

Curriculum for IT Technology

Academy Profession Degree Programme (AP) in IT Technology



Content

1. Preface.....	4
2. Name of the programme and graduates' title:	5
3. Objectives of the programme and learning outcome objectives	5
4. Learning outcome objectives for the IT and Electronics Engineer.....	6
4.1 Knowledge	6
4.2 Skills	7
5. Competences	7
6. Structure of the programme	8
7. Subject areas	9
8. Teaching and working methods	10
9. Subject areas – common	11
9.1 Subject area – Electronic and communication systems (15 ECTS).....	11
9.1.1 Knowledge	11
9.1.2 Skills	11
9.1.3 Competences	11
9.2 Subject area - Company (15 ECTS).....	12
9.2.1 Knowledge	12
9.2.2 Skills	12
9.2.3 Competences	12
10. Subject areas – electronics technology	12
10.1 Subject area - Electronic systems (25 ECTS)	13
10.1.1 Knowledge	13
10.1.2 Skills	13
10.1.3 Competences	13
10.2 Subject area - Embedded systems (15 ECTS)	13
10.2.1 Knowledge	13
10.2.2 Skills	13
10.2.3 Competences	13
10.3 Subject area - Software development (5 ECTS).....	14
10.3.1 Knowledge	14
10.3.2 Skills	14
10.3.3 Competences	14
11. Subject areas – network technology.....	14
11.1 Subject area - Network technology systems (35 ECTS).....	15
11.1.1 Knowledge	15
11.1.2 Skills.....	15
11.1.3 Competences	15
11.2 Subject area - Advisory and consultancy functions (10 ECTS).....	15
11.2.1 Knowledge	15
11.2.2 Skills.....	16
11.2.3 Competences	16
12. Compulsory elements – common (30 ECTS)	16
12.1 Compulsory element - Networks and operating systems (5 ECTS)	16
12.1.1 Learning objective	16
12.2 Compulsory element - Technology (5 ECTS).....	17
12.2.1 Learning objective	17
12.2.2 Semester.....	17
12.3 Compulsory element - Written and oral communication (10 ECTS)	17
12.3.1 Learning objective	17
12.3.2 Semester.....	18

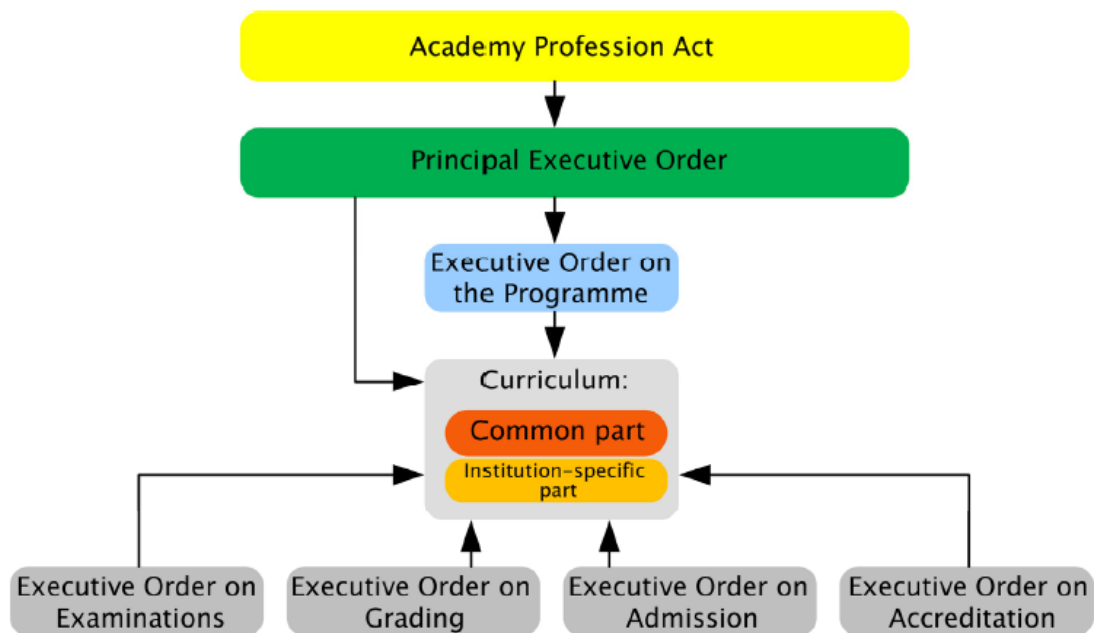
12.4 Compulsory element - The company (10 ECTS).....	18
12.4.1 Learning objective	18
12.4.2 Semester.....	18
13. Compulsory elements – electronics technology (45 ECTS)	18
13.1 Compulsory element - Electronics (25 ECTS)	18
13.1.1 Learning objective	18
13.1.2 Semester.....	19
13.2 Compulsory element - Microprocessor systems (15 ECTS).....	19
13.2.1 Learning objective	19
13.2.2 Semester.....	19
13.3 Compulsory element - Software development (5 ECTS)	20
13.3.1 Learning objective	20
13.3.2 Semester.....	20
14. Compulsory elements – network technology (45 ECTS)	20
14.1 Compulsory element - Security (5 ECTS)	20
14.1.1 Learning objective	20
14.1.2 Semester.....	21
14.2 Compulsory element - Networks (25 ECTS).....	21
14.2.1 Learning objective	21
14.2.2 Semester.....	21
14.3 Compulsory element - Advisory and consultancy functions (5 ECTS).....	21
14.3.1 Learning objective	21
14.3.2 Semester.....	22
14.4 Compulsory element - Database and programming technology (10 ECTS)	22
14.4.1 Learning objective	22
14.4.2 Semester.....	22
15. Optional elements (15 ECTS in total).....	23
16. Practical training (15 ECTS).....	23
16.1 Practical training guidelines.....	23
17. Final examination project (15 ECTS).....	24
17.1 Learning objective	24
Skills	24
Competences	24
18. Examination regulations	25
18.1 Registering for examination.....	25
19. Other conditions.....	27
The Curriculum is regulated by the following acts and executive orders.....	29

