BSc in Biomedical Engineering

Officiel title

Bachelor of Science in Engineering in Medicine and Technology

About the curriculum

This programme specification revised by 1 September 2017 applies for all students enrolled in the programme.

Students enrolled from 1 September 2017 will find their curriculum in the paragraph "Curriculum".

Students enrolled prior to 1 September 2017 may find additional information to the curriculum in the paragraph "Curriculum, previous admission years.

The curriculum comprises the following parts:

- Official title
- About the curriculum
- Duration
- General admission requirements
- Study programme admission requirements
- Objectives and general learning outcomes for the BSc programme
- Programme Specific Competence profile
- Structure
- Curriculum
- Curriculum, previous admission years
- Bachelor Project
- Head of Studies
- Study activity requirements and programme deadlines
- Rules for teaching
- Exam rules
Credit transfers and exemptions

The curricula have been laid down by the University, see Ministerial Order no. 261 of 18 March 2015 on Bachelor and Master’s Programmes at Universities, Ministerial Order no. 247 of 13 March 2015 on the International Education Activities of Universities, and Ministerial Order no. 114 of 3 February 2015 on the Grading Scale and Other Forms of Assessment of University Education. According to section 11(8) of DTU’s statutes, the curriculum is approved by the Dean of the programme, following delegation by the President.

Duration

The BSc in Engineering programme is a three-year, full-time programme corresponding to 180 ECTS credits (European Credit Transfer System).

Admission requirements

Students holding a Danish qualifying exam are required to have passed:

- Mathematics A
- Danish A
- English B
- Physics B /Geoscience A
- Chemistry C/Biotechnology A

Admission requirements for the BSc in Engineering

Applicants are admitted to a BSc programme which constitutes a separate admission area and provides access to one or several MSc programmes at DTU.

Based on the Admissions Order, the Danish Agency for Higher Education determines which high school exams qualify the holder for admission.

A foreign exam which, according to DTU’s assessment, corresponds to a Danish qualifying exam together with the Study Test in Danish as a Second Language also qualifies the holder for admission (however, there is no requirement for proficiency in Danish for people from other Nordic countries.)

DTU may admit applicants on a case by case basis, provided the applicant has the academic qualifications equivalent to those documented by a qualifying exam.

Objectives and general learning outcomes for the BSc programme

The BSc in Engineering programme is a research-based basic engineering programme qualifying the student for an MSc programme. The BSc graduate must have a solid basic academic foundation in the fields of technical science, IT, and natural science and be able to understand and apply mathematical and physical principles and methods.
The BSc graduate must have an understanding of the theoretical basis, concepts, and models of a specific technological area, and be able to work with abstract formulations and problems as well as view a complex context from different angles. The BSc graduate must have thorough knowledge of basic standard methods to solve idealized problems within mathematics and natural sciences and be able to use this to solve subproblems in an engineering context.

The BSc graduate must be able to combine research-based and practical knowledge to find suitable technological solutions, propose ways of implementing them, and make an overall assessment of their usability with due consideration for ethical, economic, social, and environmental conditions. The BSc graduate must have insight into the types of knowledge and competences on which the engineering subjects are based and be able to view technological solutions in a broad social perspective.

The programme also helps develop social and communicative competences, so that the graduate is able to use the professional knowledge in collaboration with others.

The primary aim of the BSc programme is to qualify the student to complete an MSc programme either at DTU or at another Danish or international university.

**Competence profile for the BSc programme**

The competence profile comprises the shared general goals for learning outcome of the entire BSc programme and field-specific goals for learning outcome.

**Shared academic goals for learning outcome (BSc Eng)**

A Bachelor of Science in Engineering from DTU

- can combine research-based and practical knowledge to find suitable technological solutions, and see these in a social context
- has a thorough knowledge of basic mathematical and scientific methods which can be used to assess and solve idealized technical issues
- has knowledge of basic concepts of programming languages and can solve and document minor programming tasks
- has a basic understanding of engineering science theory and identifies issues of modern engineering
- has knowledge of the information structures of the subject and information sources relevant to the field of study, and can carry out relevant and critical information searches
- is able to communicate technical information, theories, and results both graphically, in writing, and orally, and is able to present this to different groups of stakeholders
- is able to independently acquire new knowledge and adopt a critical approach to the acquired knowledge
- can—on the basis of an independent professional approach—contribute to technical problem-solving through project work, independently as well as in collaboration with others.

**Programme Specific Competence profile**

**The BSc graduate in Medicine and Technology**
• possesses basic knowledge about the anatomy, physiology and biochemistry of the human organism

• possesses basic knowledge about the function of the healthy human body, and is aware of the most significant illnesses affecting Danish society, including their incidence, aetiology, pathogenesis and symptoms

• possesses fundamental knowledge about concepts, theories and methods in cellular and biophysics, as well as a basic understanding of the fundamental role these play in human biology concept and theory formation

• possesses fundamental knowledge about metals, ceramics and polymers, as well as a basic understanding of their mechanical properties, their potential medicotechnical applications and their limitations

• possesses fundamental knowledge about—and practical experience with—the structure and application of analogue electrical circuits and amplifiers

• possessed fundamental knowledge about—and practical experience with—concepts, theories, methods and tools for the analysis of signals and linear systems, as well as a basic understanding of their areas of application and limitations

• possesses fundamental knowledge about the concepts, theories and methods of classic mechanics, and has practical experience with the utilization of same in the analysis of the locomotive apparatus and the mechanical function of other organs

• possesses fundamental knowledge about concepts and theories regarding the transportation of liquid and solid matter, as well as practical experience with the use of same in describing and analysing the function and performance of organs and technical organ support systems

• possesses fundamental knowledge about statistical concepts, theories and methods, as well as practical experience with computer-based tools for statistical analysis

• possesses fundamental knowledge about mathematical-physical concepts and theories in the field of electrophysiology, as well as practical experience with models and tools for simulating the function of the nerves, brain, muscles and heart

• possesses fundamental knowledge about measuring instrumentation, including practical experience with the operation and areas of application of the most common transducers, signal amplification and digitalization, and the processing, storage and display of analogue signals on computers

• possesses fundamental knowledge about the concepts, theories and methods of image creation technologies, including x-ray, CT, MRI and ultrasound, as well as practical experience with the areas of application and limitations of same

• possesses fundamental knowledge of and specific experience with the organization, staff composition and infrastructure, ethics, behaviour and hygiene of the hospital sector, and, on the basis of this knowledge, can participate in the work of a hospital department

• has the opportunity to supplement his/her basic knowledge with topics in the fields of finance and management, or to add to his/her fundamental technical knowledge by taking
supplementary courses in one or more areas of specialization, including numerical methods, stochastic signals, image analysis, C++ programming, organic and physical chemistry, solid state mechanics, and mathematical modelling of chemical systems

• has a basic understanding of the discipline from a larger, more general perspective, with the emphasis on the causes and consequences of scientific and technical development, the positioning of the subject in a broader cultural and social context, and the cognitive basis issues with which one is confronted in the field of modern medicotechnical engineering

• can formulate simple electrical, mechanical and chemical models of linear and non-linear organ system and assess their suitability and limitations

• can use computer-based tools to program and simulate simple linear and non-linear physiological systems

• can apply statistics and dynamics to perform simple quantitative analyses of the function of the locomotive apparatus

• can use video technology and write software for the performance of the most common motion analyses, with regard to biomechanical analyses of the function of the locomotive apparatus

• can use commercial, computer-based simulation tools to analyse the transportation of solid and liquid matter in the body’s organs and in medicotechnical equipment

• can design and construct simple amplifiers and filters using integrated analogue circuits

• can compile and program a computer-controlled data collection system for medicotechnical measurements

• can select the most suitable image generation technology—from CT, MRI and ultrasound—for a given purpose

• can implement the most common methods for processing and analysing signals and images in computer programs, and in this way contribute to the identification and extraction of diagnostic information in scanned images and measured physiological signals

• can prepare and perform medicotechnical experiments and validate and communicate the results within the framework of given ethical norms

• can enter into commercial, clinical or research development environments and—as part of an interdisciplinary partnership—contribute to the analysis and resolution of a given healthcare issue

• can, on the basis of detailed knowledge of the shape, function, performance, illnesses and tolerance of organs and tissue, contribute to the development of gentle but efficient products, methods and materials for diagnosis and/or treatment

• can, on the basis of his/her interdisciplinary knowledge, contribute to the formulation of mathematical-physical models for the analysis and computer simulation of the function of organs and tissue, and use same to contribute to identifying measurable features with the potential to generate new information for the elucidation and treatment of illnesses
can, for the most common patient analyses, independently select and compile components in a diagnosis system, and validate the accuracy and reproducibility of the measured data.

• can, for the most common technology-base treatment methods, contribute to the development, utilization and maintenance of system components and validation of the efficiency of treatment methods.

Structure

A BSc in Engineering programme consists of four blocks. Each of the four blocks constitutes an equal share of the programme’s 180 ECTS credits. If students choose more than the required credits in the groups with mandatory courses, the credits count as elective courses.

The order and scheduling of the mandatory courses, academic content, teaching and working methods, as well as any programme prerequisites are described in a study plan for each BSc programme. See curriculum below. Teaching and working methods as well as any prerequisites for the individual courses are set out in course descriptions available on DTU’s website.

Basic natural science courses
Through courses in mathematics, physics, and chemistry as well as similar courses, this block provides a natural science basis for working with technology. The basic natural science subjects comprise three mandatory courses in mathematics, physics, and chemistry: In addition, the student must obtain at least 10 ECTS credits, which vary from programme to programme.

Technology core courses
The technology core courses constitute the engineering foundation for the individual BSc programmes, providing the basis for admission to an MSc programme. In this block, students choose a specified number of courses from a range on offer.

Projects and general subjects, including BSc project
This block contains such elements as programming, engineering science theory, engineering, and a course project as well as a BSc project. The elements in this block are mandatory, but the programme content varies. The Engineering Work course is located in the programme’s first semester.

Electives
In this block, you can choose freely from among the engineering courses on offer at DTU and similar courses at other universities. Students can choose to take the courses that fall within the scope of the recommended courses of study on the individual BSc programmes. Students can also choose to follow courses in advanced mathematics, physics, and chemistry, or choose more general courses in, for example, management and finance. Finally, students can use the electives to change educational focus, so that they qualify for MSc programmes for which the selected BSc programme does not immediately provide access.

Requirements for Completing the BSc Eng Programme

Students must meet the following requirements in order to complete the programme:

• Students must pass courses corresponding to 45 ECTS credits within the basic natural science courses.
• Students must pass courses corresponding to 45 ECTS credits within the technology core courses.
• Students must pass courses and projects corresponding to 45 ECTS credits within projects and professional skills courses, including a BSc project of 15 or 20 ECTS credits.
• Students must also pass additional courses and/or projects to obtain a total of 180 ECTS credits.
• Students must have achieved grades in accordance with the 7-point grading scale in at least two-thirds of the total credits.
• At least one third of the programme completed by the student must be assessed by an external co-examiner. This does not apply to exams for which credits have been transferred from other universities.

**Completion Guidelines for Late Students**
If students exceed the prescribed period of study by more than six months, they will be offered special guidance in the form of an information meeting and a possible personal interview. If students are 12 months late, they will be called in for a personal interview.

