



Curriculum for IT-Technology (AP)

Dania Academy

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Curriculum for the Academy Degree Programme in IT Technology at Dania Academy

Approved by the Rector on behalf of the Board.



Anders Graae Rasmussen

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1. Introduction

The curriculum for the Academy Profession Degree Programme in IT-Technology consists of two parts:

Part 1 - The national part

Part 2 - The institutional part

The national part of the curriculum for the Academy Profession Degree Programme in IT-Technology has been released in accordance with § 21, section 1 in the Ministerial Order for technical and commercial Academy Profession Programmes and Professional Bachelor Programmes.

The national part of the curriculum has been developed by the educational network for the Academy Profession Degree Programme in IT-Technology and approved by all the institutions that offer the programme. The institution-specific part has been approved by Dania Academy.

The curriculum and significant changes to it have been submitted to the chairmanship of external examiners and the educational committee.

Dania Academy may choose to grant exemptions from the rules and regulations established by the institution or institutions if justified by exceptional circumstances.

1.1. Purpose and professional aim

The purpose of the programme is to qualify the graduate to be able to function independently as an IT specialist and be able to translate business needs into integrated, secure and sustainable solutions with an effective interaction between hardware, network and software. The graduate can develop, adapt and maintain solutions involving the use and adaptation of both electronics and network components as well as their composition. The graduate can plan technical projects as well as participate in consulting companies within the area.

This programme gives the graduate the right to use the title IT Technologist AK (AP Graduate in IT Technology).

1.2. Overview of the programme's subject elements

Subject areas	Weight	ECTS	National subject elements	ECTS	Local subject elements	ECTS
Network	3	18	Network technology I Network technology II	9 9	Network and Cloud Specialist	30
Hardware	3	18	Embedded systems I Embedded systems II	9 9	Penetration tester and Cyber Security Analyst	30
Software	2	14	Programming I Programming II	7 7	Application and Web Developer	30
Project management and business understanding	1	10	Project management and business understanding I Project management and business understanding II	5 5		

				60		30
Internship		15				
Final Exam Project		15				
Prescribed number of ECTS		120				

1.3. Timing of the programme's subject elements

Programme elements	1st semester	2nd semester	3rd semester	4th semester	ECTS
Network technology	9	9			18
Embedded Systems	9	9			14
Programming	7	7			18
Project management and business understanding	5	5			10
Electives			30		30
Internship				15	15
Final Exam Project				15	15
ECTS in total	30	30	30	30	120

PART 1 – The national part

2. The programme's goals for learning outcomes

Knowledge

The graduate will have knowledge about:

- Communication and interface technique in general and specifically what is used in embedded and network-based solutions.
- Programming in both embedded and network-based solutions and the use of algorithms and design patterns to ensure effective interaction between hardware, network and software.
- Innovative problem-solving methods, project management of technical projects as well as general information about companies and their structure.
- Customer needs, quality and resource management as well as advisory and consultative functions for technical problem solutions.
- Technologies in a broad sense, and especially concerning network, server, components and electronics.
- Security in the network as well as data management in order to understand how secure integrated solutions are designed.
- Basic parts of the technologies, including operating systems, protocols, signal handling and the use of components.
- Sustainability in IT solutions and how this can be included in IT-based solutions.

Skills

The graduate will have the skills to:

- Evaluate technical solutions based on the needs of the company and the customer's needs.
- Communicate and document tasks and solutions.
- Use tools and equipment related to the design, development and testing of both hardware and software.
- Communicate in writing and orally concerning network technology and embedded systems.
- Apply innovative approaches focusing on customer needs, in order to ensure effective solutions involving hardware, network and software.
- Use the technology and tools for the design, implementation, testing and quality assurance of secure and sustainable solutions.

Competencies

The graduate will be able to:

- Manage the interaction between hardware, software and networks in integrated solutions.
- Independently handle planning and quality management of own technical tasks.
- Participate in real-life development processes for academic and interdisciplinary collaboration.
- Handle customer tasks in order to convert customer needs into reliable solutions.
- In a structured context, acquire knowledge, skills and new competencies by understanding companies and customers' use of IT.
- Handle analysis, needs identification, design, implementation and testing of secure and sustainable solutions for network-based and integrated technologies.

3. The programme includes 4 national subject elements

3.1. Network technology

Content

This subject element consists of network and server technologies, operating systems, network security and communication including protocols and services. The subject element also contains design and the use of networks and network-based/cloud solutions. In general, we work with design, development, testing and documentation as well as dissemination of safe and sustainable solutions.

Learning objectives for Network technology

Knowledge

The student will gain knowledge about:

- Network and server technologies overall, and the difference between physical and virtual technologies.
- Operating systems as well as the difference between different systems.
- Data management, including security.
- Network security, including different products.
- Communication protocols and their use for different architecture.

Skills

The student will get the skills to:

- Apply network technology and hardware in connection with design, planning and implementation of complex, secure and sustainable network solutions.
- Apply network technological knowledge in connection with administration, operation and monitoring of complex network solutions.
- Communicate and document tasks and solutions within networks.
- Use tools and equipment related to the design, development and testing of solutions.
- Evaluate network security in concrete products.

Competencies

The student will learn to:

- Manage analysis, needs identification, design, development and testing of secure network solutions.
- Manage planning and quality management of own network and server technology-related tasks.
- Acquire new knowledge, skills and competencies within network and server technologies.
- Participate in practice-orientated development processes in teams.

ECTS weight

Network technology is worth 18 ECTS credits.

3.2. Embedded Systems

Content

The subject element deals with signal handling, competent technology, communication, Internet of Things-techniques, protocols, interfacing, selection and application of embedded systems as well as components for integrated solutions. The subject element generally works with design, development, testing and documentation as well as the dissemination of secure and sustainable solutions.

Learning objectives for Embedded Systems

Knowledge

The student will gain knowledge about:

- Communication and interface technique in general, as well as how they are used in selected solutions.
- An overview of electronic modules, as well as how selected modules are built up.
- Protocols, including communication protocols, their structure as well as what differences and uses there are.
- Internet of Things-techniques, construction generally and selected solutions in more details.
- Applied technical mathematics within the subject area to understand electronics and/or communication.
- Operating systems, their distinctive features and use.
- A general understanding of signal handling as well as an understanding of how it is used and integrated in solutions.

Skills

The student will get the skills to:

- Evaluate, select, adapt and use embedded systems and components in secure and sustainable solutions.
- Build and use test systems.
- Document and disseminate tasks and solutions with the use of embedded components and systems.

Competencies

The student will learn to:

- Manage analysis, needs assessment, design, development and testing of secure embedded and sustainable solutions.
- Manage the analysis, diagnostics, testing and servicing of the technology involved in working with electronic systems, taking into account financial, environmental and quality requirements.
- Acquire new knowledge, skills and competencies within the subject area.
- Participate in practice-orientated development processes in teams.

ECTS weight

Embedded Systems is worth 18 ECTS credits.

3.3. Programming

Content

The subject area consists of the basic elements of programming, use of environments and data handling as well as design, development, testing and documentation of solutions.

Learning objectives for Programming

Knowledge

The student will gain knowledge about:

- Programming techniques in different types of language
- Overall algorithms and design patterns and in connection with their selected programming language.

Skills

The student will get the skills to:

- Use tools and equipment related to the design, development and testing of programs

- Document, disseminate and support programming-related solutions in connection with internal and customer-facing relationships
- Evaluate and select simple algorithms for solving specific problems.

Competencies

The student will learn to:

- Acquire new knowledge, skills and competencies within programming
- Participate in practice-orientated development processes in teams
- Manage the design, development and testing of larger solutions in multidisciplinary cooperation.

ECTS weight

Programming is worth 14 ECTS credits.

3.4. Project management and business understanding

Content

This subject element includes innovation, project management, economy, quality and resource management, advisory and consultative functions, as well as documentation and dissemination.

Learning objectives for Programming

Knowledge

The student will gain knowledge about:

- What innovation is, and how to use innovative methods in problem solving
- Project management in connection with development projects within IT
- How a company is organized, including the parts that control the company, as well as how one can describe the economic issues overall
- Quality and resource management as part of a development project and as part of the management of maintenance of IT operations
- Advisory and consultative functions when IT-specialists need to understand and solve the customer's needs

Skills

The student will get the skills to:

- Communicate in writing and orally to both professional people and customers
- Apply innovative problem-solving methods, with a focus on customer needs
- Evaluate the complexity of a given technical problem

Competencies

The student will learn to:

- Handle customer tasks in order to convert customer needs into reliable solutions
- Manage planning and control their own technical tasks as well as engage in interdisciplinary projects
- In a structured context, acquire new knowledge, skills and competencies by understanding companies and customers' use of IT.