1. Preface

The present Curriculum lays down the rules, rights and obligations applying to the students on the IT and Electronics Engineer programme. In addition, it describes the requirements for the students in terms of, for example, practical training, tests, compulsory attendance, student counselling and credits.

The Curriculum consists of a common part and a part concerning the relevant institution, where the general part applies to all approved providers of the programme, and the institution-related part describes the local conditions in the individual institutions. To facilitate the understanding of the Curriculum, these two parts have been compiled in the following.

The Curriculum is regulated by the acts and executive orders listed on page 29.



2. Name of the programme and graduates' title:

The name of the programme is Academy Profession Degree Programme in IT Network and Electronics Technology.

The graduates of this programme are entitled to use the title IT and Electronics Engineer Specialised in Network Technology (in Danish: It- og elektronikteknolog med speciale i netværksteknologi) or IT and Electronics Engineer Specialised in Electronics Technology (in Danish: It- og elektronikteknolog med speciale i elektronikteknologi).

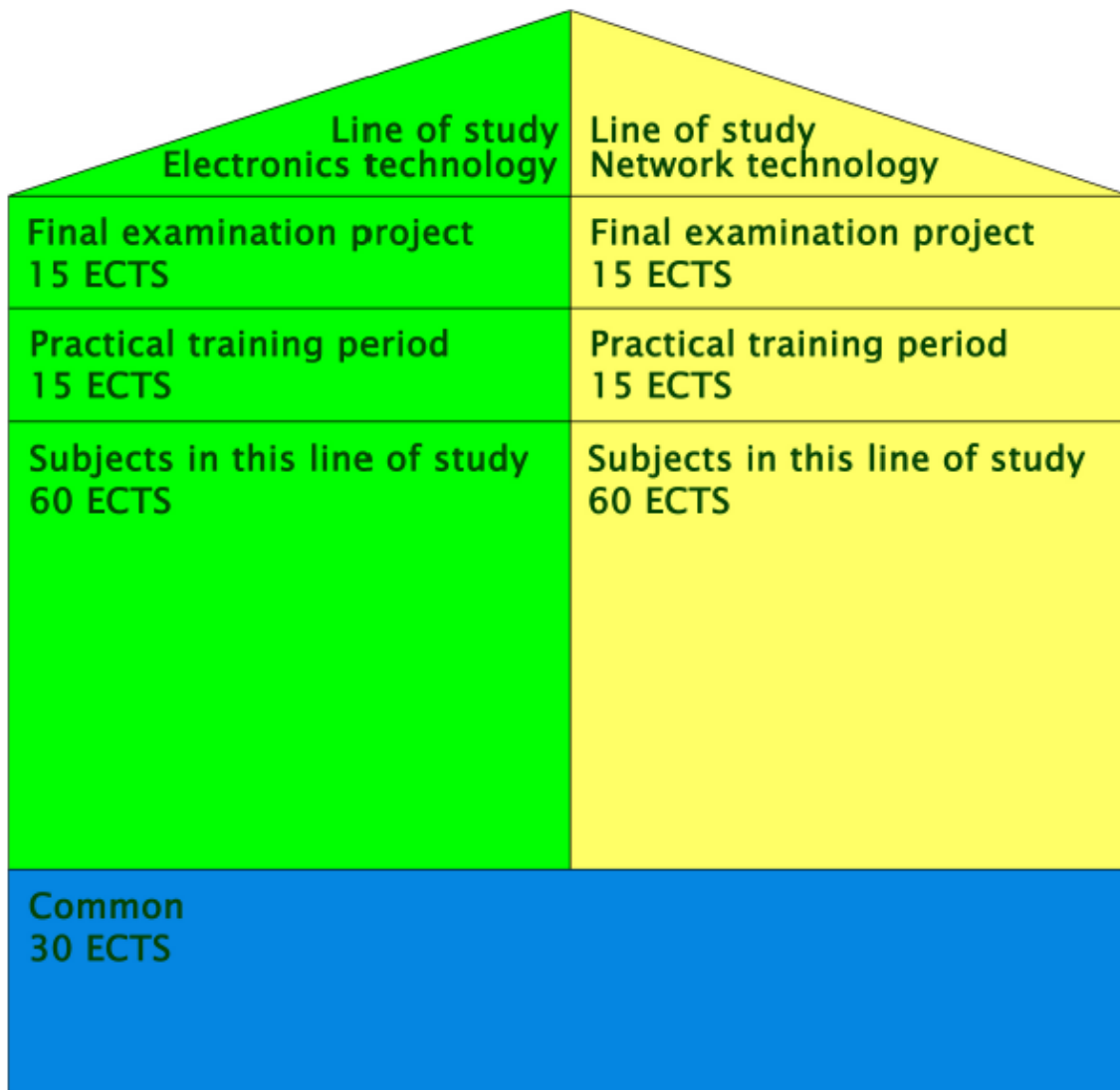
The Danish name of the programme is Erhvervsakademiuddannelsen (AK) inden for netværks-og elektronikteknologi.

