Curriculum for the Academy Profession Degree Programme in Production Technology

August 2020

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1. Curriculum framework

This is a translated version of the Danish curriculum. In case of any discrepancies between this curriculum and the Danish curriculum, the text in the Danish curriculum applies.

The purpose of the programme is to qualify students to independently plan, organise and carry out tasks specific to the development and construction of products, machines, operational solutions, industrial production, as well as technical sales and procurement in companies primarily within the industry.

This full-time programme is equivalent to 120 ECTS credits. The academy profession programme is a level 5 in the qualifications framework for lifelong learning in accordance with the qualifications framework for higher education.

The Academy Profession Degree Programme in Production Technology gives the graduate the right to use the title AP graduate in Production Technology.

The title of the programme is Academy Profession Degree Programme in Production Technology.

The following acts and ministerial orders apply to the programme:

Danish (Consolidated) Act on Academies of Professional Higher Education

Danish (Consolidated) Act on Academy Profession Programmes and Professional Bachelor Programmes

Ministerial Order on Technical and Commercial Academy Profession Programmes and Professional Bachelor Programmes

Ministerial Order on Examinations on Professionally Oriented Higher Education Programmes (the examination order)

Ministerial Order on Admission to and Enrolment on Academy Profession Programmes and Professional Bachelor Programmes (the Admissions Order)

Ministerial Order on the Grading Scale and Other Forms of Assessment of Study Programmes Offered under the Ministry of Higher Education and Science.

National part/local part of the curriculum

The curriculum consists of a national part, adopted by the Academies of Professional Higher Education's educational network for the programme and an institutional part established by the individual educational institution.

The national part was approved by the programme network of the Profession Academies in August 2019.

This curriculum will be effective from August 2020 and apply to all students attending the programme.

1.1. **Transitional schemes**

There are no transitional scheme. This curriculum applies to all students attending the programme.

1.2. **The programme's goals for learning outcomes:**

Knowledge

The graduate will have knowledge about:

- the practice of the profession and the subject area as well as key applied theory and methods in:
    - companies' use of technical, organisational, financial, quality and environmental theories and methods in production, product development and technical sales and procurement
    - technical, organisational, financial, quality and environmental concepts and methods and companies' use of these concepts and methods in production, product development and technical sales and procurement
    - globalisation and international development trends.

Skills

The graduate will get the skills to:

- apply the key methods and tools of the subject area
- apply technical, innovative, creative and analytical skills associated with employment in production, product development and technical sales and procurement
- assess practice-orientated issues and list and select appropriate solutions in the technical, organisational, financial, quality and environmental areas
- communicate practice-orientated problems and solutions to partners and users, including the use of technical documentation and calculation to communicate technical, organisational, financial, quality and environmental issues and solutions.

Competencies

The graduate will learn to:

- handle situations of a development-orientated nature in production, product development and technical sales and procurement
- take part in project management of professional and interdisciplinary cooperation in production, product development, as well as purchase and sale, nationally and internationally
- acquire skills and new knowledge in relation to production, product development and technical sales and procurement in a structured context.

2. Admission

Admission is in accordance with the Ministerial Order on Admission to and Enrolment on Academy Profession Programmes and Professional Bachelor Programmes.

3. National and local subject elements

3.1. **Sequencing of subject elements, internship and exams**

Programme structure					
Subject elements	**National subject elements**		**Local subject elements**		
	First year of study				
	First semester	**Second semester**	**Third semester**		**Fourth semester**
Product Development 10 ECTS	7	3			
Construction 10 ECTS	5	5			
Technical Documentation 6 ECTS	2	4			
Materials & Manufacturing Processes 9 ECTS	5	4			
Business Technology 11 ECTS	4	7			
Production Engineering 8 ECTS	4	4			
Automation 6 ECTS	3	3			
Local subject elements 16 ECTS				16	
Electives 14 ECTS				14	
Internship 15 ECTS					15
Final exam project 15 ECTS					15
ECTS credits Total 120 ECTS	30	30		30	30

The PT programme is based on 7 subject areas. It comprises 120 ECTS credits over 2 years of study with a distribution of 30 ECTS credits in each semester.

First-year exam
The first-year exam consists of 2 part-exams (A and B) of 30 ECTS each. Part-exams A and B are each weighted 50% of the grade for the first-year exam, and both part-exams must be passed with a grade of 02 in order for the student to continue in the second year of study.

Under each of the following 7 subject areas, (1) and (2) indicate which knowledge, skills and competencies are tested in the first semester (1) (part-exam A) and which are tested in the second semester (2) (part-exam B).

3.2. The programme includes 7 national subject elements

3.2.1. Product Development

Contents

Subject element Product Development deals with planning and execution of the product development process in product and process development and associated services and methods.

Learning outcomes for Product Development

Knowledge

The student will gain knowledge about:

- the practice of the profession and the subject area as well as key applied theory and methods in:
    - (1) systematic development of products, processes and services
    - (1) idea generation
    - (1) needs analysis
    - (1) understanding of market and business principles, including knowledge gathering and data processing
    - (1) aesthetics and design
    - (1) visualisation
    - (1) problem formulation and requirement specifications.

Skills

The student will get the skills to:

- apply the key methodologies and tools of the subject area as well as the skills associated with employment in the industry, including:
    - (1) outlining the product and the process
    - (1) performing functional analyses.

- assess practice-orientated issues and suggest and select possible solutions involving:
    - (1) knowledge of market and needs
    - (1) stakeholder and user perspectives.

- communicate practice-orientated issues and solutions to partners and users, including:
    - (1) listing and selecting ideas in a concept proposal
    - (2) communicating relevant results of their own work.

Competencies

The student will learn to:

- manage development-orientated situations, including:
    - (2) participation in development and ideation processes in a systematic product development process while taking into account other subject areas of the programme.
- participate in academic and interdisciplinary cooperation based on a professional approach, including:
    - (2) active participation in cross-disciplinary teamwork on the development of products and services.

- acquire new knowledge, skills and competencies in relation to the profession in a structured context, including:
    - (2) acquisition and translation of new knowledge in the development of products and services.

ECTS weight

Subject element Product Development is worth 10 ECTS credits.

3.2.2. Construction

Contents

Subject element Construction deals with dimensioning and construction of a physical product based on the identified specifications and load conditions with due consideration of the interaction with other subject elements having an impact on the entire construction.

Learning objectives for Construction

Knowledge

The student will gain knowledge about:

- the practice of the profession and the subject area as well as key applied theory and methods, including:
    - (1) statics and the science of the strength of materials
    - (1) dimensioning of constructions
    - (2) commonly used machine elements and concepts

- (2) 3D models and basic FEM analysis (Finite Element Method)
- (2) risk analysis.

