

Curriculum for the
Academy Profession Degree Programme
in Production Technology
National section

National curriculum



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Please note: This document was translated for information purposes only. The study programme is not taught in English.

1. Background for the curriculum

The purpose of the Academy Profession Degree Programme in Production Technology is to qualify graduates to be able to independently plan, organise and carry out tasks within production, product development as well as technical sales and purchases in business and industrial enterprises.

The programme is a full-time study, the official length being 120 ECTS credits. Under the qualifications framework for Danish higher education, the programme is placed at the academy profession level, corresponding to level five of the qualifications framework for lifelong learning.

The Academy Profession Degree Programme in Production Technology gives graduates the right to bear the title AP Graduate in Production Technology. The Danish title is Produktionsteknolog AK.

The Danish name of the study programme is Erhvervsuddannelsen inden for produktion (Produktionsteknolog AK).

1.1 The latest version of the following acts and ministerial orders apply to the study programme:

The Act on Academies of Professional Higher Education (Danish title: Bekendtgørelse af lov om erhvervsakademier for videregående uddannelser)

The Act on Academy Profession Programmes and Professional Bachelor Programmes (Danish title: Bekendtgørelse af lov om erhvervsakademiuddannelser og professionsbacheloruddannelser (also known as LEP-loven).

The Ministerial Order on Academy Profession Programmes and Professional Bachelor Programmes (Danish title: Bekendtgørelse af lov om erhvervsakademiuddannelser og professionsbacheloruddannelser (also known as LEP-bekendtgørelsen).

The Ministerial Order on Examinations on Professionally Oriented Higher Education Programmes (Danish title: Bekendtgørelse om prøver i erhvervsrettede videregående uddannelser (also known as eksamensbekendtgørelsen)

The Ministerial Order on Admission to Academy Profession Programmes and Professional Bachelor Programmes. (Danish title: Bekendtgørelse om adgang til erhvervsakademiuddannelser og professionsbacheloruddannelser (also known as Adgangsbekendtgørelsen).

The Ministerial Order on the Grading Scale and Other Forms of Assessment (Danish title: Bekendtgørelse om karakterskala og anden bedømmelse).

The Ministerial Order on the Academy Profession Programme in Production Technology (Danish title: Bekendtgørelse om erhvervsakademiuddannelse inden for produktion).

National section / institutional section of the curriculum

This Curriculum is made up of a national section, which has been adopted by the Education Network for the Academy Profession Degree Programme in Production Technology study programme, and an institutional section laid down by the educational institution alone.

The national section was adopted by the Education Network at a meeting on 18 August 2014.

1.2 Effective date

This Curriculum shall come into force as of 1 September 2014.

1.3 Requirements to educational background, passed course units and possible entrance exam

Admission with a Danish upper secondary education, a vocational education at the same level or with a passed entrance exam to the Danish engineering programmes.

Curriculum for the Academy Profession Degree Programme in Production Technology, national section

Specific requirements for upper secondary educations or similar educations: English corresponding to Danish C-level, mathematics corresponding to Danish C-level

1.4 Academic criteria for the selection of applicants

Not applicable

2. Educational components and modules of the programme

2.1 Order of the components, internship and examinations during the course of the programme

Educational components						
Educational component / project period	1. sem.	2. sem.	3. sem.		4. sem.	
	<i>Project period</i>	<i>Project period</i>	<i>Project period</i>		<i>Internship</i>	<i>Final degree project</i>
Core fields of study						
Scientific method, 8 ECTS	5	3				
Product development, 9 ECTS	5	4				
Construction, 11 ECTS	5	6				
Technical documentation 6 ECTS	4	2				
Materials and production processes 9 ECTS	4	5				
Business knowledge 10 ECTS	4	6				
Production technology 7 ECTS	3	4				
Automation 5 ECTS			5			
Elective educational components 25 ECTS				25		
Internship 15					15	
Final degree project 15 ECTS						15
ECTS credits						
Total 120 ECTS	30	30	5	25	15	15

All examinations take place at the end of a semester with the exception of the internship report which is to be submitted before the student commences the final degree project.

3. Core areas of study

The study programme includes the following core areas of study:

The numbers in parentheses indicate the educational component / semester that the Knowledge, Skills and Competencies of a particular core area belong to.

Scientific Method – 8 ECTS

- *Knowledge*
 - Knowledge of analytical methods (1)
 - Understanding of relevant communications techniques (1)
 - Understanding of resource management methods (1)

- *Skills*
 - Ability to communicate problems and issues (2)
 - Ability to apply relevant methods for the presentation of problems and issues (1)
 - Ability to assess and apply relevant analytical methods (2)

- *Competencies*
 - Ability to perform resource management – individually and in groups (2)

Product development – 9 ECTS

- *Knowledge*
 - Knowledge of theories and methods for systematic product development (1)
 - Knowledge of markets' influence on product development (2)
 - Knowledge of the influence of product development on a company's ability to do business (1)
 - Knowledge of the influence of a company's production methods and human resources on the product development process (2)