3. Objectives of the programme and learning outcome objectives

The objective of the IT Network and Electronics Technology programme is to enable the graduates to work, independently and using innovative methods, on project planning, design and construction of electronic and communications systems, including converting customer requirements into technical solutions, within the network and electronic fields, respectively. In addition, the objective is to enable the graduates to independently undertake project management, quality control and resource management in connection with development and project planning assignments.

The learning outcome objectives cover the knowledge, skills and competences to be acquired by a

graduate IT and Electronics Engineer during the programme.



4. Learning outcome objectives for the IT and Electronics Engineer

4.1 Knowledge

The IT and Electronics Engineer has acquired knowledge of

1. Communications and interface technology
2. Programming technology
3. Innovation, project management and business understanding, advisory and consultancy functions and
4. Technical mathematics

In addition, the graduates on the network technology line of study have acquired knowledge on

1. Client and server technologies
2. Database systems
3. Network security and
4. Network project planning

In addition, the graduates on the electronics technology line of study have acquired knowledge on

1. Embedded systems
2. Electronics technology and design and
3. Production technology and management

4.2 Skills

The IT and Electronics Engineer is able to

1. Assess technical solutions based on the company's and the customer's needs
2. Communicate and document assignments and solutions for the people in charge of executing the technical assignments as well as for companies and customers
3. Use tools and equipment in connection with design, development and testing of both hardware and software
4. Communicate in writing and orally in Danish and English and
5. Use innovative methods focused on user needs

The graduates on the network technology line of study are also able to

1. Apply knowledge on network technology in connection with design, project planning, estimation of costs, implementation, administration, operation and monitoring of complex network solutions
2. Assess and communicate the suitability of technical network solutions vis-à-vis the company and the customer and
3. Use up-to-date tools for construction, testing and maintenance of database systems

The graduates on the electronics technology line of study are also able to

1. Use relevant CAE and simulation tools
2. Assess and select relevant development models and
3. Design and use test systems

5. Competences

The IT and Electronics Engineer is able to

1. Communicate, document, present and provide support in Danish and English in connection with internal and customer relations, including handling documentation and presentation of projects
2. Undertake independent as well as customer-based and team-based assignments

3. Acquire skills and new knowledge within the field
4. Independently undertake technical project management assignments and
5. Participate in practice-oriented development processes

The graduates on the network technology line of study are also able to

1. Handle complex network solutions and systems in connection with internal and customer-related advisory and consultancy services, both strategically and technically
2. Handle analysis, identification of requirements, solution proposals, design, estimation of costs, preparation of requirements specification, projecting and planning relating to network and security solutions, including managing, coordinating, quality-assuring and managing the resources in respect of implementation and commissioning in all project stages and
3. Manage and coordinate administration, operation, monitoring, maintenance and problem-solving relating to networks

The graduates on the electronics technology line of study are also able to

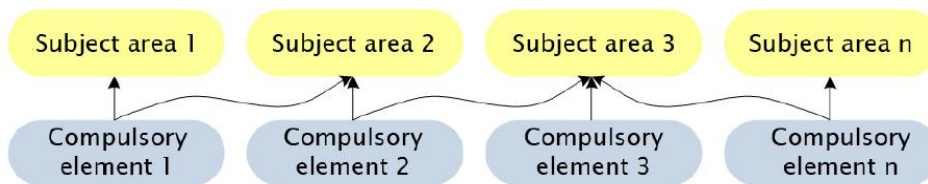
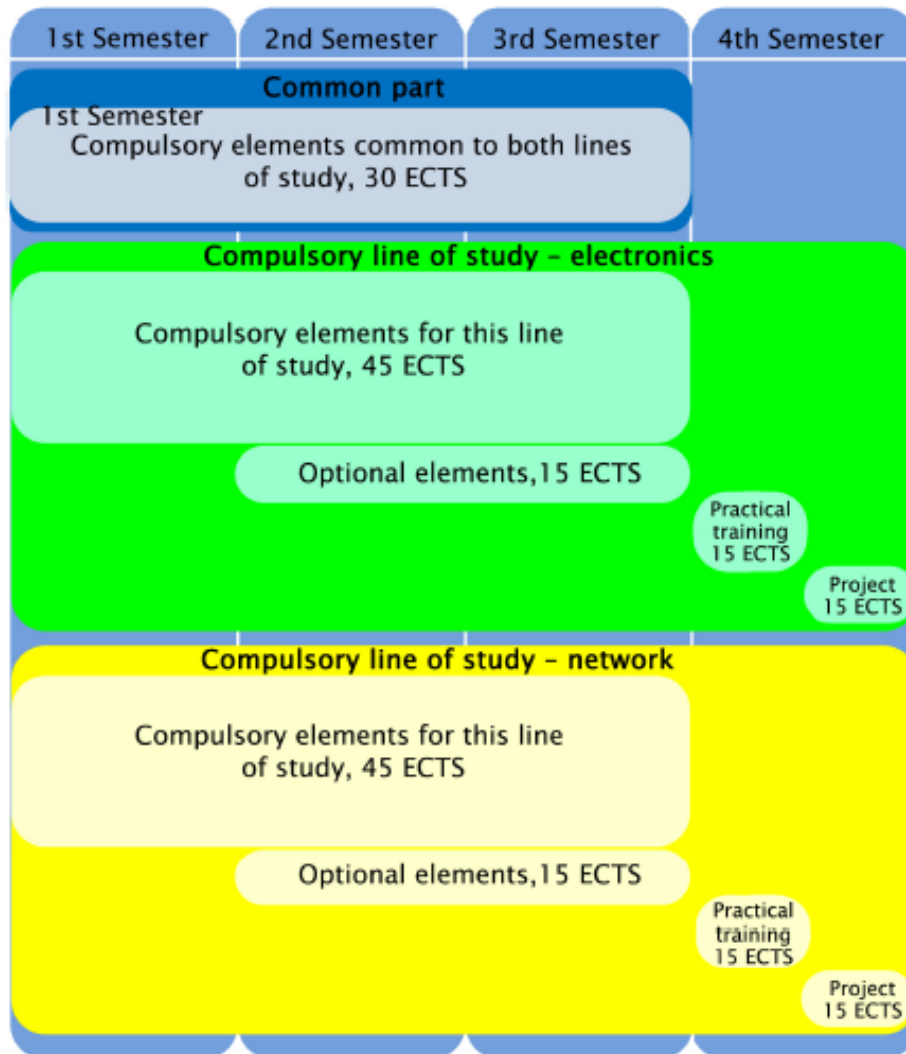
1. Handle design, development, construction, testing, product maturing and documentation of electronic systems, products and prototypes and
2. Handle analysis, construction, diagnosis, testing and service of the technology involved in the work on electronic and computerised systems, taking into account financial, environmental and quality requirements

