

Automation Engineering

# Institutional Curriculum

## for the Academy Profession Degree Programme in Automation Engineering

**Institutional part**

Effective as from September 2022



PROFESSIONSHØJSKOLEN

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## 1. Curriculum for the Academy Profession Degree Programme in Automation Engineering; Institutional part

The Curriculum for the study programme consists of two parts:

The national part of the curriculum is laid down by the study programme network with a view to ensuring that the academic contents of parts of the study programme are identical for all educational institutions providing the study programme.

This institutional part is laid down by the study programme at the University College of Northern Denmark (UCN) and is designed to accommodate local and regional needs.

The institutional part of the curriculum for this programme has been drawn up in accordance with:

Ministerial Order on Academy Profession Programmes and Professional Bachelor Programmes

Ministerial Order on technical and mercantile Academy Profession degree programmes and Professional Bachelor programmes

Ministerial Order on Exams on Professionally Oriented Higher Education Programmes

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

The following sections in the Examination Rules for UCN's academy profession degree programmes constitute an extension to this institutional part of the curriculum of the study programme and has the same validity as the study programme's other provisions.

Section 4.5 - Withdrawal from exams

Section 13 - Examination complaints og appeals

Section 14.1 - Use of own and other students' work

Section 14.2 - Disciplinary measures in case of cheating at exams and disruptive behaviour at exams

*Exam and test are used synonymously in this institutional part of the curriculum.*

Please note: this text is a translation intended for information purposes only. In the event of any discrepancy between this translation and the original, the original text shall prevail. In addition, only the Danish text is legally valid.

## 2. Overview of the Study Programme

Sem.	National Subject Elements	Local Subject Elements	Elective Subject Elements	ECTS	Assessment
1.	Academic aptitude exam			0	Internal
	<p><b>Project 1B: Machines</b></p> <p>PLC- og HMI- programming1 (10 ECTS)</p> <p>Mathematics and physics (5 ECTS)</p> <p>Electrical technology (5 ECTS)</p> <p>Machine and robot safety (5 ECTS)</p> <p>Project management (5 ECTS)</p>			30	Intern
2.	<p><b>Project 2B: Cells</b></p> <p>PLC- og HMI- programming 2 (5 ECTS)</p> <p>Structured programming (5 ECTS)</p> <p>Process Control (5 ECTS)</p> <p>PLC-systems (5 ECTS)</p> <p>Technology and project development (5 ECTS)</p> <p>Robot programming and configuration (5 ECTS)</p>	½		30	External

Sem.	National Subject Elements	Local Subject Elements	Elective Subject Elements	ECTS	Assessment
3.		<b>Project 3A: Business understanding</b>  Business understanding (5 ECTS)		5	Internal
		<b>Project 3B: Systems</b>  System design of automatic processing and production lines (5 ECTS)  Control (regulation) (5 ECTS)  Technical innovation (5 ECTS)  Industrial robotic systems (5 ECTS)		20	Internal
			Elective	5	Internal
4.	Internship			15	Internal
	Final degree project			15	External
<b>Total ECTS credits: 120</b>					

The national subject elements of the study programme are described in the national part of the curriculum.

### 3. Local Subject Element: *Systems*

#### Course content and language

In the *Systems* subject element, students learn about programming, communication, data exchange and data collection in systems made up of various controllers, robots, and regulators. Furthermore, *Technical innovation* adds several tools that give students an insight into innovative processes to stimulate innovation in the field of automation.

**Language of instruction:** Danish

#### Learning objectives

The learning objectives for the *Systems* subject element comprise the learning objectives for the individual subjects as follows:

Systems design of automatic processing and production lines (5 ECTS credits in the third semester)

#### Knowledge

The student should have acquired knowledge of:

- 1) concepts, theories, and methods applied in automation
- 2) different PLC and HMI systems
- 3) network technologies and protocols that can be used to communicate on different levels in an automatic system

#### Skills:

The student should be able to:

- 1) reflect on the technologies that could be applied to an automatic system
- 2) apply a varied set of technical, creative, and analytical skills related to designing, sizing, programming, and configuring systems in the field of automation
- 3) assess practice-related problems in the fields of control, regulation, monitoring, and communication and propose solutions for those problems
- 4) communicate practice-related problems and solution proposals to partners and users
- 5) handle and assess data and data types

#### Competencies

The student should be qualified to:

- 1) manage all phases of project development within the field of automation and to do this by structuring and performing quality assurance on solutions that are then documented and carried out according to current regulations and practises
- 2) develop solutions that involve PLC and HMI-systems
- 3) take a professional approach to co-operating with others within the profession and across professions
- 4) acquire new knowledge relating to automation, within a structured context



## Control (regulation) (5 ETCS in the 3rd semester)

### **Knowledge**

The student should have acquired knowledge of:

- 1) describing different control(regulation) principles and optimization methods, including model-based tuning
- 2) using PLCs as a simulation tool

### **Skills**

The student should be able to:

- 1) select an appropriate control (regulation) type based on the client's specific requirements
- 2) document a tuning using control calculations
- 3) justify their choice of regulator type.