**Curriculum**

**Basic Natural Science Courses**

The mandatory basic natural science courses in this programme are:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>01005</td>
<td>Advanced Engineering Mathematics 1</td>
<td>20</td>
<td>Fall and Spring</td>
</tr>
<tr>
<td>01034</td>
<td>Advanced Engineering Mathematics 2</td>
<td>5</td>
<td>E1A (Mon 8-12)</td>
</tr>
<tr>
<td>01035</td>
<td>Advanced Engineering Mathematics 2</td>
<td>5</td>
<td>E2B (Thurs 8-12), E2B (Thurs 8-12), F2B (Thurs 8-12)</td>
</tr>
<tr>
<td>02402</td>
<td>Introduction to Statistics</td>
<td>5</td>
<td>E3A (Tues 8-12), E3A (Tues 8-12), F4A (Tues 13-17), E1B (Thurs 13-17) and F1B (Thurs 13-17)</td>
</tr>
<tr>
<td>10020</td>
<td>Physics 1</td>
<td>10</td>
<td>E2A (Mon 13-17)</td>
</tr>
<tr>
<td>26028</td>
<td>Fundamental Chemistry in English</td>
<td>5</td>
<td>E3 (Tues 8-12, Fri 13-17) and E4 (Tues 13-17, Fri 8-12)</td>
</tr>
<tr>
<td>KU002</td>
<td>Human Biology</td>
<td>10</td>
<td>F3 (Tues 8-12, Fri 13-17) and F4 (Tues 13-17, Fri 8-12)</td>
</tr>
<tr>
<td>KU003</td>
<td>Human Diseases for Non-Clinicians</td>
<td>10</td>
<td>E5A (Wed 8-12) and E5B (Wed 13-17) and E3B (Fri 13-17)</td>
</tr>
<tr>
<td>KU011</td>
<td>Cell and Tissue Biology</td>
<td>10</td>
<td></td>
</tr>
</tbody>
</table>
The course 26028 Fundamental Chemistry can be replaced by the course 26000 General Chemistry. This is especially recommended for students who have had chemistry at the A-level. It is only possible to choose one version of Advanced Engineering Mathematics 2.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
<th>Schedule</th>
</tr>
</thead>
<tbody>
<tr>
<td>26000</td>
<td>General Chemistry</td>
<td>5</td>
<td>E4B (Fri 8-12) and F5B (Wed 13-17)</td>
</tr>
</tbody>
</table>

**Technology Core Courses**

The technology core courses in this programme can be split into three groups: 1. Mandatory programme courses at DTU 2. Elective programme courses at DTU and 3. Electives programme courses at KU.

**Group 1: Mandatory programme courses at DTU**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
<th>Schedule</th>
</tr>
</thead>
<tbody>
<tr>
<td>31540</td>
<td>Introduction to medical imaging</td>
<td>5</td>
<td>E1B (Thurs 13-17)</td>
</tr>
<tr>
<td>31605</td>
<td>Continuous Time Signals and Linear Systems</td>
<td>5</td>
<td>F3A (Tues 8-12)</td>
</tr>
<tr>
<td>41650</td>
<td>Materials Science</td>
<td>5</td>
<td>F1B (Thurs 13-17)</td>
</tr>
</tbody>
</table>

**Group 2: Elective programme courses at DTU**

The student must choose at least 10 ECTS points from this group.

Even though the courses are not mandatory they are important pre-requisites for master courses within the same topics.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
<th>Schedule</th>
</tr>
</thead>
<tbody>
<tr>
<td>02512</td>
<td>Introduction to Medical Image Analysis</td>
<td>5</td>
<td>F5A (Wed 8-12)</td>
</tr>
<tr>
<td>31511</td>
<td>AC circuits with ECG amplifier</td>
<td>10</td>
<td>F5B (Wed 13-17)  and F3B (Fri 13-17)</td>
</tr>
<tr>
<td>31520</td>
<td>Physiological fluid mechanics</td>
<td>5</td>
<td>January</td>
</tr>
<tr>
<td>31522</td>
<td>Physiological and pharmacological mass transport</td>
<td>10</td>
<td>F5B (Wed 13-17)  and F3B (Fri 13-17)</td>
</tr>
<tr>
<td>31533</td>
<td>Quantitative electrophysiology</td>
<td>5</td>
<td>E1B (Thurs 13-17)</td>
</tr>
</tbody>
</table>

**Group 3: Elective programme courses at KU**

The student is allowed to replace one of the courses with a special course at KU, with the same point count. If this option is chosen the student is responsible for finding a topic and a supervisor.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
<th>Schedule</th>
</tr>
</thead>
<tbody>
<tr>
<td>KU004</td>
<td>Clinical methods in diagnosis and treatment</td>
<td>5</td>
<td>F1A (Mon 8-12)</td>
</tr>
<tr>
<td>KU005</td>
<td>Modelling of physiological systems</td>
<td>5</td>
<td>E2A (Mon 13-17)</td>
</tr>
<tr>
<td>KU010</td>
<td>Biomechanics of the Locomotor System</td>
<td>7.5</td>
<td>E5A (Wed 8-12)</td>
</tr>
</tbody>
</table>

**Projects and Professional Skill Courses**
All the courses in this basic block are mandatory, and include general engineering courses and the projects of the programme.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
<th>Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>31501</td>
<td>Biomedical engineering 1</td>
<td>5</td>
<td>E5A (Wed 8-12)</td>
</tr>
<tr>
<td>31502</td>
<td>Biomedical engineering 2</td>
<td>5</td>
<td>F5A (Wed 8-12)</td>
</tr>
<tr>
<td>KU006</td>
<td>Introduction to clinical practise in Hospitals</td>
<td>5</td>
<td>June</td>
</tr>
<tr>
<td>KU012</td>
<td>Medical Science and Technology Studies</td>
<td>2.5</td>
<td>E4B (Fri 8-12)</td>
</tr>
</tbody>
</table>

In the course KU006 Introduction to clinical practice in Hospitals the student is posted in a hospital in the capital region. The study places in this course are therefore limited to students in the 5. Semester enrolled in this bachelor programme.

31501 snd 31502 are engineering work for BSc Eng in Medicine and Technology

**Electives**

In this basic block you rest of the points up to 180 ECTS must be achieved from any courses offered for bachelor students (NOT BEng) or master students. Students can choose courses, which are recommended by the head of study. Students can also use the freedom of choice to achieve knowledge within advanced mathematics, physics, or chemistry. It is also possible to follow more general courses within management and economy. Finally, students can choose courses, which qualify them for a certain master programme.

Students, who wish to do a master within Medicin and Technology and follow the study line **Signal and model based diagnostics**, are recommended to use some elective points to achieve skills within programming, and analog and digital instrumentation:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
<th>Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>27611</td>
<td>Introduction to Bioinformatics</td>
<td>5</td>
<td>F4A (Tues 13-17)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>F5B (Wed 13-17) and F3B (Fri 13-17)</td>
</tr>
<tr>
<td>31511</td>
<td>AC circuits with ECG amplifier</td>
<td>10</td>
<td>F2 (Mon 13-17, Thurs 8-12)</td>
</tr>
<tr>
<td>31561</td>
<td>Applied Signal Processing</td>
<td>10</td>
<td>F2 (Mon 13-17, Thurs 8-12)</td>
</tr>
</tbody>
</table>

Students, who wish to do a master within Medicin and Technology and follow the study line **Diagnostic imaging and radiation physics**, are recommended to use some elective points to achieve skills within some of the following courses:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
<th>Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>02512</td>
<td>Introduction to Medical Image Analysis</td>
<td>5</td>
<td>F5A (Wed 8-12)</td>
</tr>
<tr>
<td>31561</td>
<td>Applied Signal Processing</td>
<td>10</td>
<td>F2 (Mon 13-17, Thurs 8-12)</td>
</tr>
</tbody>
</table>

Students, who wish to do a master within Medicin and Technology and follow the study line **Biomechanics and Biomaterials**, are recommended to use some elective points to achieve skills within some of the following courses:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
<th>Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>26400</td>
<td>Organic Chemistry 1</td>
<td>5</td>
<td>F5A (Wed 8-12)</td>
</tr>
<tr>
<td>41501</td>
<td>Strength of Materials</td>
<td>5</td>
<td>F2A (Mon 13-17)</td>
</tr>
</tbody>
</table>
Students, who wish to do a master within Medicin and Technology and follow the study line **Physiological and pharmacological material transport**, are recommended to use some elective points to achieve skills within some of the following courses:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Points</th>
<th>Schedule</th>
</tr>
</thead>
<tbody>
<tr>
<td>26202</td>
<td>Physical Chemistry for the Biological Sciences</td>
<td>5</td>
<td>F4B (Fri 8-12)</td>
</tr>
<tr>
<td>26400</td>
<td>Organic Chemistry 1</td>
<td>5</td>
<td>F5A (Wed 8-12)</td>
</tr>
<tr>
<td>27022</td>
<td>Biochemistry</td>
<td>5</td>
<td>F4B (Fri 8-12)</td>
</tr>
<tr>
<td>31520</td>
<td>Physiological fluid mechanics</td>
<td>5</td>
<td>January</td>
</tr>
<tr>
<td>31522</td>
<td>Physiological and pharmacological mass transport</td>
<td>10</td>
<td>F5B (Wed 13-17) and F3B (Fri 13-17)</td>
</tr>
<tr>
<td>31533</td>
<td>Quantitative electrophysiology</td>
<td>5</td>
<td>E1B (Thurs 13-17)</td>
</tr>
<tr>
<td>41501</td>
<td>Strength of Materials</td>
<td>5</td>
<td>F2A (Mon 13-17)</td>
</tr>
<tr>
<td>KU005</td>
<td>Modelling of physiological systems</td>
<td>5</td>
<td>E2A (Mon 13-17)</td>
</tr>
</tbody>
</table>

**Blocked courses**

Some of the mandatory courses from Copenhagen University have a content which overlap with some of the courses at DTU. Therefore, students in this programme cannot take the following courses:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Points</th>
<th>Schedule</th>
</tr>
</thead>
<tbody>
<tr>
<td>02631</td>
<td>Introduction to programming and data processing</td>
<td>5</td>
<td>E1B (Thurs 13-17), F2B (Thurs 8-12)</td>
</tr>
<tr>
<td>02632</td>
<td>Introduction to programming and data processing</td>
<td>5</td>
<td>August</td>
</tr>
<tr>
<td>02633</td>
<td>Introduction to programming and data processing</td>
<td>5</td>
<td>January, June</td>
</tr>
<tr>
<td>24001</td>
<td>Human Physiology</td>
<td>5</td>
<td>E2B (Thurs 8-12)</td>
</tr>
<tr>
<td>27002</td>
<td>Life Science</td>
<td>5</td>
<td>E1B (Thurs 13-17)</td>
</tr>
<tr>
<td>27230</td>
<td>Prokaryotic Cell Biology</td>
<td>5</td>
<td>E1A (Mon 8-12)</td>
</tr>
<tr>
<td>42610</td>
<td>Philosophy of science in engineering</td>
<td>5</td>
<td>E3B (Fri 13-17), F3A (Tues 8-12)</td>
</tr>
</tbody>
</table>

**Curriculum, previous admission years**

Please see the Danish version
Bachelor Project

The BSc project is the final project on the BSc programme. The purpose of the BSc project is to give the student the opportunity to competently formulate, analyse, and process issues within a limited subject area that reflects the emphasis of the programme.

The BSc project must demonstrate the student’s ability to solve a relevant engineering task in which the acquired knowledge and competences are applied in an independent way in a major project. The student must demonstrate, at the appropriate level, the ability to assess options, results, and argue for the results obtained in a logical and coherent manner in a report.

The BSc project must include a summary. The summary must be in English—unless another foreign language has been agreed with the supervisor—and is included in the overall assessment. If—following agreement with the supervisor—the BSc project is written in a foreign language, the summary may be written in the same foreign language.

The BSc project must be prepared individually or in groups of up to four students.

The BSc project must be approved by the head of studies to ensure that it falls within the programme focus area. The student normally carries out the project in a department relevant to his or her BSc programme. However, subject to agreement with the head of studies, the student may carry out the project in other departments. The student can also do the BSc project in collaboration with a company or another university.

Prerequisites for starting the BSc project

The student can only start the BSc project when they have achieved 120 ECTS credits in the programme and have passed the course project. The basic natural science courses, technology core courses, and the course project are academic prerequisites for starting the BSc project.

Project agreement, scope, and project period

The student must enter into an agreement with a supervisor regarding the BSc project and register with the department, which reports the agreement electronically to the Office for Study Programmes and Student Affairs.

The supervisor must be a permanent academic staff member (not PhD students) approved by the head of department with research obligations.

The student must enter into an agreement with the supervisor in due time before project start. The work must not be started before the student receives an email with the approved project agreement from the Office for Study Programmes and Student Affairs. This also applies if the BSc project is carried out, entirely or partly, outside DTU. The BSc project agreement is binding and counts as an exam attempt from the moment the BSc project is initiated as agreed. The agreement can be cancelled up until the BSc project start date and will then not count as an exam attempt.

