

CURRICULUM
for
**Bachelor in Product Development and Integrative
Technology**

Part II: Institutional Part
Commencement 01.01.2021



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This curriculum must be used in combination with the national part of the curriculum (called the national part). The national part of the curriculum is the same for all academies that offer this programme, while this part of the curriculum (the institutional part) is specific to Business Academy Aarhus.

1. Overview of elective elements on the programme

Semester	Subject elements (national and institutional including electives)	ECTS
1st semester	National subject element: Product development part 1	7,5
1st semester	National subject element: Integrative Technology part 1	7,5
1st semester	National subject element, programme specialisation: <ul style="list-style-type: none"> • Innovation and industrial design for programme specialisation IT and electronics • Innovation and industrial design for programme specialisation installation and automation • Innovation and industrial design for programme specialisation development of products and production 	5
1st semester	Institutional subject element: Rapid prototyping	5
1st semester	Institutional subject element: Project management	5
2nd semester	National subject element: Product development part 2	7,5
2nd semester	National subject element: Integrative technology part 2	7,5
2nd semester	National subject element, programme specialisation: <ul style="list-style-type: none"> • Construction and sustainability for the programme specialisation IT and electronics • Construction and sustainability for the programme specialisation installation and automation • Construction and sustainability for the programme specialisation development of products and production 	5
2nd semester	Institutional subject element: Sustainability	5
2nd semester	Institutional subject element: Elective element	5
3rd semester	Internship	15
3rd semester	Bachelor Project	15

2. Institutional subject elements

On this programme there are institutional subject elements which are weighted 20 ECTS, of which 5 ECTS are electives.

Students may also follow electives at other institutions provided that they pay for their own transportation, overnight accommodation, etc.

2.1. Rapid prototyping

Content

The subject element deals with prototyping and associated tools. It is a practically focused subject, where the emphasis is on being able to master the tools. In addition, work is done also with the usability of tools in different product development contexts.

Learning objectives for rapid prototyping

Knowledge

The student will gain knowledge about:

- the content, purpose and use of different tools, as well as the underlying theory
- and an understanding of the use of the tools as well as the underlying theory and will be able to reflect on which tools are suitable for a given product development situation.

Skills

The student will get the skills to:

- apply various forms of prototyping tools, including:
 - Computer Aided Design
 - Computer Aided Machining
 - Embedded Electronics
 - and Virtual and Augmented Reality, as well as master the preparation of prototypes
- evaluate the practice-orientated and theoretical issues in experimental product development in a business context, as well as justify and select appropriate model approaches for a given situation
- communicate practice-orientated and academic issues and solutions within prototyping and the associated tools to business partners and users.

Competencies

The student will learn to:

- manage complex, development-orientated and experimental situations in connection with product development with the use of prototyping tools
- independently engage in academic and interdisciplinary cooperation and assume responsibility for the development and testing of prototypes, taking into account users' ethics
- identify their own learning needs and develop their own knowledge, skills and competencies in relation to prototyping tools and their use.

ECTS weight

The subject element rapid prototyping is weighted 5 ECTS credits.

2.2. Project management

Content

The subject element deals with project management and leadership, in general and in practice. The subject works with different models and the underlying theories, as well as how a foundation can be created for choosing the best possible model for a specific project. In addition, some managerial topics such as motivation, conflict resolution and development talks are included.

Learning objectives for project management

Knowledge

The student will gain knowledge about:

- different project management models including their underlying philosophy
- and an understanding of the practice, applied theory and method in project management, and will be able to reflect on which models and methods are most useful in a given situation.

Skills

The student will get the skills to:

- apply different and relevant models and tools for planning, managing and monitoring projects and can master the management of technical projects
- evaluate practice-orientated and theoretical issues in project management and leadership as well as justify and choose relevant methods and techniques for the solution of concrete problem statements
- communicate practice-orientated and academic issues within project management and project models to business partners and users.

Competencies

The student will learn to:

- handle the planning and management of complex and development-orientated technical projects
- independently engage in academic and interdisciplinary cooperation and assume the responsibility of leading the cooperation
- identify their own learning needs and develop their knowledge, skills and competencies in relation to the roll as project manager.

ECTS weight

The subject element project management is weighted 5 ECTS credits.



2.3. Sustainability

Content

This subject element is concerned in a broad context with sustainability as an extensive concept, including the circular economy. The subject has been developed in relation to the national and specialisation related subject 'sustainability in product development' and thus the concept of sustainability is used in the context of product development and the integration of technology in an industrial context.

Learning objectives for sustainability

Knowledge

The student will gain knowledge about:

- development and research-based knowledge on environmentally damaging production methods, harmful substances and environmental management tools
- and an understanding of the practices, theories and methods used in climate, water, energy and recycling.

Skills

The student will get the skills to:

- use a variety of sustainable methods in connection with new product development, including circular economy and will be able to master life-cycle analysis of a product as well as the production process
- evaluate practice-orientated and theoretical issues in relation to sustainable design in a concrete situation and justify and choose appropriate models for sustainable conversions
- communicate environmental issues and solutions based on a commercial understanding to professional partners as well as to non-specialists and users.

Competencies

The student will learn to:

- manage complex and development-orientated issues in the conversion to sustainable product development or manufacture
- independently engage in academic and interdisciplinary cooperation concerning sustainability and a circular economy and take responsibility for the project
- identify their own learning needs and develop their knowledge, skills and competencies in relation to sustainable product development.

ECTS weight

The subject element sustainability is weighted 5 ECTS credits.



2.4. Elective – Industry 4.0

Content

The subject element deals with Industry 4.0 both as a concept and as an umbrella term for the technologies that relate to the concept. The subject is an immersive self-study, where the students must choose and examine a technology or process in relation to the overall concept. As part of the subject, students should visit fairs and companies, and use academic literature searches.

The students work individually with their chosen topic, a lecturer is appointed, and their primary role is supervisory. The chosen topic must be approved by the programme.

Learning objectives

Knowledge

The student will gain knowledge about:

- essential technologies, processes and theories within industry 4.0 in connection the selected item. The knowledge must be both developmental and research-based.
- and an understanding of technologies, practices and methods related to a specific topic within the industry 4.0.

Skills

The student will get the skills to:

- use different methods in connection with (academic) immersion of specific technologies and can master understanding technology
- evaluate practice-orientated, technological, and theoretical issues in relation to industry 4.0 in a concrete situation and justify and choose appropriate models for the use of technologies in an industry 4.0 context in connection with the chosen topic.
- communicate technological issues and solutions based on a commercial understanding to professional partners as well as to non-specialists and users.

