Special training requirements:*<br>Section A-V/2, Paragraph 3, Crisis management and human behaviour training as set in table A-V/2<br>*Annex to STCW Convention, as amended: Chapter V - Special training requirements:* | | |

| | | |
|---|---|---|
| | Regulation V/2, paragraph 7<br>*STCW Code, as amended: Part A, chapter V - Special training requirements:*<br>Section A-V/2, Paragraph 4, Passenger safety. Cargo safety and hull integrity training | |
| **Certificate(s):** | *Course Certificate of training for personnel on passenger ships and ro-ro passenger ships* is issued when<br>1. passed course §5, Crisis management and crowd control (human behavior) and<br>2. passed course §6, Passenger safety, cargo safety and hull integrity training and<br>3. passed course §7, Training in organization and execution of lifeboat and fire drills<br>Credit transfer is given to Course §6, when a BS or BJ student has passed course Ship Technology III or a BM student has passed course Ship Technology and Docking for Marine Engineers.<br>Order of a special qualification requirements, etc. for personnel on passenger ships – order no 391 of 22 April 2014, as amended | |
| **Responsible:** | Subject Manager | |
| **Valid from:** | 2022-1 | EIN |
| **Expired:** | | |
| **Remarks:** | None | |

## Purpose

### § 5, Crisis management and crowd control (human behaviour):

The purpose of this part of the optional course is to let the student as ships officers or as responsible for the safety of passengers acquire the knowledge, skills and competences to handle the safety of passengers on board passenger ships in adverse and emergency situations.

### § 7, Training in organization and execution of lifeboat and fire drills:

The purpose of this part of the optional is to let the student acquire the knowledge, skills and competence to enhance the management of fire and boat drills including evacuation of passengers on board passenger ships.

## Learning objectives

### Pax-RoRo:

### §5, Crisis management and crowd control (human behavior) (88122-1):

**Knowledge:**

- Emergency plans and procedures
- Leadership skills and stress handling

- Human behavior and responses
- The importance of clear and concise instructions and reports

**Skills:**

- Initial assessment of and providing an effective response to emergency situations in accordance with the established emergency procedures
- Ability to lead and direct others in emergency situations
- Ability to identify the development of symptoms of excessive personal stress
- Awareness of the general reaction patterns of people in emergency situations
- Ability to provide relevant information in emergency situations

**Competencies:**

- Organize shipboard emergency procedures
- Optimize the use of resources
- Control response to emergencies
- Control passengers and other personnel during emergency situations
- Establish and maintain effective communications

### §7, Training in organization and execution of lifeboat and fire drills (88222-2):

**Knowledge:**

- Appropriate safety regulations concerning passenger ships' fire safety, evacuation and use of life saving appliances
- Importance of a common understanding regarding the importance of a thorough preparation and planning of all required drills
- Planning, preparation, execution and evaluation of fire fighting and evacuation drills

**Skills:**

- Include crisis management and crowd control into fire fighting and evacuation drills
- Heighten safety awareness when conducting fire fighting and safety drills.
- Enhance cooperation between the different personnel groups
- Motivation of personnel in conjunction with execution of drills
- Involvement of leading personnel in when planning, executing and evaluating drills

**Competencies:**

- Planning of fire fighting and evacuation drills
- Execution of fire fighting and evacuation drills
- Evaluation of fire fighting and evacuation drills

## Core literature

None

## Examination

**§5, Crisis management and crowd control (human behavior) & §7, Training in organization and execution of lifeboat and fire drills (88122):**

| | |
|---|---|
| Examination type: | Ongoing assessment |
| Grading scale: | Passed or Not Passed |
| Preparation time: | None |
| Duration: | N/A |
| Aids allowed: | N/A |
| Important Information: | None |
| Prerequisites for Examination: | None |

## Qualification prerequisites for professors/instructors etc.

Associate professors or assistant professors intended to be used in qualifying for certification under the STCW convention of 1978 as amended shall:

- have a qualification level that is higher than the level of learning objectives for the subject in accordance with the Danish order no. 391 of 22 April 2014
  and
- have a full understanding of the subject-training programme and the specified objectives for each type of training being conducted.