- practice and key applied theories and methods as well as the profession's use of theories and methods, including:
  - (2) product dimensioning and its influence on other decision-making in a development process
  - (2) tolerancing and its impact on manufacturing processes, the price and use of a product.

Skills

The student will get the skills to:

- apply the key methodologies and tools of the subject area as well as the skills associated with employment in the industry, including:
  - (1) calculation of estimates on statically determined constructions
  - (1) identification of the various forms of tension arising in a load-bearing construction
  - (2) identification of critical points in a construction, strength calculation and dimensioning of a construction.

- assess practice-orientated issues and suggest and select possible solutions, including:
  - (2) demonstration of a practical sense of the design of physical products in relation to material strength
  - (2) incorporation of standard solutions in construction design
  - (2) calculation and determination of relevant tolerances for a given construction.

- communicate practice-orientated issues and solutions to partners and users, including:
  - (2) a well-structured account of dimensioning and construction solutions
  - (2) application of commonly used IT tools for the acquisition of knowledge, data processing, documentation and presentation.

Competencies

The student will learn to:

- manage development-orientated situations, including:
  - (2) incorporation of inputs from and outputs to the other subject areas in their work, taking into account in particular:
    - the choice of material
    - producibility
    - assembly
    - function(ality).

- participate in academic and interdisciplinary cooperation based on a professional approach,

including:

- (2) engaging in interdisciplinary cooperation on the dimensioning of simple statically determined constructions.

- acquire new knowledge, skills and competencies in relation to the profession in a structured context.

ECTS weight

Subject element Construction is worth 10 ECTS credits.

3.2.3. Technical Documentation

Contents

Subject element Technical Documentation deals with technical documentation with correct approval criteria in accordance with current norms and standards.

Learning objectives for Technical Documentation

Knowledge

The student will gain knowledge about:

- the practice of the profession and the subject area as well as key applied theory and methods, including:
  - (1) structure and coherence in building a 3D model
  - (2) types of technical drawing and hierarchy in relation to subsequent application.

- practice and key applied theories and methods as well as the profession's use of theories and methods, including:
  - (2) current standards and directives
    - technical drawing, line weight, layout of views and drawing layout
    - CE marking
    - common file standards for export to CAM (Computer-Aided Manufacturing).
  - (2) the complete technical dossier, its structure, purpose and scope
    - the importance of technical forms of documentation in a global and legal context
    - technical drawing as a means of communication.

Skills

The student will get the skills to:

- apply the key methodologies and tools of the subject area as well as the skills associated with employment in the industry, including:

- (1) the use of 3D CAD (Computer-Aided Design) software in the construction of a 3D CAD model at part as well as assembly level
- (2) the use of 3D CAD software in the preparation of technical production drawings in accordance with current norms and standards as well as subsequent application
- (2) the preparation of illustrations based on 3D models and prototypes.

- assess practice-orientated issues and suggest and select possible solutions, including:
  - (2) application and assessment of commonly used IT tools for the acquisition of knowledge, data processing, documentation and presentation.

- communicate practice-orientated issues and solutions to partners and users, including:
  - (1) conversion of sketches, concept descriptions and design calculations to a 3D CAD model.

Competencies

The student will learn to:

- manage development-orientated situations, including:
  - (2) the use of relevant software solutions for technical documentation
  - (2) the application of relevant standards and norms for the purpose of documentation in complex contexts.

- participate in academic and interdisciplinary cooperation based on a professional approach, including:
  - (2) management of essential parts of the technical documentation in an interdisciplinary development process while taking into consideration input and output from the other core areas.

- acquire new knowledge, skills and competencies in relation to the profession in a structured context, including:
  - (2) 3D modelling and documentation standards.

ECTS weight

Subject element Technical Documentation is worth 6 ECTS credits.

3.2.4. Materials & Manufacturing Processes

Contents

Subject element Materials & Manufacturing Processes deals with the prerequisites for qualified selection of materials and manufacturing processes based on professional and interdisciplinary parameters.

Learning objectives for Materials & Manufacturing Processes

Knowledge

The student will gain knowledge about:

- the practice of the profession and the subject area as well as key applied theory and methods, including:
  - (1) physical properties of and suitable manufacturing processes for:
    - metals, particularly steel and aluminium
    - plastic, elastomers and composites
    - wood
    - ceramics
    - new materials.
  - (2) surface and heat treatment of various materials
  - (1) joining technologies
  - (1) machining processes
  - (2) choice of materials in a sustainability perspective
  - (2) materials testing.

- practice and key applied theories and methods as well as the profession's use of theories and methods, including:
  - (2) material properties and their implications for a product development process
  - (1) manufacturing processes and their implications for the quality and price of the final product.

Skills

The student will get the skills to:

- apply the key methodologies and tools of the subject area as well as the skills associated with employment in the industry, including:
  - (1) the use of databases/reference books for the provision of data on materials, including
    - physical properties
    - manufacturing processes
    - environment/sustainability.

- assess practice-orientated issues and suggest and select possible solutions, including:
  - (1) selection of materials based on their properties and design requirements
  - (1) identification, assessment and recommendation of suitable manufacturing processes
  - (2) identification of relevant material properties in relation to the function of a product and subsequent assessment and selection of suitable materials
  - (2) assessment of the relationship between materials, manufacturing processes and sustainability
  - (2) assessment of materials and manufacturing process from an environmental perspective
  - (2) recommendation of manufacturing processes based on realisability.

- communicate practice-orientated issues and solutions to partners and users in relation to

materials and manufacturing processes.

Competencies

The student will learn to:

- manage development-orientated situations, including:
  - (2) contributing to the choice of materials and manufacturing processes based on a holistic understanding of the realisable manufacture of the product/service.

- participate in academic and interdisciplinary cooperation based on a professional approach, including:
  - (2) interdisciplinary cooperation on the selection of materials and manufacturing processes taking into account the framework provided by the other core areas.

- acquire new knowledge, skills and competencies in relation to material properties and manufacturing processes in a structured context.

ECTS weight

Subject element Materials & Manufacturing Processes is worth 9 ECTS credits.

3.2.5. Production Engineering

Contents

Subject element Production Engineering deals with preparation, planning and use of a company's production assets.

Learning objectives for Production Engineering

Knowledge

The student will gain knowledge about:

- the practice of the profession and the subject area as well as key applied theory and methods in:
  - (1) manufacturing and production processes
  - (1,2) principles in production engineering, including:
    - production layout
    - process and product flows
  - (1) basis of production, including data processing
  - (1) stock building and management
  - (1) lead-time in production engineering
  - (2) control measurement methods
  - (1) allocation of resources

- (1) cost prices
- (1) physical work environment in production.

Skills

The student will get the skills to:

- apply the key methodologies and tools of the subject area as well as the skills associated with employment in the industry, including:
  - (1) preparation of the manufacture of a product taking into account the company's other systems, cost price and a given production layout.