The duration of a BSc project is 9 weeks full time study (including annual leave and public holidays) for a project of 15 ECTS credits.

The project period can be extended with up to 9 weeks, as the project period is extended with 3 weeks for every 5 ECTS-points the student takes simultaneously being courses or projects.
The project period can also be extended with up to 6 weeks due to documented permanent impairment. The Office for Study Programmes and Student Affairs (AUS-sps@adm.dtu.dk) can assist the supervisor in making this assessment as required.

The agreed project period must be observed.

Under special circumstances the Board of Studies may grant extensions of up to three weeks. Application must be submitted to the relevant Board of Studies. Applications for extensions beyond three weeks should be addressed to the Exemption Committee for the MSc Programmes in Engineering. Application is submitted through www.dispensation.dtu.dk. The application should be submitted well in advance of the deadline for the project in order for the Exemption Committee to be able to handle the application in time. Information regarding exemptions can be found at DTU Inside under ‘Exemption’.

Exemptions may be granted for an extension owing to unforeseen delays during the project period.

**BSc project content and learning outcomes**

The content of the BSc project is to be agreed with the supervisor. The project can include a combination of experimental work, field work, theoretical studies, synthesis, modelling, and analysis.

The BSc graduate

- can work independently and is able to structure a major project, including meeting deadlines and organizing and planning the project work
- can summarize and interpret technical information and is fully familiar with technical problem solving through project work
- is able to work with all project phases, including the preparation of proposals, solutions, and documentation
- is able to independently acquire new knowledge and adopt a critical approach to the acquired knowledge and carry out relevant and critical information searches, and on this basis find the right methods to shed light on the problem in question
- is able to communicate technical information, theory, and results in written, visual/graphic, and oral form.

During the first month, the student is to submit a project plan outlining the objective of the BSc project together with a justification for same to the supervisor. In the project plan, the student is also to take into account the overarching learning outcomes listed above. When submitting the BSc project, the student is to enclose a separate document presenting the original project plan and a revision of same, where appropriate. In addition, the document is to include a brief self-evaluation of the project process.

**Assessment**

The BSc project is assessed according to the 7-point grading scale by an external examiner on the basis of a report and an oral defence. When assessing a BSc project, the main focus is on academic content. The students’ ability to express themselves accounts for a small, but nonetheless significant percentage of the assessment, while spelling ability carries little weight.

If the project is prepared by more than one student, each student is to be examined individually. The assessment of group projects, however, may also include a group exam with the participation of the
entire group. Then the individual oral exam is carried out, which, besides the examinee, only group members who have already been examined are allowed to attend.

In consultation with the student, the department, supervisor, and external examiner determine the time and date of the oral defence. In accordance with section 3.8 of the Rules and Regulations—Grade Issue Date—the defence must take place no later than 10 working days after submission of the written report. This does not include Christmas holidays and public holidays. In exceptional circumstances, the head of department can approve a later exam date.

The oral defence of projects carried out in a company may be held behind closed doors following agreement with the supervisor.

Curricula are planned in such a way as to ensure that BSc projects completed within the prescribed time can be assessed within the prescribed programme duration.

Head of study

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Email:kah@elektro.dtu.dk

Study activity requirements and programme deadlines

Students must meet the study activity requirements and deadlines set out below. If students do not meet the requirements set out below, they can only continue on the study programme if granted an exemption.

Commencement of Studies Exam
In the beginning of the study programme, BSc Eng students must participate in and pass a commencement of studies exam in order to continue on the programme. The purpose of the commencement of studies exam is to ascertain whether students have actually commenced their studies. The exam is assessed by internal examiners and is assessed as ‘Approved’ or ‘Not approved’. Students have two attempts to pass the commencement of studies exam.

The commencement of studies exam consists of two parts:

1. The student must sign DTU's Code of Honour. The code summarizes the principles of good scientific and ethical conduct/practice at DTU. At the beginning of their studies, students must actively indicate their acceptance of the code in order to continue their studies at DTU.
2. The student must complete and submit an individual study plan which meets the criteria in the curriculum.

Information about the commencement of studies exam is sent to the students’ student email address six weeks after study start and must be confirmed no later than one week after. The second exam attempt takes place immediately thereafter.

First-year Exam
Before the end of the first year of study after study start, students must have obtained 30 ECTS credits (first-year exam) in order to retain the right to participate in teaching and exams. The first-year exam is passed when students have obtained 30 ECTS credits within the mandatory course blocks ‘basic natural science courses’, ‘technology core courses’, and ‘projects and professional skills courses’.

If students are admitted before September 2015, the first-year exam is passed when the students, before the end of the second year of study after study start, have obtained 60 ECTS credits within the three mandatory course blocks: natural science courses, technology core courses, and projects and professional skill courses.

**Study Activity Requirement of 30/45 ECTS Credit Points**
The study activity requirements mentioned below are applicable from 1 September 2016. Courses passed before this date does not count in the statement of the study activity requirement.

Students must pass at least 30 ECTS credits in the first year of study on your programme and 45 ECTS credits in each of the following years of study. The student must be allowed three examination attempts in courses where the accumulated ‘study activity requirement’ applies. This means that students has had the opportunity to register for three exams in the course in accordance with the prescribed study plan pertaining to their education.

The study activity requirement is accumulated, so the students must fulfill the study activity requirements below:

<table>
<thead>
<tr>
<th>Period</th>
<th>Accumulated study activity requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. year of study</td>
<td>30 ECTS-point</td>
</tr>
<tr>
<td>2. year of study</td>
<td>75 ECTS-point</td>
</tr>
<tr>
<td>3. year of study</td>
<td>120 ECTS-point</td>
</tr>
<tr>
<td>4. year of study</td>
<td>165 ECTS-point</td>
</tr>
<tr>
<td>5. year of study</td>
<td>210 ECTS-point</td>
</tr>
</tbody>
</table>

**Students enrolled at August 2015 or earlier**

Other students enrolled at August 2015 or earlier must at least pass 45 ECTS-credits per study year.

<table>
<thead>
<tr>
<th>Period</th>
<th>Accumulated study activity requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Sep 2016 – 31 Aug 2017</td>
<td>45 ECTS-point</td>
</tr>
<tr>
<td>1 Sep 2017 – 31 Aug 2018</td>
<td>90 ECTS-point</td>
</tr>
<tr>
<td>1 Sep 2018 – 31 Aug 2019</td>
<td>135 ECTS-point ect.</td>
</tr>
</tbody>
</table>

**Study Activity Requirement of 5 ECTS Credit Points**

Students admitted to the BSc Eng programme must pass courses corresponding to at least 5 ECTS credits per year of study to comply with DTU’s study activity requirements.

**Maximum Period of Study**
The BSc in Engineering programme must be completed no later than 4 years after admission.

For students enrolled before September 2015 other rules applies, and the BSc Eng course of study must be completed according to this schema.

BSC Eng

01 September 2014 31 January 2019
The prescribed period of study plus 3 years

For all students enrolled before September 2013 the MSc Eng course of study must be completed within four years.

**Exemption**
In exceptional circumstances, such as long-term illness or similar, students may apply for an exemption from the deadlines.

**Paragraphs from Rules and Regulations**

The following paragraphs are part of this programme specification but taken from the collected Rules and Regulation. The numbering of the paragraphs correspond to the numbering in the Rules and Regulations.

**Rules and regulations chapter 2**

**2.2 Course registration**

Course registration and withdrawal of course registration takes place via the Studyplanner.

Newly admitted MSc students and guest students must actively declare that they accept DTU’s honor code to be able to register for courses.

Students must be registered for a course to attend classes—including laboratory exercises—to participate in group work, and to obtain course information via DTU Inside as well as teaching material (notes etc.).

Students are responsible for ensuring that they are registered for the right courses in their study plan.

Students may take the same course twice if they did not fulfill the mandatory prerequisite to qualify for taking the exam in the first place.

Students cannot register for a course they have already passed. A course has been passed if the grade 02 or the assessment ‘Pass’ has been awarded. Reregistrations for passed courses will be rejected.

Students cannot register more courses than the prescribed ECTS credit total of the programme in question. Students can, however, if their passed number of ECTS credits hinder them from reaching the prescribed number of ECTS credits, typically entailing credit transfer, register for a final course of up to 5 ECTS credits, even if they hereby exceed the prescribed ECTS credit total of the study programme in question (see ‘Credit transfer during the study programme’ under ‘Credit transfer’).
A non-mandatory course may be cancelled if less than ten students are registered. Other rules regarding minimum participation are stated in the course description. Mandatory courses and courses from the mandatory course groups cannot be cancelled.

Registrations for courses which do not form part of the student’s study programme will be rejected, unless the course has been pre-approved by the Head of Studies who has notified the Office for Study Programmes and Student Affairs, the Study Administration of this.

BEng and BSc students are automatically registered for courses in the first teaching period (13-week period) in the first semester of their programme. Students must register for all other courses via the Studyplanner.

All approved course registrations are automatically transferred to exam registrations after the supplementary registration period has passed.

Deadlines etc. can be found on DTU Inside under ‘Registration deadlines for courses and examinations’.

### 2.4 Academic prerequisites for course participation

Prerequisites and rules for course participation are specified in the course description.

Lecturers are responsible for ensuring that exercises and other laboratory and workshop activities take place under safe conditions. They must therefore provide thorough instructions. Students who fail to understand or respect the lecturer’s safety instructions may be expelled from the activity.

**Mandatory prerequisites**

Students are required to pass courses specified as a mandatory prerequisite before participating in the course. Students may only register for the course and, if relevant, take part in a drawing of lots if they have passed or are registered for the exam in the mandatory course.

**Recommended academic prerequisites**

Recommended academic prerequisite courses form the basis for the teaching, and students are expected to have knowledge of the topics covered by the courses. Students who do not have the necessary prerequisites are not entitled to extra academic counselling and may, if necessary, be expelled from the class.

### 2.5 Participation in limited admission courses

A number of courses at DTU have limited admissions due to for example laboratory exercises. If there is limited admission to a course, it is specified in the course description.

**2.5.1. Guidelines in relation to overbooked courses**

No later than one month before the start of the teaching period, a study announcement will be sent out with information about the procedure for the drawing of lots in the event of overbooked courses.

All students who have registered for a course for which participation will be determined by drawing lots will receive an email after the draw with status information. There are three status types:

- Place on the course guaranteed
- On the waiting list
Lost draw. 
Students, who have been granted a place in the course, but who do not attend classes when the course starts and fail to notify the lecturer of subsequent attendance will not be permitted to keep their place in an overbooked course after the dates stated below:

13-week period: after the end of class on the first day of teaching in the course
3-week period: four hours after course commencement
The place will be given to the next student present with the lowest number on the waiting list.

2.5.2 Priority in case of drawing of lots
It may be stated in the course description that students enrolled on certain study programmes have priority in a drawing of lots. Students who have registered for a course within the deadline will be assigned a place or participate in the drawing of lots according to this priority. If nothing is stated in the course description, all full-time students who have registered within the deadline will participate in the draw equally.

- Full-time students who have registered within the deadline and students on the flexible master’s programme (part-time programme) have priority over guest students and students on the other part-time programmes in any drawing of lots.

- Students for whom the course is mandatory or forms part of one of the mandatory groups have priority over students for whom the course is not mandatory. If a student for whom a course forms a mandatory part of the programme loses a draw, the student in question will be guaranteed a place next time the course is offered.

- Guest students studying at DTU under an exchange agreement between DTU and an international partner university, and for whom the course constitutes a mandatory programme element, take precedence over full-time students for whom the course is not mandatory as well as over other guest students and part-time students.

- Guest students and students enrolled on part-time programmes for whom a course constitutes a mandatory programme element take precedence over guest students and students on part-time programmes for whom the course is not mandatory.

- Guest students and students on part-time programmes who have registered within the registration deadline will be assigned a place in overbooked courses and have priority over full-time students who register after the deadline.