6. Structure of the programme

The IT and Electronics Engineering programme is an academy profession degree programme of two years' duration, made up of four semesters and corresponding to a total of 120 ECTS.

The programme is divided into:

- A common part, consisting of compulsory elements common to both lines of study
- Two compulsory lines of study, each consisting of compulsory elements relevant to the selected line of study Each line of study also comprises optional elements, a practical training period and a final examination project.



7. Subject areas

The programme is divided into a number of subject areas describing the general learning objectives for the programme. Each subject area comprises one or more compulsory elements.

Compulsory part

The compulsory part of the programme comprises the following subject areas:

1. Electronic and communications systems
2. The company

Compulsory line of study for electronics technology

Here, the students will start specialising in the electronics technology line of study. The compulsory part of the programme comprises the following subject areas:

1. Electronic systems
2. Embedded systems
3. Software development

Compulsory line of study for network technology

Here, the students will start specialising in the network technology line of study. The compulsory part of the programme comprises the following subject areas:

1. Network technology systems
2. Advisory and consultancy functions

Practical training period

The students will complete one or more periods of practical training for one or more companies. Here, the students will undertake special commercial projects in accordance with the objectives of the programme.

The practical training may be related to either a domestic or an international company.

Final examination project

This is the final part of the programme, where the students must demonstrate their abilities to combine theory and practice in close cooperation with industry.

Supervisors from the business community will be available to the students for this project. The final examination project may be related to either a domestic or an international company.

8. Teaching and working methods

On the IT and Electronics Engineering programme, teaching takes the form of a dynamic and interactive process, the most important element of which is the students' active participation.

The students are responsible for their own learning, and both students and teachers contribute constructively to the learning process.

Teaching is a combination of group instruction, project work in groups and individual work – typically involving interdisciplinary issues and always on an application-oriented basis.

In order to ensure optimal learning and personal development for the individual students, the IT and Electronics Engineering programme uses varied educational methods focusing on dialogue, discussion and projects. The teaching methods used are varied with, among other things, group instruction, work in teams, interdisciplinary cases, theme work, guest lectures, visits to companies and project work.

9. Subject areas – common

Subject areas common to the two lines of study

9.1 Subject area – *Electronic and communication systems (15 ECTS)*

The objective is for the students to acquire knowledge and understanding of electronic and communications systems.

9.1.1 Knowledge

The graduate has acquired knowledge on

Interface technology
Communications technology
Written and oral communication in Danish and English
Technical mathematics

9.1.2 Skills

The graduate is able to

- Assess technical solutions based on the company's/customer's needs
- Communicate and document the assignment for the people in charge of executing the technical assignment and the solution for the company/customer
- Use tools and equipment in connection with development and testing of hardware
- Use tools and equipment in connection with design and testing of communications systems

9.1.3 Competences

The graduate is able to

- Communicate, document, present and provide support in Danish and English in connection with internal and customer relations, including handling documentation and presenting projects
- Undertake independent as well as customer-based and team-based assignments
- Acquire skills and new knowledge within electronic and communications systems
- Content from the following compulsory elements

Technology

Networks and operating systems
Written and oral communication
The company

9.2 Subject area - Company (15 ECTS)

9.2.1 Knowledge

The graduate has acquired knowledge on

- Written and oral communication in Danish and English
- Innovation, project management and business understanding as well as advisory and consultancy functions

9.2.2 Skills

The graduate is able to

- Assess technical solutions based on the company's/customer's needs
- Communicate and document the assignment for the people in charge of executing the technical assignment and the solution for the company/customer

9.2.3 Competences

The graduate is able to

- Communicate, document, present and provide support in Danish and English in connection with internal and customer relations, including handling documentation and presenting projects
- Undertake independent as well as customer-based and team-based assignments
- Acquire skills and new knowledge within the company's field
- Act independently, take the initiative and make decisions, including handling technical project management assignments
- Use innovative methods, focused on user needs, and participate in practice-oriented development processes
- *Content from the following compulsory elements*

Networks and operating systems
Technology
Written and oral communication
The company

10. Subject areas – electronics technology

Subject areas for the compulsory electronics technology line of study (a total of 45 ECTS).

