

Translation: Only the Danish version is authentic

Order no. 1742 of 22 December 2006 issued by the Danish Maritime Authority

Order on the ship officer training programme

In pursuance of sections 12-15 of act no. 226 of 22 April 2002 on maritime training programmes, the following provisions are laid down:

Chapter 1

Purpose and title of the training programmes

Section 1. The purpose of the junior officer training programme (Bachelor of Maritime Transport and Ship Management) is to qualify the student for forming part of the crew on merchant ships as a ship officer (bridge, deck and machinery) at junior level. As a junior officer, the student shall be able to perform multidisciplinary tasks as a manager on board a merchant ship in consideration of current regulations and standards for social, safety, environmental and occupational health conditions.

Subsection 2. The student shall be qualified for the following:

- 1) to form part of a merchant ship's safety and environmental preparedness as a junior officer;
- 2) to form part of management and cooperative relations with people of different educational and cultural backgrounds;
- 3) to take part in further training; and
- 4) to develop his abilities, on the basis of the training programme, to:
 - a) cooperate;
 - b) demonstrate responsible behaviour;
 - c) demonstrate both professional and social flexibility; and
 - d) perform the management tasks related to the function as a junior officer.

Subsection 3. After graduation, the student shall comply with the provisions of the STCW 95 Convention so that it is possible to issue certificates at the operational level for all the functions of chapter II/1 and chapter III/1 of the Convention.

Subsection 4. When the junior officer training programme has been completed under this Order, the junior officer examination has been passed. The training programme shall entitle the student to use the title Bachelor of Maritime Transport and Ship Management.

Section 2. The purpose of the senior officer training programme is to qualify the student for acting as a manager in the maritime profession. The student shall be able to form part of the crew on merchant ships as a senior officer and, after the necessary duration of service, be able to acquire rights of competency as a chief engineer and/or master. As a senior officer, the student shall be able to perform tasks as a manager on board a merchant ship in consideration of current regulations and standards for social, safety, environmental and occupational health conditions.

Subsection 2. The student shall be qualified for the following:

- 1) to perform the management tasks related to the function as a senior officer, including take care of the safety and environmental operation;
- 2) to develop his abilities, on the basis of the training programme, to:
 - a) cooperate;
 - b) acquire knowledge about technical/professional subjects;
 - c) act correctly in critical situations;

- d) demonstrate responsible management behaviour; and
- e) demonstrate both professional and social flexibility.

Section 3. After graduation as a senior officer (master), the student shall, in addition to section 2, also comply with the provisions of the STCW 95 Convention so that it is possible, after the necessary duration of service, to issue certificates at the management level pursuant to chapter II/2 of the Convention for merchant ships with a gross tonnage above 3000 GT, including to be able to organise the following:

- 1) cargo handling and stowing;
- 2) the administrative operation of a merchant ship; and
- 3) the safety preparedness as well as the medical treatment on board a merchant ship.

Subsection 2. When the senior officer training programme (master) has been completed under this Order, the senior officer examination as a master has been passed. The English title is Post Graduate Diploma as Master Mariner.

Section 4. After graduation as a senior officer (master), the student shall, in addition to section 2, also comply with the provisions of the STCW 95 Convention so that it is possible, after the necessary duration of service, to issue certificates at the management level pursuant to chapter III/2 of the Convention for merchant ships with a propelling power above 3000 kW, as well as in addition:

- a) be able to perform the management of operation and work in connection with shore-based electrical and mechanical engineering systems; and
- b) acquire the theoretical basis for acquiring boiler attendant certificates and refrigeration authorisation.

Subsection 2. The student may, as an elective subject, qualify for the theoretical basis for acquiring authorisation as an electrician, cf. the Order on approved tests and work experience requirements for authorisation of electricians.

Subsection 3. When the senior officer training programme (chief engineer) has been completed under this Order, the senior officer training programme as a chief engineer has been passed. The English title is Post Graduate Diploma as Marine Chief Engineer.

Section 5. After having completed the senior officer training programme (dual purpose), the student shall comply with section 2, section 3(1) and section 4(1) and possibly (2).

Subsection 2. When the senior officer training programme (dual purpose) has been completed under this Order, the senior officer training programme as a dual purpose ship officer has been passed. The English title is Post Graduate Diploma as Marine Chief Engineer and Master Mariner.

Section 6. The master training programme (Bachelor of Maritime Transport and Nautical Science) shall qualify the student for acting as a manager in the maritime industry. The student shall be able to form part of the crew on merchant ships as an officer and, after the necessary duration of service, be able to acquire rights of competency as a master. The student shall be able to perform tasks as a work manager on board a ship in consideration of current regulations and standards for social, safety, environmental and occupational health conditions.

Subsection 2. The student shall be qualified to:

- 1) form part of a merchant ship's safety and environmental preparedness as an officer and, after the necessary duration of service, be able to perform the function as a master, including be responsible for the safety and environmental operation;

- 2) form part of management and cooperative relations with people of different educational and cultural background;
- 3) take part in further training; and
- 4) develop his abilities, on the basis of the training programme, to:
 - a) cooperate;
 - b) acquire knowledge about technical/professional subjects;
 - c) act correctly in critical situations;
 - d) demonstrate responsible management behaviour; and
 - e) demonstrate both professional and social flexibility.

Subsection 3. After graduation as a master, the student shall comply with the provisions of the STCW 95 Convention so that it is possible, after the necessary duration of service, to issue certificates at the management level pursuant to chapter II/2 of the Convention for merchant ships with a gross tonnage above 3000 GT, including to be able to organise the following:

- 1) cargo handling and stowing;
- 2) the administrative operation of a merchant ship; and
- 3) the safety and environmental preparedness as well as the medical treatment on board a merchant ship.

Subsection 4. When the master training programme has been completed under this Order, the master examination has been passed. The training programme shall entitle the student to use the title Bachelor of Maritime Transport and Nautical Science.

Chapter 2 Admission

Section 7. In order to be admitted to the ship officer training programme, applicants shall either:

- 1) have passed one of the following upper secondary educations:
 - a) Upper secondary school leaving examination (stx);
 - b) higher preparatory examination (course);
 - c) higher technical examination; and
 - d) higher commercial examination;
- or
- 2) have passed a vocational training programme supplemented by
 - a) mathematics, English and Danish as well as physics or chemistry, of which two subjects shall be at least at B-level and the remaining subjects at least at C-level;
 - or
 - b) have passed an admission course for the engineering training programmes or similar complying with the requirements of subsection 2a.

Subsection 2. Relevant work experience of at least two years' duration may, according to a decision made by the training institution in each individual case on the basis of an assessment of prior learning, substitute the admission requirement for a vocational training programme.