# Syllabus

| | | | |
|---|---|---|---|
| **Subject area:** | **88000** | **Elective Subject (BM+BJ+SE)** | |
| **Subject(s):** | 88100 | Elective Subject | |
| | 88123 | Robot I - Basic | 2 ECTS |
| | | | |
| **Admission criteria:** | None | | |
| **Criteria to pass subject** | These assessments make up the subject:<br>1. **None** assessment using the 7-point grade scale.<br>• To pass the average of the assessments must be at least 2.0. (no rounding).<br>2. **One** assessment graded Passed/Not Passed.<br>• This assessment must be graded Passed. | | |
| **Semester:** | BM5 + BJ5 + SE(MCH) + SE(SCH)<br>BM5 (Specialization: Automation) | | |
| **ECTS credits:** | 2 | | |
| **Course Regulations:** | • Marine Engineer (BM) Version 5.80, 1 February 2021.<br>• Ship Officer (BJ+SE) Version 5.80, 1 February 2021.<br><br>• Marine Engineer (BM) Version 6.10, 1 February 2022.<br>• Ship Officer (BJ) Version 6.10, 1 February 2022. | | |
| **Orders:** | • Order on the professional bachelor training programme for Marine Engineer – Danish order no 1610 of 13 December 2016 as amended.<br>• Order on the professional bachelor training programme for Master - Danish order no. 1349 of 23 November 2018 as amended. This order is for students who were registered in BM1 for first time in the spring of 2019 or later (2019-2, 2020-1 ect.).<br>• Order on the professional bachelor training programme for Ship Officer – Danish order no. 1612 of 13 December 2016, as amended.<br>• Order on the professional bachelor training programme for Ship Officer - Danish order no. 1350 of 23 November 2018 as amended. This order is for students who were registered in BJ1, SE1 eller SE2 for first time in the spring of 2019 or later (2019-2, 2020-1 ect.).<br>• Order on tests in the maritime training programmes – Danish order no 1585 of 13 December 2016, as amended.<br>• Order on grading scale and other examination – Danish order no 114 of 3 February 2015, as amended. | | |
| **STCW:** | None | | |
| **Certificate(s):** | None | | |
| **Responsible:** | Subject Manager | | |
| **Valid from:** | 2022-1 | EIN | |
| **Expired:** | | | |

# Syllabus

| | |
|---|---|
| **Remarks:** | None |

## Purpose

The focus is to gain basic knowledge about robot technology with focus on autonomous robot.

## Learning objectives

**Robot I – Basic (88123):**

**Knowledge:**

- To classify robots.

**Skills:**

- Qualified selection of sensors.
- Using practical equipment components in laboratory, so the student are challenged to problem solving and doing exercises that demonstrate independent thinking and behavior and dealing with options and solutions.
- Study literature and manuals for equipment's and software in English language.

**Competencies:**

- Design simple robot program for autonomous application.

## Core literature

- International version of user manuals for equipment and other technical product information, in English
- Use of Help function in programming software, in English
- Agreement with the teacher

## Examination

**Robot I – Basic (88123):**

| | |
|---|---|
| Examination type: | Ongoing assessment |
| Grading scale: | Passed or Not Passed |
| Preparation time: | None |
| Duration: | N/A |
| Aids allowed: | N/A |
| Important Information: | None |
| Prerequisites for Examination: | None |

## Qualification prerequisites for professors/instructors etc.

Associate professors or assistant professors intended to be used in qualifying for certification under the STCW convention of 1978 as amended shall:

- have a qualification level that is the same or higher than the level of learning objectives for the subject
  and
- have a full understanding of the subject-training programme and the specified objectives for each type of training being conducted.

# Syllabus

| | | | |
|---|---|---|---|
| **Subject area:** | **88000** | **Elective Subject (BS+BJ+SE)** | |
| **Subject(s):** | 88100 | Elective Subject | |
| | 88125 | Shipping and Chartering | 2 ECTS |
| | | | |
| **Admission criteria:** | None | | |
| **Criteria to pass subject** | These assessments make up the subject:<br>1. **None** assessment using the 7-point grade scale.<br>• To pass the average of the assessments must be at least 2.0. (no rounding).<br>2. **One** assessment graded Passed/Not Passed.<br>• This assessment must be graded Passed. | | |
| **Semester:** | BS5 + BS7 + BJ5/BJ6 + SE(SKF) + SE(SCH) | | |
| **ECTS credits:** | 2 | | |
| **Course Regulations:** | • Master Mariner (BS) Version 5.80, 1 February 2021.<br>• Ship Officer (BJ+SE) Version 5.80, 1 February 2021.<br><br>• Master Mariner (BS) Version 6.10, 1 February 2022.<br>• Ship Officer (BJ) Version 6.10, 1 February 2022. | | |
| **Orders:** | • Order on the professional bachelor training programme for Master Mariner – Danish order no. 1611 of 13 December 2016, as amended.<br>• Order on the professional bachelor training programme for Master Mariner - Danish order no. 1349 of 23 November 2018 as amended.<br>• Order on the professional bachelor training programme for Ship Officer – Danish order no. 1612 of 13 December 2016, as amended.<br>• Order on the professional bachelor training programme for Ship Officer - Danish order no. 1350 of 23 November 2018 as amended. This order is for students who were registered in BJ1, SE1 eller SE2 for first time in the spring of 2019 or later (2019-2, 2020-1 ect.).<br>• Order on tests in the maritime training programmes – Danish order no 1585 of 13 December 2016, as amended.<br>• Order on grading scale and other examination – Danish order no 114 of 3 February 2015, as amended. | | |
| **STCW:** | None | | |
| **Certificate(s):** | None | | |
| **Responsible:** | Subject Manager | | |
| **Valid from:** | 2022-1 | EIN | |
| **Expired:** | | | |
| **Remarks:** | None | | |