10.1 Subject area - Electronic systems (25 ECTS)

10.1.1 Knowledge

The graduate has acquired knowledge on

- Electronics technology and electronics design
- Production technology and production management

10.1.2 Skills

The graduate is able to

- Work on design, construction, testing, product maturing and documentation of electronic systems, including using relevant CAE and simulation tools
- Assess and select relevant development models
- Design and use test systems

10.1.3 Competences

The graduate is able to

- Carry out design, development, construction and testing of new electronic products/prototypes
- Analyse, construct, diagnose, test and service the technology involved in the work on electronic and computerised systems, taking into account financial, environmental and quality requirements
- *Content from the following compulsory element*

Electronics

10.2 Subject area - Embedded systems (15 ECTS)

10.2.1 Knowledge

The graduate has acquired knowledge on

- Production technology and production management

10.2.2 Skills

The graduate is able to

- Work on design, construction, programming, testing, product maturing and documentation of embedded systems, including using relevant CAE and debugging tools
- Assess and select relevant development models

10.2.3 Competences

The graduate is able to

- Carry out design, development, programming, construction and testing of embedded systems
- Analyse, specify, construct, program, diagnose, test and service the technology involved in the work on embedded systems, taking into account financial, environmental and quality requirements
- *Content from the following compulsory elements*

Microprocessor technology
Software development

10.3 Subject area - Software development (5 ECTS)

10.3.1 Knowledge

The graduate has acquired knowledge on

- Programming technology
- Written and oral communication in Danish and English

10.3.2 Skills

The graduate is able to

- Convert a specific assignment into technical solutions
- Communicate and document the assignment for the people in charge of executing the technical assignment and the solution for the company/customer
- Use tools and equipment in connection with design, development and testing of software

10.3.3 Competences

The graduate is able to

- Communicate, document, present and provide support in Danish and English in connection with internal and customer relations, including handling documentation and presenting projects
- Undertake independent as well as customer-based and team-based assignments
- Acquire skills and new knowledge relating to software development
- *Content from the following compulsory element(s)*

Software development
Microprocessor systems
Written and oral communication
The company

11. Subject areas – network technology

The subject areas for the compulsory network technology line of study make up a total of 25 ECTS points.

11.1 Subject area - Network technology systems (35 ECTS)

11.1.1 Knowledge

The graduate has acquired knowledge on

- Client and server technologies
- Database systems
- Network security
- Network project planning

11.1.2 Skills

The graduate is able to

- Apply knowledge on network technology in connection with design, project planning, estimation of costs, implementation, administration, operation and monitoring of complex network solutions
- Choose a suitable technical network solution for the company/customer
- Use up-to-date tools for construction, testing and maintenance of database systems

11.1.3 Competences

The graduate is able to

- Handle analysis, identification of requirements, solution proposals, design, estimation of costs, preparation of requirements specification, projecting and planning relating to network and security solutions, including managing, coordinating, quality-assuring and managing the resources of implementation and commissioning in all project stages
- Manage and coordinate administration, operation, monitoring, maintenance and problem-solving relating to networks
- *Content from the following compulsory elements*

Security

Networks

Database and programming technology

11.2 Subject area - Advisory and consultancy functions (10 ECTS)

11.2.1 Knowledge

The graduate has acquired knowledge on

- Network project planning
- Advisory and consultancy functions

11.2.2 Skills

The graduate is able to

- Apply knowledge on network technology in connection with advisory and consultancy assignments
- Provide advice and consultancy to the company/customer on suitable technical network solutions

11.2.3 Competences

The graduate is able to

- Provide internal and customer-related advisory and consultancy services relating to complex network solutions and systems, both strategically and technically
- Handle analysis, identification of requirements, solution proposals, design, estimation of costs, preparation of requirements specification, projecting and planning relating to network and security solutions, including managing, coordinating, quality-assuring and managing the resources of implementation and commissioning in all project stages
- *Content from the following compulsory element(s)*

Advisory and consultancy functions
Networks
Security

12. Compulsory elements – common (30 ECTS)

12.1 Compulsory element - Networks and operating systems (5 ECTS)

12.1.1 Learning objective

The objective is to enable the students to

- Use tools and equipment in connection with design and testing of hardware solutions
- Design a communications system
- Content

Network concepts
Transmission media
Network topologies
IP networks
Reference model
Protocols
LAN and WAN
Network units
Network testers

Routed networks
Segmented networks
Industrial networks
Basic security
File systems
Operating systems

Semester

This element may be taken in the first, second or third semester.