2.6 Mandatory participation in class and mandatory assignments

2.6.1. Mandatory participation in class
Attending classes is generally not mandatory. However, many courses (practical courses, laboratory courses, etc.) require active participation to pass the course. In connection with projects, giving presentations and acting as a critic in relation to presentations given by other students may be mandatory. If participation is mandatory, this must be specified in the course description.
2.6.2. Mandatory assignments etc.
Submission of assignments and reports may be optional for students, a prerequisite in order to qualify for taking the exam, or the assignments may form part of the exam. Students can only expect to have take-home assignments assessed that have been submitted on time.

If mandatory assignments do not constitute the basis for assessment but are a prerequisite for taking the exam, this must be stated in the course description. The mandatory assignments must meet the learning objectives for the course in terms of form and content, and it is expected that the course coordinator provides the students with feedback on the assignments.

The individual course coordinators decide on the criteria for approval of mandatory assignments and inform the students.

2.6.3. Illness or other legitimate reasons for absence from mandatory activities
Students who, due to illness or for other legitimate reasons, are prevented from participating in mandatory teaching modules or completing laboratory or workshop activities must notify the lecturer responsible as soon as possible. The student can agree with the lecturer to retake the mandatory activity or have it replaced by a similar activity. If this is not possible, the student is entitled to take the activity again the next time the course is offered. The student must be able to document the reason for being absent.

If the student is unable to participate in the exam in the course due to legitimate absence, the student must submit documentation for the reason for the absence, if the exam is not to count as an exam attempt (see ‘Illness in connection with exams’ under ‘Exams’).

2.7 Deadlines for publication of teaching material and syllabus
Information about material forming part of the exam syllabus must be available on DTU Inside no later than three weeks before the end of the teaching period together with a description of the syllabus or other reading guidelines.

2.8 Project courses
The content of a project course is agreed between the student(s) and a DTU supervisor. Registration for project courses takes place at the relevant department via the project reporting system before the project course starts.

The ECTS credit for a project course ranges from 5 to 30 ECTS credits with intervals of 2.5 credits. 5 ECTS credits correspond to around three weeks of full-time study. In exceptional cases, it is possible to take a project course corresponding to 2.5 ECTS credits, for example if the course constitutes the final element of the programme. In such case, the lecturer must contact the Office for Study Programmes and Student Affairs with a view to registering the course.

The project period for a project course cannot extend six months. The agreement made regarding a project course is binding on both parties, but can be changed according to agreement between the parties. The project course must be documented in a report or similar.

If a student fails a project course a re-exam is possible. The supervisor makes this decision based on academic reasons. The department board of studies make a decision in the event of a disagreement.
between the student and the supervisor. The student can always plead for the right of three examination attempts in the course.

2.8.1 Projects in cooperation with a company (project-based exams)
A project course can be carried out entirely or partially with a company in Denmark or abroad (a project-based exam). The academic content, learning objectives as well as form of assessment and grading must be agreed with a DTU supervisor. The supervisor is responsible for ensuring that the project has a sufficient academic/theoretical level. The ECTS credit total is based only on the expected project workload, which means that the duration of the internship with the company is not credit awarding.

The students are responsible for finding a company, but many departments have contact with a number of companies. It is recommended that students carry out projects in cooperation with companies in the final part of the study programme.

Students can also search the DTU Internship and Project Bank where company projects are posted, among other things. DTU’s Internship and Project Bank can be found at Projektbank.dtu.dk.

When completing an unpaid project-based exam students may under certain conditions receive a token of appreciation from the company. The token of appreciation may have a worth of up to DKK 3,000 per month and may not be given as a pre-agreed upon income, like a salary.

Project proposals
Students are recommended to draw up a project proposal to be signed jointly by the student, the supervisor, and the company, since all three parties must agree on the project.

The project proposal should contain the most important details related to the project: project title, specific tasks, expected working hours/time of arrival, duration of the internship with the company, etc. If the company makes requirements in relation to confidentiality and rights to use the project, two separate agreements can be made with the student and DTU, respectively.

The project supervisor can refer the student to the person responsible for contracts at the relevant department. The project supervisor can find an overview of persons responsible for contracts on DTU Inside under ‘Forskningssamarbejde, jura og kontraktforhold’ (in Danish only).

Insurance
During an internship with a company in connection with a project, the insurance taken out by Polyteknisk Forening (PF student association) does not provide cover (see ‘Insurance for students’).

2.8.2 Portfolio credit courses
By registering for a portfolio credit course, BSc and MSc students have the opportunity to obtain up to 10 ECTS credits in the elective courses group for competences acquired through work experience, starting their own business, online courses, etc. after admission to their current study programme at DTU. Students generally register for the portfolio credit course after acquiring the relevant competences.

In the portfolio credit course, the students account for the academic/professional competences acquired in a report. The competences must be at the same or at a higher level than the level the students would otherwise achieve on the study programme. A portfolio credit course can be equivalent to 5, 7.5, or 10 ECTS credits. Students must register for a portfolio credit course at a department, and each student must be assigned a DTU supervisor, who determines the evaluation and assessment form.
2.8 Evaluation of teaching

At the end of the semester, the teaching in all courses are evaluated via DTU Inside. The students complete the evaluation forms anonymously. Evaluations are processed by the board of studies at the department.

The evaluation of a course comprises three forms:

**Form A:** Evaluation of the course in general
**Form B:** Evaluation of the course coordinator/lecturers
**Form C:** Free-text proposals (text fields where students can give praise or criticism in their own words)

Form A is available to everyone. A summary of the course evaluations is published on DTU's homepage.

Forms B and C are confidential as they may contain sensitive personal information. The evaluations may, however, be accessed by the following persons:

- The relevant head of department and managers with direct HR responsibility
- All members of the relevant board of studies
- The course coordinator
- When the course comprises a mandatory element of the programme, the relevant head of studies.

2.10 Complaints regarding teaching and supervision

Students who are dissatisfied with the teaching in a given course or with the supervision received in connection with a project must contact the lecturer/supervisor concerned immediately to find a solution to the problem. If this does not solve the problem, the following rules for complaints regarding teaching/supervision have been established:

- Complaints must be justified in writing and submitted to the board of studies at the department offering the course within two weeks of the announcement of the student’s grade. A list of study board chairmen at the individual departments can be found on DTU Inside under ‘Study board chairmen’.

- The department board of studies informs the head of department about the complaint if the complaint concerns issues relating to personnel, and makes sure that the lecturer/supervisor gets the opportunity to comment on the complaint.

- As soon as possible after the consultation of the lecturer/supervisor, the department board of studies forwards the decision to the student, and a copy is provided for the head of department.
● If the student’s complaint is upheld, the head of department, based on the decision of the department board of studies, will decide on any measures that need to be taken with regard to the lecturer/supervisor.

● The decision must contain the grounds for rejection and a procedure for complaints, in case the student’s complaint is not fully upheld, see below.

● If the student does not accept the decision of the department board of studies, the student can file a complaint to the dean of the programme in question no later than two weeks after the student has received the decision. The complaint must be justified in writing and submitted via student email to the Office for Study Programmes and Student Affairs to studenterklager@dtu.dk. The complaint must be accompanied by the documents included in the original complaint to the department board of studies.

● The decision of the dean is final unless any procedural errors have been made. If the student believes that there are procedural errors in the dean’s decision, the student in question can appeal to the Danish Agency for Science and Higher Education. The appeal must be filed within two weeks of announcement of the dean’s decision. It must be justified in writing and submitted to the Office for Study Programmes and Student Affairs (studenterklager@dtu.dk) who forwards the appeal to the Agency.

2. Study Programme Rules

The study programmes at DTU consist of courses which include lectures, seminars, classes, practical exercises, projects, etc. A course can have a duration of more than one teaching period.

The academic year is divided into six teaching periods. Two 13-week periods in the autumn and spring semesters, respectively, each followed by an exam period of about two weeks, and four 3-week periods followed by exams in January, June, July, and August, respectively.

The order and scheduling of mandatory courses, academic content, teaching and working methods, as well as any prerequisites are specified in the programme specifications for each study programme and the individual course descriptions. Mandatory study elements can generally not be taught in July/August exclusively.

BEng and BSc courses are usually taught in Danish, except for courses on the English-language BSc programme in General Engineering. A limited number of courses can be offered in English on other BSc and BEng programmes.

All MSc courses are taught in English.

Sound- or video recording of teaching sessions at DTU are not allowed unless the teacher has approved this in writing. Recordings are only for personal use unless the teacher has allowed publication of the recording, including what kind of publication.

Lectures at DTU are generally open to the public. A teacher can, however, deny access to the public due to considerations of space or order and can hence reject listeners who are not registered for the course. Only students registered for the course may participate actively in the class.
Rules and regulations chapter 3

3. Exam rules

Each course and project concludes with an exam. The objective of the exam is to assess the extent to which the student meets the learning objectives defined for the course or project. The exam must reflect the overall course objectives, learning objectives, and content.

Type of assessment, date of examination etc. can be found in the course descriptions at DTU Course Base.

3.1 Registration and withdrawal

All approved course registrations are automatically transferred to exam registrations at the end of the supplementary registration period. Students are responsible for all other exam registration.

Students’ exam registrations can be found at DTU Inside in the tab ‘Toolbox’ under ‘Course registration’. Here students can also withdraw exam registrations and register for other exams if he/she wish to participate in the exam in other/more courses than those transferred from the course registrations, for example re-exams.

Registration is binding after the deadline for exam withdrawal, and an exam attempt has been used even if the student does not participate in the exam.

Even if a student has passed one or more part-exams in a course, this does not count as an exam attempt if the student withdraw from the exam within the current deadlines. The student must pay attention to the rules for part-exams in connection with re-exams. These rules can be found at DTU Inside under ‘Re-exams’, ‘Exam’.

Students must register for and withdraw from any subsequent second or third exam attempt within the current deadlines. Similarly, students who have withdrawn from their first exam attempt in a course, must register for a new exam in the course unless they register for the course once more.

Students can find the deadlines for exam registrations etc. on DTU Inside under ‘Deadlines for registration for and withdrawal from courses and examinations’ under ‘Exam’.

The students are responsible for ensuring that they are registered for the right exams.

Students cannot register for exams in courses which have already been passed (grade 02 or higher or ‘Pass’).

If, after the publication of the dates for written exams, it transpires that a student has registered for two exams which overlap, the student is entitled to withdraw from one of the written exams and instead take the exam in question in the next (re-)exam period. The same applies to oral exams if the student is unable to arrange a different time of examination for the oral exam with the examiner. The above also applies if two re-exams overlap. The student shall contact the Office for Study Programmes and Student Affairs through studieservice@adm.dtu.dk.

Exam attempts

Students are entitled to three exam attempts in each course or project.
Even though several versions of the same course with different course numbers may be available, students only have three exam attempts. This also include one or more exam attempts used under vacant place scheme (vacant place on DTU’s courses offered to students as a part-time programme). Several versions of the same course both cover courses with different course number and/or title and courses that are not applicable with other courses.

Students who do not pass a third exam attempt are obliged to apply for an exemption to be granted an additional exam attempt immediately after the announcement of the grade for the third exam attempt. If they fail to do so, they will no longer be entitled to be enrolled in the study programme. The Exemption Committee’s granting of a fourth exam attempt must take place at the next (re-)exam of the course. These rules also apply to students who do not pass a forth exam attempt etc.

All activities that form part of the programme must be assessed. To obtain an assessment, students must be registered for the exam in the activity. Students may not participate in an exam or have, for example, a substitution paper assessed if they are not registered for the exam in the course.

Students should be present at written exams (on-site exams) 15 minutes before the exam starts in order to be ready at the time when the exam starts. Students who show up after the exam has started will not be allowed to participate in the exam.

If students are registered for an exam after the deadline for withdrawal and they do not turn up at the exam, it is regarded as an exam attempt. This is also the case if students fail to submit and/or have not had mandatory assignments approved in order to qualify for exam participation.

For guest students and students in part-time programmes, special rules apply for exam registration. Find information on special rules for students in part-time programmes at DTU's webpage.