# Syllabus

## Purpose

The objective of Shipping and Chartering is to qualify the student to fulfill the commercial obligations of a ship and shipowner when fixed on a charter party with due regard to securing the interests of his principals. These include the contractual terms of international commerce which affect the charter party and the shipments of cargo.
The participants will acquire a sound comprehension of shipping trade mechanisms, shipping market cycles, the freight, sale and purchase, newbuilding and demolition markets and ships' employment enabling them to comprehend the ship operator's choice of vessels employment. All lectures and course material will be presented in English.

## Learning objectives

### Shipping and chartering (88125):

**Knowledge:**

- The role of the owner, carrier, charterer, operator and broker in a chartering perspective.
- Chartering categories and hybrids.
- Contracts of carriage/affreightment and incorporated clauses.
- Choice of legal forum in chartering agreements.
- Deviation and liberty clauses.
- Documentary Credit System.
- Chartering abbreviations.
- The organization of the Shipping Market.
- Bunker strategy.
- Characteristics of shipping market cycles.
- Supply and Demand.
- Immediate, short and long term freight rate mechanisms.
- Key shipping indexes'.
- The freight market, the sale and purchase market, the demolition market and the new building market.

**Skills:**

- Understand chartering contract negotiations.
- Read and understand the content of standard charter parties.
- Understand the implications of standard abbreviations regarding laytime and demurrage.
- Understand key shipping indexes'.
- Identify whether a particular market is weak or strong based upon shipping newsletters.
- Link world events into a shipping context.

**Competencies:**

- Compute laytime and demurrage against a charter party.
- Issue letters of protest.

## Core literature

Core literature for this course will be provided by the responsible lecturer.

## Examination

**Shipping and chartering (88125):**

| | |
|---|---|
| Examination type: | Ongoing assessment |
| Grading scale: | Passed or Not Passed |
| Preparation time: | None |
| Duration: | N/A |
| Aids allowed: | N/A |
| Important Information: | Course participants may also pass this course by completing a 3 days internship at an approved shipping office. This must be approved by the course lecturer prior to commencement. |
| Prerequisites for Examination: | None |

## Qualification prerequisites for professors/instructors etc.

Associate professors or assistant professors intended to be used in qualifying for certification under the STCW convention of 1978 as amended shall:

- have a qualification level that is the same or higher than the level of learning objectives for the subject
  and
- have a full understanding of the subject-training programme and the specified objectives for each type of training being conducted.

# Syllabus

| | | | |
|---|---|---|---|
| **Subject area:** | **88000** | **Elective Subject (BS+BM+BJ+SE)** | |
| **Subject(s):** | 88100 | Elective Subject | |
| | 88129 | Advanced English | 2 ECTS |
| | | | |
| **Admission criteria:** | The student should have demonstrated in a previous exam or in spoken and written tests the ability to speak and write English at the level 10 on the trini-scale or a level C1 on the Common European Scale for Languages (CEFR) | | |
| **Criteria to pass subject** | These assessments make up the subject:<br>1. **None** assessment using the 7-point grade scale.<br>• To pass the average of the assessments must be at least 2.0. (no rounding).<br>2. **One** assessment graded Passed/Not Passed.<br>• This assessment must be graded Passed. | | |
| **Semester:** | BS5 + BS7 + BM5 + BM8 + BJ5/BJ6 + SE(SKF) + SE(MCH) +SE(SCH) | | |
| **ECTS credits:** | 2 | | |
| **Course Regulations:** | • Master Mariner (BS) Version 5.80, 1 February 2021.<br>• Marine Engineer (BM) Version 5.80, 1 February 2021.<br>• Ship Officer (BJ+SE) Version 5.80, 1 February 2021.<br><br>• Master Mariner (BS) Version 6.10, 1 February 2022.<br>• Marine Engineer (BM) Version 6.10, 1 February 2022.<br>• Ship Officer (BJ) Version 6.10, 1 February 2022. | | |
| **Orders:** | • Order on the professional bachelor training programme for Master Mariner – Danish order no. 1611 of 13 December 2016, as amended.<br>• Order on the professional bachelor training programme for Master Mariner - Danish order no. 1349 of 23 November 2018 as amended.<br>• Order on the professional bachelor training programme for Marine Engineer – Danish order no 1610 of 13 December 2016 as amended.<br>• Order on the professional bachelor training programme for Marine Engineer - Danish order no. 1348 of 23 November 2018 as amended. This order is for students who were registered in BM1 for first time in the spring of 2019 or later (2019-2, 2020-1 ect.).<br>• Order on the professional bachelor training programme for Ship Officer – Danish order no. 1612 of 13 December 2016, as amended.<br>• Order on the professional bachelor training programme for Ship Officer - Danish order no. 1350 of 23 November 2018 as amended. This order is for students who were registered in BJ1, SE1 eller SE2 for first time in the spring of 2019 or later (2019-2, 2020-1 ect.).<br>• Order on tests in the maritime training programmes – Danish order no 1585 of 13 December 2016, as amended.<br>• Order on grading scale and other examination – Danish order no 114 of 3 February 2015, as amended. | | |