Competencies

The student will learn to:

- manage processes by creating an overview and insight into a new technology in an innovative way for industrial use
- independently engage in academic and interdisciplinary cooperation concerning industry 4.0 according to the chosen topic and connected technologies and take responsibility for the project
- identify their own learning needs and develop their own knowledge, skills and competencies in relation to understanding technology and industry 4.0 within the chosen topic.

ECTS weight for electives

The elective element Industry 4.0 is weighted 5 ECTS.

2.5. Other electives at the Academy

It is also possible to choose electives from other Bachelor's programmes at the Academy, where especially the Bachelor's programme in Software Development and the Bachelor's programme in Web Development etc are relevant.

Some of the electives are only offered in Danish, and the elective must be approved by the head of programme for the Bachelor programme in Product Development and Integrative Technology, if you select electives from other programmes.

Electives chosen from other programmes are completed as indicated by the relevant programme and in accordance with how they conduct their exams.

Relevant elective subjects from other the Academy's other Bachelor programmes will be presented in class during the course of the 1st semester.

2.6. Summer and winter school

It is also possible to choose a summer school or winter school as an elective. The selected summer or winter school must be approved by the programme's head of department for Product Development and Integrative Technology before you leave so that prior credit approval can be obtained. Upon approval of the prior credit approval, the programme element is considered completed if it is passed according to the rules of the programme. The International Office can be contacted for further information.

3. Exams on the programme

When starting on a programme element, semester, etc., the students will automatically be registered for the relevant exams. Registration for an exam means that one exam attempt has been used. This does not apply to students who are unable to attend the examination due to a documented illness or maternity/paternity leave. The student has 3 attempts to take an exam.

It is always the responsibility of the student to ensure that they have internet access during the exam and that their computer is functional.

3.1. Overview of examinations and their timing

Time	Subject/exam	ECTS	Internal/external assessment	Assessment
1st semester	1. Experimental product development	30	Internal	7-point scale
2nd semester	2. Sustainable product development	25	External	7-point scale
2nd semester	3. The elective's exam	5	Internal	7-point scale
3rd semester	4. Internship exam	15	Internal	7-point scale
3rd semester	5. Bachelor Project	15	External	7-point scale

Information on the date, times and location for exams is available on Study Update

This is followed by a description of each exam with:

- Learning objectives for the exam
- The exam form and organisation including any formal requirements for written exams
- Prerequisites for the exam – active attendance and submission requirements
- Criteria for assessment and co-examiner
- Completion when requirements listed below are not met

Exams are done in Danish for students doing Produktudvikling og teknisk integration and English for students doing Product Development and Integrative Technology.

For all international programmes, all exams are conducted in English.

3.2. Completion of the exams

In general, the following applies for all programmes in relation to when an exam has been completed or an exam attempt has been used. If there are deviations for a specific exam, they will appear in the individual exam descriptions below.

Pass / fail exams

If a student has not achieved the mark 02 or higher for an oral or written exam or a combination of this, the exam will not be passed and one exam attempt will have been used.

If exam project was prepared by one student and not passed, the student can choose to work further on the existing project or prepare a new project.

In the event of one student, as part of a group project, not achieving the mark 02 or above, the student can rewrite their section of the joint project, provided the exam is individualised. The student can also choose to write a new project alone, where the rules for the scope and guidelines for individually produced projects apply.

Project not handed in/written answers

If a student does not hand-in their exam project or a written report, one exam attempt will have been used.

The student can choose to work further on their existing project or prepare a new project.

Not participated in the exam/oral examination

If a student hands in their exam project or written answers, but doesn't participate in the oral exam, one exam attempt will have been used.

A new oral exam will be scheduled as soon as possible and the student will be examined in the previously handed in project.

Sickness and re-examinations

The deadline for the first sick/re-exam will be at the end of February/end of July.

The deadline for the second sick/re-exam will be the start of June/end of December.

Actual dates will always be listed in the activity calendar for the programme available on Study Update.

Information about the time and place of sick/re-exams can be found on Study Update. This may be the same as the next regular exam. The student is responsible for finding out when the sick and re-exams take place.

Sick exams

A student who has been prevented from taking an examination due to a documented illness or another unforeseen circumstance will be given the opportunity to take a (illness) exam as soon as possible. If it is an exam that is scheduled in the programme's last examination period, the student

will be given the opportunity to retake the exam in the same examination period or as soon as possible after.

The illness must be documented by a doctor's certificate. The Academy must receive the doctor's certificate no later than three working days after the examination. Students who become acutely ill during an exam must prove that they have been ill on that day.

If the illness is not documented according to the above rules, the student will have used one examination attempt. The student must pay the cost of the doctor's certificate. Requirements for the doctor's certificate can be found on Study Update under 'Worth knowing about exams'.

Re-examination

With a failed exam, or failure to appear for an exam, the student is automatically registered for the re-examination, provided that the student has an exam attempt left. The student is registered to take the exam the next time it is scheduled. The re-examination may be the same as the next regular exam.

The programme may grant an exemption from the automatic registration to an exam provided this is justified by exceptional circumstances, including documented disabilities.

3.3. Experimental product development, 1st semester - 30 ECTS

Learning objectives for the exam

The learning objectives for the exam are identical with the learning objectives for the two national and institutional subject elements on the 1st semester including the chosen study programme. The learning objectives for Experimental Product Development come partly from the subjects Innovation and Industrial Design (5 ECTS), Rapid Prototyping (5 ECTS) and Project Management (5 ECTS) and partly from a subset of the learning objectives from the two national subject elements Product Development and Integrative Technology, respectively, Product development part 1 (7.5 ECTS) and Integrative Technology part 1 (7.5 ECTS). The learning objectives for Integrative Technology and Product Development are divided into part 1 and 2 for the examination in the 1st and 2nd semester and can be seen in appendix 1.

The exam form and organisation including any formal requirements

The exam includes two elements: An individual oral examination based on a group project and a series of continuous assessment activities throughout the semester. The actual exam and the continuous assessment activities will be evaluated separately. Together the two elements make up the exam Experimental development.

1st element: The continuous assessment activities

The two continuous assessment activities consist of a series of activities spread over the 1st semester. For each individual continuous assessment activity, points will be awarded, which at the

end of the 1st semester will be converted to a mark which is weighted 30% of the mark for exam Experimental development.