Subsection 3. Admission on the basis of another upper secondary school leaving examination shall take place in accordance with chapter 2 of the Order on admission, enrolment and leave, etc. for certain higher education programmes issued by the Ministry for Education.

Subsection 4. In order to be admitted to the ship officer training programme for a junior officer or to the master training programme, a work experience agreement with an approved shipping company shall be available.

Subsection 5. In order to be admitted to the ship officer training programme, the applicant shall be subject to a medical examination as well as a hearing and sight test for seafarers.

Subsection 6. In order to be admitted to the senior officer training programme, the student shall have passed the ship officer training programme (Bachelor of Maritime Transport and Ship Management).

Chapter 3 *Contents, duration and arrangement of the training programmes*

Section 8. The junior officer training programme is divided into subjects and consists of:

- 1) mandatory subjects, corresponding to 140 ECTS credits;
- 2) optional subjects, corresponding to 140 ECTS credits;
- 3) work experience, corresponding to 75 ECTS credits; and
- 4) a bachelor project, corresponding to 15 ECTS credits.

Subsection 2. In annex 1, the extent given as ECTS credits, purpose as well as examination and test requirements are given for each individual subject.

Section 9. The senior officer training programme (master) is divided into subjects and consists of:

- 1) mandatory subjects, corresponding to 30 ECTS credits;
- 2) optional subjects, corresponding to 5 ECTS credits.

Subsection 2. In annex 2, the extent given as ECTS credits, purpose as well as examination and test requirements are given for each individual subject.

Section 10. The senior officer training programme (chief engineer) is divided into subjects and consists of:

- 1) mandatory subjects, corresponding to 60 ECTS credits;
- 2) optional subjects, corresponding to 5 ECTS credits; as well as
- 3) possibly the elective subject electrical authorisation of 20 ECTS credits.

Subsection 2. In annex 3, the extent given as ECTS credits, purpose as well as examination and test requirements are given for each individual subject.

Section 11. The senior officer training programme (Dual Purpose) is divided into subjects and consists of:

- 1) mandatory subjects, corresponding to 80 ECTS credits;
- 2) optional subjects, corresponding to 5 ECTS credits; as well as
- 3) possibly the elective subject electrical authorisation of 20 ECTS credits.

Subsection 2. In annex 4, the extent given as ECTS credits, purpose as well as examination and test requirements are given for each individual subject.

Section 12. The master training programme is divided into subjects and consists of:

- 1) mandatory subjects, corresponding to 125 ECTS credits;
- 2) optional subjects, corresponding to 10 ECTS credits;
- 3) work experience, corresponding to 75 ECTS credits; and
- 3) a bachelor project, corresponding to 15 ECTS credits.

Subsection 2. In annex 5, the extent given as ECTS credits and the purpose are given for each individual subject.

Section 13. The training programmes are divided into semesters with an official length as follows:

- a) Ship officer training programme, junior, 4 student full time equivalents or 240 ECTS credits;
- b) ship officer (chief engineer), 1-1.3 student full time equivalents or 65-85 ECTS credits;
- c) ship officer (master), 0.5 student full time equivalents or 35 ECTS credits;
- d) ship officer (dual purpose), 1.5-1.8 student full time equivalents or 85-100 ECTS credits;
- e) master (single), 3.75 student full time equivalents or 225 ECTS credits.

Subsection 3. Each year of study shall be divided into two semesters of 18-24 weeks' duration.

Subsection 4. The training programme shall be completed within the number of years corresponding to twice the prescribed duration.

Subsection 5. The training institution may, when justified by special conditions, grant exemptions from the time-limit stipulated in subsection 4.

Section 14. The training programmes shall be arranged so that an interaction between and combination of theory and practice is established.

Subsection 2. The training programmes shall be arranged with an increasing degree of difficulty and complexity throughout the education.

Section 15. The training programme shall determine what study goals shall be achieved by the student, including requirements for passed tests and examinations, before it is possible to initiate work experience periods at sea or ashore. If the student does not meet these requirements, it shall not be possible to initiate the work experience period unless the training institution grants permission for this on the basis of a specific assessment of the student's qualifications in relation to the purpose of the work experience and the subsequent theoretical training. However, exemptions may not be granted from requirements for training in maritime safety, cf. subsection 2.

Subsection 2. Before initiating work experience at sea, the student shall have passed relevant maritime safety training, cf. annex 1.

Section 16. National and international research results that are of relevance to the profession should, to as great an extent as possible, be incorporated into the teaching.

Section 17. The theoretical parts and work experience parts of the training programmes shall be arranged so that they develop the student's qualifications and understanding within the subjects management, safety, operation optimisation and internationalisation with English as the working language.

Subsection 2. Teaching methods and learning environments that develop the students' independence, interpersonal skills, reflection and ability to create professional innovation shall be included in the theoretical parts and work experience parts of the training programmes.

Subsection 3. The training programmes shall emphasise the students' possibility of acquiring wide practical experience in the ship officer profession, and this element shall be included in the entire course of the study.

Section 18. The training programmes shall, to the extent that it is relevant for the field of study, include teaching of environmental problems and of the interaction between different types of culture. Furthermore, the training programmes shall contribute to furthering the

students' personal development and contribute to developing their interest in and ability for active participation in a democratic society.

Section 19. Experience gained in practice as well as knowledge about central trends in the profession and about methods for developing the professional subject and carrying out quality and development work shall be incorporated in the teaching.

Section 20. The training institution shall arrange a suitable offer of elective subjects. The elective subjects shall supplement the student's professional competence within fields meeting local needs or specialisation needs as well as the study competence in relation to further training. An elective subject shall have an extent of at least 2 ECTS credits.

Subsection 2. For the senior officer training programme, the training institution shall as a minimum offer the elective subjects given in annex 6.

Chapter 4

Approval of training institutions

Section 21. The training programmes shall be offered by maritime training institutions approved by the Danish Maritime Authority. The training institutions shall be responsible for implementing the training programmes in their entirety, including teaching delegated.

Chapter 5

Work experience

Section 22. Work experience ashore shall take place in a company approved by the training institution. Work experience at sea shall take place in a shipping company approved by the Danish Maritime Authority.

Subsection 2. Work experience at sea shall take place in a merchant ship and in accordance with a training record book approved by the Danish Maritime Authority.

Subsection 3. The training institution shall assist the work experience place with the drawing up of agreements and the administration in connection with the implementation of work experience.