# Syllabus

| | | |
|---|---|---|
| **STCW:** | None | |
| **Certificate(s):** | None | |
| **Responsible:** | Subject Manager | |
| **Valid from:** | 2022-1 | EIN |
| **Expired:** | | |
| **Remarks:** | None | |

## Purpose

To enable the student to work as a Ships Officer or Master Engineer with a competence and ability in English so he/she can compete for jobs on sea or on land, conduct business in an international working environment, and carry out research and other enquiries in the maritime merchant sector.

## Learning objectives

**Advanced English (88129):**

**Knowledge:**

- The language and vocabulary of job applications and interviews, human resources, qualifications and relevant personal experience.
- The language of technical reports, ordering supplies, communications with ship owners and charterers, and maintaining efficiency onboard.
- The language of environmental protection, emissions and the latest developments in these fields.
- The language of negotiating, diplomacy, and managing cultural differences.
- The language of planning, meetings, decision making and teamwork.
- Appropriate English for projects, surveys and research into maritime topics.

**Skills:**

- Write job applications and Curriculum Vitae to international companies.
- Conduct him/herself well in job interviews.
- Write letters and reports in relation to his job of Master or Chief Engineer.
- Analyze, advise and report on ship efficiency and environmental protection matters in English.
- Negotiate and use diplomacy in English when dealing with people of all ranks.
- Organize his/her own work and those of others in English.
- Carry out maritime research and surveys, and be familiar with project methodology language, in English.

**Competencies:**

- Act and speak with confidence in the modern international merchant shipping world.

- Communicate in writing to all major stakeholders.
- Complete research or projects in English which should be of a sufficient level to be published.

## Core literature

Science Research Writing for non-Native Speakers, H.G.Glasman-Deal, 2014, Imperial College Press, UK

## Examination

**Advanced English (88129):**

| | |
|---|---|
| Examination type: | Ongoing assessment |
| Grading scale: | Passed or Not Passed |
| Preparation time: | None |
| Duration: | N/A |
| Aids allowed: | N/A |
| Important Information: | None |
| Prerequisites for Examination: | None |

## Qualification prerequisites for professors/instructors etc.

Associate professors or assistant professors intended to be used in qualifying for certification under the STCW convention of 1978 as amended shall:

- have a qualification level that is the same or higher than the level of learning objectives for the subject
  and
- have a full understanding of the subject-training programme and the specified objectives for each type of training being conducted.