BEng projects, BSc projects, and MSc theses also conclude with an exam, but registration is made via the project reporting system by the department with which the student is affiliated. (See ‘My programme specification’)

### 3.2 Assessment forms and grading

The assessment consists of a grade based on the 7-point grading scale or the assessment ‘Pass’ or ‘Fail’. The assessment ‘Pass’ or ‘Fail’ can only be used for tests/exams accounting for up to one third of the study programme’s ECTS credits. This does not apply to exams for which credits have been transferred from other universities.

The assessment ‘Did not sit exam’ (Ej mødt) is used when the student has been registered for the exam without taking part. The assessment ‘Not approved’ (Ikke godkendt (IG)) is used when a student has failed to submit the mandatory assignments required in order to be able to sit an exam. (See ‘Mandatory participation in class and mandatory assignments’ under ‘Teaching’).

The assessment ‘CHEAT’ (Snyd) is used if the student has had a course cancelled after violating the exam rules (exam cheating).

Exams may be written, practical, oral, or a combination of these, for instance a series of part-exams during the course.

In connection with the approval of course descriptions, the department board of studies decides on the form of assessment, including part-exams, to be used on the course.
Students must be assessed individually. In connection with both individual exams and group exams, an assessment must be made of the performance of each individual student, and individual grades must be awarded. For group projects, each individual student must be given his or her own grade or assessment; it is thus not possible to give a grade for the group as a whole.

In connection with their assessment, the external and the primary examiner must take notes about the candidate’s performance and the grading for use in the event of a future appeal. The notes must be kept for at least a year, and until the conclusion of any appeal procedure.

3.2.1. Requirements for passing exams and part-exams
An exam has been passed when the student has obtained the grade 02 or higher according to the 7-point grading scale or has obtained the assessment ’Pass’.

All mandatory activities in a course (except e.g. laboratory exercises which cannot be assessed and mandatory assignments which are a prerequisite for exam participation) must be included in the assessment.

A course comprising several part-exams can be assessed based on either an overall assessment or a weighted average of the part-grades. In connection with overall assessments, students only obtain one grade for the course. If students obtain part-grades they are informed of the grades regularly, and the final and overall grade is the weighted average of the part-grades, rounded up or down to the nearest grade on the 7-point grading scale.

The requirements for passing exams if part-grades are awarded are that 1) the average grade for part-exams must be at least 02 without rounding up, and that 2) no part-grade must be less than 00.

For some courses, it may be relevant to deviate from the above rule or to establish additional requirements for part-grades. Such deviations must be approved by department board of studies and the dean. The deviations must be stated in the course description.

If the student does not attend a part-exam for which a part-grade is given, the part-grade -3 will be awarded for the part-exam and included in the calculation of the overall grade for the course. The course will thus be assessed as not passed (i.e. -3), see above. This is also the case if a student does not attend an exam which is a prerequisite for making an individual assessment of a performance, such as a group project, as the student’s contribution to the group presentation cannot be established.

All part-exams in a course must be taken in the same course module, unless otherwise stated in the course description. Part-exams cannot be retaken if the course has been passed (see ‘Requirements for passing exams and part-exams’ under ‘Assessment form and grading’ under ‘Exam’).

Students can only file complaints regarding part-grades if a change of the part-grade will change the overall grade. A complaint regarding a part-grade can only be filed when the student has been notified of the grade.

3.2.2. Individual assessment of group projects etc.
The exam for a course may consist of written reports, posters, or similar. Such written work can be carried out individually or as group projects.

DTU recommends a maximum of six students for group projects in connection with courses. The individual course coordinator may decide on a maximum number which is lower or higher than six if appropriate from the point of view of the learning objectives.
Special rules apply regarding group size in the case of BEng projects, BSc projects, and MSc theses. (See ‘My programme specification’)

Group projects can be written in two different ways. The form of assessment depends on whether the project is individualized or not, see below.

For a group project, an independent grade or other assessment can only be awarded if the individual student’s contribution to the project can be ascertained (individualization). A group project is not deemed to be individualized if the students merely state, for example, that they have contributed equally to all sections of the report, etc. It must be clearly indicated which sections each student is (primarily) responsible for.

Before the students commence a group project, the course coordinator must inform the students whether or not they are required to individualize the project. If a group project does not comply with the course coordinator’s requirements for individualization or other formal requirements, the paper may be rejected and no assessment given.

a. Group projects without individualization
A group project where the students’ individual contributions are not indicated must always be followed by an oral exam, as it is not possible to carry out an individual assessment on the basis of the group project alone. The assessment is then based on an overall assessment of the project and the subsequent oral exam. The oral exam can be either an individual exam (i.e. one student at a time) or an oral group exam. (See ‘Oral group exams’ under ‘Exam forms’ under ‘Exam’)

b. Group projects with individualization
Several students can contribute individual sections to a joint report. Provided that the students’ individual contributions are clearly distinguishable in the joint report, a subsequent oral exam is not required. It is accepted that general descriptive sections such as the introduction and the conclusion are prepared jointly. However, the most important sections in a group project must be individualized.

3.3 Use of aids and materials at written exams

Exam assignments must generally be formulated in such a way that prevents them from becoming an aids and materials exam. Emphasis must be placed on testing the students’ academic knowledge at the time of the exam.

Students must not gain unauthorized access to information during the exam, including using the Internet. Therefore, students are not allowed to bring mobile phones etc. The exam paper submitted must be prepared during the exam.

Calculators, computers, and other electronic aids must not be set up in a way that enables communication with others inside or outside the exam room.

Aids and materials permitted at exams are specified in the course description. There are three options:

1. No aids and materials permitted (except from standard dictionaries and calculators)
2. Written materials permitted (i.e. books, notes, old take-home assignments, etc. but not technical aids, for instance a laptop)
3. All aids and materials permitted (i.e. a standard laptop, tablet, or similar in addition to written materials).

Students are always allowed to bring standard dictionaries, i.e. spelling dictionaries, contemporary language dictionaries, and other language dictionaries, but not, for example, technical or medical dictionaries. This does, however, not include language exams where dictionaries are not permitted.

Students are always allowed to bring a calculator, unless the department forbids the use of calculators or makes one available at the exam. The department can make computers available at the exam, in which case students are not allowed to bring their own computer.

Students are not allowed to use their own printer at the exam.

Violation of the rules of using aids and materials at written exams can lead to disciplinary measures towards students according to the rules regarding cheating at exams. Find more information on this at DTU Inside under 'Cheating at exams and other forms of assessment' under 'Exam'.

Students are responsible for any aids and materials they bring to the exam, and DTU generally does not make any type of facilities available for their use. Students are not granted extra time if the aids they have brought to the exam have a malfunction, are out of power etc.

It is possible to apply for special conditions at a written exam and thus obtain permission to use compensating aids (e.g. assistive aids for dyslexics) for written exams, where aids are otherwise not permitted. (See ‘Special conditions for written exams’ under ‘Exam’)

3.4 Cheating at exams and other forms of assessment

DTU has established principles for good scientific and ethical conduct/practice at DTU, which, among other things, state that through their projects and conduct during courses, students must show that they have understood the principles of good scientific practice. DTU’s principles for good scientific conduct can be found at DTU Inside under ‘Research’ and ‘Principles for good scientific conduct’.

As of the academic year 2017/2018, DTU has introduced an Honour Code for exams. At the beginning of their studies, students must actively express their acceptance of the code in order to continue their studies at DTU. Acceptance of the Honour Code is a part of the commencement of studies exam for newly admitted BEng and BSc students. Newly admitted MSc students must express their acceptance of the code in connection with registration for courses in the 1st semester. More information on DTU's Honour Code can be found at DTU Inside under ‘Structure and Rules’.

Thus DTU requires that students at DTU demonstrate independence in their work, and that the exam always reflects the students’ own work.

Cheating at exams and plagiarism

DTU considers it cheating if students at an exam hand in work which they have not independently produced at the exam in question, if students use prohibited aids and materials at an exam, if students gain unauthorized access to information during the exam through other students or by using the Internet, or if students demonstrate academic dishonesty, for example by manipulating or falsifying data. DTU also considers it exam cheating if a student helps another student violate the exam rules.
Written assignments may only be submitted for assessment once. Written assignments previously assessed at DTU or another educational institution may not be reassessed, regardless of the grade earned and whether the assignment is the result of the student’s own previously submitted work.

Examples of violation of the exam rules also include plagiarism in the form of copying entire documents or parts of documents from the Internet or copying other people’s exam papers. Violation of the exam rules can also be copying own previous exam papers/assignments, communicating on tasks during individual exams with invigilation, or falsifying data from laboratory tests or analyses. Cheating at exams furthermore includes not complying with the rules on correct quotation or referencing.

The general rules regarding quotations and references in connection with written assignments state that direct quotes from other people’s work or own work must be indicated with quotation marks at the beginning and end of the quotation, and a precise reference to the source of the quote must be made either in parenthesis or in a note, including the pages on which the quote is found. If the quote is not rendered word by word, but derives from a specific source, the source must also be indicated in parenthesis or in a note with reference to the relevant page numbers. Sources must be listed in the bibliography.

‘Stop plagiarism’ (www.stopplagiat.nu) is a web tutorial for students on plagiarism. Here you can find further guidelines on quotes and source references.

3.4.1. Procedure in case of cheating at exams

The department must notify the Office for Study Programmes and Student Affair via eksamenssnyd@adm.dtu.dk if there is suspicion of violation of the exam rules. Violation will lead to disciplinary sanctions (see ‘Disciplinary measures’ under ‘Structure and rules’).

Following consultation of the student suspected of violating the rules, the Office for Study Programmes and Student Affairs makes a decision on the matter. If the student maintains that there are legal discrepancies in the decision, the student can appeal to the dean of the relevant programme within two weeks of receiving the decision.

The Office for Study Programmes and Student Affairs can choose to cancel an exam and request the student to resit the exam if there are reasonable grounds for suspicion of irregularities in connection with the student’s exam paper which strongly indicate that the student’s achievement of the current learning objectives cannot be assessed of the basis of the exam. The exam form in connection with the new exam may differ from the exam form at the ordinary exam. Exams which are cancelled due to suspicion of irregularities are not considered an exam attempt.

If the new exam confirms suspicions of cheating, a decision is taken in accordance with DTU’s rules regarding disciplinary measures for students.

If the new exam does not confirm the suspicions of cheating, the decision is taken the student cannot be deemed to have violated the exam rules. The student is assessed based on the performance at the new exam.

3.5 Special exam arrangements

3.5.1 Special arrangements at written exams

The Office for Study Programmes and Student Affairs may allow special exam arrangements at written exams within the ordinary exam periods for:
1. Students with physical or mental impairment (e.g. physical disability, dyslexia, etc.). The impairment must have a significant impact on the student’s potential exam performance.

2. Students in their first year of study in Denmark whose native language and qualifying exam are not Danish, provided that the exam is in Danish only.

3. Students with similar difficulties, for instance students who are in the last month of pregnancy or who are breastfeeding an infant.

The reason for granting special arrangements must always be documented. Exam stress is not a valid reason for allowing special arrangements.

The following is considered valid documentation: a) dyslexia test, b) a doctor’s note from your own GP or a consultant describing the applicant’s study/exam-related challenges, c) documentation for a non-Danish qualifying exam (if applying on the basis of first year of study in Denmark), and d) a pregnancy journal (if applying due to pregnancy/birth).

For special exam arrangements to be allowed, the Office for Study Programmes and Student Affairs must deem this to be necessary to ensure that the student is examined on equal terms as the other students. It is a precondition for allowing special exam arrangements that the academic level of the exam is not lowered.

Applications for special exam arrangements must be submitted to aus-sps@adm.dtu.dk by 1 November at the latest for winter exams, by 15 April at the latest for summer exams, and by 15 June at the latest for re-exams in August. The application form can be found here at DTU Inside. In the case of emergencies (e.g. a broken arm), students can apply after the deadline by writing to studieservice@adm.dtu.dk.

If you want to apply for special arrangements at written exams outside the ordinary exam periods, you need to refer to the conditions for oral examinations (see section 3.5.2), because these exams are administratively handled by the departmental course coordinators.

3.5.2 Special arrangements at oral exams
The course coordinators may allow special arrangements at oral exams.

The circumstances which form the basis for allowing such special arrangements must be documented. Exam stress is not a valid reason for allowing special arrangements.