ECTS weight

Project management and business understanding is worth 10 ECTS credits.

3.5. The number of exams in the national subject elements

There are 2 exams in the national subject elements, which represent 60 ECTS in total. In addition, there is one exam in the final examination project. For the number of exams in the internship, refer to the sections below.

For a comprehensive overview of all the programme exams, please refer to the institutional part of the curriculum, as the national subject elements described in this curriculum can be tested together with subject elements set in the institutional part of the curriculum.

4. Internship

Content

In combination with the other subjects in the programme, the internship contributes to strengthening the student's learning and development of practical skills.

Learning objectives for the internship

Knowledge

The student will gain knowledge about:

- The most important academic methods and technologies used in embedded systems and network solutions in a concrete company situation.

Skills

The student will get the skills to:

- Apply versatile technical and analytical methods of work related to employment within the industry
- Evaluate practical issues and commission solutions
- Organize and plan daily work assignments in the profession
- Disseminate practice-orientated issues and reasoned solutions.

Competencies

The student will learn to:

- Manage development-orientated practical and professional situations in relation to the profession and especially in relation to the internship company
- Acquire new knowledge, skills and competencies in relation to the profession
- Participate in disciplinary and interdisciplinary collaboration with a professional approach.

ECTS weight

The internship is worth 15 ECTS credits.

5. Requirements for the final exam project

Learning objectives for the final exam project

The final exam project, together with the internship exam and the other exams on the programme, must document that the learning objectives for the programme have been achieved.

The final exam project must also demonstrate the student's understanding of practices and centrally applied theory and methods in relation to a practice-orientated problem statement. The problem statement must

be based on a specific task within the programme's area. The problem statement that must be central to the programme and profession, is formulated by the student, possibly in collaboration with a private or public company. The institution must approve the problem statement.

Exams for the final exam project

The final exam project completes the programme once all the preceding exams have been passed.

ECTS weight

The final exam project is worth 15 ECTS credits.

Examination form

The examination consists of a project report and an oral defence. The exam has an external co-examiner, and one overall individual mark for the project and oral exam will be given according to the 7-point scale.

6. Rules on credit

Passed programme elements are equivalent to similar programme elements taken at other educational institutions offering this programme.

The students are obliged to inform us of any completed programme elements from another Danish or foreign higher education programme or any jobs which are likely to qualify for credit transfer.

The institution approves, in each instance, credit on the basis of completed programme elements and any jobs which meet the objectives of the subjects, the educational part and the internship parts.

The decision is taken according to an academic assessment.

For prior credit approval of studies in Denmark or abroad, students are required to document each approved and completed programme element on the completion of these studies.

In connection with the application for prior credit approval, the students must give the institution permission to obtain any required information after the completion of their studies.

On approval according to the above, the programme element is deemed to be passed if it was passed according to the rules of the programme in question.

PART 2 - Institutional part

7. The programme contains 6 local subjects

In addition to the national subject elements the programme includes local subject elements as well amounting to 30 ECTS credits. The local subject elements offer the student the opportunity to qualify their academic and professional competencies through elective elements, specialisation and from the perspective of topics broadly related to the area of the programme.

Each year a number of local subject elements are offered as electives as described in the annex to this curriculum. **The institution is not required to provide teaching in all electives offered**, but teaching will be provided for an appropriate number of electives, subject to a qualified assessment of both academic merits and any capacity constraints.

7.1. Network Specialist

Content

This elective gives the student the knowledge, skill, and competence to design, configure, troubleshoot, and manage enterprise wired and wireless networks. The student will learn to implement security principles, automation, and programmability within and enterprise network, and how to overlay network designs by using software defined solutions.

Recommended prerequisites before choosing the elective:

- CCNA or equivalent knowledge and skill
- DEVASC or equivalent knowledge and skill

Learning goals for Network Specialist

Knowledge

The student has knowledge of:

- practice and applied theory and methods within enterprise networks
- understanding of practice, centrally applied theory and method and can understand the industry's application of theory and method within enterprise networks
- possible security threats and monitoring of these in enterprise networks
- design network systems with regard to QoS

Skill

The student can:

- apply the subject area's central methods and tools within enterprise networks in connection with design and implementation of networks
- apply skills related to enterprise networks in connection with the construction, testing, maintenance, administration, operation and monitoring of these networks
- select components, describe and implement networks to solve a specific task that requires an enterprise network

Competence

The student can:

- independently and in a structured way acquire new knowledge, skills and competencies in relation to enterprise networks

- participate in professional and interdisciplinary collaboration on needs assessment, analysis, solution proposals, development, design and implementation of enterprise network solutions with a professional approach

ECTS weight

Local subject elective Network Specialist is worth 30 ECTS credits.

7.2. Cloud Specialist

Content

This subject element must provide the student with the knowledge, skills and competencies required to design, build and develop IT systems and infrastructure using the cloud computing paradigm. The subject element includes not only the hardware and software related aspects related to cloud computing, but also considerations about security, operation as well as data migration.

Learning goals for Cloud Specialist

Knowledge

The student has knowledge of:

- practice and applied theory and methods in cloud computing
- understanding of practice, centrally applied theory and method and can understand the industry's application of theory and method within cloud computing
- the different types of service models used in connection with cloud computing
- possible security threats in connection with a cloud-based system and how these are addressed

Skill

The student can:

- use the subject area's central methods and tools within cloud computing in connection with the design, planning and implementation of systems based on cloud computing
- apply the skills associated with cloud computing in connection with building, testing, maintenance, administration, operation and monitoring of cloud solutions
- select, describe and implement cloud-based solutions

Competence

The student can:

- independently and in a structured way acquire new knowledge, skills and competencies in relation to cloud-based systems
- participate in professional and interdisciplinary collaboration on needs assessment, analysis, solution proposals, development, design and implementation of cloud solutions with a professional approach

ECTS weight

Local subject elective Cloud Specialist is worth 30 ECTS credits.

7.3. Penetration Tester

Content

Students who complete this elective, should by the end of the elective have a strong and deep understanding of various verticals of security, starting with preparing a base and advancing through security concepts and hands-on experience. Students will learn how to move through the steps of the cyber-kill chain from network scanning to user privilege escalation and finally securing persistent access.

Learning goals for Penetration Tester

Knowledge

The student has knowledge of:

- Ethical hacking concepts, cyber kill chain concepts, an overview of information security, security controls, and various laws and regulations related to information security
- Footprinting concepts and methodologies and utilizing footprinting tools along with the counter-measures
- Concepts of vulnerability assessment, its types, solutions, and tools
- Mobile device management, mobile platform attack vectors, and vulnerabilities related to Android and iOS systems
- Operational Technology (OT) essentials, threats, attack methodologies and attack prevention. The concept of OT is a new addition
- Recognizing the vulnerabilities in IoT and ensuring the safety of IoT devices
- Cloud computing, threats and security, essentials of container technology and serverless computing

Skill

The student can:

- Understand wireless encryption, wireless hacking, and Bluetooth hacking-related concepts
- Understand encryption algorithms, Public Key Infrastructure (PKI), cryptographic attacks, and crypt-analysis
- Understand Denial of Service (DoS) and Distributed Denial of Service (DDoS) attacks, use cases, and utilize attack and defense tools
- Implement security solutions like firewall, IPS, honeypots, their evasion, and protection
- Perform and identify phases of system hacking, attacking techniques to obtain, escalate, and maintain access on victim along with covering tracks
- Understand and assess malware threats, analysis of various viruses, worms and trojans like Emotet and battling them to prevent data. APT and Fileless Malware concepts have been introduced to this domain
- Perform network scans, host, and port discovery by utilizing different scanning tools

Competence

The student can:

- Perform enumeration techniques that now includes NFS enumeration and related tools, DNS cache snooping, and DNSSEC Zone walking along with the countermeasures
- Understand concepts and techniques of packet sniffing as well as counter measures against them
- Apply social engineering concepts and related terminologies like identity theft, impersonation, insider threats, social engineering techniques, and countermeasures
- Understand web server and web application-based attacks, methodologies
- Perform SQL injection, hijacking, and evasion techniques
- Craft a comprehensive report for a customer, documenting the findings, make recommendations that reflects the customers' needs and select an appropriate communication strategy designed to the receiver

ECTS weight

Local subject elective Penetration Tester is worth 30 ECTS credits.