### **Competencies**

The student should be qualified to:

- 1) advise on and implement various control (regulation) solutions for an assignment specified by a client.

## Industrial robotic systems (5 ECTS in the 3rd. semester)

### **Knowledge**

The student should have acquired knowledge of:

- 1) communication between robots and between robots and systems
- 2) robotic vision systems
- 3) Robot Operating System.

### **Skills**

The student should be able to:

- 1) specify and select components and tools for robotic systems
- 2) program collaborative robots
- 3) perform offline and online programming.

### **Competencies**

The student should be qualified to:

- 1) set up and commission industrial robotics systems.

## Technical Innovation (5 ECTS in the 3rd. semester)

### **Knowledge**

The student should have acquired knowledge of:

- 1) organisation development as well as change and development processes in a business
- 2) innovation, innovation management and innovation processes as well as the theories and methods to carry out innovation projects and processes
- 3) creativity and creative processes as well as methods, tools, and techniques for generating and developing ideas
- 4) needs-oriented problem solving and market-based concept and product development.

## Skills

The student should be able to:

- 1) apply theories and methods for planning, initiating, and completing innovation processes and projects
- 2) manage creative processes as well as methods, tools, and techniques for generating and developing ideas
- 3) steer all phases of development projects from idea to completed solution model, concept, or product
- 4) apply relevant models and tools for technical problem solution and project development

## Competencies

Students should be qualified to:

- 1) collaborate with others on development projects and innovation processes
- 2) undertake problem solution and development tasks when developing or optimizing products or production processes.

## ECTS weight

The subject element *Systems* is worth 20 ECTS credits.

## Number of exams

Number of exams: 1

## Course content of the *Business understanding* subject element

### Course content and language

The purpose of the *Business understanding* subject element is to prepare the students for acting in the business community as competent employees who understand the business aspect of being employed in a business. This means that the subject element focuses on qualifying automation engineers for dealing with tasks in the project organisation and taking part in daily operations while they keep a business perspective on the internal and external relations of the business.

### Examination language:

The examination language is Danish

### Learning objectives

The learning objectives for the *Business understanding* subject element are:

## Business understanding (5 ECTS)

### Knowledge

The student should have acquired knowledge of:

- 1) The internal business processes that influence the daily work of the automation engineer
- 2) Business structure and culture as well as organisational collaboration
- 3) Methods and models for analysing the business and its context such as markets, needs and clients as well as other stakeholders
- 4) Business economics, including the economic management of a business, projects, and tasks
- 5) The business's responsibilities in terms of occupational health and safety, contract law etc.

### Skills

The student should be able to:

- 1) use relevant methods and models for internal and external analysis of the business and its context, the market, and stakeholders
- 2) use contemporary methods for calculating prices and be able to form an understanding of a project or an assignment's economic consequences to the business
- 3) draw up a business plan.

### Competencies

The student should be qualified to:

- 1) ensure the existence of a well-prepared basis for decision-making relating to tasks and
- 2) possess a general idea of establishing and running an independent business.

## ECTS weight

The subject element *Business understanding* is worth 5 ECTS credits.

## Number of exams

Number of exams: 1

## 4. Local subject element *Elective*

The programme contains 5 ECTS electives.

### Elective

#### Content and language

The local subject element: *Elective* gives students the opportunity to qualify study-related and business competencies through specialisation and the contextualisation of subjects that broadly relate to automation.

The program offers at least one elective each year. The student can also organize the optional education elements themselves as theoretical and/or practical programme courses that are approved by the education.

**Examination language:**

The examination language is Danish

**Learning objectives**

The learning objectives for the local electives are as follows:

**Knowledge**

The student should have acquired knowledge of:

- 1) The theory and practice of the chosen subject(s) in relation to the profession

**Skills**

The student should be able to:

- 1) Select, describe a problem of their choice relating to automation and perform literature searches on the subject
- 2) Discuss process-related and analytical skills in the context of the selected topic(s)
- 3) Assess problems and specify potential solutions in relation to the selected topic(s)
- 4) Present key results.

**Competencies**

The student should be qualified to:

- 1) Independently acquaint themselves with new topics within the theory or practice of the subject field
- 2) Contextualise and relate the selected topic(s) to the other subject fields of the study programme.

**ECTS weight**

The subject element *elective* is worth 5 ECTS credits.

**Number of exams**

Number of exams: 1

**5. The programme's exams in the 1st. semester**

Sem.	National subject elements	Local subject elements	ECTS	Internal/external	Also called
1.		Academic aptitude exam	0	Internal	Academic aptitude exam
	Machines		30	Intern	First-semester exam

## **The Academic aptitude exam**

The Academic aptitude exam is an individual, internal written on-site exam based on reflections about study start.

### **Scheduled time**

The academic aptitude exam will take place no later than two months after the start of the study programme.