The following is considered valid documentation: a) dyslexia test, b) a doctor’s note from your own GP or a consultant describing the applicant’s study/exam-related challenges, c) documentation for a non-Danish qualifying exam (if applying on the basis of first year of study in Denmark), and d) a pregnancy journal (if applying due to pregnancy/birth).

For special exam arrangements to be allowed, the course coordinator must deem that it is necessary to ensure that the student is examined on equal terms with the other students. The Office for Study Programmes and Student Affairs can assist the course coordinators in making this assessment as required. It is a precondition for allowing special exam arrangements that the academic level of the exam is not lowered.

In order to apply, the student must contact the course coordinator no later than one month before the oral exam in order to secure an agreement.
3.6 Illness in connection with exams

Students who are unable to participate in an exam or who have to leave an exam due to illness must, no later than two weeks following the date of the exam, send documentation of the illness to the Office for Study Programmes and Student Affairs through student mail to studieservice@adm.dtu.dk. If this procedure is followed unattended exams during the period of illness will not count as exam attempts. The student in question must bear the expenses for the medical certificate.

Students who become ill during the exam must notify an invigilator or examiner before leaving the exam.

If a student choose to complete an exam despite not feeling well, it will count as an exam attempt.

Students must contact the doctor on the day of the exam or the proximate weekday at the latest.

It is the students' responsibility to register for a new exam attempt in the same course.

If a student is unable to comply with one of the deadlines specified for the programme due to documented illness, the deadline will be extended until the next (re)-exam is held in the course in question without the student having to submit an application. If the student remains ill at the next exam in the course, the student must submit an application for an exemption to have the deadline extended again. However, the above does not apply if a deadline is granted through exemption. This also apply if an exam attempt has been granted through exemption in order to be used before an exact deadline. In such cases, students must immediately apply for exemption for a renewed postponement of the deadline.

If a student is unable to participate in an exam due to severe illness of a family member or friend, or in case of a serious event that may affect the student’s performance at the exam, the student can apply for cancellation of the exam by submitting relevant documentation to the Office for Study Programmes and Student Affairs via student mail to studieservice@adm.dtu.dk. If the student has already completed the exam, it will count as an exam attempt, and the exam cannot be cancelled.

If a student falls ill while completing the final project (BEng project, BSc project and MSc thesis) the rules in the students programme specification apply. See ‘My programme specification’.

3.7 External examiners and confidentiality

All external examiners used at DTU must be members of the nationwide engineering examiner corps (www.censornet.dk).

The external examiners' activities are covered by the Public Administration Act, including the provisions on disqualification and secrecy.

The course description specifies whether a course is assessed by an external examiner or as an internal examination. Final projects are always assessed by an external examiner.

Projects which, entirely or partially, are carried out with private companies, may, taking into account any information about trade secrets, know-how etc., be treated as confidential, which means that the oral presentation will not be open to the public. It may be agreed that the report must not be made publicly available.
3.8. Deadlines for grading

Exams in 13-week courses:
No later than 20 work days after the day of the exam.

3-week courses:
No later than 20 work days after the last day of the 3-week period.

Engineering internship:
No later than 20 work days after the submission date of the report.

BEng project/BSc project/MSc thesis
The grade is awarded in connection with the oral exam. The oral exam must be held no later than 10 work days after submission of the written report.

In exceptional circumstances, the head of department can approve a later exam date.

3.9 Re-exams

Students who have not passed a course in the first exam attempt must register for the subsequent exam in the course.

When the re-exam takes place depends on when the course is offered:

- For courses offered in the 13-week period in the autumn with a regular exam in December, there is a re-exam period in May
- For courses offered in the 13-week period in the spring with a regular exam in May, there is a re-exam period in August
- For courses offered in the 3-week period January with a regular exam in January, there is a re-exam period in May
- For courses offered in the 3-week periods June and July with a regular exam in June and July, there is a re-exam period in August
- For courses offered in the 3-week period August with a regular exam in August, there is a re-exam period in December

Courses offered in several of the above teaching periods have correspondingly several re-exam periods.

If a course, exceptionally, from a safety or academic assessment, is not suitable for being offered for re-exam, students who have not passed the course must take the course again. This must be stated in the course description under 'Teaching and learning method'.

A student may participate in an offered re-exam without taking part in the previous ordinary exam in a course if the student meets the requirements for participation in the exam. See below under 'Mandatory assignments, oral presentations etc. as a prerequisite for exam participation’

An overview of exam dates can be found at DTU Inside (See 'Dates of exams' under 'Exam').

Registration for- and withdrawal from re-exam must be completed within the applicable deadlines (see 'Deadlines for registration for and withdrawal from courses and examinations' under 'Exam').
The examination form at the re-exam may be different from the ordinary exam. The examination form at the re-exam must be communicated to the students by the course coordinator 14 days before the start of the re-exam period. (However, see 'Exam forms' under 'Exam' regarding written exams (written on-site exams), with fewer than 10 registered students).

For rules regarding re-exam in project courses, see 'Project courses'.

3.9.1. Mandatory assignments, oral presentations etc. as a prerequisite for exam participation
A student who, in a course, does not meet the prerequisite for exam participation as stated in the course description, may first register for the re-exam in the course when the course coordinator has given the student the opportunity to fulfill the prerequisite for exam participation, if necessary, by taking the course again. It is the student's responsibility to contact the course coordinator and clarify this question. Prerequisite assignments etc. at the re-exam, may differ from those at the previous examination.

Students who fulfill the prerequisite for taking an exam in a course but do not pass the exam may resit the re-exam in the course in the next re-exam period without having to hand in the mandatory assignments, etc. again.

Students who choose to wait for their re-exam or do not complete their re-exam cf. above, is not entitled to (yet another) re-exam on the basis of previously approved / passed prerequisite assignments etc. However, based on an academic assessment, the course coordinator may approve that the student register for the re-exam without having to resubmit the prerequisite assignment.

Read more at DTU Inside under 'Mandatory participation in class and mandatory assignments'.

3.9.2. Part-exams that are included in the assessment of a re-exam
In courses with part-exams, the student sits the re-exam in order to pass the part-exam(s) which have not passed at the previous exam. If part-exams are assessed in a course based on an overall assessment, i.e. without the use of part-grades, the student resits the re-exam in order to complete part-elements of the course, which enables the student to pass the course on an overall reassessment.

As a general rule, already passed/approved part-exams are included in the proximate re-exam period and also in later (re)exams. However, under special circumstances, students must re-sit approved/passed part-exams in connection with re-exams. The course coordinator makes this decision based on an academic assessment.

In the case of disagreement between a student and a course coordinator regarding whether or not a part-exam must be resat in connection with re-exams, the department board of studies decides.

Read more about part-exams at DTU Inside under 'Assessment forms and grading' Under 'Exam'.

3.9.3. Special circumstances regarding final exams
If a student has been ill at the (re)exam during exam period, in which the student should have completed his/her education, the student will be able to sit the re-exam in the same exam period or immediately after to the re-exam period. This also applies to a student who does not pass (non-attendance, grade -3 or 00, or not passed) a single (re)exam in the exam period in which the student should have completed his / her education. Students who have been absent from the exam (non-attendance) are not entitled to a quick re-exam.
Students wishing to take a quick re-exam according to the above rules, should contact the Office for Study Programmes and Student Affairs in person no later than 14 days after publication of the grade. The student must contact the relevant institution immediately after approval from the Office for Study Programmes and Student Affairs.

3.10 Exam complaints

Exam complaints must be submitted within two weeks of the announcement of the grade on DTU Inside. For oral examinations, the deadline is two weeks after the examination is held.

If possible, within the time limit students are encouraged to discuss their exam paper/performance with the course coordinator/examiner before submitting an exam complaint. The two-week submission deadline, however, still applies.

Complaints can be submitted regarding:
1) Legal issues
2) The basis for examination (questions, assignments etc.)
3) The exam process
4) The assessment

- The complaint must be in writing and justified. Dissatisfaction with the grade without further justification does not suffice and does not qualify as a justified complaint. Complaints without sufficient justification will be rejected without being handled.
- Complaints must include the student’s name, address, student ID number, and course number of the relevant course. The complaint must be submitted using the student email (sxxxxxxx@student.dtu.dk) to the Office for Study Programmes and Student Affairs via email to studenterklager@dtu.dk
- The Office for Study Programmes and Student Affairs forwards the complaint to the examiner and, if relevant, the co-examiner, who submit a statement on the assessment and all of the student’s objections.
- The assessors’ statement is then forwarded to the student, who has one week to comment on the statement.
- A decision on the matter is made by the Office for Study Programmes and Student Affairs on the basis of the assessors’ statement and the student’s comments, if any, and may be one of the following:
  1) Offer of a reassessment (new assessment) by new assessors – however, this type of ruling is not possible in connection with oral exams
  2) Offer of a re-exam (new exam) assessed with new assessors
  3) The student’s complaint is not upheld.

If the student is offered a reassessment or re-exam, the student has two weeks to accept the offer. The student must be aware that a re-exam and a reassessment may result in a lower grade. It is not possible to complain about the assessment of a re-exam or a reassessment unless the complaint concerns legal issues.

If the student’s complaint is not upheld, the student has the possibility of appealing against the decision. The appeal must be filed within two weeks of announcement of the decision. It must be justified in writing and submitted to studenterklager@dtu.dk using the student email address. The decision is made by a board of appeals of 4 members appointed specifically to make a decision on the matter, comprising two external examiners, a lecturer, and a student within the relevant subject
area. The decision of the board of appeals may be 1) to offer a reassessment by new assessors (however, not in connection with oral exams), 2) to offer a re-exam with new assessors, or 3) that the student’s appeal is not upheld. The board of appeals is in no position to lower or higher the student’s grade. The decision of the board of appeals cannot be further appealed with respect to academic issues.

3.11 Exam certificate/diploma

When a student has completed a study programme at DTU, DTU issues an exam certificate/diploma. The exam certificate/diploma lists all the exams which the student has passed within the student’s curriculum.

The exam certificate/diploma is dated with the date on which the study programme ended:

- If the final element is a BEng project, a BSc project, or an MSc thesis, the exam certificate/diploma will be dated with the date of the oral presentation.
- If the final element is a course, the exam certificate/diploma will be dated with the date on which the last course was assessed.

The exam certificate/diploma will be sent to the student’s registered address no later than two months after the end of the study programme (however, not including July).

Students who are disenrolled from a study programme at DTU without having completed it will receive documentation for any successfully completed parts of the programme stated in ECTS credits.

Rules and regulations chapter 4

4. Credit Transfer, Studying Abroad, Exemption, Leave, etc.

4.1 Credit transfer from previously non-completed study programmes at the same level (pre-commencement credit transfer)

Upon admission to DTU’s BEng, BSc, and MSc programmes, students are obliged to apply for credit transfer for passed programme elements (courses etc.) from all previous non-completed study programmes at the same level. This may, for example, be the case if an applicant to a BSc programme has previously been admitted to another BSc programme without having completed the programme.

If it is deemed that credit transfer for programme elements can be granted to the mandatory parts of the programme, students will be granted credit transfer. If it is deemed that credit transfer for programme elements can be granted to the elective parts of the programme, students can decide whether they want credit transfer. A credit transfer cannot be withdrawn once it has been granted. If students do not submit an application for credit transfer for previously passed programme elements at the same level or submit incorrect or incomplete information thereon, DTU may withdraw its offer of a place on the study programme.
In addition it is possible for students who wish so to apply for credit transfer for programme elements from previous completed study programmes at the same level.

For students admitted from the summer 2017 it applies for the BEng and BSc programmes that courses must be at professional bachelor or BEng level as a minimum. For the MSc programmes the courses must be at MSc level as a minimum.

BEng students who have completed a higher education programme in technical sciences prior to admission can apply for credit transfer for parts of the programme, provided that an established credit transfer agreement has been concluded. For information on current established credit transfer agreements, please send an email to merit@adm.dtu.dk.

When granted a pre-commencement credit transfer, students can still obtain a diploma from DTU even though credit transfer has been granted for more than half of the programme.

4.1.1 Non-transferrable programme elements
Students cannot be granted transfer of credits from the qualifying programme/exam.