7.4. Cybersecurity Analyst

Content

This subject element must provide the student with the knowledge, skills and competencies required to design, build and develop IT systems and IT infrastructure, taking into account the general IT security.

Recommended prerequisites before choosing the elective:

- Familiarity with Ethernet and TCP/IP networking
- Working knowledge of the Windows and Linux operating systems
- Familiarity with basics of networking security concepts
- Familiarity with basics of networking automation concepts

Learning goals for Cybersecurity Analyst**Knowledge**

The student has knowledge of:

- Possible security threats in connection with IT systems and how these are addressed
- Practice and applied theory and methods in IT security
- The industry's application of theory, methods and practice within IT security

Skill

The student can:

- use the subject area's central methods and tools within IT security in connection with the design, planning and implementation of complex network solutions
- apply the skills related to IT security in connection with building, testing, maintenance, administration, operation and monitoring of network solutions
- assess practical issues and set up and choose solutions within network security
- convey practical IT security issues and solutions to partners and users

Competence

The student can:

- participate in professional and interdisciplinary collaboration on the preparation of IT security strategy and policies with a professional approach
- independently and in a structured way acquire new knowledge, skills and competencies in relation to network security as well as IT security in general

ECTS weight

Local subject elective Cybersecurity Analyst is worth 30 ECTS credits.

7.5. Application Developer**Content**

Students must understand the software engineering concepts used to develop Object Oriented software with UML using the Unified Process, and to understand how to come from a problem to the final solution. This involves requirement capturing (Use Cases and non-functional requirements), analysis, domain models, interaction diagrams, design classes, design patterns etc. Overall, the aim is to enable the students to understand and master the concepts and techniques of object-oriented system development and programming, including Client/Server programming.

Learning goals for application developer**Knowledge**

The student has:

- Knowledge of Abstraction and requirements capturing
- Knowledge of Unified Process and S.O.L.I.D Design principles
- Knowledge of the difference between software development and programming
- Knowledge of various distributed system types (e.g., client/server, peer-to-peer)
- Knowledge of the 3-tier architecture

- Knowledge of various distributed communication methods

Skill

The student can:

- Use UML to document requirements, analysis, and design artefacts
- Use Unified Process in combination with agile software development
- Use the S.O.L.I.D principles on design models
- Create a domain model from a problem description and requirement specification and the elements in the model
- Create and evaluate architectural design models in UML
- Choose middleware for a given distributed system or embedded system.
- Implement thread-safe classes and multi-threaded programs
- Implement systems using client-server technologies

Competence

The student can:

- Understand a problem and be able to make a requirement specification with use Cases and non-functional requirements
- Design the architecture of a distributed system using the 3-tier model
- Design and implement a distributed system and on different platforms using various middleware solutions.
- Implement programs in a chosen programming using correct design patterns and middleware solutions
- Apply design for test principles according to the test pyramid, both theoretically and practically test software using different testing techniques

ECTS weight

Local subject elective Application Developer is worth 30 ECTS credits.

7.6. Web Developer

Content

This elective comprises the development and modelling of web applications, including architecture, robustness, internet, and web protocols, use of debugging techniques and techniques for installation and maintenance. The subject area also includes version control, quality assurance, data security, data storage, data modelling and exchange of data sources based on recognized standards.

Learning goals for Web Developer

Knowledge

The student knowledge of:

- Web architecture and design patterns
- Development methods in web development
- In practice, methods, and systems for version control, and data storage, modelling, exchange, security, and quality assurance
- Practice, applied theory, and methods of designing user experiences, and reflect upon the web developer's practice in designing user experiences
- Aesthetics and trends in interaction design

Skill

The student can:

- Master all phases of development including planning, developing, and implementing web applications based on specific development wishes, as well as evaluate practice-based and theoretical problems and select and justify relevant solution models in relation to the development of web applications
- Master a suitable programming language for the development of web applications
- Use and model data sources as well as justify proposals for solutions
- Implement and evaluate web user interfaces as well as justify and communicate solution proposals to collaborative partners and users
- Use relevant theories and methods for the quality assurance of all phases of development
- Apply methods and tools for quality assurance in the development process, as well as evaluate and justify the choice of specific tools
- Use methods and tools to design user experiences for relevant target groups with the involvement of users
- Communicate their choice of methods and tools used in the development process and practice-based and specialist problems in the design of user experiences and communicate central problems to collaborative partners and users

Competence

The student can:

- Handle complex web development and must be able to handle complex and development-oriented situations in web development
- Independently enter professional and interdisciplinary cooperation with a professional approach and take responsibility within the framework of professional ethics in relation to web programming
- Manage development platforms and environments in the development process of advanced web applications
- Handle complex design processes based on analysis and planning
- Both independently and in groups, understand the design and organization of user interfaces and user experiences for complex systems
- Evaluate and justify the choice of a suitable programming language and relevant methods for the implementation of web applications

ECTS weight

Local subject elective Web Developer is worth 30 ECTS credits.

7.7. Examinations

The purpose of exams during the education is to decide to which degree the student meets the professional objectives established for the education and its elements. The curriculum distinguishes between two different examination forms:

- External exam: Evaluated by the lecturer and one or more appointed co-examiners
- Internal exam: Evaluated by a lecturer and where the oral exams are concerned, a co-examiner appointed by the academy (as established by the individual education).

NB: Enrolment will be terminated for students who have not passed any exams in a continuous period of at least one year.

Part-exams that have not been passed cannot be re-taken if they form part of an overall exam that has been passed unless otherwise stipulated in the ministerial order or the curriculum for the education.

Reference is also made to the Ministerial Order on Examinations on Professionally Oriented Higher Education Programmes, the Ministerial Order on the Grading Scale and Other Forms of Assessment of Study Programmes under the Ministry of Higher Education and Science as well as **Dania Academy's examination rules** at: <https://eadania.com/media/3992/exam-regulations-dania-academy-2020.pdf>

7.7.1 Overview of exams

Place-ment	Examination	Subject elements	ECTS	Evaluation	Grading scale	Weighting
1 st se- mester	Commence- ment of studies exam	The purpose of this exam is to es- tablish that the student has in fact started their studies.	In- ter- nal	Approved / not ap- proved	Approved / not ap- proved	
	1 st internal exam	This exam must document that the student has achieved the learning objectives set for the 1st semester Consists of 3 parts: - 3 ongoing part assessments - 1 written group semester pro- ject with oral group exam A grade for all 4 parts will appear on the diploma.	30	Internal	7-point scale	1: Weighting of each Part as- sessment: 15% 2: Weighting of project: 55%
2 nd se- mester	1 st external exam	This exam must document that the student has achieved the learning objectives set for the 1st semester. Consists of 3 parts: - 3 ongoing part assessments - 1 written group semester pro- ject with oral group exam A grade for all 4 parts will appear on the diploma.	30	External	7-point scale	1: Weighting of each part as- sessment: 15% 2: Weighting of project: 55%
3 rd se- mester	2 nd internal exam	The exam must document that the student has achieved the learning objectives set for the elective in question.	30	Internal	7-point scale	
4 th se- mester	Internship exam	This exam must document that the student has achieved the learning objectives for the internship	15	Internal	7-point scale	
	Final exam pro- ject	The final exam project, together with the internship exam and the other exams on the programme, must document that the learning objectives for the programme have been achieved. The final exam project completes the programme once all the preced- ing exams have been passed.	15	External	7-point scale	

7.7.2 Description of exams

1st internal exam

Placement	1 st semester
Learning objectives being tested and the related subject elements	<p>The following learning objectives from the national part of the curriculum are tested:</p> <p>Learning Objectives for Network Technology:</p> <p>Knowledge The student will gain knowledge about:</p> <ul style="list-style-type: none"> • Network security, including different products • Communication protocols and their use for different architecture <p>Skills The student will get the skills to:</p> <ul style="list-style-type: none"> • Apply network technology and hardware in connection with design, planning and implementation of complex, secure and sustainable network solutions • Use tools and equipment related to the design, development and testing of solutions <p>Competencies The student will learn to:</p> <ul style="list-style-type: none"> • Manage analysis, needs identification, design, development and testing of secure network solutions • Participate in practice-orientated development processes in teams <p>Learning Objectives for Programming</p> <p>Knowledge The student will gain knowledge about:</p> <ul style="list-style-type: none"> • Programming techniques in different types of language <p>Skills The student will get the skills to:</p> <ul style="list-style-type: none"> • Use tools and equipment related to the design, development and testing of programs <p>Competencies The student will get the skills to:</p> <ul style="list-style-type: none"> • Acquire new knowledge, skills and competencies within programming <p>Learning Objectives for Embedded Systems</p> <p>Knowledge The student will gain knowledge about:</p> <ul style="list-style-type: none"> • Communication and interface technique in general, as well as how they are used in selected solutions • An overview of electronic modules, as well as how selected modules are built up • Protocols including communication protocols, their structure as well as what differences and uses there are • Applied technical mathematics within the subject area to understand electronics and/or communication. <p>Skills</p>