12.2 Compulsory element - Technology (5 ECTS)

12.2.1 Learning objective

The objective is to enable the students to

- Use tools and equipment in connection with design and testing of hardware solutions
- Design electronic systems
- Content

Technical mathematics
Basic theory, Ohm's law and circuit theory
Basic analogue technology
-OpAmp
Basic digital technology
-Logical circuits
Microprocessor technology
-Microprocessors and μ Controllers
-Design
-Interface
Design tools
Measuring techniques and documentation

12.2.2 Semester

This element may be taken in the first, second or third semester.

12.3 Compulsory element - Written and oral communication (10 ECTS)

12.3.1 Learning objective

The objective is to enable the students to

- Communicate in writing and orally in Danish and English
- Communicate, document, present and provide support in Danish and English in connection with internal and customer relations, including handling documentation and presenting projects

- Content
 - Oral and written communication in English
 - Communications technology
 - Documentation techniques

12.3.2 Semester

This element may be taken in the first, second or third semester.

12.4 Compulsory element - The company (10 ECTS)

12.4.1 Learning objective

The objective is to enable the students to

- Communicate and document assignments and solutions for the people in charge of executing the technical assignments as well as for companies and customers
- Undertake quality control and resource management in connection with development and project planning assignments
- Use innovative methods focused on user needs
- Undertake independent as well as customer-based and team-based assignments
- Acquire skills and new knowledge within the field
- Independently undertake technical project management assignments and
- Participate in practice-oriented development processes
- Content

Innovation
 Project planning
 Project management
 Business understanding
 Finance
 Calculation
 Quality control and resource management
 Advisory and consultancy functions

12.4.2 Semester

This element may be taken in the first, second or third semester.

13. Compulsory elements – electronics technology (45 ECTS)

The compulsory elements for the compulsory electronics technology line of study make up a total of 45 ECTS points.

13.1 Compulsory element - Electronics (25 ECTS)

13.1.1 Learning objective

The objective is to enable the students to

- Use relevant CAE and simulation tools
- Assess and select relevant development models
- Design and use test systems
- Handle design, development, construction, testing, product maturing of electronic systems, taking into account financial, environmental and quality requirements
- Handle analysis, diagnosis and service of electronic systems
- Handle documentation of electronic systems, products and prototypes
- Content

Digital electronics
 Analogue electronics
 Power electronics
 Transducer
 Wireless communication
 Electromagnetic and electric noise
 Signal processing

13.1.2 Semester

This element may be taken in the second or third semester.

13.2 Compulsory element - Microprocessor systems (15 ECTS)

13.2.1 Learning objective

The objective is to enable the students to

- Use relevant simulation tools
- Design and use test systems
- Handle design, development, construction, testing, product maturing of microprocessor systems, taking into account financial, environmental and quality requirements
- Handle analysis, diagnosis and service of microprocessor systems
- Handle documentation of microprocessor-based systems, products and prototypes
- Content

Microprocessors
 Embedded systems
 Peripheral units
 Interface
 Programming
 Relevant types of operating systems
 Troubleshooting

13.2.2 Semester

This element may be taken in the second or third semester.

13.3 Compulsory element - Software development (5 ECTS)

13.3.1 Learning objective

The objective is to enable the students to

- Use tools and equipment in connection with design, development and testing of software solutions
- Content

Syntax, operators, control structures, functions and classes
Structured program design
Compilation and linking
Development models
Development tools and systems
Testing of program solutions
Documentation of program solutions
Security

13.3.2 Semester

This element may be taken in the first, second or third semester.

14. Compulsory elements – network technology (45 ECTS)

The compulsory elements for the compulsory network technology line of study make up a total of 45 ECTS points.

14.1 Compulsory element - Security (5 ECTS)

14.1.1 Learning objective

The objective is to enable the students to

- Handle analysis, identification of requirements, solution proposals and design relating to security solutions
- Content

Security solutions in networks and on network units
Server security
Access control
Encryption and certificates
Firewall
Analysis
Design of security solutions

14.1.2 Semester

This element may be taken in the second or third semester.

14.2 Compulsory element - Networks (25 ECTS)

14.2.1 Learning objective

The objective is to enable the students to

- Apply knowledge on network technology in connection with design, project planning, estimation of costs, implementation, administration, operation and monitoring of complex network solutions
- Assess technical network solutions relative to the company's and the customer's needs
- Handle complex network solutions and systems
- Handle solution proposals and design of network solutions
- Manage and coordinate administration, operation, monitoring, maintenance and problem-solving relating to networks
- Content

Network design

Router technology

Advanced IP routing

Switch technology

Network design

Design tools

Protocol analyser

Monitoring

Network management

Administration of users and resources

IP services and performance

Wireless networks

Server systems

Client-server technologies

Backup systems

Troubleshooting and fault repair

14.2.2 Semester

This element may be taken in the second or third semester.

14.3 Compulsory element - Advisory and consultancy functions (5 ECTS)

14.3.1 Learning objective

The objective is to enable the students to

- Handle estimation of costs in connection with design and project planning of complex network solutions
- Assess and communicate technical network solutions relative to the company's and the customer's needs

- Handle internal and customer-related advisory and consultancy services, both strategically and technically
- Handle analysis, identification of requirements, solution proposals, design, estimation of costs, preparation of requirements specification, projecting and planning in relation to network and security solutions
- Manage, coordinate, quality-assure and manage the resources of implementation and commissioning in all project stages
- Manage and coordinate administration, operation, monitoring, maintenance and problem-solving relating to networks
- Content

IT requirements specification and contract management

System specification

Presentation techniques

Consulting techniques

Negotiation techniques

Project planning techniques

Planning

Implementation

Quality control

Documentation

14.3.2 Semester

This element may be taken in the second or third semester.