# Syllabus

| | | | |
|---|---|---|---|
| **Subject area:** | **88000** | **Elective Subject (BM+BJ+SE)** | |
| **Subject(s):** | 88100 | Elective Subject | |
| | 88140 | Electrical Maritime Practice<br>(Maritime Electrical Installations and Switchboards, Documentation and Troubleshooting) | 2 ECTS |
| | | | |
| **Admission criteria:** | None | | |
| **Criteria to pass subject** | These assessments make up the subject:<br>1. **None** assessment using the 7-point grade scale.<br>• To pass the average of the assessments must be at least 2.0. (no rounding).<br>2. **One** assessment graded Passed/Not Passed.<br>• This assessment must be graded Passed. | | |
| **Semester:** | BM8 + BJ5 + SE(MCH) + SE(SCH)<br>BM8 (Specialization: Automation) | | |
| **ECTS credits:** | 2 | | |
| **Course Regulations:** | • Marine Engineer (BM) Version 5.80, 1 February 2021.<br>• Ship Officer (BJ+SE) Version 5.80, 1 February 2021.<br><br>• Marine Engineer (BM) Version 6.10, 1 February 2022.<br>• Ship Officer (BJ) Version 6.10, 1 February 2022. | | |
| **Orders:** | • Order on the professional bachelor training programme for Marine Engineer – Danish order no 1610 of 13 December 2016 as amended.<br>• Order on the professional bachelor training programme for Marine Engineer - Danish order no. 1348 of 23 November 2018 as amended. This order is for students who were registered in BM1 for first time in the spring of 2019 or later (2019-2, 2020-1 ect.).<br>• Order on the professional bachelor training programme for Ship Officer – Danish order no. 1612 of 13 December 2016, as amended.<br>• Order on the professional bachelor training programme for Ship Officer - Danish order no. 1350 of 23 November 2018 as amended. This order is for students who were registered in BJ1, SE1 eller SE2 for first time in the spring of 2019 or later (2019-2, 2020-1 ect.).<br>• Order on tests in the maritime training programmes – Danish order no 1585 of 13 December 2016, as amended.<br>• Order on grading scale and other examination – Danish order no 114 of 3 February 2015, as amended. | | |

# Syllabus

| | | |
|---|---|---|
| **STCW:** | None | |
| **Certificate(s):** | None | |
| **Responsible:** | Subject Manager | |
| **Valid from:** | 2022-1 | EIN |
| **Expired:** | | |
| **Remarks:** | | |

## Purpose

**Low voltage working at or near live electrical installations:**
Competencies regarding work tasks and operation tasks at or near low voltage installations, with or without voltage in accordance with safety precautions regarding people, installations and operation.

**Troubleshooting and circuit diagrams:**
Competencies regarding troubleshooting in Maritime electrical equipment and systems based on circuit diagrams and function knowledge.

**Construction and wiring of electrical switchboards:**
Skills regarding construction, documentation and practical wiring of electrical switchboards

**Electrical measurements:**
Skills regarding measuring in electrical installations and safe handling of common instruments

**Remarks:**
The teaching methodology is mainly based on work shop principles regarding the troubleshooting tasks

## Learning objectives

**Electrical Maritime Practice (88140):**

**Knowledge**:

- Security of necessary tools and equipment, measurement technique
- First Aid regarding electrical accidents
- Maritime Electro technical documentation

**Skills**:

- Safety management regarding electrical installations
- Preparation of documentation regarding risk assessment
- Operational skills regarding work at or near maritime low-voltage installations and systems, with or without live voltage

- Determination of functionality for electrical equipment, and documentation regarding main- and auxiliary circuit diagrams
- Operational skills regarding electrical measuring instruments
- Construction, documentation and wiring of electrical switchboards

**Competencies**:

- Operational competences within working at or near maritime low-voltage installations and systems, with or without live voltage in accordance with specified safety precautions for people, installations and operation
- Preparation of electrical documentation
- Troubleshooting in Maritime electrical installations

## Core literature

- Power point
- Tasks and exercises (Moodle)
- Web -Automation: www.pcschematic.dk/skole

## Examination

**Electrical Maritime Practice (88140):**

| | |
|---|---|
| Examination type: | Ongoing assessment |
| Grading scale: | Passed/Not Passed |
| Preparation time: | None |
| Duration: | N/A |
| Aids allowed: | N/A |
| Important Information: | None |
| Prerequisites for Examination: | Attendance is mandatory |

## Qualification prerequisites for professors/instructors etc.

Associate professors or assistant professors intended to be used in qualifying for certification under the STCW convention of 1978 as amended shall:

- have a qualification level that is the same or higher than the level of learning objectives for the subject
  and
- have a full understanding of the subject-training programme and the specified objectives for each type of training being conducted.