Chapter 6

Course regulations

Section 23. The training institution shall, in the study regulations, stipulate the regulations and guidelines governing the arrangement and implementation of the teaching. The study regulations shall contain a description of how the training institution, when arranging the training programme, meets chapter 3 of this Order as well as the requirements for theoretical training for acquiring authorisations, including the requirements of the STCW Convention, cf. section 1(2) and (3), section 3(1), section 4(1) and section 5(1).

Subsection 2. Furthermore, the study regulations shall contain the following:

- 1) a description of the structure of the training programme, including:
 - the training programme's division into modules or subjects covering all the purposes and goals set within the framework determined;
 - the location of the modules or subjects in the training programme as regards time;
 - relevant sub-goals of the various stages of the training programme;
 - the elective subjects offered; and

- how the participants' compliance with the purposes and goals is assessed in a comprehensive manner, including the location of examinations and tests as well as the ongoing evaluation.
- 2) guidelines for the drafting of bachelor projects;
- 3) guidelines for the work experience periods;
- 4) regulations and guidelines for examinations and tests; and
- 5) guidelines for approving teaching at another Danish or foreign training institution.

Section 24. Study regulations and important amendments hereof shall enter into force at the start of a semester.

Subsection 2. Study regulations and important amendments hereof shall contain interim provisions.

Subsection 3. The study regulations in force shall be available from the webpage of the institution and documented in the quality assurance system of the training institution.

Chapter 7 *Examination and evaluation*

Section 25. As regards examinations, including tests, evaluations, examination certificates, complaints about examinations, credits, etc., reference is made to the Order on the holding of tests and the evaluation of students at the maritime training programmes.

Subsection 2. The bachelor project shall be evaluated at an oral examination, and subsequently an overall mark shall be given for the written work and the oral performance.

Subsection 3. Work experience shall be approved according to the guidelines provided in the approved training record book.

Subsection 4. In the subject "Electrical and electronic machinery, systems and equipment", the student shall pass an external written and oral examination as well as an authorisation test in the presence of an external examiner appointed by the Danish Safety Technology Authority.

Subsection 5. Courses forming part of a subject shall be passed before sitting for the final examination in the test. A course certificate shall be issued in accordance with the provisions in force for the course.

Subsection 6. Elective subjects shall be evaluated in accordance with the goal description of the subject and be evident from the enclosure to the examination certificate.

Chapter 8 *Teacher qualifications*

Section 26. The teachers at the training programmes shall, in general, have a level of qualification higher than the leaving level for the training programmes. Qualification level shall, in addition to pedagogical competence, mean documented theoretical, expert and/or professional competence.

Subsection 2. Teachers shall have passed at least the adult education training programme, part 1, or similar pedagogical training programme, or pass such a training programme within the first years of employment.

Chapter 9 *Other provisions*

Section 27. Decisions made by the training institutions in accordance with this Order may be brought before the Danish Maritime Authority by the one affected by the decision, cf. the Order on complaints related to the act on maritime training programmes. The complaint shall be submitted to the training institution, which shall send on the complaint to the Danish Maritime Authority accompanied by a statement. In case the statement disfavours the plaintiff, the training institution shall give him an opportunity to comment on the statement within a time-limit of at least one week. Any comments from the plaintiff shall accompany the complaint when sent to the Danish Maritime Authority.

Subsection 2. The time-limit for filing complaints under subsection 1 shall be two weeks from the day when the plaintiff was informed of the decision.

Subsection 3. Decisions made by the Danish Maritime Authority pursuant to the Act on maritime training programmes cannot be brought before any higher administrative authority.

Chapter 10 *Entry into force and interim provisions*

Section 28. This Order shall enter into force on 1 January 2007 and shall apply to students who have started the training programmes during the last six months of 2005 or later.

Subsection 2. The training institutions may continue to implement the training programmes in accordance with the study regulations used at the entry into force of the Order; study regulations revised in accordance with this Order shall, however, enter into force at the beginning of the fall semester 2007.

Subsection 3. The training institutions shall lay down the necessary interim regulations for students enrolled for the ship officer training programme and wanting to finalise their training programme according to this Order.

Danish Maritime Authority, 22 December 2006
Andreas Nordseth / Hemming Hindborg

**Description of the contents of the junior officer training programme
(Bachelor in Maritime Transport and Ship Management)**

Workshop training school, maritime work experience and basic subjects

Test requirements for the workshop training school, work experience and basic subjects – except for English: Practical, oral and/or written tests. An examination shall be held in the subject English.

Workshop training school – ECTS credits: 30

The student shall, by means of a professional and theoretical training programme, acquire craft skills of relevance to a ship officer so that he is able to independently use these skills both when planning and carrying out mechanical engineering and electro-technical maintenance and repairs. These craft tasks shall be carried out in consideration of the environmental and safety provisions in force.

The student shall develop his understanding of and insight into the relevant crafts of a ship officer and be able to assess the craftsmanship of a piece of work performed.

The student shall have an understanding of general safety and environmental conditions. Furthermore, he shall have an understanding of the use of personal protective equipment and be able to use it correctly.

Basic maritime subject – ECTS credits: 5

Knowledge about safety at sea is central when working as a ship officer on board a merchant ship. The subjects within the basic maritime subject shall provide the student with fundamental knowledge about shipboard safety, the ship's safety organisation and occupational health at sea. Subsequently, the student shall be able to form part of the roll (boat, fire and MOB rolls) at the functional level. Consideration shall be paid to the fact that the student shall not form part of the ship's safety preparedness during the first work experience period.

Furthermore, the student shall comply with the requirements of the STCW Convention, regulation VI/2, para. 1, on liferaft and lifeboats.

Key subjects

1. safety at sea;
2. practical seamanship and watchkeeping service;
3. work safety/occupational safety; and
4. fire-fighting.

Work experience at sea – ECTS credits: 75

During the introductory three-month work experience period, the student shall also form part of the bridge watch under supervision of a qualified officer in order to acquire a watchkeeping certificate pursuant to the STCW 95 Convention, regulation II/4.

The bridge watch and engine room service should be arranged so that the student also gets an opportunity to perform watchkeeping duties in connection with the passing of channels, navigation in busy waters as well as during manoeuvres, and great emphasis shall be placed on

understanding the necessity for keeping a good discipline on the bridge and in the engine room, cf. the STCW Convention, chapter VIII.

- The student shall have completed a minimum of six months' bridge watchkeeping service under supervision of the master or a qualified officer pursuant to the STCW Convention, regulation II/1.
- The student shall have completed a minimum of six months' engine room service pursuant to the STCW Convention, regulation III/1.

In connection with the last part of the work experience period, the student shall learn to work in a development-focused and problem-solving manner with the profession as a junior officer. The student shall, by relating experience and theoretical knowledge, be able to identify and analyse subjects, areas and problems that are central to the profession as a junior officer.