The two assessment activities are described below:

Assessment activities	Time placement / frequency	Credits	Assessment
A. Attendance at teaching activities	Continuously on the 1st semester	33% of the points	Participation in the daily quiz or attendance registration in Canvas.
B. Task solution	Continuously on the 1st semester	67% of the points	The tasks compiled with points in Canvas and when handed in. An overview and a schedule will be available on Canvas at the beginning of the semester.
Point scale			
	Marks for continuous assessment activities	Percentage points	
	12	94-100%	
	10	85-93%	
	7	75-84%	
	4	60-74%	
	02	50-59%	
	00	11-49%	
	-3	0-10%	

The activities happen throughout the semester, if the students have documented absence due to sickness, maternity/paternity leave or sabbatical leave etc, active participation will be assessed in relation to the actual participation. With undocumented absence or lack of participation, students will be given the lowest score.

The weighted average mark for the continuous assessment activities is indicated on the diploma as continuous assessment in experimental prototyping.

2nd element: Exam

The individual oral exam is based on a group project. The group project must be prepared by a group of no more than 4 students.

The oral exam:

1. Group presentation based on a product and a poster: Max 20 minutes per group regardless of group size
2. 25-minute individual examination, which is based on the project, and an exam question drawn by the student that is based on the curriculum. The students from the group are examined individually and the process is as follows:
 - a. The student presents important aspects of their individual parts of the project. This includes their role and what they have learnt from the project (about 10 minutes).
 - b. The student draws and answers a question, which is based on the semester's learning objectives (approx. 10 min).
3. Deliberation and communication of marks: 5 minutes.

Formal requirements for the group project

A poster must be handed in and a prototype must be prepared. The poster, which constitutes the written part of the exam, must be visually clear, contain images, illustrations and text. It must be possible for professionals with the same background as the students to understand the poster without needing a presentation. The poster must be printed in A1 format and must be handed-in as a PDF in WISEflow.

The prototype can either be presented as a physical product or as an illustration through the use of simulation tools. The prototype must not be handed-in, but must be presented in connection with the group presentation.

Prerequisites for the exam – active attendance and submission requirements

The following requirements must be met to take the oral part of the exam:

- The written project, is the basis for the exam and the assessment thereof and must:
 - fulfil the formal requirements (see above) and
 - be handed-in on time, in accordance with the exam schedule, which is available on Study Update

It is a prerequisite for taking the oral exam that students confirm their co-responsibility for the preparation of the project with their signature. This happens when you upload your report to WISEflow.

Non-compliance with one or more of these conditions means that the student cannot participate in the exam, and one exam attempt will have been used.

Criteria for assessment and co-examiner

The assessment criteria for the exam are identical to the learning objectives as described above. One overall mark is given, the actual exam is weighted 67% and the continuous assessment activities are weighted 33% of the final mark for Experimental product development.

At the oral exam, one mark is awarded based on an overall assessment of the student's written and the oral presentation.

The diploma will indicate an overall mark for the continuous assessment activities, the mark for the oral exam and an overall mark for the exam Experimental product development.

When calculating the weighted average of the continuous assessment activities and the exam, the mark will be rounded up if it is halfway between two marks on the marking scale. There will be no rounding if the overall mark is under 02.

The exam is assessed according to the 7-point scale and has an internal co-examiner.

Completion of the exam

If a student fails the exam, the student must do a re-exam in the actual exam. A new written product or prototype must not be prepared. The mark for the continuous assessment activities will be transferred for the re-exam regardless of whether the continuous assessment activities have been passed or failed, i.e. it doesn't matter whether the overall assessment is above or below 02. For further information, read the section about completion of exams.

3.4. Sustainable product development, 2nd semester -25 ECTS

Learning objectives for the exam

The learning objectives for the examination are identical to the learning objectives for three national subject elements in the 2nd semester (Product Development, part 2 (7.5 ECTS); Integrative Technology, part 2 (7.5 ECTS); Construction and Sustainability (subject element for programme specialisation, 5 ECTS)), as well as the local subject element Sustainability (5 ECTS). The national learning objectives can be found in the national curriculum. The learning objectives for Integrative Technology and Product Development are divided into part 1 and 2 for the examination in the 1st and 2nd semester and can be seen in appendix 1.

The exam form and organisation including any formal requirements

The exam includes three elements:

- 1) a number of continuous assessment activities throughout the semester
- 2) an individual, oral examination based on a group project

The actual exam (the second element) and the continuous assessment activities (the first element) will be evaluated separately. Together, these two elements make up the Sustainable Product Development exam.

1st element: The continuous assessment activities

The two continuous assessment activities consist of a series of activities spread over the 2nd semester. For each individual continuous assessment activity, points will be awarded, which at the end of the 2nd semester will be converted to a mark which is weighted 33% of the mark for exam.

The two assessment activities are described below:

Assessment activities	Time placement / frequency	Credits	Assessment
A. Attendance at teaching activities	Continuously on the 2nd semester	33% of the points	Participation in the daily quiz or attendance registration in Canvas.
B. Task solution	Continuously on the 2nd semester	67% of the points	The tasks compiled with points in Canvas and when handed-in. An overview and a schedule will be available on Canvas at the beginning of the semester.
Point scale	Marks for continuous assessment activities	Percentage points	
	12	94-100%	
	10	85-93%	
	7	75-84%	
	4	60-74%	
	02	50-59%	
	00	11-49%	
	-3	0-10%	

The activities happen throughout the semester, if the students have documented absence due to sickness, maternity/paternity leave or sabbatical leave etc, active participation will be assessed in relation to the actual participation. With undocumented absence or lack of participation, students will be given the lowest score.

The weighted average mark for the continuous assessment activities is indicated on the diploma as continuous assessment in sustainable product development.

2nd element: Exam

The individual oral exam (element 2) is based on a group project.

The oral exam:

1. Group presentation based on a group project. Max 20 minutes per group regardless of group size
2. Individual examination for 25 minutes based on a group project:
 - a. The student presents important aspects of their individual parts of the project. This includes their role and what they have learnt from the project (about 10 minutes).
 - b. The student answers the questions, which are based on the project, the project's presentation and the semester's curriculum (approx. 10 min).
3. Deliberation and communication of marks: 5 minutes.

The group presentation can be replaced by a video that must not be longer than 10 minutes.

Group project

The group project must be prepared in groups of max 4 students, and the project must include a written report, a prototype as well as a video presentation of the prototype.

The written report

The report must deal with how product development, business and sustainability have been included in the development of the prototype.

Formal requirements for the written report

The report, which constitutes the written part of the exam, must at least contain:

- Front page with title
- Table of contents
- Introduction
- Main section
- Conclusion
- Bibliography (including all sources that have been referenced)
- Appendices (only include appendices essential to the report)
- Hand-in electronically.