# Syllabus

| | | | |
|---|---|---|---|
| **Subject area:** | **88000** | **Elective subjects (BJ+BS+BM+SE)** | |
| **Subject(s):** | 88100 | Elective subject | |
| | 88143 | Globalization | 2 ECTS |
| **Admission criteria:** | | | |
| **Criteria to pass subject** | These assessments make up the subject:<br>1. **None** assessment using the 7-point grade scale.<br>• To pass the average of the assessments must be at least 2.0. (no rounding).<br>2. **One** assessment graded Passed/Not Passed.<br>• This assessment must be graded Passed. | | |
| **Semester:** | BS5 + BS7 + BM8 + BJ5 + BJ6 + SE(SKF) + SE(MCH) + SE(SCH)<br>BM8 (Specialization Management) | | |
| **ECTS credits:** | 2 | | |
| **Course Regulations:** | • Master Mariner (BS) Version 5.80, 1 February 2021.<br>• Marine Engineer (BM) Version 5.80, 1 February 2021.<br>• Ship Officer (BJ+SE) Version 5.80, 1 February 2021.<br><br>• Master Mariner (BS) Version 6.10, 1 February 2022.<br>• Marine Engineer (BM) Version 6.10, 1 February 2022.<br>• Ship Officer (BJ) Version 6.10, 1 February 2022. | | |
| **Orders:** | • Order on the professional bachelor training programme for Master Mariner – Danish order no. 1611 of 13 December 2016, as amended.<br>• Order on the professional bachelor training programme for Master Mariner - Danish order no. 1349 of 23 November 2018 as amended.<br>• Order on the professional bachelor training programme for Marine Engineer – Danish order no 1610 of 13 December 2016 as amended.<br>• Order on the professional bachelor training programme for Marine Engineer - Danish order no. 1348 of 23 November 2018 as amended. This order is for students who were registered in BM1 for first time in the spring of 2019 or later (2019-2, 2020-1 ect.).<br>• Order on the professional bachelor training programme for Ship Officer – Danish order no. 1612 of 13 December 2016, as amended.<br>• Order on the professional bachelor training programme for Ship Officer - Danish order no. 1350 of 23 November 2018 as amended. This order is for students who were registered in BJ1, SE1 eller SE2 for first time in the spring of 2019 or later (2019-2, 2020-1 ect.).<br>• Order on tests in the maritime training programmes – Danish order no 1585 of 13 December 2016, as amended.<br>• Order on grading scale and other examination – Danish order no 114 of 3 February 2015, as amended. | | |

# Syllabus

| | | |
|---|---|---|
| **STCW:** | | |
| **Certificate(s):** | | |
| **Responsible:** | Subject Manager | |
| **Valid from:** | 2022-1 | EIN |
| **Expired:** | | |
| **Remarks:** | | |

## Purpose

The purpose of this subject is to give the students an understanding of the globalization process. This subject will equip the students with some knowledge of the happenings in the field of economy, finance, culture and politics – with an emphasis on market and consumer behavior.

## Learning objectives

### Globalization (88143):

**Knowledge**:

- Globalization and the new global economy
- Continuity and change in the world economy since the 1970s
- Regional and multilateral agreements
- The field of economy, finance, culture and politics
- The development of new markets
- Consumer behavior and how it affects international trade and shipping
- Techniques on how to spot market opportunities
- The consequences of outsourcing

**Skills**:

- Understand the globalization process
- Understand the mechanism of international economic connections through which it works and an idea of some of the debates it has evoked
- Analyze market opportunities
- Reflect on how the maritime industry can explore market opportunities
- Reflect on different scenarios raised

**Competencies**:

- Critically evaluate and assess a market
- Critically evaluate global transformation

## Core literature

N/A

## Examination

**Globalization (88143):**

| | |
|---|---|
| Examination type: | Ongoing assessment |
| Grading scale: | Passed/Not Passed |
| Preparation time: | None |
| Duration: | N/A |
| Aids allowed: | N/A |
| Important Information: | None |
| Prerequisites for Examination: | None |

## Qualification prerequisites for professors/instructors etc.

Associate professors or assistant professors intended to be used in qualifying for certification under the STCW convention of 1978 as amended shall:

- have a qualification level that is the same or higher than the level of learning objectives for the subject
  and
- have a full understanding of the subject-training programme and the specified objectives for each type of training being conducted.