- assess practice-orientated issues and suggest and select possible solutions, including:
  - (2) comparison with alternative solutions in terms of costs and resource consumption
  - (1) translating the basis of construction into basis of production
  - (1) preparation of production plans on the basis of production and use of methodical planning tools.

- communicate practice-orientated issues and solutions to partners and users, including:
  - (2) presentation of their solutions and results in a practice-orientated context.

Competencies

The student will learn to:

- manage development-orientated situations, including:
  - (2) preparation of the manufacture of a given product
  - (2) application of commonly used IT tools for the acquisition of knowledge, data processing and documentation.

- participate in academic and interdisciplinary cooperation based on a professional approach, including:
  - (2) actively incorporating elements from the other subject elements, in particular business technology, in the preparation of production
  - (2) contributing to the planning of the manufacture of a given product
  - (2) taking part in interdisciplinary dialogue with the other subject elements on product and production optimisation.

- acquire new knowledge, skills and competencies in relation to production technical work in a structured context.

ECTS weight

Subject element Production Engineering is worth 8 ECTS credits.

3.2.6. **Automation**

Contents

Subject element Automation deals with automation in own product design solutions and production planning in a given company.

Learning objectives for Automation

Knowledge

The student will gain knowledge about:

- the practice of the profession and the subject area as well as key applied theory and methods, including:
  - (1) control terminology, theories and methods used in automation
  - (2) future production methods in the light of digitisation
  - (1) item structure in relation to automated production.

- practice and key applied theories as well as the profession's use of theories and methods, including:
  - (1) use of pneumatics and hydraulics
  - (1) commonly used electronic control solutions
  - (1) mechanical components applied in pneumatics and hydraulics
  - (1) simple control circuits.

Skills

The student will get the skills to:

- apply the key methodologies and tools of the subject area as well as the skills associated with employment in the industry, including:
  - (1) preparation of specifications for use in the development of simple automated solutions in a production process.

- assess practice-orientated issues and suggest and select possible solutions, including:
  - (2) improvements to a product to make it suitable for automated production
  - (2) drawing on company and stakeholder data material in the configuration of future production solutions
  - (2) making allowance for later automated production of a given item or product in the construction design
  - (2) application of commonly used IT tools for the acquisition of knowledge, data processing and documentation
  - (2) estimation of the potential of automation based on a system view of production facilities, taking into account the profitability, quality and safety of the entire production system.

- communicate practice-orientated issues and solutions in relation to automation to partners and users.

Competencies

The student will learn to:

- manage development-orientated situations, including:
  - (2) qualification of automation possibilities, together with other groups of professionals, based on an overall view of the company's products and manufacturing process.

- participate in academic and interdisciplinary cooperation based on a professional approach, including:

  - (2) contributing to the development of automated solutions in a given company's work with products and/or production optimisation.

- acquire new knowledge, skills and competencies in relation to production automation in a structured context.

ECTS weight

Subject element Automation is worth 6 ECTS credits.

3.2.7. Business Technology

Contents

Subject element Business Technology deals with understanding and working with a company's management systems, including payroll, stock, production, finance, quality and environmental systems as well as the organisation of a company.

Learning objectives for Business Technology

Knowledge

The student will gain knowledge about:

- the practice of the profession and the subject area as well as key applied theory and methods in:
  - (1) project management
  - (2) business economics
  - (1) production and stock management systems
  - (2) quality management systems
  - (1) business organisation
  - (2) environment, occupational health and safety and current legislation
  - (2) technical sales and procurement
  - (1) internationalisation.

Skills

The student will get the skills to:

- apply the key methodologies and tools of the subject area as well as the skills associated with employment in the industry, including:
  - (2) project development coordination
  - (2) using economics as a significant factor in deciding on own solutions, including
    - assessing the impact on the profit and loss account and balance sheet
    - contributing to the drawing up of calculations
    - budget preparation and assessment.

- assess practice-orientated issues and suggest and select possible solutions, including:
  - (2) processing and assessing statistical data in connection with quality measurements
  - (2) preparing instructions and procedures for quality control systems
  - (2) establishing a comprehensive overview of the production and management systems of a company
  - (2) applying commonly used IT tools for the acquisition of knowledge, data processing and documentation.

- communicate practice-orientated issues and solutions to partners and users, including:
  - (2) communication of issues and possible solutions through graphically illustrated material and company information flow.

Competencies

The student will learn to:

- manage development-orientated situations, including:
  - (2) qualification of a company's data in relation to quality, finances and resources
  - (2) development of business processes, including procedures and instructions for the company's production and management systems
  - (2) implementation of optimisation processes.

- participate in academic and interdisciplinary cooperation based on a professional approach, including:
  - (2) technical sales and procurement
  - (2) preparation of a company business plan based on their own professional expertise
  - (2) interdisciplinary cooperation with the other subject areas on company management and planning.
- acquire new knowledge, skills and competencies in relation to the subject element in a structured context.

ECTS weight

Subject element Business Technology is worth 11 ECTS credits.

3.3. **Number of exams in the national subject elements**

The national subject elements of the first year of study make up 60 ECTS and are completed with part-exam A and part-exam B.

There is an internship exam in the second year of study.

Students can sit exams in the national subject elements specified in this curriculum together with subject elements in the institution-specific part of the curriculum. For a total list of all exams under the degree programme, please see section 5 of the curriculum.

3.4. **Local subject elements**

The local subject elements in the second year of study make up 30 ECTS. Project work makes up 14 ECTS credits, and 2 electives of 8 ECTS credits each make up a total of 16 ECTS credits.

Project work involves working in groups of 3 to 5. The purpose of the project work is to give the students an opportunity to specialise in specific subject elements and increase their understanding of the interdependence of the subject elements.

The learning objectives for the local subject elements are formulated in continuation of the national subject elements of the programme. The progression from the first year of study lies in the student's being able to incorporate new knowledge in the chosen subject elements.

For this reason, the third semester is structured in such a way that the students work with a problem formulated by the students themselves, possibly in cooperation with a private or public company. The groups must choose four of the seven local subject elements listed below.

The individual group decides on the four local subject elements to include in their project work.

The project is organised as project work allowing the students to work independently with the chosen problem. Meanwhile the students take part in guidance modules throughout the semester.

The learning objectives for the programme's seven local subject elements are described below, each of which is weighted 3.5 ECTS credits. Four of them must be integrated into the project work.

Product Development and Design (local programme element)

ECTS: 3.5

Learning objectives for Product Development and Design:

Knowledge

The student will gain knowledge about:

- the practice of the profession and the subject area as well as key applied theory and methods in:
    - digital modelling and manufacturing in product development
    - digitisation in product development and production
    - digital modelling and manufacturing in companies.