The work experience period shall lead to the exchange of knowledge, competences and values between the training and the profession/work life as well as the establishment of networks.

Basic subjects (English, maritime English, methodology and first-aid) – ECTS credits: 10

English shall be used in the education in all relevant subjects in order to qualify the student for using English as a working language. In addition, the English education shall provide the student with such an ability to communicate orally and in writing in English as may be necessary to function in an international environment.

Maritime English shall provide the student with such an ability to communicate orally and in writing in English as may be necessary to function as an officer on board a merchant ship engaged on international voyages.

Methodology shall provide the student with competences within the subject areas of qualitative and quantitative methodology, project management and information retrieval.

First-aid shall provide the student with such theoretical and practical competences that he would be able to offer first-aid in case of accidents and sudden sickness. In addition, the student shall have knowledge of general health conditions especially related to the maritime trade.

Nautical subject area

Test requirements: The student shall sit for examinations in all subjects, including the most important themes.

Subject: Navigation and meteorology – ECTS credits: 15

The student shall have such competences and knowledge about navigation, manoeuvring and nautical meteorology as may be necessary to take care of the planning and implementation of the voyage of a merchant ship, including to function as a watchkeeping navigator on board merchant ships in trade on all seas.

The student shall have passed an approved "Radar/ARPA/ECDIS simulator course" as well as a "Full-mission bridge simulator course".

Subject: Watchkeeping duty, visual signalling and communication – ECTS credits: 10

Watchkeeping duty where the student shall be able to meet regulation II/4 of the STCW Convention during the first work experience period. Subsequently, the student shall acquire the competences within the subject of watchkeeping, including the regulations for preventing collisions at sea and watchkeeping, that may be necessary to independently function as a watchkeeping navigator.

Visual signalling and communication where the student shall acquire the necessary theoretical and practical competences, including compliance with regulation IV/2 of the STCW Convention on radiocommunications, to be able to carry out the communication occurring on board a merchant ship.

Subject: Ship design, cargo handling and stowing – ECTS credits: 15

The student shall have the knowledge of ship construction and of conditions related to ships' stability, buoyancy, draught, trim and hull impacts that is necessary to function as a junior officer on merchant ships in accordance with the conventions in force. The student shall acquire the competences and skills that are necessary to be able to function as a watchkeeping deck officer in connection with cargo handling and stowing on board merchant ships on international voyages, including tankers (oil, gas and chemical tankers), dry cargo carriers (container ships, general cargo and bulk carriers), refrigerator ships, ro-ro ships and passenger ships.

Technical subject area

Test requirements: The student shall sit for examinations in all subjects, including the most important themes.

Subject: Thermal machinery and systems – ECTS credits: 15

Knowledge about thermal machinery and systems is crucial to the work as a ship officer. The subjects within the field of thermal machinery and systems shall enable the student to take care of the operation and maintenance of engine, vapour, combustion and refrigerating systems with associated systems so that these systems work reliably and economically optimal without posing a danger to the surroundings and having a harmful effect on the environment.

Central themes

- 1) combustion engines and associated systems
- 2) hydraulic and pneumatic systems with associated components
- 3) stationary steam boilers
- 4) combustion systems for fossil fuels and bio-waste
- 5) pumps, compressors and associated piping
- 6) climate engineering
- 7) refrigeration engineering
- 8) environmental engineering

Subject: Electrical and electronic machinery, systems and equipment – ECTS credits: 10

Electrotechnics where the student shall acquire the electrotechnical knowledge necessary to be able to take care of the operation and maintenance of electrical systems on board ships. The student shall be able to operate the electrical equipment under both normal and abnormal conditions and be able to carry out simple fault-finding tasks.

Subject: Process analysis and automation – ECTS credits: 5

The student shall acquire the knowledge on data retrieval, data logging, regulation and control engineering that is necessary for him to act rationally and correctly when supervising and operating ship control systems.

Management subject area

Test requirements: The student shall sit for examinations in all subjects, including the most important themes.

Subject: Management – economics, management and safety – ECTS credits: 5

The management training shall form the basis of the ship officer's function as a future. The subjects taught within the subject of management shall provide the student with the competences that are necessary for him to be able to assume his environmental, safety and quality responsibility as a work manager.

Central themes

1. organisation and personnel management,
2. safety and quality management,
3. environmental engineering and management, and
4. maintenance and management.

Subject: Ship and operational management – ECTS credits: 10

The student shall acquire the practical and theoretical competences that are necessary for him to be able to assume his safety and environmental responsibility when functioning as a ship officer on board a ship. The student shall acquire the knowledge about maritime national and international legislation, as well as administrative, safety and environmental conditions that are necessary for him to have knowledge about his obligations and responsibility in this connection when functioning as a ship officer.

The student shall acquire knowledge about loading-related conditions of the propulsion machinery and the propeller in consideration of safe and economic operation.

The student shall be able to operate and maintain tank and bilge systems, sanitary systems, fire-extinguishing systems, inert gas systems, stern tube systems, ventilation systems, vapour systems and freshwater systems in both normal and abnormal conditions of operation.

In addition, the student shall acquire the competences that are necessary for him to be able to function as a watchkeeping engineer officer/operational watch.

Central themes

1. maritime law and ship administration,
2. maritime English,

3. ship propulsion,
4. auxiliary and service systems in ships, and
5. watchkeeping duty in the engine, including having passed an approved full-mission engine room simulator course.

Maritime health, safety and the environment

Test requirements: The student shall sit for examinations in all subjects, including the most important themes.

Subject: Maritime health, safety and the environment – ECTS credits: 10

The student shall acquire the practical and theoretical competences that are necessary for him to be able to assume his health, safety and environmental responsibility when functioning as a ship officer on a merchant ship.

The student shall:

- comply with the requirements of the STCW Convention, regulation V/1 (“Tanker Familiarization Course”) as well as the requirements of the STCW Convention, regulation VI/2, paragraph 1, on liferafts and lifeboats;
- comply with the training requirements on fire-fighting in accordance with the STCW Convention, regulation VI/3, including smoke-diving; and
- have passed Step I of the maritime medical examiner training course for medicine chest A in merchant ships. (Step II of the maritime medical examiner training course for medical inventory A in merchant ships shall be passed as described in the circular in force).

Central themes

1. fire-fighting in ships,
2. occupational safety/occupational health, and
3. health training (assisting medical examiner).

Elective subjects

Test requirements: Practical oral and/or written tests.

Elective subject – ECTS credits: 10

The subject, its purpose, the type of test and the student’s acquired result shall be stated on the annex to the examination certificate. The purpose of the elective subjects is that the student supplements his professional competence within areas meeting local needs or needs for specialisation or his study competence in relation to further training.