The report must have at least 15 standard pages plus 5 standard pages per student. Cover page, TOC, bibliography and appendices are not included. Appendices will not be assessed.

One standard page is 2,400 keystrokes which includes spaces and footnotes. This does not include front page, table of contents, bibliography and appendices.



Prototype and video presentation

There must be a prototype, which, must be presented to potential users. This presentation must be documented by a video, which must be handed-in via WISEflow immediately before the exam (see deadlines on Study Update).

The prototype can either be presented as a physical product or as an illustration through the use of simulation tools. The prototype must not be handed-in, but must be presented in connection with the group presentation.

Prerequisites to take the oral part of the exam

The following requirements must be met to take the exam:

- The written assignment and video presentation of the prototype, which forms the basis for assessment, must:
 - fulfil the formal requirements (see above) and
 - be handed-in on time, in accordance with the exam schedule, which is available on Study Update.

It is a prerequisite for taking the oral exam that students confirm their responsibility for the preparation of the project with their signature, this is done when the project is uploaded in WISEflow.

Non-compliance with one or more of these conditions means that the student cannot participate in the exam, and one exam attempt will have been used.

Criteria for assessment and co-examiner

The assessment criteria for the exam are identical to the learning objectives for the exam. One overall mark will be given for the oral exam and the group presentation and the individual part based on the group project consisting of the written report, the prototype and the presentation video, where the exam itself weighs 67% and the continuous assessment activity weigh 33% of the total mark for Sustainable Product Development.

At the oral exam, one mark is awarded based on an overall assessment of the student's written and the oral presentation.

The diploma will indicate an overall mark for the continuous assessment activities, the mark for the oral exam and an overall mark for the exam Sustainable product development.

When calculating the weighted average of the continuous assessment activities and the exam, the mark will be rounded up if it is halfway between two marks on the marking scale. There will be no rounding if the overall mark is under 02.

The exam is assessed according to the 7-point scale and has an external co- examiner.

Completion of the exam

If a student fails the exam, the student must do a re-exam in the actual exam. A new written product or prototype or a video must not be prepared. The mark for the continuous assessment activities will be transferred for the re-exam regardless of whether the continuous assessment activities have been passed or failed, i.e. it doesn't matter whether the overall assessment is above or below 02. For further information, read the section about completion of exams.

3.5. Elective subject exam: Industry 4.0, 2nd semester – 5 ECTS

Learning objectives for the exam

The learning objectives for the exam are identical to the learning objectives for the elective.

The exam form and organisation including any formal requirements

The exam includes two elements: An individually compiled written article, as well as a number of continuous assessment activities throughout the semester. The actual exam and the continuous assessment activities will be evaluated separately. Together these two elements make-up the exam in the elective subject Industry 4.0.

1st element: The continuous assessment activities

The two continuous assessment activities consist of a series of activities spread over the 2nd semester. For each individual continuous assessment activity, points will be awarded, which at the end of the 2nd semester will be converted to a mark which is weighted 33% of the mark for exam.

The two assessment activities are described below:

Assessment activities	Time placement / frequency	Credits	Assessment
A. Attendance at teaching activities	Continuously on the 2nd semester	33% of the points	Participation in the daily quiz or attendance registration in Canvas.
B. Task solution	Continuously on the 2nd semester	67% of the points	The tasks compiled with points in Canvas and when handed-in. An overview and a schedule will be available on Canvas at the beginning of the semester.

Point scale	Marks for continuous assessment activities	Percentage points
	12	94-100%
	10	85-93%
	7	75-84%
	4	60-74%
	02	50-59%
	00	11-49%
	-3	0-10%

The activities happen throughout the semester, if the students have documented absence due to sickness, maternity/paternity leave or sabbatical leave etc, active participation will be assessed in relation to the actual participation. With undocumented absence or lack of participation, students will be given the lowest score.

The weighted average mark for the continuous assessment activities is indicated on the diploma as continuous assessment Industry 4.0.

2nd element: Exam

The exam is a written article. Requirements for methodology and literature can be found on Canvas in the module for the subject.

Formal requirements for the written product

An article must be handed-in that concerns Industry 4.0 within the selected topic. The article must follow the IMRAD format and must have 3,000 words, which includes footnotes, figures and tables, but excludes the list of references/sources. The article must be at least 2,750 words with a maximum of 3,200 words.

There must be a link to the article on the student's LinkedIn profile.

Prerequisites to take the exam

The following requirements must be met to take the exam:

- The written assignment, which forms the basis of assessment, must:
 - fulfil the formal requirements (see above) and
 - be handed-in on time, in accordance with the exam schedule, which is available on Study Update

Non-compliance with one or more of these conditions means that the student cannot participate in the exam, and one exam attempt will have been used.

Criteria for assessment and co-examiner

The assessment criteria for the exam are identical to the learning objectives for the elective element as described above. One overall mark is given, the actual exam is weighted 67% and the continuous assessment activities are weighted 33% of the final mark for the elective element exam.

The diploma will indicate an overall mark for the continuous assessment activities, the mark for the written exam and an overall mark for the elective element exam Industry 4.0.

When calculating the weighted average of the continuous assessment activities and the exam, the mark will be rounded up if it is halfway between two marks on the marking scale. There will be no rounding if the overall mark is under 02.

The exam and the continuous assessment assignments are assessed according to the Danish 7-point scale, and there is an internal co-examiner.

Completion

If a student fails the exam, the student must do a re-exam in the actual exam. A new article must be written. The mark for the continuous assessment activities will be transferred for the re-exam regardless of whether the continuous assessment activities have been passed or failed, i.e. it doesn't matter whether the overall assessment is above or below 02. For further information, read the section about completion of exams.

3.6. Electives exams for subjects offered by other programmes

For electives offered at other programmes, the chosen elective is examined according to relevant programme's curriculum.

3.7. Internship exam, 3rd semester - 15 ECTS

Learning objectives for the exam

The learning objectives for the exam are identical to the learning objectives for the internship as stipulated in the national part of the curriculum, and are based on the individual learning objectives.

Exam form and organisation

The exam is an individual, written exam. At the end of the internship, the student submits a written report about an academic problem from the internship company as well as the learning objectives. The report must be prepared individually.

Formal requirements for the written internship report

The internship report, which constitutes the written part of the exam, must as a minimum contain:

- Front page with name, internship company, internship period
- Preface

- Introduction
- Description of the company (its main activities, number of employees, their profession, etc.)
- Description of concrete tasks
- Reflection on the concrete learning objectives achieved
- Conclusion
- Appendices: Company reference and logbook
- Bibliography (including all sources that have been referenced)
- Any further appendices (only include appendices essential to the report)

The internship report can only be 10 standard pages excluding appendices.