	<p>The student will get the skills to:</p> <ul style="list-style-type: none"> Evaluate, select, adapt and use embedded systems and components in secure and sustainable solutions <p>Competencies</p> <p>The student will learn to:</p> <ul style="list-style-type: none"> Acquire new knowledge, skills and competencies within the subject area Participate in practice-orientated development processes in teams <p>Learning objectives for Project Management and business understanding</p> <p>Knowledge</p> <p>The student will gain knowledge about:</p> <ul style="list-style-type: none"> What innovation is, and how to use innovative methods in problem solving Project management in connection with development projects within IT Quality and resource management as part of a development project and as part of the management of maintenance of IT operations <p>Skills</p> <p>The student will get the skills to:</p> <p>Communicate in writing and orally to both professional people and customers</p>
ECTS in total	30 ECTS
Prerequisites	<p>The student must meet the requirement for study activity as described in section 7.8 and 7.9.</p> <p>In order to take the oral part of the exam project, the content of the written assignment must meet formal requirements and be submitted correctly and on time. To take the oral exam, the student must confirm paper submission by way of signature. This is done practically speaking by uploading the assignment in WISEflow.</p> <p>If the prerequisite is not met, the student / students cannot participate in the exam and will have used one exam attempt. This applies to the ordinary exams as well as re-exams.</p>
Deadline for when prerequisites must be met	No later than 14 days before the oral exam
Form	Combined written assignment prepared in groups and 3-part assessments. Part assessments as well as the assignment contain product types that document that the student has achieved the competence goal, including work with and reflection on selected and essential knowledge and skills goals. The oral part of the exam takes place at a specified time at a specified physical address and under supervision.
Contents related extent (formalities)	<p>Part assessment A: Network technology</p> <p>All students are given the same assignment and complete the assignment under supervision. The individual student must carry out a network simulation task to demonstrate an understanding of a network composition as well as network configuration based on the set task. The student has 6 hours to complete the assignment.</p> <p>All aids are allowed.</p> <p>Part assessment B: Programming</p>

The student draws an assignment which includes practical and theoretical elements and has 1 hour for preparation. The student then gives a presentation at a 20-minute oral individual exam:

- Presentation (5 minutes)
- Dialogue and discussion (10 minutes)
- Deliberation and grading (5 minutes)

Part assessment C: Embedded systems

Individual completion of a practical task with physical presence and subsequent individual presentation of the product. All students are given the same assignment and complete the assignment under supervision. Each student must select relevant components for the given task from a selection of available equipment. The students must program the system to perform the set task and associated requirements for the system.

When the time has elapsed, all examinees leave the room, after which they enter one by one and present their task.

All aids are allowed.

The following will be handed out to the student at the exam:

- 1 microcontroller
- 10 components
- A task description incl. requirements specification for the system

Of the components, a minimum of 3 and a maximum of 7 will not be included in the system.

Of the relevant components, 1 component will use a known data protocol, as well as another component which is analogue and will require mathematical conversion to give the user meaningful values. In addition, the assignment will also require students to calculate the minimum requirement for a power supply to the system. The students will have to present this, incl. intermediate results, either orally during the presentation, or in writing in the programming, in the form of a comment.

The students have 90 minutes to complete the assignment description in accordance with the requirements specification.

Group semester project with group exam

The purpose of the project is to test the students' ability to work methodically and theoretically with a problem from a case company chosen by the institution and related to the subject area of the programme in the 1st semester. The project is therefore based on a business-related and contemporary, relevant issue. The project is based on the problem statement, which means that it will not be possible to uncover all learning objectives at the same time.

The project consists of a written assignment of 31,200-43,200 keystrokes (including spaces, footnotes, figures and tables, but excluding cover, table of contents, list of sources and appendices), prepared in groups of 2-4 students and an oral group examination.

Oral exam in group semester project

The oral exam has a duration of 45 min.

	<ul style="list-style-type: none"> • The student gives a presentation of the selected elements from the project (max. 5-10 min.) • After the presentation, the examiners ask in-depth questions about the presentation and the written report, as well as general questions in relation to the learning objectives for the relevant subject elements (approx. 15-25 min.) • It is the responsibility of the group to ensure that all group members participate actively in the entire exam. <p>Deliberation and grading: approx. 5-10 minutes.</p>
Evaluation	<p>Internal evaluation according to the 7-grade scale.</p> <p>The result from the three part assessments is included as ongoing assessment, each weighted 15% of the total grade. The project is weighed 55% of the grade. The result of the ongoing part assessments will appear from the diploma.</p> <p>The student has one attempt to complete part assessments A-C. In the event of undocumented absence from the oral part, non-submission of assignments or submission without actual content, the student is awarded the assessment 'not submitted'.</p> <p>The student has three exam attempts, and the project must be passed. The student receives one aggregate grade for the written and the oral part of the semester project. The written part of the exam is assessed for the group as a whole. A differentiated, independent grade for the written part of the semester project requires that the individual student's contribution appears expressly from the paper. The oral part is evaluated on the basis of the individual performance at the exam.</p> <p>In the event of "fail", the student / students will be advised on what to improve in a new assignment and a new oral examination.</p>
Evaluation criteria	<p>Part assessment A: Network technology</p> <ul style="list-style-type: none"> • The student is assessed on the basis of the degree to which the simulation has been completed, including the degree to which the network has been completed and set up. <p>Part assessment B: Programming</p> <ul style="list-style-type: none"> • The oral presentation is assessed on the basis of the question drawn and the answer to the question asked, as well as academic insight in the following dialogue and discussion. <p>Part assessment C: Embedded systems</p> <ul style="list-style-type: none"> • If the task performed demonstrates an attempt to implement the required components correctly in the code, the goal has been achieved. • If only the required modules have been selected to complete the task, the goal has been achieved. • If an attempt has been made to implement the one component that makes use of a data protocol correctly by selecting the correct auxiliary library in the code, the goal has been achieved. • If an attempt has been made to convert the one analogue component included in the system correctly to meaningful units (e.g. temperature) and the calculation for the power supply has been drawn up correctly, the goal has been achieved. • Have all the correct auxiliary libraries in the code been selected to support the selected components?

- Have all the selected components been correctly implemented in the code?
- Does the system's function meet the requirements specification?
- Is the conversion of the analogue sensor correct?
- Is the calculation of the power supply correct?

The total result is converted to a grade according to the following table:

Percent-age	Grading scale
90-100	12
80-89	10
70-79	7
65-69	4
60-65	02
40-59	00
0-40	-03

Group semester project with group exam

In addition to the learning objectives in the curriculum, emphasis will be placed on the following in the evaluation of the written product:

- Has the problem statement been accounted for?
- Relevant selection, application and combination of knowledge and methods from relevant subject elements
- Academic insight and immersion - mastery of relevant academic goals in the relevant subjects and familiarisation with relevant new academic areas
- Use of relevant material
- Academic content and presentation
- Formal requirements, including citation

At the oral exam emphasis is on:

- The oral presentation of the project and its main conclusions
- Academic insight and immersion in the academic dialogue and combination of knowledge from the relevant subject elements
- The examinee's ability to make methodological and interdisciplinary considerations in connection with projects and choice of relevant subjects, including argumentation for the choice of one subject

The students receive one grade based on an overall assessment of the written assignment and the oral presentation.

Writing and spelling skills	Included in the overall assessment
Language	English, see also Academy Dania's examination regulations for exemption options.
Aids	All aids are allowed except external communication
Registration for exams	When starting a semester, you will automatically be registered for the tests and exams scheduled for that semester – including the related make-up exams/re-exams. It is not possible to withdraw from an exam, except in exceptional circumstances. See Dania Academy's examination rules.