- *Skills*
 - Ability to apply sketching techniques and physical models to communicate and generate ideas (1)
 - Ability to apply creative methods for idea generation (2)
 - Ability to take a user perspective on the product development process (2)
 - Ability to assess a product's sustainability (2)
 - Ability to apply requirements specifications (2)
 - Ability to communicate practical problems and solution proposals (2)

- *Competencies*
 - Ability to manage product development in collaboration with other students (2)

Construction – 11 ECTS

- *Knowledge*
 - Basic knowledge of dimensioning of constructions (1)
 - Knowledge of basic statistics (1)
 - An understanding of the relations between construction processes and production control systems (2)

- *Skills*
 - o Ability to use 3D programs for modelling simple constructions (2)
 - o Ability to apply basic statistics (2)
 - o Ability to apply knowledge of strength of materials for dimensioning simple constructions (2)

- *Competencies*
 - o –

Technical documentation – 6 ECTS

- *Knowledge*
 - o Knowledge of tolerances (1)
 - o Knowledge of standards (1)
 - o An understanding of technical specifications (2)
 - o An understanding of the structure of computer-aided design programs (1)

- *Skills*
 - o Ability to use a 3D product model for the preparation of 2D drawings complying with current norms and standards (1)
 - o Ability to evaluate dimension and geometric tolerances in drawings (2)
 - o Ability to communicate through sketching techniques (1)
 - o Basic understanding of kinds of technical documentation (1)

- *Competencies*
 - o Ability to manage the creation of a 3D product model (2)
 - o Ability to collaborate with others on product modelling (2)

Materials and production processes – 9 ECTS

- *Knowledge*
 - o An understanding of materials properties and materials testing methods (1)
 - o Knowledge of production processes (1)
 - o An understanding of the connections between product quality and price in relation to choice of materials and production processes (2)

- *Skills*
 - o Ability to assess the production processes' influence on a product (2)
 - o Ability to evaluate the relation between production processes, materials and sustainability (2)
 - o Ability to select the right materials based on materials properties and requirements (2)

- *Competencies*
 - o –

Business knowledge- 10 ECTS

- *Knowledge*
 - o An understanding of the quality concept (1)
 - o Knowledge of tools for project management (1)

- Knowledge of business economics (1)
- Knowledge about the environment and related current legislation and regulations (2)
- An understanding of cultural differences as well as differences due to different nationalities (2)
- Knowledge of a company's business processes (1)

- *Skills*
 - Ability to apply methods for company management and control (2)
 - Ability to apply tools for project control (2)
 - Ability to assess companies' quality and environmental issues (2)
 - Ability to communicate company issues and solution proposals (2)

- *Competencies*
 - Ability to undertake project control (2)

Production technology – 7 ECTS

- *Knowledge:*
 - Knowledge of production systems (2)
 - Knowledge of control systems (2)
 - Knowledge of principles of production technology (1)
 - Knowledge of production processes (1)

- *Skills:*
 - Ability to apply basic theories of production technology (2)
 - Ability to evaluate production technology and economic matters (2)
 - Ability to communicate solution proposals relating to production technology (2)

- *Competencies:*
 - Ability to partake in optimisation projects (2)

Automation – 5 ECTS

- *Knowledge*
 - Basic knowledge of electricity, pneumatics and hydraulics (3)

- *Skills*
 - Ability to dimension basic pneumatic and hydraulic components (3)

- *Competencies*

4. Compulsory educational components

The compulsory educational components are formed by the Knowledge, Skills and Competencies of the core areas of study. In section 3.2 the number in parentheses indicated the educational component to which that core area's Knowledge, Skills and Competencies belong to.

The compulsory educational components are examined at the First-year examination comprising 60 ECTS, the remaining 5 ECTS are examined in the third semester.

5. Internship

5.1 Internship learning outcomes

The internship constitutes 15 ECTS credits.

- *Competencies*
 - The student should, within the field of study, acquire new knowledge related to both the core areas of study as well as the elective educational components.
 - The student should take part in situations aimed at development in collaboration with other professions.
 - The student should take part in disciplinary and cross-disciplinary collaboration with people from other cultures in society as well as other business cultures.
 - The student should acquire knowledge and become skilled with relevant tools and methods.
 - The student should take part in discussions of disciplinary, practical problems.

The internship is concluded by an assessment according to the 7-point grading scale.

6. Final degree project requirements

The final degree project will be assessed at an individual, externally assessed examination. The exam consists of a written project report, a presentation and an oral examination. The assessment will be made based on a total assessment of the project and the oral performance. The student will receive a single, joint grade for the written project and the oral defence.

The purpose of the examination is to demonstrate whether the student has generally achieved the learning objectives of the study programme as defined in appendix 1 of the Ministerial Order on the Academy Profession Degree Programme in Production Technology.

The final degree project must evolve from a practical problem and the problem statements must be prepared by the student in collaboration with the educational institution and a company/business. The educational institution must approve the problem statement and the research question.

The maximum allowed length of the report is 90,000 characters including spaces.

7. Credit transfer

7.1 Transfer credit agreements under the national part of the curriculum:

The educational institutions may local credit transfer agreements.

8. Rules for exemption

Exemptions may be made from the rules in the institutional section of this curriculum. Exemption may be granted upon written application due to exceptional circumstances.