One standard page is 2,400 keystrokes which includes spaces and footnotes. This does not include front page, table of contents, bibliography and appendices. Appendices will not be assessed.

Prerequisites to take the exam

The following requirements must be met to take the exam:

- The internship exam, which forms the basis of the assessment must comply with the formal requirements and must be submitted on time in accordance with the examination plan available on Study Update.
- In order to have the internship report assessed, it is a prerequisite that the student by their signature confirm that they are responsible for the preparation of the report.

Non-compliance of one or more prerequisites or in the event that the internship exam is not handed in correctly will mean that the student will not be able to take part in the exam and one exam attempt will have been used.

Assessment criteria

The assessment criteria for the exam are identical to the learning objectives for the internship. The exam is assessed according to the 7-point scale and has an internal co-examiner.

Completion of the exam

Exam failed

If an internship project is given less than the mark 02, it is a fail and one exam attempt will have been used. The student must then prepare a revised internship report to sign up for an internship exam again.

3.8. Bachelor exam, 3rd semester - 15 ECTS

Learning objectives for the exam

The learning objectives for the Bachelor project are identical to the programme's learning outcomes, which can be found in the national part of the curriculum.

Exam form and organisation

The exam is an individual, oral examination based on the written Bachelor project. The project can be prepared by a group of no more than 4 students.

The oral exam:

30 minutes per examinee is set aside, this includes the assessment.

1. presentation of the project for about 10 min. per student. In other words:
 - a. if the project is individually prepared, the exam will be started with a 10-minute presentation by the student.
 - b. if the project has been prepared in a group, the exam will be started with each group member giving a 10-minute presentation.
2. Followed by an individual examination. The student is examined individually for 15 min.
3. Deliberation and communication of marks: 5 min.

Formal requirements for the main exam project

The Bachelor's project must document the student's understanding of and ability to reflect on the practices of the profession and the use of theory and method in relation to a real-life problem. The problem statement that must be central to the programme and profession, is formulated by the student, possibly in collaboration with a private or public company. The educational institution approves the problem statement.

The formal requirements for the Bachelor's project, including scope, can be found in the national part of the curriculum.

Prerequisites to take the oral part of the exam

The written project, is the basis for the exam and the assessment thereof and must:

- meet the formal requirements for the main exam project
- be handed-in on time in WISEflow (see deadlines on Study Update)
- The exam can only be taken after all other exams of the programme have been passed, this includes the internship exam.

If the written part of the project is not correct or not handed-in on time, the students will not be able to take part in the oral exam and one exam attempt will have been used.

Assessment criteria

The exam is assessed according to the 7-point scale and has an external co-examiner. One total mark is awarded based on an overall assessment of the student's written and oral performance.

4. Rules for the completion of an internship

During the internship, the student will have a supervisor from the programme and a contact person in the company. Together, the internship company and the student determine the learning objectives to be attained by the student during the internship period, these must be based on the learning objectives found in the third part of the national part of the curriculum and which will subsequently provide the basis for the company's planning of the student's work. The learning objectives for each student must be approved by the Academy.

The internship period is 10 weeks and concludes with an exam based on a written report. See also section 3 concerning the description of the programme's exams.

The internship is generally considered equivalent to a regular full-time job (37 hours per week) and should reflect the requirements for work performance, commitment and flexibility that graduates could expect to meet in their first jobs.

5. The programme parts that can be completed abroad

5.1. The programme parts and rules for prior credit approval

It is possible for a student to take a semester abroad, just as it is possible for foreign students to study one semester on our programme. An internship can also take place abroad.

The students can, after applying for the programme's prior credit approval, take individual programme components abroad.

Upon approval of the prior credit approval, the programme element is considered completed if it is passed according to the rules of the programme.

With prior credit approval for study abroad, students are required to document each approved and completed programme component when their exchange programme is completed. In connection with the application for prior credit approval, the students must give permission to the institution to obtain any required information after the completion of their studies.

The Academy has a wide network of partners abroad and the Academy's International Office can assist students who wish to take part of their programme abroad. International Office can be contacted for further information, and information about specific opportunities. It should be noted, however, that a lot of work is required by the individual student if they wish to study abroad. It is up to the individual student to investigate available subjects for study abroad at the desired university, etc. The International Office can help with advice etc. but will not do any detailed planning. This is the student's own responsibility.

5.2. Individual subjects or an entire semester abroad - exam

It must be agreed in advance to which extent a subject or an entire semester can be taken abroad.

The student must take their exams at a partner institution abroad. The student must document all learning from the subjects taken at the partner institution in an online portfolio. A learning report for each subject, which describes the types of learning achieved in the subject, must be prepared.

The scope of the report must be appropriate to the course's credits, as agreed between the student and Business Academy Aarhus in advance, but at least two standard pages.

All the subject's tasks and corresponding hand-ins must be documented online in the portfolio. A link to the portfolio as well as proof of passing the exam at the partner institution must be handed into the Academy no later than four weeks after completion abroad. The portfolio, including learning reports, is assessed as pass/fail.

Bachelor Project

Business Academy Aarhus appoints a supervisor – and the report must be submitted and examined as explained in the national part of the curriculum in the section 'Requirements for the Bachelor project'.

Rules for examinations abroad

For a description of the rules for conducting exams abroad, please refer to the section with useful tips on examinations on Study Update. This also describes the costs involved if the examination is held abroad.

6. Requirements for written assignments and projects

In all exams etc. a standard page is defined as containing 2,400 keystrokes including spaces and footnotes. This does not include front page, table of contents, bibliography and appendices. Appendices will not be assessed.

The requirements on the scope of written assignments and the correlation between the number of members of a group and the scope of projects are specified in the description of the individual exams.

Hand-in of written assignments and projects as part of an exam take place in WISEflow, unless otherwise stipulated.



6.1. What effect do spelling and writing skills have on the assessment?

In the assessment of projects and exams, in addition to the academic content, the student's spelling and writing ability is also important (weighted 10 per cent). The assessment reflects an overall assessment of the academic content as well as writing and spelling ability.

Students who can document a relevant disability can apply for an exemption from the requirement that spelling and writing skills are included in the assessment. The application must be sent to the programme head no later than 4 weeks before the exam.

7. The use of aids and assistance

During exams, all aids and assistance, including electronic devices, are allowed, unless a ministerial order or curriculum for the specific programme specifies restrictions for use.

Any rules for limitations in the use of aids will be apparent from the description of the individual exam.