The student shall pass elective subjects corresponding to 10 ECTS credits.

Elective subjects shall be offered as independent subjects of an extent of at least 2 ECTS credits.

Bachelor project

Bachelor project – ECTS credits: 15

The student shall learn how to work development-oriented with the planning and implementation of a project. The student shall, by making connections between experience, practical competences and theoretical knowledge, be able to identify and analyse problems that are crucial in relation to the profession as a ship officer. The student shall acquire special insight into a subject, field or problem and shall, through the project work, learn systematic problem formulation and consideration as well as retrieval and analysis of data material, including relevant research and development results.

Description of the contents of the senior officer training programme (master)

Management subject area

Test requirements: The student shall sit for examinations in all subjects, including the most important themes.

Subject: Management – economics, management and safety – ECTS credits: 10

The management training shall form the basis of the ship officer's function as a future manager. The subjects in the field of management shall provide the student with fundamental knowledge about a number of central areas within the economic management of a company and be able to further the personal development process of employees and managers in a company. The student shall acquire the competences that are necessary to be able to assume his environmental, safety and quality responsibility as a work manager and be able to take care of the operational management of environmentally-polluting systems.

In addition, the student shall acquire the practical competences in structural evaluation and theoretical knowledge on maintenance that will enable him to function as a maintenance manager.

Central themes

1. economics,
2. organisation and personnel management,
3. safety and quality management,
4. environmental engineering and management, and
5. maintenance and management.

Subject: Ship and operational management for senior officers (master) – ECTS credits: 10

The student shall be able to take care of management tasks related to the general operation of a ship. This includes communication, crew safety, health and the environment as well as taking care of the ship's safety, operation and maintenance. In addition, the ship officer shall acquire competences that will enable him to independently perform management tasks within the maritime industry and in relation to ship operation. The training programme shall further develop the ship officer's independence and interpersonal skills, theoretical understanding and ability to learn and analyse.

Central themes

1. safety management for senior officers,
2. the ISM Code, standards and audits,
3. operational management,
4. communication and English,
5. geography and cultural sociology,
6. crew resource management,
7. docking,
8. shipping and chartering,
9. business economics, and
10. on board assessment.

Technical subject area

Test requirements: The student shall sit for examinations in all subjects, including the most important themes.

Subject: Ship operations, ship engineering and administration – ECTS credits: 10

After having finalised the training programme, the ship officer shall be able to take care of the ship's administrative operation, navigation in an economically profitable manner and handling of the cargo and medical examination on board at the management level. This means that the ship officer is able to perform tasks at the management level as a senior officer on board a merchant ship in consideration of the current rules and standards for social, safety, health and environmental and occupational health conditions.

After having finalised the training programme, the aim is that the ship officer shall have passed the medical examiner training programme for medical inventory A in merchant ships and be able to assume responsibility for the medical examination on board a merchant ship also in conditions where another person is a medical examiner.

Central themes

1. navigation and propulsion,
2. ship engineering, cargo handling and stowing,
3. maritime law and ship administration, and
4. health training (medical examiner).

Elective subjects

Test requirements: Practical oral and/or written tests.

Elective subjects (senior officers) – ECTS credits: 5

The training programme contains seven elective subjects, at least two of which the student shall complete at his own choice. The purpose of elective subjects is to provide the student with special knowledge about a specific professional area; for example, the student may get an opportunity to specialise in a specific type of ship. Certain of the elective subjects cover parts of chapter V of the STCW Convention. Reference is made to the text in connection with the elective subjects.

See annex with the elective subjects that shall, as a minimum, be offered.

Description of the contents of the senior officer training programme (chief engineer)

Management subject area

Test requirements: The student shall sit for examinations in all subjects, including the most important themes.

Subject: Management – economics, management and safety – ECTS credits: 10

The management training shall form the basis of the ship officer's function as a future manager. The subjects in the field of management shall provide the student with fundamental knowledge about a number of central areas within the economic management of a company and be able to further the personal development process of employees and managers in a company. The student shall acquire the competences that are necessary to be able to assume his environmental, safety and quality responsibility as a work manager and be able to take care of the operational management of environmentally-polluting systems.

In addition, the student shall acquire the practical competences in structural evaluation and theoretical knowledge on maintenance that will enable him to function as a maintenance manager.

Central themes

1. economics,
2. organisation and personnel management,
3. safety and quality management,
4. environmental engineering and management, and
5. maintenance and management.

Technical subject area

Test requirements: The student shall sit for examinations in all subjects, including the most important themes.

Subject: Thermal machinery and systems – ECTS credits: 25

Knowledge about thermal machinery and systems is crucial to the work as a ship officer. The subjects within the field of thermal machinery and systems shall enable the student to take care of the operation and maintenance of engine, vapour, combustion and refrigerating systems with associated systems so that these systems work reliably and economically optimal without posing a danger to the surroundings and having a harmful effect on the environment.

The student shall also acquire fundamental knowledge about the effects that residual products and polluting products from households, transport systems, ship systems and industrial process systems have on the environment.

In addition, the student shall acquire knowledge about the composition, properties and strength of materials as well as about the condition of engine components on the basis of material samples.

Central themes

1. combustion engines and associated systems,
2. hydraulic and pneumatic systems with associated components,
3. stationary steam boilers,
4. combustion systems for fossil fuels and bio-waste,
5. pumps, compressors and associated piping,
6. climate engineering,
7. refrigeration engineering and refrigeration technology,
8. environmental engineering, and
9. materials and strength.

Subject: Electrical and electronic machinery, systems and equipment – ECTS credits: 15

Electrotechnics where the student shall acquire the electrotechnical knowledge necessary to be able to take care of the operation and maintenance of electrical systems on board ships, including high-voltage plants, and ashore. The student shall be able to operate the electrical equipment under both normal and abnormal conditions and be able to carry out simple fault-finding tasks.

It shall be possible to supplement the subject with the elective subject: Electrical authorisation – ECTS credits: 20

The student shall have acquired the theoretical basis for being authorised as an electrician when the requirements for work experience according to the act on electricians have been met. The student shall be able to carry out projecting, installation, operationalisation and maintenance of an electricity supply system, electrical installations and consumer systems, made for both high- and low-voltage, in accordance with the relevant orders, regulations and directives and in consideration of safety and the requirements of users and authorities.

Subject: Process analysis and automation – ECTS credits: 10

The student shall acquire the knowledge on data retrieval, data logging, regulation and control engineering that is necessary for him to act rationally and correctly when supervising and operating ship control systems. The student shall acquire the knowledge that is necessary for him to take care of tasks within the fields of process analysis, operational optimisation, fault-finding and maintenance in connection with automation of technical processes within the fields of transport, supply, production and the environment.