1st external exam

Placement	2 nd semester
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<p>Learning objectives being tested and the related subject elements</p>	<p>The following learning objectives from the national part of the curriculum are tested:</p> <p>Learning Objectives for Network Technology</p> <p>Knowledge</p> <p>The student will gain knowledge about:</p> <ul style="list-style-type: none"> • Network and server technologies overall, and the difference between physical and virtual technologies • Operating systems as well as the difference between different systems • Data management, including security <p>Skills</p> <p>The student will get the skills to:</p> <ul style="list-style-type: none"> • Apply network technological knowledge in connection with administration, operation and monitoring of complex network solutions • Communicate and document tasks and solutions within networks • Evaluate network security in specific products. <p>Competencies</p> <p>The student will learn to:</p> <ul style="list-style-type: none"> • Manage planning and quality management of their own network and server technology-related tasks • Acquire new knowledge, skills and competencies within network and server technologies <p>Learning Objectives for Programming</p> <p>Knowledge</p> <p>The student will gain knowledge about:</p> <ul style="list-style-type: none"> • Overall algorithms and design patterns and in connection with their selected programming language. <p>Skills</p> <p>The student will get the skills to:</p> <ul style="list-style-type: none"> • Document, disseminate and support programming-related solutions in connection with internal and customer-facing relationships • Evaluate and select simple algorithms for solving specific problems. <p>Competencies</p> <p>The student will learn to:</p> <ul style="list-style-type: none"> • Participate in practice-orientated development processes in teams • Manage the design, development and testing of larger solutions in multidisciplinary cooperation. <p>Learning Objectives for Embedded Systems</p> <p>Knowledge</p> <p>The student will gain knowledge about:</p> <ul style="list-style-type: none"> • Internet of Things-techniques, construction generally and selected solutions in more details • Operating systems, their characteristics and application • A general understanding of signal handling and how it is used and integrated in solutions
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	<p>Skills The student will get the skills to:</p> <ul style="list-style-type: none"> • Build and use test systems • Document and disseminate tasks and solutions with the use of embedded components and systems <p>Competencies The student will learn to:</p> <ul style="list-style-type: none"> • Manage analysis, needs assessment, design, development and testing of secure embedded and sustainable solutions • Manage the analysis, diagnostics, testing and servicing of the technology involved in working with electronic systems, taking into account financial, environmental and quality requirements <p>Learning objectives for Project Management and business understanding</p> <p>Knowledge The student will gain knowledge about:</p> <ul style="list-style-type: none"> • How a company is organized, including the parts that control the company, as well as how one can describe the economic issues overall • Advisory and consultative functions when IT-specialists need to understand and solve the customer's needs <p>Skills The student will get the skills to:</p> <ul style="list-style-type: none"> • Apply innovative problem-solving methods, with a focus on customer needs • Evaluate the complexity of a given technical problem <p>Competencies The student will learn to:</p> <ul style="list-style-type: none"> • Handle customer tasks in order to convert customer needs into reliable solutions • Manage planning and control their own technical tasks as well as engage in interdisciplinary projects • In a structured context, acquire new knowledge, skills and competencies by understanding companies and customers' use of IT.
ECTS in total	30 ECTS
Prerequisites	<p>The student must have passed the 1st semester. The student must also meet the requirement for study activity as described in section 7.8 and 7.9.</p> <p>In order to take the oral part of the exam project, the content of the written assignment must meet formal requirements and be submitted correctly and on time. To take the oral exam, the student must confirm paper submission by way of signature. This is done practically speaking by uploading the assignment in WISEflow.</p> <p>If the prerequisite is not met, the student / students cannot participate in the exam and will have used one exam attempt. This applies to the ordinary exams as well as re-exams.</p>
Deadline for when prerequisites must have been met	No later than 14 days before the oral exam

Form	<p>Combined written assignment prepared in groups and 3 part assessments. Part assessments as well as the assignment contain product types that document that the student has achieved the competence goal, including work with and reflection on selected and essential knowledge and skills goals. The oral part of the exam takes place at a specified time at a specified physical address and under supervision.</p>
Contents related extent (formalities)	<p>Part assessment D: Network technology All students are given the same assignment and complete the assignment under supervision. The student must set up a server environment with associated services. The student has 6 hours to complete the assignment.</p> <p>All aids are allowed.</p> <p>Part assessment E: Programming The student draws an assignment which includes practical and theoretical elements and has 1 hour for preparation. The student then gives a presentation at a 20-minute oral individual exam:</p> <ul style="list-style-type: none"> • Presentation (5 minutes) • Dialogue and discussion (10 minutes) • Deliberation and grading (5 minutes) <p>Part assessment F: Embedded systems The exam is conducted in self-chosen groups of 2-3 people. The groups are formed no later than 3 days before the exam. The exam consists of an optional task based on a short task description. Several groups may therefore have the same task. The task is of a project-orientated nature with a combination of a practical task in the form of the development of a simple IoT system based on a task description containing a requirements specification and associated technical documentation to be performed, e.g. test and verification results.</p> <p>The task is performed over 1 day with physical presence and ends with a submission of documentation and artefacts (code, appendices, etc.) in Wiseflow as well as a short demonstration of the solution at the end of the day.</p> <p>The practical part is about wireless interconnection of a simple embedded system consisting of a microcontroller and some sensors with a central platform in the form of a single-board computer (Raspberry Pi) that users can access. This will simulate the setup of an IoT system with an associated platform.</p> <p>For the practical task, a technical documentation must be drawn up with the requirements specification from the task, for which a test specification must be prepared, and verification results as a result of tests must be documented. In addition, the choice of components must be well-argued in the documentation to ensure that they comply with the requirements specification. A system design and architecture for the system must also be included, so that these can be compared to the group's practical product. Both elements of the exam have a standard time of 50%.</p> <p>The technical documentation must have a scope of 12,000-16,800 keystrokes and must be submitted in pdf format. When handing in the written part, all the coding that the students have prepared themselves must be attached, including a code for verification</p>

	<p>tests, as well as data sheets for selected system components - this must be zip-filed and handed in as an appendix.</p> <p>The group must demonstrate that the system's functionalities work as described in the task description.</p> <p>Group semester project with individual oral exam</p> <p>The purpose of the project is to test the students' ability to work methodically and theoretically with a problem from a case company chosen by the group and related to the subject area of the programme in the 1st semester. The project is therefore based on a business-related and contemporary, relevant issue. The project is based on the problem statement, which means that it will not be possible to uncover all learning objectives at the same time.</p> <p>The project consists of a written assignment of 31,200-43,200 keystrokes (including spaces, footnotes, figures and tables, but excluding cover, table of contents, list of sources and appendices), prepared in groups of 2-4 students, and an oral group examination.</p> <p><u>Oral exam in group semester project</u></p> <p>The oral exam has a duration of 45 min.</p> <ul style="list-style-type: none"> • The students give a presentation of the selected elements from the project (max. 5-10 min.) • After the presentation, the examiners ask in-depth questions about the presentation and the written report, as well as general questions in relation to the learning objectives for the relevant subject elements (approx. 15-25 min.) • It is the responsibility of the group to ensure that all group members participate actively in the entire exam. • Deliberation and grading: approx. 5-10 minutes
Evaluation	<p>Internal evaluation according to the 7-grade scale.</p> <p>The result from the 3-part assessments is included as ongoing assessment, each weighted 15% of the total grade. The project is weighed 55% of the grade. The result of the ongoing part assessments will appear from the diploma.</p> <p>The student has one attempt to complete part assessments D-F. In the event of undocumented absence from the oral part, non-submission of assignments or submission without actual content, the student is awarded the assessment 'not submitted'.</p> <p>The student has three exam attempts, and the project must be passed. The student receives one aggregate grade for the written and the oral part of the semester project. The written part of the exam is assessed for the group as a whole. A differentiated, independent grade for the written part of the semester project requires that the individual student's contribution appears expressly from the paper. The oral part is evaluated on the basis of the individual performance at the exam.</p> <p>In the event of "fail", the student / students will be advised on what to improve in a new assignment and a new oral examination.</p>
Evaluation criteria	Part assessment D: Network technology

- The student is assessed on the basis of the degree to which setting up the server environment with associated services has been achieved, including the degree of completion.

Part assessment E: Programming

- The oral presentation is assessed on the basis of the question drawn and the answer to it, as well as academic insight in the following dialogue and discussion.

Part assessment F: Embedded systems

The exam is weighted 70% in terms of skills goals, and 30% knowledge goals.

- Cf. Internet of Things-techniques, construction in general and selected solutions in more details:
 - If the group chooses to use a solution that requires access to data from the system via a platform that can be connected to a network, the goal has been achieved.
- Cf. Operating systems, their characteristics and application
 - If the group succeeds with, or correctly tries to implement functionalities on both microcontroller and single-board computer, the goal has been achieved
- Cf. A general understanding of signal handling as well an understanding of how it is used and integrated in solutions
 - If the group's design and architecture correctly shows the signal types being used for different components, the goal have been achieved.