Skills

The student will get the skills to:

- apply the key methodologies and tools of the subject area as well as the skills associated with employment in the industry, including:
    - methods for digital design and production
    - designing to the manufacture and assembly / disassembly of the product.
- assess practice-orientated issues, propose and select possible solutions, including:
    - selection and assessment of IT tools in the acquisition of knowledge, data processing, evaluation, documentation and presentation.
- communicate practice-orientated issues and solutions to partners and users, including:
    - presenting and selecting ideas by way of alternative solutions
    - evaluating and validating solution proposals in relation to a given user group
    - communicating relevant results of their own work.

Competencies

The student will learn to:

- manage development-orientated situations, including:
    - taking part in research and project work, including the development of alternative solutions.
- participate in academic and interdisciplinary cooperation based on a professional approach, including:
    - development of products and/or processes in cooperation with other subject areas
    - structuring of the development process in a business perspective.
- acquire new knowledge, skills and competencies in relation to the profession in a

structured context, including:

- acquisition and translation of new knowledge, skills and competencies in digitised product development and production.

Construction (local programme element)

ECTS: 3.5

Learning objectives for Construction:

Knowledge

The student will gain knowledge about:

- the practice of the profession and the subject area as well as key applied theory and methods in:
  - statics and the science of the strength of materials, including dynamically impacted constructions
  - commonly used methods for the dimensioning of constructions.
- practice and key applied theories and methods as well as the profession's use of theories and methods, including
  - product dimensioning and its bearing on other decision-making in a development process, including
    - the connection between choice of concept, materials, manufacturing processes and tolerances from an overall economic and sustainability perspective.

Skills

The student will get the skills to:

- apply the key methodologies and tools of the subject area as well as the skills associated with employment in the industry, including:
  - identifying exposed points in a physical product based on its physical and mechanical properties
  - documenting the dimensions of products based on its physical and mechanical properties.
- assess practice-orientated issues, propose and select possible solutions, including:
  - the functionality of a product based on its physical and mechanical properties
  - documentation of the physical and mechanical properties of a product in a product development process.
- communicate practice-orientated issues and solutions to partners and users, including:

- reflection on the use of simulation programmes to determine the suitability of a product based on its physical and mechanical properties.

Competencies

The student will learn to:

- manage development-orientated situations, including:
  - contributing knowledge of the physical and mechanical properties of a product to project work.
- participate in academic and interdisciplinary cooperation based on a professional approach, including:
  - the development of products and/or processes in cooperation with other relevant perspectives.
- acquire new knowledge, skills and competencies in relation to the profession in a structured context, including:
  - acquisition of new knowledge, skills and competencies in product dimensioning, including the use of various FEA (Finite Element Analysis) tools for determining loads and stresses in a structure.

Technical Documentation (local subject element)

ECTS: 3.5

Learning objectives for Technical Documentation:

Knowledge

The student will gain knowledge about:

- the practice of the profession and the subject area as well as key applied theory and methods in:
  - technical documentation of physical products, including standards, norms and rules for documentation in a global perspective.
- practice and key applied theories and methods as well as the profession's use of theories and methods, including
  - the importance of various forms of documentation in a global context
  - tolerancing and its impact on manufacturing processes, price and applicability of a product
  - preparing technical drawings on an unambiguous basis
  - the difference between and the need for plausible use of dimensional tolerances and geometric tolerances
  - conversion of sketches, concept descriptions and design calculations to 3D CAD models
  - the connection between choice of concepts, materials, manufacturing processes

and tolerances in an overall economic and sustainability perspective.

Skills

The student will get the skills to:

- apply the key methodologies and tools of the subject area as well as the skills associated with employment in the industry, including:
  - the use of 3D software in the preparation of technical production drawings in accordance with current norms and standards as well as subsequent application.

- assess practice-orientated issues, propose and select possible solutions, including:
  - considering the connection between choice of concepts, materials, manufacturing processes and tolerances in an overall economic and sustainability perspective.

- communicate practice-orientated issues and solutions to partners and users, including:
  - communicating, on an informed basis, the choice of tolerances in an interdisciplinary perspective.

Competencies

The student will learn to:

- manage development-orientated situations, including:
  - adjusting the basis of documentation to the development of new or existing products.

- participate in academic and interdisciplinary cooperation based on a professional approach, including:
  - contributing to the technical basis of documentation in an interdisciplinary project, including preparation of a technical dossier (CE marking etc.).

- acquire new knowledge, skills and competencies in relation to the profession, independently and in a structured context, including:
  - customer demands, new rules / standards and software.

Materials and Manufacturing Processes (local subject element)

ECTS: 3.5

Knowledge

The student will gain knowledge about:

- the practice of the profession and the subject area as well as key applied theory and methods in:
  - sustainability in product development
  - manufacturing processes, quantity and their impact on the environment, quality and price
  - test methods for material properties.

- practice and key applied theories and methods as well as the profession's use of theories and methods, including:
  - analysis of a product's environmental impact
  - comparison of production sizes and price.

Skills
The student will get the skills to:

- apply the key methodologies and tools of the subject area as well as the skills associated with employment in the industry, including:
  - analysis and use of technical specifications in their choice of material and manufacturing method
  - assessing a product's suitability for production
  - analysing a product's suitability for recycling.

- assess practice-orientated issues, propose and select possible solutions, including:
  - choosing materials based on several criteria and design requirements
  - suggesting materials and production process from a sustainability perspective.

- communicate practice-orientated issues and solutions to partners and users, including:

Competencies
The student will learn to:

- manage development-orientated situations, including:
  - taking part in research and project work, including the development of alternative solutions.

- participate in academic and interdisciplinary cooperation based on a professional approach, including:
  - choosing materials and production processes for a product, taking into account several criteria and design requirements.

- acquire new knowledge, skills and competencies in relation to the profession, independently and in a structured context, including:
  - acquisition of new knowledge, skills and competencies in the choice of materials and manufacturing processes.

Business Technology (local subject element)

ECTS: 3.5

Learning objectives for Business Technology:

Knowledge
The student will gain knowledge about:

- the practice of the profession and the subject area as well as key applied theory and methods within:
    - project management
    - a company's production management systems
    - business economics
    - technical sales and procurement
    - environment and working environment.

Skills

The student will get the skills to:

- apply the key methodologies and tools of the subject area as well as the skills associated with employment in the industry, including:
    - project coordination and management
    - methods in economics for the assessment of various solutions
- assess practice-orientated issues, propose and select possible solutions, including:
    - evaluation and compilation of data material on quality measurements
    - assessment of a company's processes and procedures.
- communicate practice-orientated issues and solutions to partners and users by means of graphical materials and information flow in the company.