It is not possible to transfer a master thesis from one MSc programme to another.

Study elements passed as part of an education completed more than five years prior to admission to DTU cannot be credit transferred. If the last element of an unfinished study programme has been passed more than five years before admission to DTU, study elements from the programme cannot be transferred. This includes previous study programmes at DTU as well as other educational institutions. In special cases the relevant Head of Studies can grant an exemption to this rule. The Head of Studies assesses whether or not an exemption can be made when processing the credit transfer application.

4.1.2 Study activity requirements and programme deadlines in relation to pre-commencement credit transfer
Students who have been granted pre-commencement credit transfer must still comply with the study activity requirement (30 ECTS credits in the first year of study and 45 ECTS credits in each of the following years of study). The number of transferred ECTS credits will not be deducted from the study activity requirement.

The maximum duration of study is reduced with one semester for each 30 ECTS credits the student has been granted in pre-commencement credit transfer.

The first-year exam is reduced corresponding to the student’s pre-commencement credit transfer.

4.2 Credit transfer during the study programme
Credit transfer means replacing elements forming part of the student’s study programme at DTU by courses or exams passed at another Danish or foreign educational institution. DTU may grant credit transfer upon submission of an application.

Courses must be ‘passed’, ‘approved’, or awarded at least the grade 02 on the 7-point grading scale in order to be transferred to the programme.

For BEng programmes, transferred courses must be at BEng level as a minimum, i.e. from an engineering college, a university college, or a university.
For BSc programmes, transferred courses must be at university level.

For MSc programmes, transferred courses must be at MSc level. MSc students, however, are entitled to take 10 ECTS credits at BSc level in the course of the MSc programme. BSc level courses always form part of the electives group.

BEng and BSc students must as a minimum pass courses and projects at DTU corresponding to 90 ECTS credits (BEng Arctic Technology: 105 ECTS credits and BEng Global Business Engineering: 120 ECTS credits) to receive a diploma for a full-time study programme at DTU. This rule does not, however, apply to pre-commencement credit transfer.

MSc students must as a minimum pass courses and projects at DTU corresponding to 60 ECTS credits to receive a diploma for a full-time study programme at DTU. This rule does not, however, apply to pre-commencement credit transfer.

As a rule, courses that will make students exceed the prescribed ECTS credit total of the DTU study programme cannot be pre-approved or transferred. In some cases, however, the amount of ECTS credits transferred are not exactly the same as the size of the courses at DTU. In these cases, students may register for a final course of up to 5 ECTS credits – even if this means exceeding the prescribed ECTS credits total of the programme in question.

4.2.1 Choice of courses
As regards credit transfer, a distinction is made between specific engineering courses and general engineering courses. Courses that do not have technical-scientific content, but fall within the learning objectives of the study programme, are categorized as general engineering courses. Students may earn the following number of ECTS credits within the general engineering course category:

- 15 ECTS credits on the BSc programme
- 10 ECTS credits on the MSc programme

Language and culture courses can only be approved in connection with study abroad semesters and may not exceed 5 ECTS credits. Such courses are always transferred as BSc credits and are therefore included in the maximum of 10 ECTS credits at BSc level which MSc students are allowed to take as part of their programme. For BSc and MSc students, they are considered part of the general engineering courses as described above. For BEng students, they are considered part of the elective courses. Only language and culture courses related to the country in which the student is on the exchange can be transferred. English language courses cannot be transferred to the programme. Pre-commencement credit transfer for language and culture courses will not be granted.

A Master thesis cannot be transferred to the MSc programme at DTU. Further rules regarding the Master thesis are stated in the programme specifications for the said MSc programme. Find the generic rules on master thesis at DTU Inside under ‘Master thesis’.

4.2.2 Pre-approval of credit transfer
Students must apply for pre-approval of credit transfer for planned programme elements from another university or another institution of higher education in Denmark or abroad. By applying, students give their consent to DTU requesting the necessary information from the host institution if the students are unable to procure the documentation themselves.
The pre-approval of credit transfer is registered as a course registration and ensures that students are registered as studying actively during the semester in which they are not registered for courses at DTU due to study stays etc. elsewhere. If the pre-approved courses, which the student is taking at the host university, change during the semester, the student must submit a new application for a pre-approval of credit transfer. Each application must include a complete list of courses taken at the host university.

4.2.3 Final credit transfer
All passed courses and ECTS credits must subsequently be transferred to the study programme. Therefore, students cannot apply for credit transfer for some of the passed courses or ECTS credits only. A credit transfer cannot be withdrawn once it has been granted.

In connection with credit transfer for completed programme elements from another educational institution, the grade ‘Pass’ will appear on the student’s DTU diploma.

4.2.4 Submission of applications
Applications for pre-approval of credit transfer and final credit transfer are submitted electronically via www.merit.dtu.dk. Other enquiries regarding credit transfer are sent to merit@adm.dtu.dk via the student email.

Applications must include course description, documentation of level, and workload. As regards final credit transfer, applications must also include documentation of passed and failed courses. In addition, an official description of the grading scale, according to which the course is assessed, must be enclosed.

4.2.5 Decision-making authority
The exemption committee for the BSc and MSc programmes (CMDU) and the exemption committee for the BEng programmes (DMDU) have authorized the heads of studies and the Office for Study Programmes and Student Affairs (AUS) to make decisions in cases related to credit transfer.

A decision on credit transfer is not valid until a written decision has been issued to the student by the Office for Study Programmes and Student Affairs (AUS) via www.merit.dtu.dk.

4.2.6 Students who have completed MSc courses on their BSc programme
Students who, as part of their qualifying exam, have passed a course or otherwise acquired academic knowledge and competences corresponding to courses in either the general competence group or the technological specialization group for the MSc programme must take a different course that contributes to the overall learning outcomes of the programme in question.

If the course in question belongs to the general competence group, students must choose a different course from the general competence group or the technological specialization group. In the latter case, students must contact the Student Services at studieservice@adm.dtu.dk.

If the course in question belongs to the technological specialization group, students must choose a different course in the technological specialization group.

If it is not possible to choose a different course in line with the above rules, students must obtain approval from the head of studies to take a different course that supports the academic profile of the study programme. The head of studies contacts the Student Services.
4.3 Studying abroad

A thorough description of the possibilities for studying abroad and the application deadlines can be found on DTU Inside under ‘Study Abroad’ or on DTU’s website.

To be eligible for an exchange place, students must meet the following criteria:

- Students enrolled on a BSc or BEng programme must have completed at least two years of study (120 ECTS credits) prior to commencement of the exchange stay, unless the student is attending a summer school abroad.
- Students must be enrolled on an ordinary full-time DTU programme at the time of application and during the entire exchange stay.

Students are expected to pass and transfer at least 20 ECTS credits per semester (however, not students attending summer school abroad) and comply with other study activity requirements made by DTU, the host university, and other relevant bodies. Students, who do not comply with this requirement, may be requested to repay any grants received from DTU.

4.4 Transferring to an MSc programme

Students lacking 55 ECTS credits or less of their BEng/BSc programme at DTU can apply to take MSc courses worth a total of up to 30 ECTS credits, provided that they wish to apply for admission to an MSc programme at DTU and meet the admission requirements and academic prerequisites for admission into the MSc programme in question. Exemption will not be granted for additional ECTS credits. The using of this rule may not lead to a prolongation of the total time of study of the BEng/BSc programme.

Students must take courses, which are part of their BEng or BSc programme concurrently with the courses forming part of the future MSc programme.

When processing the application, DTU places emphasis on whether the student is deemed to have the academic prerequisites to complete courses on the MSc programme concurrently with completing the BSc/BEng programme.

The student must still apply for admission to the MSc programme before completing the BSc/BEng programme.

An electronic application form can be found at DTU Inside under ‘Transferring to an MSc programme’. Students can only apply for one semester at a time. The application must be filled out and sent from the student email to kandidatopt@adm.dtu.dk no later than one week after the beginning of the semester. It is not possible to apply for an extension of the application deadline. Decision regarding the application will be sent to the student email.

In allowing the student to take MSc courses concurrently with completing the BSc/BEng programme, DTU makes no decision on whether the student has exceeded any study activity requirements or deadlines, is in need of extra examination attempts or exemption hereof etc.

Students who have taken MSc courses concurrently with completing their BSc/BEng programme must still comply with the study activity requirement following admission to the MSc programme. The number of transferred ECTS credits will not be deducted from the study activity requirement.
Applicable from the academic year 2018/2019 the maximum duration of study is reduced with one semester if students have passed 30 ECTS credits of MSc courses under the transitional procedure.

**MSc courses passed under the transitional procedure**

MSc courses passed under the transitional procedure will automatically be transferred from the BEng/BSc programme when the student is admitted to the MSc programme.

If the student chooses a different MSc study programme to that originally planned, only passed MSc courses, which are mandatory for the new study programme will be transferred. However, the student can always ask to have passed electives transferred. The same then applies as when changing study programme.

**MSc courses not passed under the transitional procedure**

For an MSc course, which the student does not pass under the transitional procedure, the rule on binding course registration applies. If the student wishes to be exempted from the course on the MSc study programme, the student must apply for an exemption to be released from the course.

If the student applies to do a different MSc study programme to that originally planned, his or her binding registration for a failed course will be cancelled unless the course is mandatory on the new study programme.

### 4.5 Exemption

Students who fail to comply with DTU’s rules governing their study programme may only continue their studies if granted an exemption. DTU’s exemption committee may grant an exemption from rules contained in curricula, course descriptions, and DTU’s rules and regulations, provided that the exemption does not conflict with any acts or ministerial orders in the field of education.

The decision of the exemption committee on an application for exemption is discretionary. The discretionary decision must be made after a detailed individual assessment of the student’s reasons for applying for an exemption.

Applications for exemption must be justified and accompanied by the necessary documentation. An application must always be accompanied by a realistic study plan (prepared in the study planner) as well as a transcript of records including all exam attempts.

Applications for exemptions can be justified by the following:

1. **Special circumstances**, such as personal illness, serious illness/death of a close relative (parent, grandparent, child as well as spouse/partner), civic duties to serve as a lay judge or juror, compulsory military service, or other unusual, external circumstances in the life of the individual student and for which the student is not usually responsible.
   A medical certificate for both physical and mental illness should include the doctor’s assessment of how the illness affects the ability of the student to study, including a prognosis of the duration of the disease.

2. **Functional impairment**, where any special educational support (SPS) does not compensate sufficiently for the impairment. Documentation must be provided for the impairment, including any compensation the student receives in the form of special educational support.
3. The student is an elite athlete. The applicant must attach a statement from the relevant sports association which documents that the student is an elite athlete.

4. The student is an entrepreneur. Students must as a minimum document either that they have their own business which has revenue and income-generating activities (company registration no. (SE no.), annual accounts, and a description of the company should be supplied), or that they are part of an entrepreneurial environment, for example an incubator or entrepreneurial environment at DTU or regional growth environments.

5. The student is chairman of a voluntary organization under the Danish Youth Council (DUF), a member of the board of Polyteknisk Forening (PF student association), or similar organizations, and is able to document that the activities are so time-consuming that being a full-time student is not possible.

Exemption in connection with maternity/paternity leave
Upon submission of an application, the study activity requirement will be reduced by 45 ECTS credits for biological parents. At the same time, the maximum period of study is extended by one year. Any first-year exams will be postponed correspondingly.
Upon submission of an application, the study activity requirement will be reduced by 22.5 ECTS credits for non-biological parents. At the same time, the maximum period of study is extended by six months. Any first-year exams will be postponed correspondingly.

Applications to reduce the study activity requirement on the basis of maternity/paternity leave must be made by sending an email from your student email address accompanied by the required documentation to studieservice@adm.dtu.dk.

Application to be released from a course
An application to be released from a course must be accompanied by a statement from the head of studies if the course is a compulsory course in the student’s curriculum. The justification and documentation requirements are stricter if it is not the first time that the student is applying to be released from a course.

Circumstances which do not generally entitle students to exemptions
As a general rule, the exemption committees do not grant exemptions based on the following circumstances:

- Regular or voluntary work
- Participation in committee and board work, including department boards of studies and the advisory committees for the MSc programmes (CUU) and BEng programmes (DUU), respectively
- Lack of knowledge of the rules governing the study programme
- Personal circumstances, such as housing or financial problems, etc.