14.4 Compulsory element - Database and programming technology (10 ECTS)

14.4.1 Learning objective

The objective is to enable the students to

- Use up-to-date tools for construction, testing and maintenance of database systems
- Design program solutions suitable for a given assignment
- Content

Design and normalisation

Database language

Database development systems

Structure of a database system

Testing of a database system

Maintenance of a database system

Database administration

Programming technology

Script programming

14.4.2 Semester

This element may be taken in the second or third semester.

15. Optional elements (15 ECTS in total)

During the second and third semesters, the Business Academy offers a number of optional elements worth from 5 ECTS points. The optional elements are organised in accordance with the general learning outcome objectives set up for the programme.

Information on these additional elements will be available on the intranet.

16. Practical training (15 ECTS)

During the practical training, the students will work on academically relevant subjects and acquire knowledge on relevant vocational functions. The students will receive their practical training in one or more companies. The practical training may be organised in a flexible and differentiated manner, and it must be able to form the basis of the students' final examination projects. The practical training period starts after the first year of study.

Learning objectives for practical training

The objective of the practical training with a company is to give the students the option of testing their learning outcome of the programme elements in practice by spending time on work-like terms in a company and job function relevant to the field.

The objectives for the students are to:

- Gain an insight into companies' requirements and expectations for the students' knowledge, skills and competences as well as attitude to work
- Experience a normal working day and work assignments over a long period of time within the trade
- Work on assignments in practice and in accordance with their own learning objectives
- Test the knowledge and skills acquired during the programme in practice
- Gain experience on other working methods and tools for solving specific work assignments

Another objective could be to:

- Form the basis of the final examination project

16.1 Practical training guidelines

During the practical training with a company, the student will have a supervisor from the programme and a contact/supervisor from the company.

Based on the institution's learning objectives for the practical training period, the student and the contact/supervisor will jointly set up learning outcome objectives for the practical training. These learning outcome objectives must be approved by the institution. They will subsequently form the basis of the organisation of the student's work during the practical training period.

The practical training with a company must be comparable with a full-time job with the

requirements for working time, performance, dedication and flexibility which the graduate must be expected to be able to fulfil in his or her first job.

The individual learning objectives for the practical training will be evaluated at the practical test.

The student is eligible for a state education grant during the practical training. Otherwise, the student and the company must agree on the financial terms of the practical training.

17. Final examination project (15 ECTS)

In the final examination project, the students must be able to document their ability to analytically and methodically solve a complex and practice-oriented problem in relation to a specific assignment within the field. The final examination project must cover central subjects treated during the programme.

Requirements

The students must have passed all exams to be entitled to do the final examination project.

Content

The problem formulation for the final examination project must be prepared by the student and, if possible, in cooperation with a company. The problem formulation must be approved by the institution.

The guidelines and formal requirements for the project will be available on the intranet.

17.1 Learning objective

Skills

In a practice-oriented project, the students are able to

- Assess and select methods and techniques relevant to the project
- Master the methods and techniques used in the project
- Plan, manage and execute a project using relevant methods and techniques
- Document their results and work process according to the requirements of the method(s) used

Competences

Development competence

The students are able to adapt methods and techniques to the specific issues presented in the project. In addition, the students are able to reflect on and, if relevant, develop their work processes.

Cooperation competence

The students are able to participate in a qualified dialogue on the project with other specialists and users.

Learning competence

The students are able to study new theories, methods and techniques to the extent that this is relevant to their projects.

18. Examination regulations

The programme comprises the following three examinations:

1. The first examination at the end of the second semester must document that the students have fulfilled the learning objectives laid down for the first year of study.
2. The second examination after the practical training period must document that the students have fulfilled the learning objectives laid down for the practical training.
3. The third examination is an examination in the final examination project, which, in combination with the examination after the practical training and the other examinations, must document that the learning outcome objectives of the programme have been fulfilled. This examination comprises a project and an oral examination with the participation of an external examiner. One mark will be given for the final examination project.

Examination	Semester	Method	Internal / External examination
1	2 nd	Interdisciplinary oral project examination (project & report)	External
2	4 th	Practical test	Internal
3	4 th	Final examination project (project and report)	External

At Erhvervsakademi Dania, Mercantec Viborg, the following exams are also part of the education:

1. Internal exam at the first semester. This exam can be conducted in English or Danish.
2. Internal exam at the third semester.

In order to graduate, the students must have passed the practical test and have obtained the mark 02 at the other examinations.

Product requirements and other examination conditions, compulsory written assignments, theme projects, synopses and the like are provided in separate guidelines which are available on the intranet.

18.1 Registering for examination

In order to be registered for examination, the students must be assessed to have participated actively by the end of the first year of study.

The Business Academy's requirements for active participation are available on the intranet.

Examination attempts

The students may register for the same examination a maximum of three times.

The Business Academy may grant an exception and allow students a fourth attempt if exceptional circumstances apply.

Assessment and marking

All examinations are individual examinations, and all performance assessments are individual. If the examination is based on group work, the students' performance in the group process may be included in the assessment.

In written group projects etc., the contribution of the individual students must be clearly identified. In an oral examination, where the student is examined on the basis of a group product, the other members of the group are not entitled to be present in the examination room until they have been examined themselves.