Competencies

The student will learn to:

- manage development-orientated situations, including:
    - a company's data in relation to quality, finances and resources
    - a company's management systems.
- participate in academic and interdisciplinary cooperation based on a professional approach, including:
    - the purchase and sale process.
- acquire new knowledge, skills and competencies in relation to company finances, quality and resources in a structured context and understand optimisation processes.

Production Engineering (local subject element)

ECTS: 3.5

Learning objectives for Production Engineering:

Knowledge

The student will gain knowledge about:

- the practice of the profession and the subject area as well as key applied theory and methods in:
  - manufacturing and production processes
  - mapping and visualisation of a company's processes
  - quality/quantity optimisation of processes
  - finances.

Skills

The student will get the skills to:

- apply the key methodologies and tools of the subject area as well as the skills associated with employment in the industry, including:
  - making use of production and process planning methods.

- assess practice-orientated issues, propose and select possible solutions, including:
  - identification of issues in companies' value and supply chains
  - listing of alternative cost-effective solutions
  - being responsible for IT tools for the collection of knowledge, data and documentation.

- communicate practice-orientated issues and solutions to partners and users, including:
  - presentation and selection of alternative solutions
  - the company's production tasks.

Competencies

The student will learn to:

- manage development-orientated situations, including:
  - participation in research and project work
  - development of alternative solutions.

- participate in academic and interdisciplinary cooperation based on a professional approach, including:
  - development of products and/or processes in cooperation with other subject areas.
- acquire and translate new knowledge, skills and competencies in relation to automation, production and process optimisation in a structured context.

Automation (local subject element)

ECTS: 3.5

Learning objectives for Automation:

Knowledge

The student will gain knowledge about:

- the practice of the profession and the subject area as well as key applied theory and methods in:
  - industrial automation
  - industrial control system
  - industrial robots
  - industry 4.0.

Skills

The student will get the skills to:

- apply the key methodologies and tools of the subject area as well as the skills associated with employment in the industry, including:
  - incorporation of methods for production automation.
- assess practice-orientated issues, propose and select possible solutions, including:
  - selection and evaluation of appropriate automation systems for production
  - communication of practice-orientated issues and solutions to partners and users, including:
    - selection and assessment of appropriate automation systems for production development
    - communication of the results of their own professional work in the form of drawings and work simulation.

Competencies

The student will learn to:

- manage development-orientated situations, including:
  - research and project work on the development of alternative solutions.
- participate in academic and interdisciplinary cooperation based on a professional approach, including:
  - development of products and/or processes in cooperation with other subject areas
  - structuring of the development process from a business perspective
  - assessing the potential for automation based on a systemic consideration of

production plants.

- acquire new knowledge, skills and competencies in relation to the profession, independently and in a structured context, including**:**
    - acquisition and translation of new knowledge, skills and competencies in production automation, product development and production.

3.5. **Electives**

The electives are described in the electives catalogue on KEA's IT portals. Electives will only run when a minimum of 20 students have signed up.

3.6. **Internship**

Learning objectives for the internship

The internship is organised so as to contribute to the student's developing practical competencies in combination with the programme's other elements. The purpose of the internship is to enable the student to apply the methods, theories and tools acquired to the implementation of specific practical assignments within the key areas of the programme and the electives chosen by the student.

Knowledge

The student will gain knowledge about:

- the practice of the profession and the subject area as well as key applied theory and methods in:
    - the overall financial and organisational circumstances of a specific company
    - the overall company description, including products and markets
    - the context of the internship and the company
    - the student's own role in relation to the company.

Skills

Under supervision, the student will get the skills to:

- plan and implement their own work assignments in the company
- apply acquired and appropriate technical and analytical working methods associated with employment in the industry
- assess and communicate practice-orientated issues and problems, and list possible solutions to the company.

Competencies

Under supervision, the student will learn to:

- manage and structure practical and technical situations in relation to the company

- participate in professional and interdisciplinary cooperation with a professional approach
- acquire new knowledge, skills and competencies in relation to the profession.

ECTS weight

The internship is worth 15 ECTS credits.

Number of exams

The internship completes with an exam.

3.7. **Rules for the completion of the internship**

Internships have a duration of 10 weeks equivalent to 15 ECTS credits. The internship is placed in the fourth semester, immediately before the students have to write their final project.

The internship must be completed as one of the following: (A description of the individual types of internship can be found at KEA's IT portals)

1) On-the-job experience in Denmark
2) On-the-job experience abroad
3) Entrepreneurial internship in own company

On-the-job experience in Denmark or abroad will be in cooperation with a Danish or foreign company. A contract with assignments and learning objectives will be entered into and approved by the student, the company, and the internship supervisor.

The contract is to be filled in via KEA's IT portals.

Students opting for entrepreneurial internship in their own company must apply for admission (and be admitted) to a structured incubator course before the internship can be approved.

3.8. **Teaching and working methods**

The programme uses a broad range of teaching and learning methods, for example:

- Classroom teaching
- Group work
- Case-based exercises
- Company field trips
- Interdisciplinary project-orientated teaching
- Student presentations
- Cooperative learning
- Digital learning technologies and learning environments
- Workshops
- Self-study

Teaching and learning methods are adapted to the individual programme elements in order to develop the student's knowledge, skills and competencies. Teaching and learning methods

emphasise a professional presence in the programme through a mix of theory and practical exercises.

The extent of the teaching corresponds to a full-time study.

Learning is considered a process that involves the supply of relevant knowledge and new perspectives on existing knowledge combined with the opportunity for students to work with practice-orientated assignments, alone or together with others, under the guidance of the teachers.

As far as possible, teaching and learning is based on problem formulation, project-organised, practice-orientated and visionary teaching. The students should be able to see the common thread, understand the connection to the outside world, and their imagination and creativity must at all times be challenged.

The basic idea is that students will learn the most from their own experiences, i.e. by doing something rather than hearing other people talk about it. To get started, students only need the most basic knowledge, including examples of solution methods. The teacher's role is to ensure that students have the basic knowledge, and to guide them on an ongoing basis.

One of the objectives of the programmes - an objective which is emphasised again and again by host companies and graduates - is that the graduates must be able to do application-orientated work in cooperation with others - that is, they must be socially competent and apply a cooperative approach. That is why the programme is based mainly on group work. This means that students should be present and participate in the planned group work, and students are therefore expected to inform their group of any absence, illness, etc. as soon as possible.

Students must remember that they share the responsibility for their own learning, and experience has shown that only the students themselves are able to acquire learning through their own interest and efforts. It is the responsibility of the teachers and KEA to create such frameworks and inspire the students to be keen learners.

3.9. **Differentiated teaching**

Not relevant.

3.10. **Reading of texts in foreign languages**

The teaching materials will be in English.

4. Internationalisation

4.1. **Education abroad**

The electives take place in the third semester, which allows the students to take this semester abroad.