8. Special exam conditions

The Academy offers special exam conditions for students with physical or mental impairments when students apply for this, and when the Academy considers that it is necessary to equate these students with other students in an exam situation.

Students may therefore, where this is justified by physical or mental disabilities, apply for special exam conditions. Applications must be submitted to the programme four weeks before the exam. Application requirements will be waived in cases of sudden health problems. The application must be accompanied by a doctor's certificate, a report from a speech, hearing, dyslexic or blind institution or by any other documentation that indicates a doctor's condition or relevant disability.

Students whose mother tongue is not Danish can apply for permission to bring dictionaries to the examination where no aids and assistance are not allowed.

Applications for permission to bring any additional assistance must be submitted to the programme four weeks before the exam is held.

9. Cheating including the use of own and others' work (plagiarism)

Projects and other material for examinations must be prepared by the students themselves.

Upon the submission of written answers as well as physical and electronic submissions, the examinee confirms that the assignment/answers have been prepared without wrongful assistance.



9.1. Cheating and disruptive behaviour during exams

Cheating on tests and exams is covered by the Ministerial Order on Tests and Examinations in Professionally Orientated Programmes (the Examination Ministerial Order).

If a student cheats on an exam, the student will be expelled from the exam.

If the cheating occurs under aggravated circumstances, the student can be expelled from the programme for a shorter or longer period. With expulsion for cheating under aggravated circumstances, a written warning will be given stating that repetition could lead to a permanent expulsion from the programme.

Cheating is for instance:

- Improperly receiving help during an exam
- Improperly giving help to others during an exam
- To pass someone else's work off as your own (plagiarism - see <http://en.stopplagiat.nu/>)
- To use previously assessed work without a reference
- To use assistance which is not allowed for the exam in question

Expulsion from an exam for cheating means that the mark will be annulled and that one examination attempt has been used by the student.

If a student exhibits **disruptive behaviour** during an exam, the Academy can expel the student from the exam. In less severe cases, the Academy will only give a warning.

Expulsion can also occur once the exam has been held.

Presumption of cheating, including plagiarism during and after the exam

If during or after an exam, there is a suspicion that an examinee:

- Improperly obtained or provided help
- Has passed somebody else's work off as their own (plagiarism)
- Has used previously assessed work or parts thereof without reference (plagiarism)

this must be reported to the programme's head of department.

Business Academy Aarhus conducts systematic digital plagiarism control.



9.2. The process of clarification of exam cheating, including plagiarism

Postponement of the exam

If the report of cheating is plagiarism etc. in a written assignment, where this forms the basis of assessment with a subsequent oral examination, the head of the department must postpone the exam if it is not possible to determine whether plagiarism has taken place before the date of the exam.

Format and content of the report

The report must be submitted without undue delay as soon as there is a suspicion that cheating in an exam has occurred. The report must include a written presentation of the case, which includes information that can identify those incriminated, as well as a brief explanation and documentary evidence of the allegation. If one or more of the reported people are repeat offenders, this should be disclosed.

When reporting plagiarism, the plagiarised parts must be marked with a clear reference to the sources that have been plagiarised. The plagiarised text must also be marked in the source text.

Involvement of the examinee – consultation of affected parties

The head of the programme determines whether the consultation with the student happens orally, in writing or a combination thereof.

For an oral consultation, the examinee is summoned to an interview which aims to shed light on the case. The aim here is to present documentation of the suspected cheating to the student and to hear the student's side. The student has the right to have a representative accompany them to this meeting.

For the written consultation of interested parties, the documentation for the suspected cheating is sent to the student in order to request a written statement.

Sanctions for cheating and disruptive behaviour during an exam

If, after having the case explained, the head of department can confirm the suspicion of cheating, and if the action has or could have an impact on the assessment, the examinee must be expelled from the exam by the head of department.

In less severe cases, a warning is given first.

The student may not attend classes or take any examinations during their period of expulsion. With expulsion for cheating under aggravated circumstances, a written warning will be given stating that repetition could lead to a permanent expulsion from the programme.

Expulsion from an exam for cheating means that the mark will be annulled and that one examination attempt has been used by the student.

The student may not participate in a sick/re-exam but must wait until the programme's next ordinary exam.

The student may not attend classes or take any examinations during their period of expulsion.

Complaints

The decision to expel and that an examination attempt has been used due to cheating is final, and cannot be appealed to a higher administrative authority.

Complaints about legal issues (for example incapacity, consultation of interested parties, appeal guidelines, whether the Ministerial Order of Examinations has been interpreted correctly, etc.) may be submitted to the Ministry of Higher Education and Science. The complaint must be submitted to the Academy and must be addressed to the head of the programme, who must then submit a report that the complainant has the opportunity to comment on, usually within a period of one week. The Academy then sends the complaint, the report and the complainant's comments (if any) to the Ministry of Higher Education and Science. The deadline for complaints to the institution is two weeks from the day the decision was communicated to the complainant, cf. Ministerial Order on examinations.

10. Complaints regarding exams and the appeals of decisions¹

10.1. Complaints regarding exams

It is recommended that the examinee should get guidance from a student and career counsellor for the appeal procedure and for the preparation of a complaint.

The rules for exam complaints can be found in section 10 of the Ministerial Order on Examination Regulations.

In the Ministerial Order of Examinations, complaints are distinguished as either based on the

- the basis of the examination etc., the exam procedure and/or the assessment or
- complaints concerning legal matters.

The two kinds of complaints are handled differently.

10.2. Complaints about the basis of the examination etc., exam procedure and assessment

An examinee may submit a written and substantiated complaint within a period of two weeks after the exam assessment has been announced in the usual way. Complaints can relate to:

1. See Ministerial Order for Examinations chp 10.

- the basis of the exam, including exam questions, assignments, etc., as well as its relationship to the educational goals and requirements
- The exam procedure
- Assessment.

A student can complain about all exams, including written, oral and a combination thereof, as well as practical or clinical exams.

The complaint must be sent to the quality department via the complaint form on www.baaa.dk.

The process after a complaint is received is that the complaint is immediately submitted to the original examiners, i.e. the examiner and co-examiner for the examination. The opinions of the examiners will form the basis of the Academy's decision regarding academic issues. The Academy will usually decide on a deadline of two weeks for the submission of their opinion.

Immediately after the examiners' opinions are made available, the complainant has the opportunity to comment on the decision, usually with a week's deadline.

The Academy's decision is based on the complaint, the examiners' academic opinion and any possible comments the complainant may have regarding the report.