The objective of the examinations is to assess whether and to what extent the students' academic qualifications are in line with the objectives and requirements laid down for the programme in the Curriculum.

Examination language

The examinations will be held in the teaching language used.

Special examination conditions

The Business Academy is entitled to derogate from the provisions laid down for the individual examinations with a view to allowing special examination conditions for physically and mentally impaired students, students with mother tongues other than Danish and students with similar difficulties, when deemed necessary for giving such students equal status during the examinations.

Examination deadlines

The rules and deadlines laid down by the Business Academy regarding registration for and cancellation of examinations, including make-up examinations, are available on the intranet.

Complaints of assessment

Complaints regarding assessment, examinations etc. must be submitted to the institution within two weeks of the notification of the assessment to the students. Instructions are available, among other places, at www.kvu-censor.dk.

Diploma

A diploma and a Diploma Supplement will be issued when all examinations of the programme have been passed.

Students leaving the programme without having completed it are entitled to receive a certificate of the examinations passed. Such certificate will contain information on the type of examination and the mark given.

Re-examination

Re-examinations are held immediately before or after the start of the following semester. The basis for re-examination – group project or individual project – is an academic assessment of the need for a re-examination.

Re-examination for a group project The examination is carried out as the ordinary examination. The new project may either be based on the same problem as the project work forming the basis of the ordinary examination or on a new problem.

Re-examination for an individual project The project may either be based on the same problem as the project work forming the basis of the ordinary examination or on a new problem.

The purpose of the examination is the same as for the ordinary examination but, as the project is undertaken by an individual, the teamwork is not included. Instead, it is important that the students are able to work methodically and independently organise their work based on the instructive project description.

Re-examination of the practical test

As with the other examinations, the students are entitled to two re-examinations. The basis for re-examination is an academic assessment:

- If the assessment was due to the student's failure to complete his or her practical training, the student must undertake new practical training
- If the assessment was due to lacking reflection in relation to the learning objectives, a new practical test will be arranged after approx. two weeks

Make-up examination

Make-up examinations are held immediately before or after the start of the following semester.

If the Business Academy assesses that the student has participated in the project work roughly to the full extent, a make-up examination will be held as an individual examination based on the group's project work.

If the Business Academy assesses that the student has not participated in the project work roughly to the full extent, a make-up examination will be held as an individual project examination.

19. Other conditions

Studies abroad and credit transfer

The Business Academy will support students who are looking for programmes at foreign institutions with learning objectives that correspond to those of the IT and Electronics Engineering programme.

Practical training may also be completed abroad.

The Business Academy may accept that elements passed or parts thereof according to this Curriculum passed at another institution are considered to be equivalent to corresponding elements or parts thereof in this Curriculum. If such element has been assessed according to the 7-point marking scale at the institution where the examination was taken, and is equivalent to an entire subject in this Curriculum, the mark will be transferred.

The Business Academy may approve that elements passed on another Danish or foreign higher education study programme replace the elements covered by this Curriculum. When approved, elements are considered to be completed if they have been passed in accordance with the rules governing the programme in question. The assessment is transferred as 'passed'.

Leave of absence

It is possible to apply for leave of absence for personal reasons. The rules governing leave of absence and the rules applicable to students on leave of absence are provided in the Business Academy's guidelines.

Exemption from the Curriculum

If special circumstances apply, the Business Academy may grant an exemption from the provisions in the Curriculum, unless the provisions follow from the executive orders applicable to the programme.

Complaints

Complaints of decisions made under this Curriculum must be submitted to the Business Academy. The deadline for complaints is two weeks from the date of notification of the relevant decision to the student.

The students are entitled to bring the decisions made by the Business Academy under this Curriculum before the Ministry of Education, provided that the complaint relates to legal issues. The deadline for complaints is two weeks from the date of notification of the relevant decision to the student.

The complaint must be addressed to the Ministry of Education but submitted to the institution. The institution will then make a statement, which statement the complainant is entitled to comment on within one working week. Subsequently, the Business Academy will submit the complaint, the institution's statement and any comments from the complainant to the Ministry of Education.

Commencement

The present Curriculum applies to students starting the programme in September 2010.

The Curriculum is regulated by the following acts and executive orders

The Academy Profession Act (*Erhvervsakademiloven*): Act No. 207 of 31 March 2008 on academy profession programmes and professional bachelor programmes

Executive Order no. 636 of 29 June 2009 on academy profession programmes and professional bachelor programmes

The Executive Order on the IT and Electronics Engineering Programme

(*Uddannelsesbekendtgørelsen*): Executive order no. XX 2009 on the academy profession degree programme in IT and electronics engineering (IT and Electronics Engineer)

The Executive Order on Quality (*Kvalitetsbekendtgørelsen*): Executive order no. 635 of 30 June 2000 on quality development and quality control in the professional higher diploma programmes

The Executive Order on Admission (*Adgangsbekendtgørelsen*): Executive order no. 106 of 9 February 2009 on admission, registration and leave of absence etc. in certain programmes of higher education

The Executive Order on Examinations (*Eksamensbekendtgørelsen*): Executive order no. 766 of 26 June 2007 on examinations in certain programmes of higher education

The Executive Order on Grading (*Karakterbekendtgørelsen*): Executive order no. 262 of 20 March 2007 on the grading scale and other marking systems

The acts and executive orders are available at www.uvm.dk.