The internship and the final project in the fourth semester can also be completed abroad.

4.2. **Agreements with foreign educational institutions on parallel courses**

To be continuously updated on KEA’s portals.

5. Exams in the programme

5.1. Programme exams

When students enrol on a programme element, start a semester etc., they are also registered for the related exams. It is not possible to unregister for exams during the course of the programme.

Sequencing	Exam	90 ECTS distributed on the exams	Assessment
First semester	Product Development - Manufacturing and Automation (Part-exam A)	30	7-point grading scale
Second semester	Product Development - Manufacturing and Automation (Part-exam B)	30	7-point grading scale
Third semester	Semester project. Electives exam 1 Electives exam 2	14 8 8	7-point grading scale 7-point grading scale
Fourth semester	Internship exam	15	7-point grading scale
	Final exam project	15	7-point grading scale

5.1.1. Examination forms

First semester
Part-exam A in the first semester consists of a number of written portfolio assignments which together form the basis for the assessment of the part-exam. KEA will set a deadline by when all portfolio assignments must be submitted. It is a requirement that all portfolio assignments must be passed individually with a grade of 02 as a minimum.

The individual portfolio assignments are weighted in the overall assessment as illustrated in the table below. The grade for the individual portfolio assignments and the resulting grade for part-exam A are communicated to the student. Only the overall grade for the first-year exam will appear on the diploma.

If portfolio assignments are submitted immediately after completion of the course, the student(s) will receive feedback on the assignment. There will be no feedback on portfolio assignments submitted later than the first deadline for submission. Deadlines for submission with feedback will appear on KEA's learning platform at the beginning of the semester.

Part-exam A

First semester (30 ECTS)	ECTS / Weighting
Statics, strength of materials and material	7

science CO (5) MF (2)	
SolidWorks TD (2)	2
Product Development PD (7)	7
Manufacturing Processes MP (3)	3
Mass Production BT (4) PE (4)	8
Automation AU (3)	3
SUM	**30**

Second semester

The second part-exam (B), which concludes the second semester, consists of an overall semester report and an oral examination. The semester report will be prepared in groups of 3 to 5 students. It is a requirement that the second part-exam (B) must be passed individually with at least the grade of 02.

Part-exam B

Second semester (30 ECTS)	ECTS
Report + Oral exam	30
SUM	**30**

The oral exam has an external co-examiner and is based on a written project.

- The group will have 20 min. for an oral presentation.
- Then the members of the group are examined for 15 minutes, one after the other, and given their grade.

The learning objectives for the exam are identical to the learning objectives for the national subject elements. See sections 3.2-3.3.

Third semester

The third-semester oral exam is based on a written project. The project will be prepared in groups of 3 to 5 students.

- The group will have 20 min. for an oral presentation.
- Then the members of the group are examined for 15 minutes, one after the other, and given their grade.

The learning objectives for the exam are identical to the learning objectives for the chosen local subject elements. See section 3.4.

Electives exams

The exam form is described in the electives catalogue. The learning objectives for the exam are identical to the learning objectives set out in the electives catalogue. The exam is with an internal examiner.

Fourth semester

- Internship exam:
    - Written exam: The internship report constitutes the basis of assessment together with the learning objectives for the internship, cf. sections 3.6-3.7. The exam has internal assessment.

The final exam project, which has an external co-examiner, is based on a written project.

- The student will have 15 min. for an oral presentation.
- The student is then examined for 15 minutes and given their grade.

The final exam project must show the extent to which the student has met the learning objectives for the entire programme as set out in section 1.2.

5.1.2. Mandatory activities - attendance and submission

Attendance is not mandatory. However, by far the majority of the programme is about students becoming competent cooperation partners. This is one of the reasons why this programme is based on group work, and in order to get a good outcome, students must necessarily take part in this group work. Therefore, we recommend that students participate in the teaching and hand in and present the assignments and projects involved.

Exam forms based on the assessment of written work require that the written part should be handed in on time and that it satisfies all the formal requirements for the exam.

5.1.3. Academic progression in exams

First semester

- Students must demonstrate their knowledge of tools, theories, and methods from the first semester teaching in relation to a given issue/case.

Second semester

- Students must demonstrate their knowledge of tools, theories, and methods from the first and second semester teaching in relation to a problem defined by the students themselves.
- Students are required to draw partial conclusions from the tools, theories and methods used, and any selection and/or deselection hereof must be validated on the basis of these partial conclusions.

Third semester

- Students must demonstrate competence in selecting relevant tools, theories, and methods from the first, second and third semester teaching to be brought into play in resolving a company-specific problem.
- Students select four subject areas out of a total of seven for an in-depth analysis based on knowledge, skills and competencies from the electives, cf. the third-semester assessment

circle.
- Students are required to draw partial conclusions from the tools, theories and methods used, and any selection and/or deselection hereof as well as reflection on the results of the project must be validated on the basis of these partial conclusions.
- The students must incorporate new knowledge about the four selected subject areas.

Fourth semester

- The individual student must demonstrate competence in selecting relevant tools, theories, and methods from the first, second and third semester teaching to be brought into play in resolving a company-specific problem.
- Students are required to draw partial conclusions from the tools, theories and methods used, and any selection and/or deselection hereof as well as reflection on the results of the project must be validated on the basis of these partial conclusions.
- The tools, theories and methods used in the various core areas of the study should ideally be linked so as to help support the progression of the project.

5.1.4. Exam organisation

The project report for the first-year exam is based on group work. The final exam project and the internship report must be prepared individually.

5.1.5. Exams with an external co-examiner

The exam on 2. semester (Part-exam B) and the final project exam har external co-examiner(s).

5.2. **Programme exams and their placement**

See section 5.2

The exact exam times will be published each semester through KEA's IT portals.

5.3. **First-year exam**

The first-year exam (part-exam A and part-exam B) is a screening exam which must be passed by the end of the first year of study to allow the student to continue.

5.4. **Requirements for written assignments and projects**

Second semester (First-year exam, part-exam B)

Formal requirements for the report

The report is based on an approved synopsis.

The report must consist of min. 35 and max. 50 physical A4 pages including graphics. Use font size 12 in an easy-to-read font and 1½ line spacing.

Cover page, title page, table of contents, abstract, division of work, appendix, references and bibliography are not included in the total number of pages.

At least half of the report must consist of graphical illustrations, such as tables, diagrams, sketches, drawings, graphs and images.

The work division must be entered in an Excel sheet and appended to the report as a PDF file.

The projects will be scanned for plagiarism. Plagiarism also involves the reuse of more than one of a student's sentences from a previous project unless this has been referenced.