The student shall acquire the knowledge that is necessary for him to get familiar with chemical processes covering water-purification and water-treatment, flue-gas cleaning and wastewater treatment, fermentative processes and the manufacture of bio fuels, fuel cells and corrosion, “cracking” and decomposition of substances as well as electrolysis.

Elective subjects

Test requirements: The student shall sit for examinations in all subjects, including the most important themes.

Elective subjects (senior officers) – ECTS credits: 5

The training programme contains seven elective subjects, at least two of which the student shall complete at his own choice. The purpose of elective subjects is to provide the student with special knowledge about a specific professional area; for example, the student may get

an opportunity to specialise in a specific type of ship. Certain of the elective subjects cover parts of chapter V of the STCW Convention. Reference is made to the text in connection with the elective subjects.

See annex with the elective subjects that shall, as a minimum, be offered.

Description of the senior officer training programme (dual purpose)

Management subject area

Test requirements: The student shall sit for examinations in all subjects, including the most important themes.

Subject: Management – economics, management and safety – ECTS credits: 10

The management training shall form the basis of the ship officer's function as a future manager. The subjects in the field of management shall provide the student with fundamental knowledge about a number of central areas within the economic management of a company and be able to further the personal development process of employees and managers in a company. The student shall acquire the competences that are necessary to be able to assume his environmental, safety and quality responsibility as a work manager and be able to take care of the operational management of environmentally-polluting systems.

In addition, the student shall acquire the practical competences in structural evaluation and theoretical knowledge on maintenance that will enable him to function as a maintenance manager.

Central themes

1. economics,
2. organisation and personnel management,
3. safety and quality management,
4. environmental engineering and management, and
5. maintenance and management.

Subject: Ship and operational management for senior officers (master) – ECTS credits: 10

The student shall be able to take care of management tasks related to the general operation of a ship. This includes communication, crew safety, health and the environment as well as taking care of the ship's safety, operation and maintenance. In addition, the ship officer shall acquire competences that will enable him to independently perform management tasks within the maritime industry and in relation to ship operation. The training programme shall further develop the ship officer's independence and interpersonal skills, theoretical understanding and ability to learn and analyse.

Central themes

1. safety management for senior officers,
2. the ISM Code, standards and audits,
3. operational management,
4. communication and English,
5. geography and cultural sociology,
6. crew resource management,
7. docking,
8. shipping and chartering,
9. business economics, and
10. on board assessment.

Technical subject area

Test requirements: The student shall sit for examinations in all subjects, including the most important themes.

Subject: Thermal machinery and systems – ECTS credits: 25

Knowledge about thermal machinery and systems is crucial to the work as a ship officer. The subjects within the field of thermal machinery and systems shall enable the student to take care of the operation and maintenance of engine, vapour, combustion and refrigerating systems with associated systems so that these systems work reliably and economically optimal without posing a danger to the surroundings and having a harmful effect on the environment.

The student shall also acquire fundamental knowledge about the effects that residual products and polluting products from households, transport systems, ship systems and industrial process systems have on the environment.

In addition, the student shall acquire knowledge about the composition, properties and strength of materials as well as about the condition of engine components on the basis of material samples.

Central themes

1. combustion engines and associated systems,
2. hydraulic and pneumatic systems with associated components,
3. stationary steam boilers,
4. combustion systems for fossil fuels and bio-waste,
5. pumps, compressors and associated piping,
6. climate engineering,
7. refrigeration engineering and refrigeration technology,
8. environmental engineering, and
9. materials and strength.

Subject: Electrical and electronic machinery, systems and equipment – ECTS credits: 15

Electrotechnics where the student shall acquire the electrotechnical knowledge necessary to be able to take care of the operation and maintenance of electrical systems on board ships, including high-voltage plants, and ashore. The student shall be able to operate the electrical equipment under both normal and abnormal conditions and be able to carry out simple fault-finding tasks.

It shall be possible to supplement the subject with the elective subject: Electrical authorisation – ECTS credits: 20

The student shall have acquired the theoretical basis for being authorised as an electrician when the requirements for work experience according to the act on electricians have been met. The student shall be able to carry out projecting, installation, operationalisation and maintenance of an electricity supply system, electrical installations and consumer systems, made for both high- and low-voltage, in accordance with the relevant orders, regulations and directives and in consideration of safety and the requirements of users and authorities.

Subject: Process analysis and automation – ECTS credits: 10

The student shall acquire the knowledge on data retrieval, data logging, regulation and control engineering that is necessary for him to act rationally and correctly when supervising and operating ship control systems. The student shall acquire the knowledge that is necessary for him to take care of tasks within the fields of process analysis, operational optimisation, fault-finding and maintenance in connection with automation of technical processes within the fields of transport, supply, production and the environment.

The student shall acquire the knowledge that is necessary for him to get familiar with chemical processes covering water-purification and water-treatment, flue-gas cleaning and wastewater treatment, fermentative processes and the manufacture of bio fuels, fuel cells and corrosion, “cracking” and decomposition of substances as well as electrolysis.

Subject: Ship operations, ship engineering and administration – ECTS credits: 10

After having finalised the training programme, the ship officer shall be able to take care of the ship’s administrative operation, navigation in an economically profitable manner and handling of the cargo and medical examination on board at the management level. This means that the ship officer is able to perform tasks at the management level as a senior officer on board a merchant ship in consideration of the current rules and standards for social, safety, health and environmental and occupational health conditions.

After having finalised the training programme, the aim is that the ship officer shall have passed the medical examiner training programme for medical inventory A in merchant ships and be able to assume responsibility for the medical examination on board a merchant ship also in conditions where another person is a medical examiner.

Central themes

1. navigation and propulsion,
2. ship engineering, cargo handling and stowing,
3. maritime law and ship administration, and
4. health training (medical examiner).

Elective subjects

Test requirements: Practical oral and/or written tests.

Elective subjects (senior officers) – ECTS credits: 5

The training programme contains seven elective subjects, at least two of which the student shall complete at his own choice. The purpose of elective subjects is to provide the student with special knowledge about a specific professional area; for example, the student may get an opportunity to specialise in a specific type of ship. Certain of the elective subjects cover parts of chapter V of the STCW Convention. Reference is made to the text in connection with the elective subjects.

See annex with the elective subjects that shall, as a minimum, be offered.

**Description of the contents of the master training programme
(Bachelor of Maritime Transport and Nautical Science)**

Workshop training school, maritime work experience and basic subjects

Test requirements for the workshop training school, work experience and basic subjects – except for English: Practical, oral and/or written tests. An examination shall be held in the subject English.