The Academy's decision must be in writing, and can be as follows:

- provision for a new assessment (reassessment)-only for written exams
- provision for a new exam (re-examination)
- that the student's complaint has been dismissed.

Should it be determined that a reassessment or re-examination will be offered, the head of department must appoint new examiners. Reassessment can only be offered for written exams where there is material for assessment; this is because the new examiners cannot (re) assess an already held oral examination and the original examiners' notes are personal and may not be disclosed.

If the decision is an offer for reassessment or re-examination, the complainant must be advised that a reassessment or re-examination could result in a lower mark. The student must, within a period of two weeks after the decision has been made, either accept or reject the offer. The decision is binding and may not be changed, and if the student does not accept the offer within the time limit, the reassessment or re-examination will not take place.

The reassessment or re-examination must take place as soon as possible.

With a reassessment, the examiners must submit all relevant documents i.e. the exam, the answer/s, the complaint, the original examiners' opinion along with the complainant's remarks as well as the Academy's decision.

The examiners will then notify the Academy of the outcome of the reassessment, including a written justification and the assessment criteria.

Exam shortcomings

If it has been decided that a new assessment will be made or if there is an offer of a re-examination, the decision will be binding for all the examinees whose exams have the same shortcomings as the subject of the complaint.

The complaint must be sent via the complaint form on www.baaa.dk within two weeks (14 calendar days) after the assessment of the exam in question has been announced. If the deadline falls on a public holiday, the first working day thereafter is the deadline.

A dispensation from the deadline can be granted if there are exceptional circumstances

10.3. Appeals and legal issues

The complainant can appeal the Academy's decision regarding any academic issues to an appeals' board. The appeal board's activities are covered by the Public Administration Act, which includes incapacity and confidentiality.

The appeal must be sent to complaints@baaa.dk.

The deadline for an appeal is two weeks after the student has been informed of the decision. The same requirements as mentioned above under complaint (in writing, with reasons, etc.) also apply to the appeal.

The appeals board consists of two external examiners appointed by the chair of external examiners, as well as a lecturer eligible to examine, and a student within the same field of study (programme), they are both appointed by the head of department.

The appeals board makes a decision based on the original material that formed the basis for the Academy's decision and the student's substantiated appeal.

The board deals with the appeal and the resultant decision can be as follows:

- provision for a new assessment by new examiners, though this is only a possibility with written exams
- provision for a new examination (re-examination) by new examiners
- that the student's appeal has been unsuccessful.

If the decision is an offer for reassessment or re-examination, the complainant must be advised that a reassessment or re-examination could result in a lower mark. The student must, within a period of two weeks after the decision has been made, accept or reject the offer. This decision is binding and may not be changed.

If the student does not accept the offer within the time limit, the reassessment or re-examination will not take place.

The reassessment or re-examination must take place as soon as possible.

With a reassessment, the examiners must submit all relevant documents i.e. the exam, the answer/s, the complaint, the original examiners' opinion along with the complainant's remarks as well as the Academy's decision.

Appeals must be decided within two months – for summer exams, within three months – after the appeal has been filed.

The appeal board's decision is final, which means that the case cannot be appealed to a higher administrative authority with regard to the academic part of the complaint.

10.4. Complaints concerning legal matters

Complaints concerning legal issues in the decisions made by the examiners for the reassessment or re-examination or the appeal board's decision must be submitted to Business Academy Aarhus within a period of two weeks from the day the decision is communicated to the complainant.

Complaints concerning legal issues in the decisions taken by the Academy in accordance with a Ministerial Order (for example, incapacity, whether the Ministerial Order of Examinations has been interpreted correctly, etc.) may be submitted to the Academy who must submit a report that the complainant has the opportunity to comment on within a period of normally one week. The Academy then sends the complaint, the report and the complainant's comments (if any) to the Ministry of Higher Education and Science. The deadline for submission of the complaint to the Academy is two weeks (14 calendar days) from the day the decision was communicated to the complainant.

11. Indication of applied teaching and work methods

Teaching at the Business Academy Aarhus is based on our educational platform.

This means that teaching is based on appropriate business practices and connects theory with practice. Problems from different types of companies working within the industries relevant to the programme will be involved.

The teaching will be organised to provide variation. This will be achieved by group teaching, project work, interdisciplinary cases, group work, guest lectures and company visits. Lectures can occur to a limited degree. The different learning styles will, above and beyond the subject matter, also develop the students' ability to work both independently and to collaborate with others.

Teaching can be planned so that foreign languages are included in the teaching material and teaching. Additionally, the teaching will support the development of the student's IT skills.

12. Rules for credit for subject elements

12.1. Credit for subjects covered by the curriculum's institutional part

Indication of any prior credit approval for the credit of programme elements covered by the curriculum's institutional part.

Passed institutional programme elements are equivalent to the corresponding elements at other educational institutions that offer this programme or other programmes that contain the relevant programme elements.

12.2. Prior credit approval

Students may apply for prior credit approval. For prior credit approval of studies in Denmark or abroad, students are required to document each approved and completed programme element on the completion of these studies. In connection with the application for prior credit approval, the students must give permission to the institution to obtain any required information after the completion of their studies.

Upon approval of the prior credit approval, the programme element is considered completed if it is passed according to the rules of the programme.

13. Criteria for the evaluation of study activity

Enrolment can be terminated for students who have not been active on a programme for a continuous period of at least one year.

Study activity is therefore defined as follows, students must have **within the last 12 months**:

- participated in the programme's exams
- fulfilled their obligation to participate in any kind of activity, which is included as part of the programme, including group work, joint projects, remote learning, etc. as stipulated in this curriculum
- handed in, as stipulated in this curriculum, the tasks, reports, (learning) portfolios, etc., which are prerequisite requirements for participation in exams, and that they have credible content, and have not handed in material that others have copyright to
- been present for activities with compulsory attendance, as stipulated in this curriculum

Failure to meet one or more criteria in the definition of study activity can lead to the student's enrolment being terminated.

Periods during which the student has not been active due to leave, maternity/paternity leave, adoption, a documented illness or military service do not count. The student may be required to provide documentation for these circumstances.

The programme may grant exemptions from these provisions if there are exceptional circumstances. The exemption application must be sent to the head of department.

Prior to the student's enrolment being brought to an end, the student will be advised of this in writing. In connection with this, the student must be made aware of the rules above. The letter to the student must make it apparent that the student has 14 days to submit an application of exemption and evidence that the lack of activity on the programme should not count.

If the student has not responded within the time limit, their enrolment will be terminated.

If the student requests that their enrolment not be terminated, termination is delayed until the case has been decided by the head of the programme.