The skills goals for the task are divided in the following way, where all sub-goals are weighted equally.

- Build and use test systems
 - A test specification is drawn up for each requirement
 - Verification tests have been performed for all requirements that the group has managed to implement
 - The verification tests performed give true data for the measured parameter (the performed test, measures as required according to the Requirement being tested)
 - Documentation for completed tests is included in the accompanying appendix.
- Document and disseminate tasks and solutions involving the use of embedded components and systems
 - The technical documentation contains a requirements specification and associated test specification
 - The technical documentation contains a true design sketch / diagram of the system
 - The technical documentation contains true system architecture diagrams
 - The technical documentation contains the final results of the verification test
 - All the successfully fulfilled requirements specifications are documented in the technical documentation or in the accompanying appendices
 - The final product demonstrates that, as a minimum, 5 of the requirements set in the requirements specification have been fulfilled.

The total result is converted to a grade according to the following table:

Percent-age	Grading scale
93-100	12
86-92	10
75-85	7
65-74	4
58-65	02
40-57	00
0-40	-03

Group semester project with individual oral exam

In addition to the learning objectives in the curriculum, emphasis will be placed on the following in the evaluation of the written product:

- Has the problem statement been accounted for?
- Relevant selection, application and combination of knowledge and methods from relevant subject elements
- Academic insight and immersion - mastery of relevant academic goals in the relevant subjects and familiarisation with relevant new academic areas
- Use of relevant material
- Academic content and presentation
- Formal requirements, including citation

At the oral exam emphasis is on:

- The oral presentation of the project and its main conclusions
- Academic insight and immersion in the academic dialogue and combination of knowledge from the relevant subject elements
- The examinee's ability to make methodological and interdisciplinary considerations in connection with projects and choice of relevant subjects, including argumentation for the choice of one subject

The students receive one grade based on an overall assessment of the written assignment and the oral presentation.

Writing and spelling skills	Included in the overall assessment
Language	English, see also Academy Dania's examination regulations for exemption options.
Aids	All aids are allowed except external communication
Registration for exams	When starting a semester, you will automatically be registered for the tests and exams scheduled for that semester – including the related make-up exams/re-exams. It is not possible to withdraw from an exam, except in exceptional circumstances. See Dania Academy's examination rules.

2nd internal exam

Placement	End of 3 rd semester
Learning objectives being tested and the	Local learning objectives for electives are being tested

related subject elements	
ECTS in total	This exam depends on the choice of local subject element:
Prerequisites	<p>All exams in the 1st year of study must be passed. The student must also meet the requirement for study activity as described in section 7.8 and 7.9.</p> <p>In order to take the oral part of the exam project, the content of the written assignment must meet formal requirements and be submitted correctly and on time. To take the oral exam, the student must confirm paper submission by way of signature. This is done practically speaking by uploading the assignment in WISEflow.</p> <p>If the prerequisite is not met, the student / students cannot participate in the exam and will have used one exam attempt. This applies to the ordinary exams as well as re-exams.</p>
Deadline for when prerequisites must have been met	No later than 14 days before the oral exam
Form	<p>Oral, individual exam based on a written project. The project contains product types that document that the student has achieved the competence goal, including the work with and reflection on selected and essential knowledge and skills goals. The project contains reflections on the student's own learning and development in achieving the competence goal. The oral part of the exam takes place at a specified time at a specified physical address and under supervision.</p> <p>The project can be prepared individually or in groups of 2-3 students.</p>
Contents related extent (formalities)	<p>The purpose of the project is to test the students' ability to work methodically and theoretically with a problem from a case company chosen by the group, related to the subject area of the programme in the 3rd semester. The project is therefore based on a business-related and contemporary, relevant issue. The project is based on the problem statement, which means that it will not be possible to uncover all learning objectives at the same time.</p> <p>The 2nd internal exam consists of a written assignment of 36,000-43,000 keystrokes (including spaces, footnotes, figures and tables, but excluding cover, table of contents, list of sources and appendices), prepared individually or in self-chosen groups of 2-3 students, as well as an individual oral examination.</p> <p><u>Individual oral exam in semester project</u> The oral exam has a duration of 30 min.</p> <ul style="list-style-type: none"> • The students give a presentation of the selected elements from the project (max. 5-10 min.) • After the presentation, the examiners ask in-depth questions about the presentation and the written report, as well as general questions in relation to the learning objectives for the relevant subject elements (approx. 10-15 min.) • Deliberation and grading: approx. 5 minutes
Evaluation	Internal evaluation according to the 7-grade scale.

	<p>The student has three exam attempts. The student receives one aggregate grade for the written and the oral part of the semester project. The written part of the exam is assessed for the group as a whole. A differentiated, independent grade for the written part of the semester project requires that the individual student's contribution appears expressly from the paper. The oral part is evaluated on the basis of the individual performance at the exam.</p> <p>In the event of "fail", the student / students will be advised on what to improve in a new assignment and a new oral examination.</p>
Evaluation criteria	<p>In addition to the learning objectives in the curriculum, emphasis will be placed on the following in the evaluation of the written product:</p> <ul style="list-style-type: none"> • Has the problem statement been accounted for? • Relevant selection, application and combination of interdisciplinary knowledge and methods from relevant subjects • Academic insight and immersion - mastery of relevant academic goals in the relevant subjects and familiarisation with relevant new academic areas • The student's ability to express themselves professionally using relevant technical terms • Formal requirements, including citation <p>At the oral exam emphasis is on:</p> <ul style="list-style-type: none"> • The oral presentation of the project and its main conclusions Academic insight and immersion in the academic dialogue and combination of knowledge from the relevant subject elements • The examinee's ability to make methodological and interdisciplinary considerations in connection with projects and choice of relevant subjects, including argumentation for the choice of one subject • Reflection on the quality of the completed project <p>The students receive one grade based on an overall assessment of the written assignment and the oral presentation.</p>
Writing and spelling skills	Included in the overall assessment
Language	English, see also Academy Dania's examination regulations for exemption options.
Aids	No restriction on the use of aids.
Registration for exams	When starting a semester, you will automatically be registered for the tests and exams scheduled for that semester – including the related make-up exams/re-exams. It is not possible to withdraw from an exam, except in exceptional circumstances. See Dania Academy's examination rules.

Internship exam

Placement	End of 4th semester
Learning objectives included in the exam	The learning objectives for the internship will be tested. They can be found in the national part of the curriculum.
ECTS credits in total	15 ECTS corresponding to the scope of the learning objectives being tested at the exam
Prerequisites	All exams in the 1st, 2nd and 3rd semesters must have been passed. The student must also meet the requirement for study activity as described in section 7.8 and 7.9.

	<p>In addition, the student must have completed the compulsory elements, more precisely:</p> <ul style="list-style-type: none"> • Participation in mid-term evaluation with supervisor and, possibly, the internship company • Completion of final evaluation and inviting the company to complete final evaluation if not already completed <p>In addition, it is a prerequisite that the student has completed 2/3 of the internship period as a minimum in order to take the oral exam.</p> <p>In order to take the oral part of the exam project, the content of the written assignment must meet formal requirements and be submitted correctly and on time. To take the oral exam, the student must confirm paper submission by way of signature. This is done practically speaking by uploading the assignment in WISEflow.</p> <p>If the prerequisite is not met, the student / students cannot participate in the exam and will have used one exam attempt. This applies to the ordinary exams as well as re-exams.</p>
Deadline for when prerequisites must have been met	No later than 2 days before the oral exam
Form	Oral, individual exam based on a physical product. The physical product must document that the student has achieved the competence goal for the programme, including work with and reflection on selected and essential knowledge and skills goals as well as their own learning and development in achieving the competence goal. The oral part of the exam takes place at a specified time at a specified physical address and under supervision.
Contents related extent (formalities)	<p>A combination of a poster (A3 or larger) and an oral presentation. The poster serves as a presentation of a specific technical subject the student has worked on during their internship and which can be linked to one or more learning objectives. The target group for the presentation is other students within the same subject area.</p> <p>The poster must contain a description of the technology as well as the context in which the student has worked with the technology during the internship. It must give information about:</p> <ul style="list-style-type: none"> • Business • Project / product <p><u>Oral individual exam in the internship report</u> The oral exam has a duration of 15-20 minutes:</p> <ul style="list-style-type: none"> • Presentation of the technical subject and own reflections on the fulfilment of learning objectives for the internship (5-10 minutes) • Discussion of the internship (5-10 minutes) <p>Grades are not published after the oral presentation. The student receives the grade through Wiseflow no later than 2 days after the oral presentation.</p>
Evaluation	<p>Internal evaluation according to the 7-grade scale.</p> <p>The student has three attempts at the exam.</p>