Workshop training school – ECTS credits: 15

The student shall, by means of a professional and theoretical training programme, acquire craft skills of relevance to a ship officer so that he is able to independently use these skills both when planning and carrying out mechanical engineering and electro-technical maintenance and repairs. These craft tasks shall be carried out in consideration of the environmental and safety provisions in force.

The student shall develop his understanding of and insight into the relevant crafts of a ship officer and be able to assess the craftsmanship of a piece of work performed.

The student shall have an understanding of general safety and environmental conditions. Furthermore, he shall have an understanding of the use of personal protective equipment and be able to use it correctly.

Basic maritime subject – ECTS credits: 5

Knowledge about safety at sea is central when working as a ship officer on board a merchant ship. The subjects within the basic maritime subject shall provide the student with fundamental knowledge about shipboard safety, the ship's safety organisation and occupational health at sea. Subsequently, the student shall be able to form part of the roll (boat, fire and MOB rolls) at the functional level. Consideration shall be paid to the fact that the student shall not form part of the ship's safety preparedness during the first work experience period.

Furthermore, the student shall comply with the requirements of the STCW Convention, regulation VI/2, para. 1, on liferaft and lifeboats.

Key subjects

1. safety at sea;
2. practical seamanship and watchkeeping service;
3. work safety/occupational safety; and
4. fire-fighting.

Work experience at sea – ECTS credits: 75

During the introductory three-month work experience period, the student shall also form part of the bridge watch under supervision of a qualified officer in order to acquire a watchkeeping certificate pursuant to the STCW 95 Convention, regulation II/4.

The bridge watch and engine room service should be arranged so that the student also gets an opportunity to perform watchkeeping duties in connection with the passing of channels, navigation in busy waters as well as during manoeuvres, and great emphasis shall be placed on

understanding the necessity for keeping a good discipline on the bridge and in the engine room, cf. the STCW Convention, chapter VIII.

- The student shall have completed a minimum of six months' bridge watchkeeping service under supervision of the master or a qualified officer pursuant to the STCW Convention, regulation II/1.

In connection with the last part of the work experience period, the student shall learn to work in a development-focused and problem-solving manner with the profession as a master. The student shall, by relating experience and theoretical knowledge, be able to identify and analyse subjects, areas and problems that are central to the profession as a junior officer.

The work experience period shall lead to the exchange of knowledge, competences and values between the training and the profession/work life as well as the establishment of networks.

Basic subjects (English, maritime English, methodology and first-aid) – ECTS credits: 10

English shall be used in the education in all relevant subjects in order to qualify the student for using English as a working language. In addition, the English education shall provide the student with such an ability to communicate orally and in writing in English as may be necessary to function in an international environment.

Maritime English shall provide the student with such an ability to communicate orally and in writing in English as may be necessary to function as an officer on board a merchant ship engaged on international voyages.

Methodology shall provide the student with competences within the subject areas of qualitative and quantitative methodology, project management and information retrieval.

First-aid shall provide the student with such theoretical and practical competences that he would be able to offer first-aid in case of accidents and sudden sickness. In addition, the student shall have knowledge of general health conditions especially related to the maritime trade.

Nautical subject area

Test requirements: The student shall sit for examinations in all subjects, including the most important themes.

Subject: Navigation and meteorology – ECTS credits: 15

The student shall have such competences and knowledge about navigation, manoeuvring and nautical meteorology as may be necessary to take care of the planning and implementation of the voyage of a merchant ship, including to function as a watchkeeping navigator on board merchant ships in trade on all seas.

The student shall have passed an approved “Radar/ARPA/ECDIS simulator course” as well as a “Full-mission bridge simulator course”.

Subject: Watchkeeping duty, visual signalling and communication – ECTS credits: 10

Watchkeeping duty where the student shall be able to meet regulation II/4 of the STCW Convention during the first work experience period. Subsequently, the student shall acquire the competences within the subject of watchkeeping, including the regulations for preventing collisions at sea and watchkeeping, that may be necessary to independently function as a watchkeeping navigator.

Visual signalling and communication where the student shall acquire the necessary theoretical and practical competences, including compliance with regulation IV/2 of the STCW Convention on radiocommunications, to be able to carry out the communication occurring on board a merchant ship.

Subject: Ship design, cargo handling and stowing – ECTS credits: 15

The student shall have the knowledge of ship construction and of conditions related to ships' stability, buoyancy, draught, trim and hull impacts that is necessary to function as a junior officer on merchant ships in accordance with the conventions in force. The student shall acquire the competences and skills that are necessary to be able to function as a watchkeeping deck officer in connection with cargo handling and stowing on board merchant ships on international voyages, including tankers (oil, gas and chemical tankers), dry cargo carriers (container ships, general cargo and bulk carriers), refrigerator ships, ro-ro ships and passenger ships.

Technical subject area

Test requirements: The student shall sit for examinations in all subjects, including the most important themes.

Subject: Ship operations, ship engineering and administration – ECTS credits: 10

After having finalised the training programme, the ship officer shall be able to take care of the ship's administrative operation, navigation in an economically profitable manner and handling of the cargo and medical examination on board at the management level. This means that the ship officer is able to perform tasks at the management level as a senior officer on board a merchant ship in consideration of the current rules and standards for social, safety, health and environmental and occupational health conditions.

After having finalised the training programme, the aim is that the ship officer shall have passed the medical examiner training programme for medical inventory A in merchant ships and be able to assume responsibility for the medical examination on board a merchant ship also in conditions where another person is a medical examiner.

Central themes

1. navigation and propulsion,
2. ship engineering, cargo handling and stowing,
3. maritime law and ship administration, and
4. health training (medical examiner).

Subject: Mechanical engineering and maritime technology for navigators – ECTS credits: 5

To provide the student with the practical and theoretical competences that are necessary for him to be able to take care of the operation of a small ship machinery in ships with no requirement for an engine crew. Furthermore, to provide the student with an understanding of technical systems so that he as a master can act rationally and correctly and localise and remedy “simple” defects in common technical systems in ships.

In addition, the student shall acquire a Certificate of Proficiency as a motorman.

Management subject area

Test requirements: The student shall sit for examinations in all subjects, including the most important themes.

Subject: Management – economics, management and safety – ECTS credits: 15

The management training shall form the basis of the ship officer’s function as a future manager. The subjects in the field of management shall provide the student with fundamental knowledge about a number of central areas within the economic management of a company and be able to further the personal development process of employees and managers in a company. The student shall acquire the competences that are necessary to be able to assume his environmental, safety and quality responsibility as a work manager and be able to take care of the operational management of environmentally-polluting systems.