The student can complain about the decision to the pro-rector within two weeks of receipt of the decision. The complaint will delay any further action. If the pro-rector upholds the decision, the student may appeal to the Ministry of Higher Education and Science within two weeks of receipt of the decision with respect to any legal issues.

Rules about the exams, which the students according to the Ministerial Order for Examinations should have participated in before the end of the 2nd semester and passed before the end of the 3rd semester, and where the Ministerial Order for this programme has fixed time limits for completion of the programme, apply irrespective of the above rules.

Study activity and SU

If you start on a new higher education programme on 1 July 2016 or later and get SU while you are studying, you cannot postpone your programme for more than 6 months (equivalent to 30 ECTS) in proportion to the number of months you have had SU for your programme. If the student postpones their programme for more than 6 months, SU will be stopped.

For students that started on the programme before 1 July 2016, the previous rules apply, i.e that you can postpone your programme with up to 12 months before your SU will be stopped.

As an educational institution, we continuously check the students' study activity. Read more about the SU rules on su.dk. (in Danish only)

14. Requirements concerning a foreign language

Most of the programme's teaching material and teaching is in English.

No additional knowledge of a foreign language is required, other than what is stated in the admission requirements

15. Rules of exemption

If warranted by exceptional circumstances, the Academy may deviate from what has been stated in this curriculum. The various institutions must cooperate in order to have a homogenous dispensation policy.

16. Commencement and transitional schemes

This part of the institutional curriculum is valid from 1 January 2021 and is valid for all students.

At the same time, the institutional part of the curriculum from 01.08.2018 is repealed. However, exams which have been started before 01.01.2021, must be completed according to the relevant curriculum at that time, but must be completed no later than 01.03.2021.

17. Legal basis

The following current legislation applies to the programme:

- Ministerial Order no. 786 from 08/08/2019: Ministerial Order for Academies of Professional Higher Education
- Ministerial Order no. 1343 from 10/12/2019: Ministerial Order for Academy Profession degree programmes and Bachelor degree programmes
- Ministerial Order no. 1162 from 10/07/2020: Ministerial Order for technical and commercial business academies and professional bachelor courses
- Ministerial Order no. 18 from 09/01/2020: Ministerial Order for examinations in higher educational business programmes
- Ministerial Order no. 152 from 26/02/2020: Ministerial Order for admission to business academies and professional bachelor courses
- Ministerial Order no. 114 from 03/02/2015: Ministerial Order for marking scales and other assessment criteria

The applicable laws and ministerial orders are available on www.retsinfo.dk (in Danish only).

Appendix 1.

The division of Integrative Technology and Product Development into respectively part 1 and part 2 on the 1st and 2nd semester.

This subset can be seen below. Information in brackets behind each learning objective indicates which subject element the learning objectives come from.

Part 1 from Integrative Technology and Production for the 1st semester exam

Knowledge

The student will gain knowledge about:

- and an understanding of the practice, applied theory and methods for product development and innovation seen in the context of the company's organisations and systems, and will be able to reflect on how they are used in a business context (*Integrative Technology part 1*)
- and an understanding of the practice, theory and methods for product development processes in all of its phases – including the project's economic impact both during manufacture/construction and operation, and will be able to reflect on how they can be used in a business context (*Product Development part 1*)

Skills

The student will get the skills to:

- evaluate practice-orientated and theoretical issues in implementation processes associated with the use of new technologies across the company as well as identify strengths and weaknesses of these and justify and select appropriate options (*Integrative Technology part 1*)
- communicate practice-orientated and academic issues and solutions to business partners and users, including the use of appropriate IT tools in the preparation and presentation of projects, concepts and solutions (*Integrative Technology part 1*)
- evaluate practice-orientated and theoretical issues for the meaning of terms and their use in connection with the development in technical language and technology and justify and choose relevant terms (*Product development part 1*)

Competencies

The student will learn to:

- manage parts of complex product and technological development, including modifications of products and systems (*Integrative Technology part 1*)
- manage both commercial and technologically appropriate product development and create a project design for technological project work on the basis of selection, analysis and a delimitation of a problem statement (*Product development part 1*)
- identify their own learning needs and develop their own knowledge, skills and competencies in relation to product development (*Product development part 1*)

Part 2 from Integrative Technology and Production for the 2nd semester exam

The learning objectives can be found below. Information in brackets behind each learning objective indicates which subject element the learning objectives come from.

Knowledge

The student will gain knowledge about:

- essential practical and theoretical aspects of integration in connection with products and systems as well as management, planning and evaluation tools in the environmental field, including environmental management, environmental management systems and sustainability philosophies (*Integrative Technology, part 2*)
- and an understanding of the practice, applied theory and methods for product development and innovation seen in the context of the company's organisations and systems, and will be able to reflect on how they are used in a business context (*Integrative Technology part 2*)
- the practical and theoretical methodological structure of a technological project work (*Product development part 2*)
and an understanding of the practice, theory and methods for product development processes in all of its phases – including the project's economic impact both during manufacture/construction and operation, and will able to reflect on how they are can be used in a business context. (*Product development part 2*)

Skills

The student will get the skills to:

- apply methods and tools for the identification and analysis of important technological issues relating to the connection between a product's construction, manufacture and use, and must master assessing significant practical and theoretical aspects of the integration of products and systems, including the relationships between technology, technique, knowledge and organisation(s) (*Integrative Technology, part 2*)
- apply methods and tools for the identification and collection of a company's data basis and based on this, contribute to the development and optimisation of processes across the organisation and must master the planning of development work, testing of the product/the solution (proof of concept) and identify the quality of technological project work in relation to the results, validity, reliability and relevance (*Product development part 2*)
- communicate practice-orientated and professional issues as well as solutions to peers, users and partners in a business context, including environmental and sustainability considerations regarding product development. (*Product development part 2*)

Competencies

The student will learn to:

- independently engage in academic and interdisciplinary cooperation across the organisation and prevailing disciplines with a view to implementing technologies and concepts and assuming responsibility within the framework of professional ethics, including leading and managing technical development projects (*Integrative Technology, part 2*)
- identify their own learning needs and develop their own knowledge, skills and competencies in relation to the development, implementation and management of the integration of technologies (*Integrative Technology, part 2*)
- manage both commercial and technologically appropriate product development and create a project design for technological project work on the basis of selection, analysis and a delimitation of a problem statement (*Product development part 2*)
- independently engage in academic and interdisciplinary cooperation across the organisation and prevailing disciplines with a view to implementing product development and assuming responsibility within the framework of professional ethics (*Product development part 2*)