# Syllabus

| | | | | |
|---|---|---|---|---|
| **Subject area:** | **88000** | **Subject area (BS/BM/BJ/SE)** | | |
| **Subject(s):** | 88100 | Elective Subject | | |
| | 88146 | Human Factors in Safety | | 5 ECTS |
| | | | | |
| **Admission criteria:** | | | | |
| **Criteria to pass subject** | These assessments make up the subject:<br>1. **None** assessments using the 7-point grade scale.<br>• To pass the average of the assessments must be at least 2.0. (no rounding) / To pass the grade must be at least 02.<br>2. **one** assessments graded Passed/Not Passed.<br>• All assessments must be graded Passed. | | | |
| **Semester:** | BS5 + BS7 + BM5 + BM8 + BJ6 + SKF + MCH + SCH | | | |
| **ECTS credits:** | 5 | | | |
| **Course Regulations:** | • Master Mariner (BS) Version 5.80, 1 February 2021.<br>• Marine Engineer (BM) Version 5.80, 1 February 2021.<br>• Ship Officer (BJ+SE) Version 5.80, 1 February 2021.<br><br>• Master Mariner (BS) Version 6.10, 1 February 2022.<br>• Marine Engineer (BM) Version 6.10, 1 February 2022.<br>• Ship Officer (BJ) Version 6.10, 1 February 2022. | | | |
| **Orders:** | • Order on the professional bachelor training programme for Master Mariner – Danish order no. 1611 of 13 December 2016, as amended.<br>• Order on the professional bachelor training programme for Master Mariner - Danish order no. 1349 of 23 November 2018 as amended. This order is for students who were registered in BS1 for first time in the spring of 2019 or later (2019-2, 2020-1 ect.).<br>• Order on the professional bachelor training programme for Marine Engineer – Danish order no 1610 of 13 December 2016 as amended.<br>• Order on the professional bachelor training programme for Marine Engineer - Danish order no. 1348 of 23 November 2018 as amended. This order is for students who were registered in BM1 for first time in the spring of 2019 or later (2019-2, 2020-1 ect.).<br>• Order on the professional bachelor training programme for Ship Officer – Danish order no. 1612 of 13 December 2016, as amended.<br>• Order on the professional bachelor training programme for Ship Officer - Danish order no. 1350 of 23 November 2018 as amended. This order is for students who were registered in BJ1, SE1 eller SE2 for first time in the spring of 2019 or later (2019-2, 2020-1 ect.).<br>• Order on tests in the maritime training programmes – Danish order no 1585 of 13 December 2016, as amended.<br>• Order on grading scale and other examination – Danish order no 114 of 3 February 2015, as amended. | | | |

# Syllabus

| | | |
|---|---|---|
| **STCW:** | None | |
| **Certificate(s):** | None | |
| **Qualification prerequisites for professors/instructors etc.** | Associate professors, assistant professors or instructors intended to be used in qualifying for certification under the STCW convention of 1978 as amended shall:<br>• have a qualification level that is the same or higher than the level of learning objectives for the subject<br>and<br>have a full understanding of the subject-training programme and the specified objectives for each type of training being conducted. | |
| **Core literature** | | |
| **Responsible:** | Subject Manager | |
| **Valid from:** | 2022-1 | EIN |
| **Expired:** | | |
| **Remarks:** | | |

## Purpose

The purpose of the course Human Factors in Safety is to prepare the students to participate in human factor investigations in organisations and give the students insight into the factors in play when working with humans. During the past 100-years, significant changes have been made regarding the view on human factors in safety. The subject will provide a comprehensive background on the progression in the safety science field. The course will enable the students to perform investigations on what role human factors plays in everyday work.

## Human Factors in Safety

### Content:

### Learning objectives:

Knowledge:

- Recall and present relevant safety theories, accident models and views on human factors, and their progression over the past decades
- Define phenomena that contribute to the risk of organisational accidents

Skills

- Explain the advancements in human factors theories and their practical use to risk management and organisations' safety problems.
- Identify and recognise judgmental language and quick fixes in investigations

Competencies:

- Communicate and present learnings from incidents with effectiveness and wordings to increase safety in organisations
- Assess accidents and incidents in order of enhancing organisational learning

**Learning activities:**

- Situation: Large class. Large class activities take place in the classroom setting and consist of a varying mix of lecturing, tutorials and student activity.
- Student centered activities. The student centered activities are aimed at the study groups. The function of the groups may vary during the course such as buzz groups, learning cells, etc.. For student centered activities the assistant or associate professor(s) are available for tutoring, professional guidance, and formative feedback.
    - Individual reading and answering of study questions
    - Role play action in various situations that the master can face
    - Course documentation. The course documentation is the student's reflection on how the learning objectives are reached and is a compliation of theory, workplace practice and context. Some core topics of the course documentation are counting activities and are mandatory to hand in.

## Examination

| | |
|---|---|
| Examination name: | Human Factors in Safety |
| Examination type: | Ongoing assessment |
| Grade scale: | Passed/Not Passed |
| Preparation time: | |
| Duration: | |
| Aids allowed: | |
| Important information: | |
| Prerequisites for examination: | |