In addition, the student shall acquire the practical competences in structural evaluation and theoretical knowledge on maintenance that will enable him to function as a maintenance manager.

Central themes

1. economics,
2. organisation and personnel management,
3. safety and quality management,
4. environmental engineering and management, and
5. maintenance and management.

Subject: Ship and operational management – ECTS credits: 10

The student shall acquire the practical and theoretical competences that are necessary for him to be able to assume his safety and environmental responsibility when functioning as a master on board a ship. The student shall acquire the knowledge about maritime national and international legislation, as well as administrative, safety and environmental conditions that are necessary for him to have knowledge about his obligations and responsibility in this connection when functioning as a master.

The student shall acquire knowledge about loading-related conditions of the propulsion machinery and the propeller in consideration of safe and economic operation.

The student shall be able to operate and maintain tank and bilge systems, sanitary systems, fire-extinguishing systems, inert gas systems, stern tube systems, ventilation systems, vapour systems and freshwater systems in both normal and abnormal conditions of operation.

Central themes

1. maritime law and ship administration,
2. maritime English,
3. ship propulsion, and
4. auxiliary and service systems in ships.

Subject: Ship and operational management for senior officers (master) – ECTS credits: 10

The student shall be able to take care of management tasks related to the general operation of a ship. This includes communication, crew safety, health and the environment as well as taking care of the ship's safety, operation and maintenance. In addition, the ship officer shall acquire competences that will enable him to independently perform management tasks within the maritime industry and in relation to ship operation. The training programme shall further develop the ship officer's independence and interpersonal skills, theoretical understanding and ability to learn and analyse.

Central themes

1. safety management for senior officers,
2. the ISM Code, standards and audits,
3. operational management,
4. communication and English,
5. geography and cultural sociology,
6. crew resource management,
7. docking,
8. shipping and chartering,
9. business economics, and
10. on board assessment.

Maritime health, safety and the environment

Test requirements: The student shall sit for examinations in all subjects, including the most important themes.

Subject: Maritime health, safety and the environment – ECTS credits: 10

The student shall acquire the practical and theoretical competences that are necessary for him to be able to assume his health, safety and environmental responsibility when functioning as a ship officer on a merchant ship.

The student shall:

- comply with the requirements of the STCW Convention, regulation V/1 ("Tanker Familiarization Course") as well as the requirements of the STCW Convention, regulation VI/2, paragraph 1, on liferafts and lifeboats;
- comply with the training requirements on fire-fighting in accordance with the STCW Convention, regulation VI/3, including smoke-diving; and
- have passed Step I of the maritime medical examiner training course for medicine chest A in merchant ships. (Step II of the maritime medical examiner training course for medical inventory A in merchant ships shall be passed as described in the circular in force).

Central themes

1. fire-fighting in ships,
2. occupational safety/occupational health, and
3. health training (assisting medical examiner).

Elective subjects

Test requirements: Practical oral and/or written tests.

Elective subjects (senior officers) – ECTS credits: 5

The training programme contains seven elective subjects, at least two of which the student shall complete at his own choice. The purpose of elective subjects is to provide the student with special knowledge about a specific professional area; for example, the student may get an opportunity to specialise in a specific type of ship. Certain of the elective subjects cover parts of chapter V of the STCW Convention. Reference is made to the text in connection with the elective subjects.

See annex with the elective subjects that shall, as a minimum, be offered.

Bachelor project

Bachelor project – ECTS credits: 15

The student shall learn how to work development-oriented with the planning and implementation of a project. The student shall, by making connections between experience, practical competences and theoretical knowledge, be able to identify and analyse problems that are crucial in relation to the profession as a master. The student shall acquire special insight into a subject, field or problem and shall, through the project work, learn systematic problem formulation and consideration as well as retrieval and analysis of data material, including relevant research and development results.

Description of the contents of the elective subjects that shall, as a minimum, be offered in the senior officer training programmes (master, chief engineer and dual-purpose) and the master training programme

Ship Security Officer (SSO), which is aimed at ship officers wanting to qualify to be able to function as the ship's SSO.

Occupational health course for members of the safety group in merchant ships, which is aimed at ship officers wanting to qualify to be able to function as a member of the ship's safety group. The course meets the requirements of the Order on "Occupational health course for members of the safety group in merchant ships". A special certificate shall be issued following completion of this subject.

Carriage of refrigerated cargoes and refrigeration technology, which is aimed at ship officers wanting to work with refrigerated/frozen cargoes and wanting, partly, greater technical understanding of the design and operation of refrigerating systems and, partly, a wider knowledge of the market for refrigerated cargoes and factors of influence to this.

RO-RO passenger ships, which is aimed at ship officers wanting to work in ro-ro ships and/or passenger ships or wanting greater technical understanding of conditions of leak stability. The ship officer shall acquire the knowledge and competences necessary for him to function at the management level in passenger ships.

The subject "Cargo handling and stowing" shall have been completed. After having completed the training programme, the ship officer shall meet the theoretical requirements described in sections 6, 7 and 8 of "Order on special training and qualification requirements for personnel on passenger ships". A special certificate shall be issued following completion of this subject.

Management of operations in oil tankers, where the ship officer shall acquire the special qualifications necessary to function at the management level in oil tankers.

The student shall have completed a basic "Tanker Familiarization Course" as contained in the junior officer training programme and the master (restricted) training programme from December 1999 or later. After having completed the training programme, the ship officer shall meet the requirements of regulation V/1, para 2.2, of the STCW Convention on special training for the management of operations in oil tankers. If the student meets the requirement for duration of service in tankers of this type, a qualification certificate shall be issued.

Management of operations in chemical tankers, where the ship officer shall acquire the special qualifications necessary to function at the management level in chemical tankers.

The student shall have completed a basic "Tanker Familiarization Course" as contained in the junior officer training programme and the master (restricted) training programme from December 1999 or later. After having completed the training programme, the ship officer shall meet the requirements of regulation V/1, para 2.2, of the STCW Convention on special training for the management of operations in chemical tankers. If the student meets the

requirement for duration of service in chemical tankers, a qualification certificate shall be issued.

Management of operations in gas tankers, where the ship officer shall acquire the special qualifications necessary to function at the management level in gas tankers.

The student shall have completed a basic “Tanker Familiarization Course” as contained in the junior officer training programme and the master (restricted) training programme from December 1999 or later. After having completed the training programme, the ship officer shall meet the requirements of regulation V/1, para 2.2, of the STCW Convention on special training for the management of operations in gas tankers. If the student meets the requirement for duration of service in gas tankers, a qualification certificate shall be issued.