Engineering Design and Applied Mechanics – maritime engineering

The following study plan contains the courses that are essential to naval architecture and maritime engineering. The student can, according to his or her fields of interest fill up the remaining ECTS with course from the group of “normative competence” courses, “technological specialisation” courses and electives.

General competence courses (min 15 ECTS)

42490 - Technology, economics, management and organisation¹ (10 ECTS). This course is mandatory.
02431 - Risk management² (5 ECTS)

Normative competence courses (min 15 ECTS – here 20 ECTS)

41106 - Marine structures 1 (5 ECTS)
41216 - Structural assessment of ships (5 ECTS)
41323 - Advanced fluid mechanics (10 ECTS)

Technological specialisation courses (min. 30 ECTS incl. exceeding ECTS form the “general competence” and “normative competence” group, i.e. here min 25 ECTS)

41221 - Ship propulsion and manoeuvring (10 ECTS)
41222 - Wave loads on ships and offshore structures (5 ECTS)
41275 - Ship operations (5 ECTS)

¹ This course will include a maritime case.
² The students can choose a maritime case for the project work in this course.
# Base plan for maritime engineering students, start autumn

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<tr>
<th>Semester</th>
<th>Monday</th>
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<th>Thursday</th>
<th>Friday</th>
<th>3 week period</th>
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<td>1 Autumn</td>
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<td>Master Thesis</td>
<td>30-35 ECTS</td>
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- **General competence courses**: 15 ECTS (minimum 15 ECTS)
- **Normative competence courses**: 20 ECTS (minimum 15 ECTS)
- **Technological specialisation**: 20 ECTS (minimum 30 ECTS incl. exceeding ECTS from the “general competence” and “normative competence” courses)
- **MSc thesis**: 30 or 35 ECTS

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3 Please note that the plan does not contain 120 ECTS but only the maritime core courses. The intention is that the student fills in the missing ECTS according to his or her interests.
# Base plan for maritime engineering students, start spring

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Further competence and specialisations courses

In the plans above a **minimum of 5 ECTS** within the “Technological specialisation” are missing. These ECTS can be taken from “general competence” “technological specialisation” courses cf. [http://sdb.dtu.dk/2014/5/57](http://sdb.dtu.dk/2014/5/57)

Maritime engineering students should choose from the following courses:

- **Normative competence courses:**
  - 41319 - *Computational fluid dynamics* (10 ECTS, E3)
  - 41514 - *Dynamics of machinery* (5 ECTS, F4B)
  - 41822 - *Experimental fluid mechanics* (5 ECTS, January)

- **Technological specialisation:**
  - 41224 - *Linear wave dynamics* (5 ECTS, E2A)
  - 41225 - *Nonlinear wave dynamics* (5 ECTS, F2A)
  - 41346 - *IC engines - Experimental methods and data processing* (5 ECTS, F4A)
  - 41521 - *Advanced vibration and stability analysis* (10 ECTS, F2)
  - 41526 - *Fracture mechanics* (5 ECTS, E2B)
Electives

The elective courses can give the student a broader competence profile within the maritime field according to the student’s interests. Possible electives could be:

11440 - Petroleum engineering (5 ECTS, E4A)
13233 - Decision support and risk analysis (5 ECTS, E2B)
13150 - Transport economics (5 ECTS, F1A)
13420 - Green Transport Logistics (5 ECTS, F5B)
13432 - Maritime logistics (5 ECTS, F4B)
25302 – Physical Oceanography (5 ECTS, E1B)
25305 - Marine aquaculture (5 ECTS, F5B)
28415 - Oil and gas production (5 ECTS, F4A)
41117 - Marine structures 2 (5 ECTS, E1A)
41123 - Marine and hydraulic structures (5 ECTS, January)
41315 - Applied CFD (5 ECTS, June)
41343 - Fuels and emissions from transportation (5 ECTS, January)
42372 - Life cycle assessment of products and systems (10 ECTS, E1)
42375 - Advanced life cycle assessment and evaluation of environmental impacts (5 ECTS, January)
42543 - Management of change (5 ECTS, F4A)
42430 - Project management (F1A)
42085 - Strategy, design and market (5 ECTS, E2B)
42467 - Introduction to strategic management (5 ECTS, E1A)
46211 - Offshore wind energy (10 ECTS, E4)

Courses are ordered after DTU department. Students that have followed the recommended BSc study track in maritime engineering will have the prerequisites for the elective courses listed here.