	In the event of “fail”, the student will be advised on what to improve in a new assignment and a new oral examination.
Evaluation criteria	<p>In addition to the learning objectives in the curriculum, emphasis will be placed on the following in the evaluation of the written product:</p> <ul style="list-style-type: none"> • Academic insight and immersion - mastery of relevant academic goals in the relevant subjects and familiarisation with relevant new academic areas • Relevant theories and models must be used • The student’s ability to express themselves professionally using relevant technical terms • Formal requirements, including citation <p>At the oral exam emphasis is on:</p> <ul style="list-style-type: none"> • The oral presentation of the project and its main conclusions Academic insight and immersion in the academic dialogue and combination of knowledge from the relevant subject elements • Reflection on their own experience <p>The students receive one grade based on an overall assessment of the written assignment and the oral presentation.</p>
Writing and spelling skills	Included in the overall assessment
Language	English, see also Academy Dania’s examination regulations for exemption options.
Aids	No restriction on the use of aids.
Registration for exams	When starting a semester, you will automatically be registered for the tests and exams scheduled for that semester - including the associated sick exams / re-exams. It is not possible to cancel an exam unless special circumstances apply. See Dania Academy’s Exam Regulations.

Exams for the final exam project

Placement	End of 4 th semester
Learning objectives included in the exam	The final exam project is worth 15 ECTS credits.
ECTS credits in total	The final exam project, together with the internship exam and the other exams on the programme, must document that the learning objectives for the programme have been achieved. The learning objectives can be found in the national part of the curriculum.
Prerequisites	The exam project completes the programme, which is why all previous exams must have been passed.
Deadline for when prerequisites must have been met	No later than 5 days before the oral exam
Form	<p>Oral, individual exam based on a project. The project documents that the student has achieved the competence goal, including work with and reflection on selected and essential knowledge and skills goals as well as their own learning and development in achieving the competence goal. The oral part of the exam takes place at a specified time at a specified physical address and under supervision.</p> <p>The project can be prepared individually or in groups of 2-3 students.</p>

<p>Contents re- lated extent (formalities)</p>	<p>The purpose of the final exam project is to document the student's ability to process a complex and practical problem in relation to a specific assignment on a methodological basis. The final exam project completes the programme at the end of the 4th semester. The exam includes both a written and an oral part.</p> <p>The written project is an interdisciplinary project and must be based on a problem in a self-chosen company. The problem, which must be central to the programme and the profession, is formulated by the student, possibly in collaboration with a private or public company. The institution must approve the problem. The problem, which must be central to the education and the profession, is formulated by the student, possibly in collaboration with a private or public company. The institution must approve the problem statement.</p> <p>The exam project must have a maximum scope of: for 1 student: Btw. 65,000-75,000 keystrokes for 2 students: Btw. 75,000-115,000 keystrokes for 3 students: Btw. 115,000-150,000 keystrokes</p> <p>Keystrokes include spaces, footnotes, figures and tables, but excluding front page, executive summary, table of contents, list of sources and appendices.</p> <p><u>Oral individual exam in the final project</u> Based on the written project, the student is examined at an individual oral examination of 45 minutes' duration, incl. grading.</p> <ul style="list-style-type: none"> • The oral part of the exam begins with a presentation of the product prepared by the group as well as a presentation based on the project (max. 15 minutes) • After the presentation, the examiners ask more detailed questions about the presentation and the written report, as well as general questions in relation to the learning objectives for the relevant subject elements (approx. 15-20 min.) • Deliberation and grading: approx. 5-10 minutes.
<p>Evaluation</p>	<p>External evaluation according to the 7-grade scale.</p> <p>The student has three attempts at the final exam project. The student receives one aggregate grade for the written and the oral part of the final project. If the final project is prepared in groups, then the written part of the final project will be assessed as a whole for the whole group. A differentiated, independent grade for the written part of the final project requires that individual student's contribution appears expressly from the paper. The oral part is evaluated on the basis of the individual performance at the exam.</p> <p>In the event of "fail", a new final project must be prepared with a new problem formulation. The student(s) can seek guidance.</p>
<p>Evaluation criteria</p>	<p>In addition to the learning objectives in the curriculum, emphasis will be placed on the following in the evaluation of the written product:</p> <ul style="list-style-type: none"> • Has the problem statement been accounted for? • Relevant selection, application and combination of knowledge and methods from relevant subject elements • Academic insight and immersion - mastery of relevant academic goals in the relevant subjects and familiarisation with relevant new academic areas • Use of relevant material • Academic content and presentation

	<ul style="list-style-type: none"> • Formal requirements, including citation <p>At the oral exam emphasis is on:</p> <ul style="list-style-type: none"> • The oral presentation of the project and its main conclusions Academic insight and immersion in the academic dialogue and combination of knowledge from the relevant subject elements • The examinee's ability to make interdisciplinary choices in connection with projects • Reflection on the quality of the recommended improvement <p>The students receive one grade based on an overall assessment of the written assignment and the oral presentation.</p>
Writing and spelling skills	Included in the overall assessment
Language	English, see also Academy Dania's examination regulations for exemption options.
Aids	No restriction on the use of aids.
Registration for exams	When starting a semester, you will automatically be registered for the tests and exams scheduled for that semester - including the associated sick exams / re-exams. It is not possible to cancel an exam unless special circumstances apply. See Dania Academy's Exam Regulations.

7.4.3 Make-up examination, exemption, cheating, complaints and special examination conditions

Dania Academy has established rules and procedures regarding special conditions when conducting examinations. The rules and procedures will appear from **Dania's examination regulations, which the student is expected to have read at the beginning of the 1st semester.**

The examination regulations include, among other things, rules and procedures in the following areas:

- When a student may attend a make-up examination
- When the student must pass the exam
- How the student should relate to physical or psychological disability
- Examinations taken abroad
- Complaints
- Cheating, plagiarism and disruptive behaviour during examinations, etc.

7.8. Study activity criteria

At Dania Academy, we regularly monitor our students' study activity. Study activity is a prerequisite for being eligible for SU and continuing to be enrolled in the program.

Enrolment in the program is terminated for students who:

- Has not passed any tests for a continuous period of at least 1 year.
- Has not passed any study start test within 3 months after study start.
- Has not passed tests of a scope of 45 ECTS points per. academic year.

The institution may dispense with the requirement of 45 ECTS points per year of study if the student is an elite athlete or it is due to illness, maternity or unusual circumstances, including disability.

7.8.1 Commencement of studies exam

1st semester students must attend and pass a commencement of studies exam in order to continue their studies. The purpose of this exam is to establish that the student has in fact started on the education.

The commencement of studies exam is held no later than two months after commencement of study, and the result will be communicated to the student as passed/not passed within two weeks of holding the exam.

If a student fails the commencement of studies exam, they may participate in a re-examination, which will be held 3 months after the beginning of the 1st semester at the latest. The student will be given two attempts to pass the commencement of studies exam. The examination is not subject to the rules in the executive order on examination regulations regarding complaints about examinations.

Should the student fail to pass the 1st semester examination the student will be expelled from the education.