The application
Applications for exemptions must be submitted electronically via the exemption application system www.dispensation.dtu.dk. You can read more about submitting exemption applications in the Student Counselling Office’s guide ‘Jeg skal søge dispensation’. Meeting dates for the exemption committees and application deadlines can be found at DTU Inside under ‘Datoer for dispensationsmøder’ under ‘Dispensation’.

Students who are not granted an exemption can appeal against the decision to the Dean of Undergraduate Studies and Student Affairs, who has been authorized by DTU’s President to deal with appeals regarding exemption decisions. The deadline for submitting an appeal is two weeks from the day on which the committee’s decision is announced to the student. Appeals must be made in writing and reasoned, and must be submitted via the exemption application system www.dispensation.dtu.dk.

### 4.6 Leave of absence

Students are able to apply for justified leave of absence from their study programme for up to one year. Leave of absence on special grounds may, for example, be due to, adoption, military service, or illness.

**Personal illness:**
Includes any illness, including mental illness, which leaves the student incapable of active study. A medical certificate is required as documentation, which must state that the student is unable to study as a result of the illness, and the medical certificate must also state how long the student will be or is expected to be ill.

**Illness of a close relative:**
Leave of absence can be granted to care for a close relative who is seriously ill or dying. Close relatives are parents, grandparents, children, and spouse/cohabiting partner. However, other persons may also be regarded as being close. It must be documented that the person in question is close, and that he or she is seriously ill.

**Other special circumstances:**
Leave of absence can also be granted due to other special circumstances that may justify this. Special circumstances are factors which make or will make it impossible for the student to engage in active study. In other words, factors which are beyond the control of the student and which must be documented.
Applications for leave of absence as well as documentation must be submitted to the Office for Study Programmes and Student Affairs at studieservice@adm.dtu.dk from the student’s student email address no later than three weeks into the required period of leave. The application form can be found at DTU Inside under ‘Leave of Absence’.

Students who have failed to comply with DTU’s rules regarding study programmes cannot apply for leave of absence until they have been granted an exemption to continue their studies.

All study activity must stop during the period of leave. This includes participation in courses and the submission of projects. However, students may continue to register for and sit exams in the exam period during their leave of absence.
Students will not receive monthly grants (SU) during their leave of absence, and any deadlines relating to the study programme, e.g. the first-year exam and maximum duration of study, will be extended by the period of leave (calculated in entire semesters).

To participate in elections to DTU’s governing bodies, students must not be on leave on the first day of the month in which the election is called, and must still be enrolled at the time of the election. Students may only exercise their voting rights and retain their eligibility during a leave of absence period exceeding six months if the period of leave expires at the beginning of the term of office at the latest.

During the period of leave, students must stay up to date on study announcements posted by DTU.

Students who want to return to their studies before the end of their leave of absence must send an email to studieservice@adm.dtu.dk to that effect.

If a student wishes to extend his/her leave of absence in excess of one year, the student must apply for an exemption for extended leave at www.dispensation.dtu.dk. More information can be found at DTU Inside under ‘Exemption’.

4.7 SU (State Educational Grant and Loan Scheme)

Students should note the differences between DTU’s study-related rules and the legislation governing the State Educational Grant and Loan Scheme. Exemptions from DTU’s study-related rules will therefore not take account of SU issues. Likewise, SU-related decisions will not have an impact on DTU’s study-related rules.

This means that students who are granted an exemption from DTU’s study-related rules do not necessarily comply with the terms of the Danish Act on the State Educational Grant and Loan Scheme for continuing to receive SU. Therefore, students may risk losing their SU in spite of any decisions made by DTU.

Rules on SU can be found on the website of the Danish Agency for Science and Higher Education: www.su.dk. All rules governing SU can be found in the Danish Act on the State Educational Grant and Loan Scheme (SU-loven) and the Ministerial Order on the Danish State Educational Grant and Loan Scheme (SU-bekendtgørelsen), (see ’Love og bekendtgørelser’). These rules constitute the basis for decisions made by the SU office at DTU.

Further information about SU can be found at DTU Inside under ‘State Educational Grant and Loan Scheme (SU)’.

4.8 Withdrawal from study programmes

Students who wish to withdraw from their study programme at DTU can use the withdrawal form at DTU Inside under ‘Withdrawal from study programmes’.

Please note a withdrawal cannot be cancelled.

There are several things a student has to be aware of when considering withdrawing from the study programme. Therefore it is always recommended to contact the International Study Guidance Office for guidance on the issue.
Students cannot be enrolled on more than one full-time study programme at the time.

4.9 Readmission

If previously enrolled students wish to study at DTU again, they must apply for readmission.

Applicants who have withdrawn from their study programme themselves can at the earliest be admitted to and enrolled on the programme five months after withdrawal.

Applicants who have been withdrawn from their study programme by DTU for study-related reasons or who have violated DTU’s rules at the time of application for readmission need to apply for an exemption. This can only be done after DTU has informed the applicant about the matters for which an application for exemption must be submitted. Applicants must apply for exemption regardless if they are applying for a different study programme than the one they have previously been enrolled in. If the exemption is granted, it will be decided if the applicant can be readmitted. If an exemption cannot be granted, the application for readmission will be rejected.

Applicants for readmission, who have already completed higher education, will be subject to the rules and regulations regarding the restrictions of a second degree.

If the last passed course of the student's former DTU programme has been passed more than five years before the readmission, the courses on the programme cannot be transferred to the student's new enrollment. In special cases, the relevant Head of Studies can grant an exemption to this rule.

4.9.1 Readmission into BSc and BEng programmes through ordinary admission

Applicants for readmission, who have not passed what corresponds to the first academic year on the programme to which they are applying for readmission, must apply for admission through KOT (www.optagelse.dk). The applicant can be readmitted through ordinary admission if:

- The applicant meets the admission requirements for the study programme
- The applicant’s GPA is high enough to be admitted through quota 1 or the applicant is accepted through quota 2
- The applicant is granted exemption, if relevant

Application deadlines

Readmission per 1 September:

Since the applicant is applying through ordinary admission, the application deadlines for ordinary admission apply. These are described at DTU.dk under 'Admission and deadlines'.

Applications for readmission are submitted via www.optagelse.dk.

Readmission per 1 February:

Since the applicant is applying through ordinary admission, the application deadlines for ordinary admission apply. These are described at DTU.dk under 'Optagelse på bachelor- og diplomingenøruddannelsen' (in Danish only).
Applications for readmission are submitted via an application form available at DTU.dk during the application period.

**Credit transfer:**

For applicants who are readmitted, it will be assessed, which courses they can have credit transferred.

### 4.9.2 Readmission into BSc and BEng programmes outside ordinary admission

Applicants for the BSc and BEng programmes may be readmitted outside ordinary admission if:

- The applicant meets the admission requirements for the study programme
- The applicant has passed what corresponds to the first academic year of the study programme, the applicant is applying for. On the BEng programmes, the first and second semesters of the relevant study programme must be passed as a minimum. On the BSc programmes, 60 ECTS credits in the three mandatory blocks of courses (basic natural science courses, technological specialization courses, and projects and professional skill courses) must be passed as a minimum.
- There are vacant places at the relevant academic year of study on the study programme for which the student is applying.

**Application deadlines**

**Readmission per 1 September:**

The application deadline for readmission per 1 September is 1 May. For applicants who wish to be evaluated in quota 2 if they are not readmitted outside ordinary admission, the application deadline is 15 March at 12 noon.

Applications for readmission are submitted via www.optagelse.dk.

**Readmission per 1 February:**

The application deadline for readmission per 1 February is 1 November. For applicants who wish to be evaluated in quota 2 if they are not readmitted outside ordinary winter admission, the application deadline is 15 October at 12 noon.

Applications for readmission are submitted via an application form available at DTU.dk during the application period.

### 4.9.3. MSc programmes

Applicants who wish to be readmitted to an MSc programme must apply according to DTU’s general rules on admission to MSc programmes and within the applicable deadlines. Regardless of applicable deadlines, however, it is not possible to apply for readmission into the MSc programmes later than 1 May for readmission 1 September and 1 November for readmission 1 February.

Find out more at DTU.dk under ‘Admission and deadlines for MSc students’.

### 4.9.4. Programme deadlines for readmitted students

The study activity requirement for students, who are readmitted through ordinary admission, is 30 ECTS credits the first year of study and 45 ECTS credits in each of the following years of study. The year of study is calculated from the date of readmission.
The study activity requirement for students, who are readmitted outside ordinary admission, is 45 ECTS credits per year of study. The year of study is calculated from the date of readmission.

The maximum duration of study for readmitted students is the prescribed period of study + one year from the readmission date; however, reduced by one semester for every 30 ECTS credits which the student has already passed.

3.2.3. Exam forms

Different rules governing the main forms of assessment are described below. Other forms of assessment can be approved by the relevant department board of studies. Students can apply for a change in the assessment form (e.g. from written to oral exam) on the basis of special circumstances, for example a documented permanent impairment, if the department board of studies/course coordinators assess that it is academically and practically possible. The Office for Study Programmes and Student Affairs can assist the department board of studies/course coordinators in making this assessment as required. A precondition for allowing special exam arrangements is that the academic level of the exam is not lowered.

A list of study board chairmen at the individual departments can be found on DTU Inside under ‘Study board chairmen’.

Oral exams
As a general rule, all oral exams are open to the public, but can be held behind closed doors under special circumstances—justified, for instance, on grounds of student needs. Projects which, entirely or partially, are carried out with private companies, may, taking into account any information about trade secrets, know-how etc. in the report, be treated as confidential, be held behind closed doors too.

Oral exams may extend over several days. Any dates in addition to the specified exam dates must be agreed with the students. Students who are unable to attend an examination on these additional days, are entitled to participate in the exam on the exam date in accordance with the timetable or another day subject to agreement with the lecturer.

If an individual oral exam is held as a follow-up to a group project and as a follow-up to an oral group exam, if relevant, the other students in the group may not be present in the exam room before their own individual oral exam.

Oral exams must be taken before the end of the exam period, unless otherwise agreed between the course coordinator and the students.

Oral group exams
An oral exam can take place as a group exam. Group exams are typically held in connection with written assignments prepared by two or more students (group project).

At oral group exams, the students are examined individually in such a way as to ensure that an individual assessment is made of the students’ performance. When organizing an oral group exam, the course coordinator must ensure that the time allocated for the exam is adapted to the number of students participating in the exam. All members of the project group are present during the entire exam.
It is important that each assessor notes the level and quality of participation of the individual students. The assessors must also ensure that all students participate in the exam to allow individual assessments to be made.

Students are entitled be awarded the grade in private.

The possibility of choosing an individual exam instead of a group exam is only available to students with special educational needs. Decisions regarding this are made by the course coordinator.

**Practical exams as part of the teaching or as a final test**

Courses comprising exercises (laboratory courses, workshop courses etc.) may be subject to continuous assessment or include a practical exam at the end of the course. In connection with continuous assessment, the students must be informed of the criteria for passing the course at the beginning of the course. Each student's contribution must be clearly stated so they can be assessed individually.

**Written exams (written on-site exams)**

Written exams are always individual. The duration of the exam must be stated in the course description.

If less than ten students register for a written exam, the lecturer is entitled to change the assessment form to an oral exam up until one week after the exam registration deadline. This must be done with due regard for the fact that the students were expecting a written exam. The department is responsible for notifying the students in the event of a change in the assessment form. If the exam form is changed into an oral exam, the lecturer can request that registered students contact the department regarding the exam planning. If the lecturer and all registered students agree, another approved assessment form can be applied.

Exam papers must be prepared in the language of instruction. In connection with courses taught in English based on English teaching material, exam assignments must be prepared in English only. Exam papers must be prepared in the language of instruction. The assessors may allow exam papers to be submitted in other languages. Special rules apply to MSc theses.

Mobile phones, music players, ear protectors or the like must not be brought to the exam. Mobile phones will be collected prior to the exam and stored by the invigilators during the exam. Mobile phones are stored at the owner's risk.