# Syllabus

| | | | |
|---|---|---|---|
| **Subject area:** | **88000** | **Elective Subject (BS+BM+BJ+SE)** | |
| **Subject(s):** | 88100 | Elective Subject | |
| | 88148 | Innovation and Entrepreneurship - Module I+II | 5 ECTS |
| | | | |
| **Admission criteria:** | None | | |
| **Criteria to pass subject** | These assessments make up the subject:<br>1. **None** assessment using the 7-point grade scale.<br>• To pass the average of the assessments must be at least 2.0. (no rounding).<br>2. **One** assessment graded Passed/Not Passed.<br>• This assessment must be graded Passed. | | |
| **Semester:** | BS5 + BS7 + BM8 + BJ5 + SE(SKF) + SE(MCH) + SE(SCH)<br>BM8 (Specialization: Management) + BM8 (Specialization: Automation) | | |
| **ECTS credits:** | 5 | | |
| **Course Regulations:** | • Master Mariner (BS) Version 5.80, 1 February 2021.<br>• Marine Engineer (BM) Version 5.80, 1 February 2021.<br>• Ship Officer (BJ+SE) Version 5.80, 1 February 2021.<br><br>• Master Mariner (BS) Version 6.10, 1 February 2022.<br>• Marine Engineer (BM) Version 6.10, 1 February 2022.<br>• Ship Officer (BJ) Version 6.10, 1 February 2022. | | |
| **Orders:** | • Order on the professional bachelor training programme for Master Mariner – Danish order no. 1611 of 13 December 2016, as amended.<br>• Order on the professional bachelor training programme for Master Mariner - Danish order no. 1349 of 23 November 2018 as amended. This order is for students who were registered in BS1 for first time in the spring of 2019 or later (2019-2, 2020-1 ect.).<br>• Order on the professional bachelor training programme for Marine Engineer – Danish order no 1610 of 13 December 2016 as amended.<br>• Order on the professional bachelor training programme for Marine Engineer - Danish order no. 1348 of 23 November 2018 as amended. This order is for students who were registered in BM1 for first time in the spring of 2019 or later (2019-2, 2020-1 ect.).<br>• Order on the professional bachelor training programme for Ship Officer – Danish order no. 1612 of 13 December 2016, as amended.<br>• Order on the professional bachelor training programme for Ship Officer - Danish order no. 1350 of 23 November 2018 as amended. This order is for students who were registered in BJ1, SE1 eller SE2 for first time in the spring of 2019 or later (2019-2, 2020-1 ect.).<br>• Order on tests in the maritime training programmes – Danish order no 1585 of 13 December 2016, as amended.<br>• Order on grading scale and other examination – Danish order no 114 of 3 February 2015, as amended. | | |

# Syllabus

| | | |
|---|---|---|
| **STCW:** | None | |
| **Certificate(s):** | None | |
| **Responsible:** | Subject Manager | |
| **Valid from:** | 2022-1 | EIN |
| **Expired:** | | |
| **Remarks:** | Replaces “88130 Innovation and Entrepreneurship (I+II)” (6 ECTS) from 2021-2. | |

## Purpose

The student should obtain skills, knowledge and competences in order to understand and work with the fundamental focus areas of Innovation and Entrepreneurship.

## Learning objectives

### Innovation and Entrepreneurship – Module I & II (88130):

Both module I and module II are based on student ideas and projects – therefore the precise content and perspectives are variable.
Both in module I and module II, the students are encouraged to participate in “Start-Up-Programme” by “FFE-YE”

#### Module I:

**Knowledge:**

- Idea generating. Idea generating techniques and methods.
- The fundamental parts of an innovation process
- The principles of effectual entrepreneurship

**Skills:**

- Identify market needs and perspectives
- Idea screening and development
- Simple idea descriptions and prototyping
- Oral and written pitching

**Competencies:**

- None

#### Module II:

**Knowledge:**

- Basic elements of a business plan
- Content of “Business Model Canvas”

- Basic Business Models

**Skills:**

- Strategic business development
- Causation and effectuation principles
- Evaluation of business ideas and models.
- Oral presentation

**Competencies:**

- Written Business Plan and presentation

## Core literature

"Entreprenørskab i teori og praksis" – IDEA 2009
"Innovation" – Systime
"Effectual Entrepreneurship" – S. Sarasvathy
www.iværk.dk
www.amino.dk
www.startvækst.dk

## Examination

**Module I & II:**

| | |
|---|---|
| Examination type: | Ongoing assessment |
| Grading scale: | Passed or Not Passed |
| Preparation time: | None |
| Duration: | N/A |
| Aids allowed: | N/A |
| Important Information: | None |
| Prerequisites for Examination: | None |

## Qualification prerequisites for professors/instructors etc.

Associate professors or assistant professors intended to be used in qualifying for certification under the STCW convention of 1978 as amended shall:

- have a qualification level that is the same or higher than the level of learning objectives for the subject
  and
- have a full understanding of the subject-training programme and the specified objectives for each type of training being conducted.