The first page of the report is a title page which must include the following:

- The report's title
- Full names of all group members
- Photos of all group members
- KEA name and logo
- Names of affiliated teachers/supervisors
- Number of characters in the report including spaces
- Assignments given by companies or which have a clear company association require the inclusion of the name of the company, a contact and an e-mail address
- Indication of whether the report may be published or not.

The readability of a project report will be part of the basis for the assessment, and any deviation from the above-mentioned formal requirements will have an influence on the overall assessment and grading of the report. In the last resort, the project may be rejected.

Submission

Reports and synopsis are to be saved in a PDF file and uploaded under "Submission of paper" in WISEflow.

NB: Max file size is 25 MB.

For group hand-ins, all members of the group must submit the material in the respective flows. All appendices must be aggregated in a ZIP-file and uploaded under "Appendices" in WISEflow.

- Appended material that can be saved as a PDF file must be aggregated into one file
- The first page is a table of contents of all appendices and files
- Excel documents and Microsoft Project files and SolidWorks files, if any, must be submitted in the original format/version.

Appendices do not form part of the assessment, so make sure that the report covers all core areas. Select one or two examples of technical documentation to include in the report and enclose the remaining drawings as appendices.

As it should be possible to edit, scan and flag texts and tables, reports uploaded as PDF image files will not be accepted.

Oral performance

The duration of the presentation depends on the size of the group.

- The group will have 20 min. for an oral presentation.

- Then the members of the group are examined for 15 minutes, one after the other, and given their grade.

The presentation must be based on the report and the theory and methods applied. It may also include further studies and theories as well as physical models that can help support the project.

Assessment criteria

The report and the oral representation must demonstrate that the group and the individual student have acquired the knowledge, skills and competencies to apply the methods and theories on which the teaching has been based. The more students draw on relevant methods and theories correctly and systematically to shape the direction of the project, the better the overall assessment and grading will be.

Third semester

Formal requirements for the report

The report is based on an approved synopsis.

The report must consist of min. 35 and max. 40 physical A4 pages including graphics. Use font size 12 in an easy-to-read font and 1½ line spacing.

Cover page, title page, table of contents, abstract, division of work, appendix, references and bibliography are not included in the total number of pages.

At least half of the report must consist of graphical illustrations, such as tables, diagrams, sketches, drawings, graphs and images.

The work division must be entered in an Excel sheet and appended to the report as a PDF file.

The projects will be scanned for plagiarism. Plagiarism also involves the reuse of more than one of a student's sentences from a previous project unless this has been referenced.

The first page of the report is a title page, which must include the following:

- The report's title
- Full names of all group members
- Photos of all group members
- KEA name and logo
- Names of affiliated teachers/supervisors
- Number of characters in the report including spaces
- Assignments given by companies or which have a clear company association require the inclusion of the name of the company, a contact and an e-mail address
- Indication of whether the report may be published or not.

The readability of a project report will be part of the basis for the assessment, and any deviation from the above-mentioned formal requirements will have an influence on the overall assessment and grading of the report. In the last resort, the project may be rejected.

Submission

Reports and synopsis are to be saved as PDF files and uploaded under "Submission of paper" in WISEflow.

NB: Max file size is 25 MB.

For group hand-ins, all members of the group must submit the material in the respective flows. All appendices must be aggregated in a ZIP-file and uploaded under "Appendices" in WISEflow.

- Appended material that can be saved as a PDF file must be aggregated into one file
- The first page is a table of contents of all appendices and files
- Excel documents and Microsoft Project files and SolidWorks files, if any, must be submitted in the original format/version.

Appendices do not form part of the assessment, so make sure that the report covers all the selected core areas.

As it should be possible to edit, scan and flag texts and tables, reports uploaded as PDF image files will not be accepted.

Oral exam

- The group will have 20 min. for an oral presentation.
- Then the members of the group are examined for 15 minutes, one after the other, and given their grade.

The presentation must be based on the report and the theory and methods applied. It may also include further studies and theories as well as physical models that can help support the project.

Assessment criteria

The report and the oral representation must demonstrate that the group and the individual student have acquired the knowledge, skills and competencies to apply the methods and theories on which the teaching is based. The more students draw on relevant methods and theories correctly and systematically to shape the direction of the project, the better the overall assessment and grading will be. It is also important that the projects contain new knowledge and / or technology within the selected subject areas, and that the subject areas are related to each other in a given problem statement.

5.5. **Requirements for the final exam project**

The final exam project is assessed at an individual external exam. The exam consists of a written project report, a presentation and an oral exam. The assessment is based on an overall assessment of the project and the oral performance. Students are given one aggregate grade.

The exam must demonstrate the extent to which the student has achieved the learning objectives for the programme as set out in section 1.2.

The final exam project must take as its starting point a practice-orientated problem, and the problem

formulation is to be prepared by the student in consultation with KEA and a company. KEA approves the main subject and problem formulation.

Formal requirements

The report is based on an approved synopsis.

- Max. 40 physical pages incl. graphics (with the exclusion of cover page, table of contents and sources /bibliography)
- Use font size 12 in an easy-to-read font
- The title page must contain the following information:
    - The report's title
    - The student's full name
    - Name of institution and logo
    - Names of affiliated teachers/supervisors
    - Number of characters in the report including spaces.
    - Assignments given by companies or which have a clear company association require the inclusion of the name of the company, a contact and an e-mail address.

Non-observance of the max. number of pages may have an impact on the grade. If the max. number of pages is exceeded by more than 25%, the formal requirements will not have been observed, and the project may be rejected.

Projects are generally expected to be closely related to the business community, and it is therefore essential that it appears CLEARLY from the title page which company was involved and if the report CANNOT be made publicly available. See also the section on publication.

The report is expected to make use of visual communication tools, including sketches, figures, diagrams, etc.

Please note that the projects will be scanned for any plagiarism. Plagiarism also involves the reuse of more than one sentence from students' own previous project unless this has been referenced.

Submission
Reports and synopsis are to be saved as PDF files and uploaded under "Submission of paper" in WISEflow.

NB: max file size is 25 MB.

Appendices must be aggregated into a single PDF file with a table of contents.
Excel documents and Microsoft Project files to be submitted in the original format/version.
Appendices will not be assessed.

As it should be possible to edit, scan and flag texts and tables, reports uploaded as PDF image files will not be accepted.

For group submissions, all members of the group must hand in the material in the respective flows. The name of all group members must appear from the title page/cover page. The final report must be submitted no later than 12:00 on the dates that appear from your semester plan.

Otherwise, students will have used one exam attempt.

Duration

Procedure for the final exam project: 40 min. including grading.

- The student will have 15 min. for an oral presentation.
- The student is then examined for 15 minutes and given a grade.

5.6. **How important are writing and spelling skills in terms of the assessment?**

The assessment of the final project includes not only the academic content but also the student's writing and spelling. The student's writing skills are weighted 10%, whereas the academic content is weighted 90%.