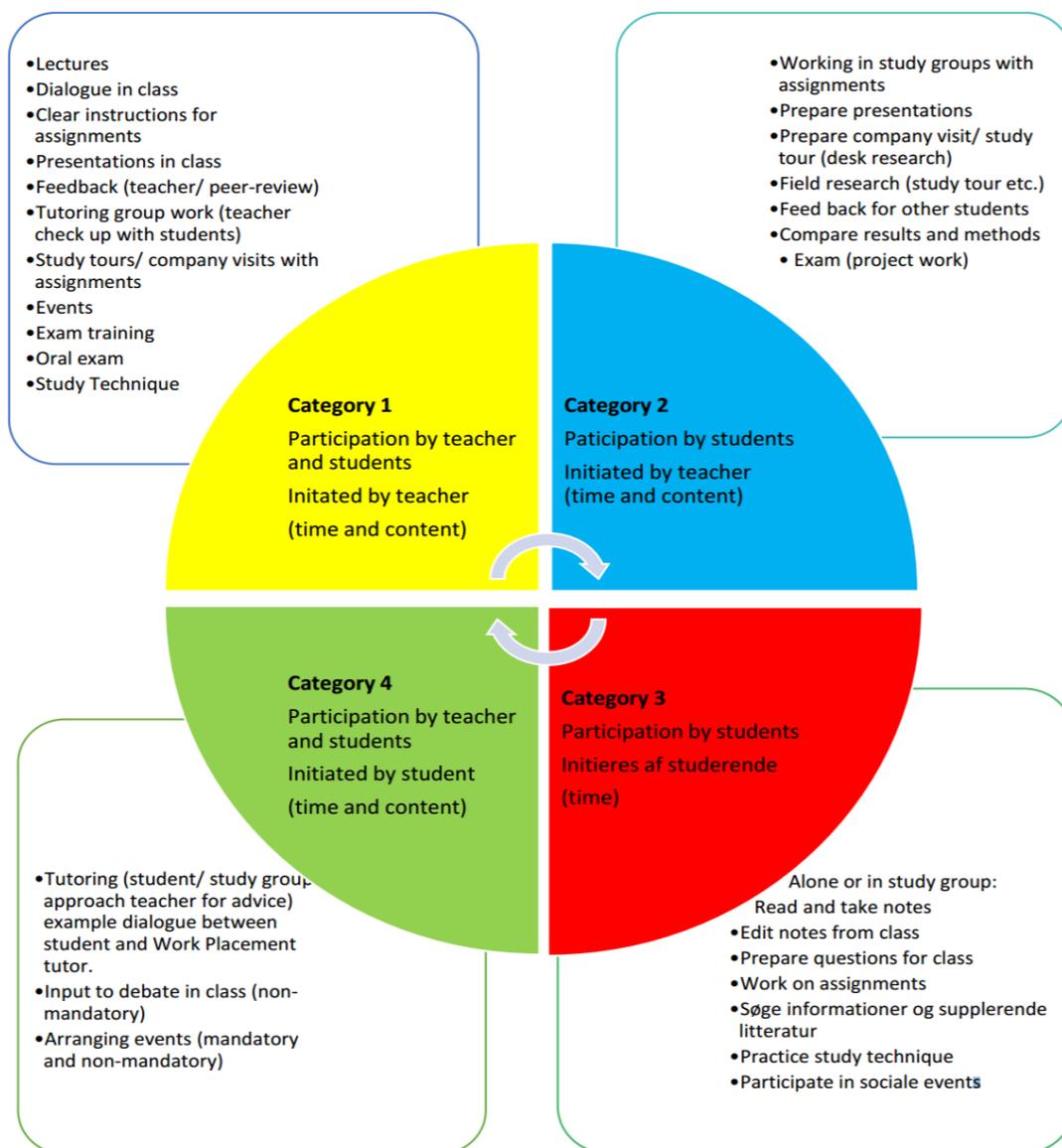
Placement	1 st semester
Subject elements	The purpose of this test is to establish that the student has in fact started their studies. This exam does NOT appear from the diploma.
Prerequisites	Enrolled on the programme and access to Moodle rooms
Deadline for when prerequisites must have been met	When the commencement of studies exam is held
Exam form	The commencement of studies exam is a individual, written basic knowledge test which will take place at a specified time at a specified physical address and under supervision.
Basis of the exam incl. formal requirements	The test consists of a 1-hour basic knowledge test within the framework of the subjects taught since the start of the study and an assessment of the study activity, including presence and completion of assignments handed out. Study activity is physical presence of min. 75% of the scheduled time as well as active participation in the teaching. If a student fails the commencement of studies exam in their first attempt, they will be called in for an interview with the institution to assess study motivation prior to the second attempt.
Evaluation	Internal assessment as approved/not approved.
Evaluation criteria	To pass, the student must get at least 50% correct answer in the basic knowledge test. The student has two attempts at the commencement of studies exam.
Spelling and writing skills	There are no special requirements for the students' writing and spelling.
Language	English, see also Academy Dania's examination regulations for exemption options.
Aids	Not allowed
Registration for exams	When starting a semester, you will automatically be registered for the tests and exams scheduled for that semester – including the related make-up exams/re-exams. It is not possible to withdraw from an exam, except in exceptional circumstances. See Dania Academy's examination rules.

7.9. The study activity model

When a student starts at Dania Academy, he or she will be introduced to activities and a study programme, which may differ from what he or she has previously been introduced to elsewhere. It is expected that the effort contributed by the student is consistent with that of a fulltime occupation. The programme is practice-based, which means that besides the internship course there will continuously be held meetings with the business/profession during the programme.

Many different types of activities are included in a study. Some of these will be on the student's own initiative, others will be designed by the programme. Some of these the students perform themselves, either alone or in a group of fellow students, others the students will perform together with the education's teaching staff, and others again will be performed together with companies, either during the internship, or in connection with company visits, projects etc.

Teaching at Dania Academy is organised based on the following model for study activity, where the activities are divided into 4 categories:



The study activity model is based on the work that the student has to provide in the study. Each semester corresponds to 825 hours, which in turn equals 30 ECTS. An ECTS therefore corresponds to 27.5 hours of work.

7.9.1 Teaching and working methods

The programme's knowledge base rests on:

- New knowledge about central trends in industries relevant to this programme
- New knowledge obtained through R&D relating to industries relevant to this programme
- New knowledge from research fields relevant to key elements in the programme's purpose and professional aim

The programme's knowledge base is business and profession based as well as development based. It being business and profession based involves that the programme is based on new knowledge of central trends within the business or profession the programme is aimed towards.

It being development based involves the programme being based on new knowledge from experimental and developmental work that is relevant to the business or the profession, the programme is aimed towards. The focus on the continuous development furthermore involves that the programme is based on new knowledge from research units, relevant to the core areas that are fundamental for the purpose and business aim of the programme.

The forms of teaching vary and may include lectures, classroom teaching, dialogue teaching, series of exercises, online / hybrid courses, presentations, cases, seminars, guest lecturers from home and abroad, projects and company stays. The pedagogical form of teaching appears from the individual courses.

7.10. Parts of the programme that can be completed abroad

The programme has been organised so that certain elements can be completed abroad within the nominal length of study.

The programme will allow the student to take the 3rd semester abroad. Dania Academy must approve the foreign educational institution and the academic content of the study/studies in question. Upon completing their studies abroad, students must document the programme elements completed with the foreign educational institutions. In connection with the preliminary approval, the student must also give the institution permission to obtain the necessary information after completion.

7.11. Rules on credit - the institutional part

The rules on credit in the institutional part follow the rules on credit in the national part, see above.

Credit transfer of programme elements in this programme

The institution approves programme elements passed in the same study programme at other institutions. The students are obliged to inform the Academy of any completed programme elements from another Danish or foreign higher education programme or any jobs likely to qualify for credit transfer. The Academy may approve that programme elements passed at another institution are equivalent to corresponding programme elements or parts thereof in this curriculum. In all other cases, the assessment will be transferred as "passed" and will not form part of the calculation of the student's average grade. Credit transfer requires that the student submits a written application with the relevant annexes to the educational institution. This also applies to Erasmus students. The decision is based on an academic evaluation.

7.12. Credit between the higher education institutions

Some Academy Profession programmes offer the possibility for credit transfer, if you apply for certain undergraduate programmes. It may be both special credit courses, or credit during the ordinary courses, meaning you may start the courses later, for instance the 2nd year of study, or that you may skip some of the subjects during the education.

Read more at:

<https://www.ug.dk/uddannelser/artikleromuddannelser/merit/merit-mellem-de-videregaaende-uddannelser>

or contact the educational guidance counsellor for further relevant information.

7.13. Leave of absence

A student may take leave of absence from the education for personal reasons. Further information on leave of absence, and the rules and regulations that apply can be found in *the Ministerial order on admission to academy profession degree programmes and professional bachelor educations*.

7.14. Exemptions

The institution may, when it deems it justified because of unusual conditions, choose to grant an exemption from the regulations in the curriculum that are laid down by the institution or the institutions alone. The institutions cooperate on a uniform exemption practice.

7.15. Foreign languages

The majority of the education's teaching material is in *English*, and parts may be taught in *English*.

No further knowledge of foreign languages is required other than what is described in the Ministerial order on admission and enrolment.

7.16. Current legislation

<https://ufm.dk/lovstof/gaeldende-love-og-regler/uddannelser/erhvervsakademiuddannelser>

8. Commencement and transitional schemes

This curriculum is valid from 30 August 2021.

The curriculum applies to all students enrolled on the programme from the date of commencement