Spelling and writing skills may be disregarded by KEA upon the student's documentation of a relevant specific impairment.

5.7. **Use of materials and aids**

All materials and aids, including electronic aids, are allowed unless otherwise stated in the individual exam. KEA may restrict the access to electronic devices for reasons of capacity.

5.8. **Special exam conditions**

Examinees with physical or mental impairments and examinees with corresponding difficulties may be granted specific exam conditions where this is necessary to give them equal status to other examinees in the exam situation. Special exam conditions must, however, not change the standard level of the exam.
Examinees with a non-Danish background are allowed to bring a dictionary to exams where materials and aids are not allowed.

An application for the granting of special exam conditions must be in writing and submitted to the Head of Programme no later than one month before the exam is to be held. Documentation of impairment must be attached to the application. As a rule, extra time at the exam means 25% extra time for the exam and the preparation.

5.9. **Make-up exams**

Students who have been prevented from taking an examination due to a documented illness or another unforeseen circumstance will be given the opportunity to take a new exam as soon as possible. If the exam is in the final exam period of the programme, the student must be allowed to take the exam in the same period or in continuation of this period.

Illness must be documented by a medical certificate, and KEA must have received the medical certificate three working days after the exam at the latest. If the illness is not documented, the student will have used an examination attempt. The cost of obtaining a medical certificate is borne by the student.

5.10. **Examination language**

For programmes taught in Danish, the exams will likewise be conducted in Danish. The exams may also be conducted in Swedish or Norwegian. If a student would like to take an exam in a different language, a written application must be submitted to the Head of Programme no later than 2 months before the exam is to be held, and there must be very goods grounds for wanting this. Furthermore, the institution must have the necessary resources.

5.11. **Commencement of studies exam**

A commencement of studies exam will be held before 1 October. It is an academic exam of moderate complexity based on key elements of the teaching. This written exam is assessed as pass/fail. The exam is passed if 80% of the answers are correct.

Students who fail the exam at the first attempt must pass a re-exam. Students who pass neither the exam nor the re-exam will be disenrolled from the programme. The exam does not fall within the scope of chapter 10 of the examinations order, which means that the student cannot complain about the assessment.

5.12. **Use of own and others' written work (plagiarism)**

Projects and other material in connection with exams must be drawn up by the students themselves.

If students unlawfully use other people's work as their own (plagiarism) or use their own previously assessed work without references, they will be expelled from the exam.

Students may also be expelled after the exam.

Expulsion from an exam due to cheating means that any grade already awarded will be withdrawn, and the student will have used one exam attempt.

For information about plagiarism, see www.stopplagiat.nu.

5.13. **Exam cheating and disruptive behaviour during exams**

Cheating at exams will be handled in accordance with the rules set out in the Ministerial Order on Examinations on Professionally Oriented Higher Education Programmes (the Examination Order).

Students who cheat at an exam will be expelled from the exam.

If cheating occurs under aggravating circumstances, the student may 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 permanent expulsion from the programme.

Cheating includes:

- obtaining unlawful help during the exam
- providing unlawful help to other students during the exam
- using other people's work as one's own (plagiarism – see www.stopplagiat.nu), see also section 5.15
- using own previously assessed work without references, see also section 5.15
- using materials and aids not permitted for the exam in question.

Expulsion from an exam due to cheating means that the awarded grade will be withdrawn, and the student will have used one exam attempt.

If students exhibit **disruptive behaviour** during an exam, KEA may expel them from the exam. In less serious cases, the institution will give the student a warning.

6. Other rules governing the programme

6.1. **Rules on compulsory attendance**

The student's presence and active participation are required for most parts of the programme; however, KEA does not want to make attendance compulsory for all the teaching in the programme. There are, however, activities in the individual semesters which the student must take part in. Such activities include:

- Assessments and exams. Absence from such activities will be considered in accordance with the exam rules.
- Status postings, written and oral status tests as well as activities described as activities with mandatory attendance in the semester descriptions, for example because of assignment introductions and company visits.

6.2. **Credit transfer**

Successfully completed programme elements are equivalent to corresponding programme elements at other educational institutions offering the programme.

Students are obliged to provide information on completed programme elements from other Danish or foreign higher education programmes and on any employment for which credit transfer may be granted. On a case-by-case basis, KEA approves credit transfers based on completed programme elements and job experience comparable to subjects, programme elements and internships. The decision is based on an academic evaluation.

6.3. **Credit transfer of subjects covered by the national part of the curriculum**

Students can apply for pre-approved credit transfer. In case of pre-approval of a period of study in Denmark or abroad, the student is obliged, after completing the period of study, to document the programme elements completed during the approved period of study. Upon obtaining the pre-approval, the student must consent to KEA's requesting the necessary information after the student has completed the period of study. If a credit transfer is granted, programme elements are deemed to have been completed if they have been passed in accordance with the rules applicable to the programme.

6.4. **Credit transfer of subjects covered by the local part of the curriculum**

Based on an academic assessment, KEA may approve that programme elements completed at another Danish or foreign higher education replace programme elements covered by this curriculum.

6.5. **Criteria for the assessment of active enrolment**

A student will be called in for a talk in case of decreasing or no clear signs of study activity (active enrolment) as defined in 5.1.2.

6.6. **Disenrollment due to insufficient study activity**

Enrolment on the programme can be terminated for students who have not passed at least one exam within a consecutive period of at least one year.

6.7. **Exemption rules**

KEA may, due to exceptional circumstances, grant exemptions from the rules in this curriculum laid down solely by KEA or jointly by the educational institutions offering the programme.

6.8. **Complaints**

Complaints regarding exams will be handled in accordance with the rules set out in Chapter 10 of the Ministerial Order on Examinations on Professionally Oriented Higher Education Programmes (the Examination Order).

When should a complaint be submitted? Complaints relating to examinations and grading must be submitted within two weeks of the assessment (grade) being announced.

How should a complaint be submitted? Complaints must be submitted individually and in writing to KEA at kvalitet@kea.dk and state the reasons for the complaint. Complaints submitted jointly by several students may be rejected.

What may the complaint concern? A complaint may concern the basis for examination, the examination process or the assessment (grade).

What may the complaint result in? If a student complaint is successful, they will be offered a new assessment (for written exams) or a re-exam (for oral exam). A grade cannot be changed administratively. A grade will only be changed if the new examiners award a different grade according to their professional assessment. The new grade may be higher or lower than the original grade.

Who handles the complaint? Complaints are normally handled by KEA Quality Assessment. This does not, however, apply to complaints concerning the basis for examination if the exam has been organised by the Danish Agency for Higher Education. In such cases, the complaint is forwarded to the Danish Agency for Higher Education together with KEA's opinion.