A resit exam will be held not later than three months after the start of the study programme.

Further information about time and venue can be found in the semester plan and on the LMS platform and in WISEflow.

### **ECTS weight**

The academic aptitude exam is worth 0 ECTS credits.

### **Examination procedure**

#### **Exam content**

The examination is based on teaching and learning activities completed between study start and the date of the examination. The exam aims to determine whether the student has in fact begun his/her studies.

#### **Examination form**

The examination consists of an internal, individual, written on-site exam based on the student's reflections on study start. The student must answer, in writing, several questions regarding these activities. The examination will take its starting point in the student's knowledge of UCN's foundation for learning, study programme administration as well as student rights and obligations.

#### **Examination aids**

All exam aids are permitted.

#### **Examination language**

The examination language is Danish

### **Assessment criteria**

The purpose of the academic aptitude exam is to clarify whether the student has actually started the programme.

The academic aptitude exam is assessed internally, and the assessment criteria given is "passed" or "failed".

### **Resit**

If the student does not pass the academic aptitude exam, the student will be offered a resit. The student thus has two test attempts to pass the academic aptitude exam.

If the student does not pass the academic aptitude exam at resit, the student is dismissed from the programme.

If it is found to be justified by unusual circumstances, the educational institution can, however, waive the requirement to have passed the academic aptitude exam, the time of passing the academic aptitude exam and the number of test attempts.

## The examination for the national subject element *Machines*

The first-semester exam tests the subject element *Machines* and the subjects under the subject fields:

- Control technology: 10 ECTS
- Control technology (regulation): 10 ECTS
- Robotics: 5 ECTS
- Business understanding and Project management: 5 ECTS

### Scheduled time

The exam will take place at the end of the first semester. Further information about the time and venue as well as about submission of the written assignment can be found on the LMS portal and in WISEflow.

The student must participate in this exam before the end of the first year of study after the study start and must have passed this exam before the end of the first year of study after the study start, in order for the student to continue the programme. This applies regardless of the number of exam attempts. However, the student must have the opportunity to take at least two attempts during the first year of study before the student can be discharged from the programme.

If the student has had the opportunity to take at least two attempts at this exam during the first year of study after study start but has not taken part in this exam before the end of the first year of study after study start or has not passed this exam before the end of the first year of study after the study start, the student is discharged from the programme.

However, if it is found to be justified in unusual circumstances, the educational institution can waive the above deadlines.

### ECTS weight

The national subject element *Machines* is worth 30 ECTS credits

### Examination prerequisites

The student must meet the following requirements to sit the exam:

- The written project, which constitutes the assessment basis as well as the exam basis must:
  - meet the formal requirements, see below
  - be submitted in due time as per the exam plan.

If the student does not meet all the prerequisite requirements of the exam, the student has used one exam attempt, leaving him/her with two attempts remaining to pass the exam.

All exam prerequisites must be met before the student takes part in the exam of the subject element for the first time.

If the student does not meet all the exam requirements at the time of the ordinary exam of the subject element, the student cannot participate in the exam of the subject element and as a result has used one exam attempt - and then has two exam attempts left to pass the exam of the subject element.

## **Examination procedure**

The exam is an internally assessed group examination where students have the opportunity to choose an individual exam. The oral exam is made on the basis of a written group project and is assessed and graded according to the 7-point grading scale. The project constitutes both the assessment basis and the examination basis, and students receive a single, total grade for the exam.

### **Examination form**

The exam is oral based on a written group project.

The group must have 1-4 members.

As a minimum, the report must have a required length as indicated below:

- For students who work individually, the report must have a minimum of 20 standard pages and a maximum of 25 standard pages. Individual projects will further in this document be considered as one-person groups.
- For groups of 2 students, the report must have a minimum of 25 standard pages and a maximum of 30 standard pages + appendices.
- For groups of 3 students, the report must have a minimum of 30 standard pages and a maximum of 35 standard pages + appendices.
- For groups of 4 persons, the report must have a minimum of 35 standard pages and a maximum of 40 standard pages + appendices.

One standard page is 2,400 characters including spaces and footnotes. The cover page, title page, table of contents, reference list and appendices do not count toward the upper character limit.

The report will be rejected if it does not meet the formal requirements, and this means that the student will have used an exam attempt.

## **Rules governing the oral presentation of the project**

The group must present the written project report.

There will be ten minutes for the presentation plus 15-20 minutes per group member for the exam dialogue and questions to the presentation including responses from the supervisors.

(That is, for groups of 1 person, 30 min. are set aside. For groups of 2 students; 60 min. For groups of 3 students; 90 min. For groups of 4 students; 120 min.).

### Examination aids

All aids are permitted.

### Examination language

The examination language is Danish

### Assessment criteria

The assessment criteria for the exam are the learning objectives for the national subject element: Machines. The learning objectives appear in the national curriculum for the programme.

The exam is carried out with internal assessment criteria and is graded according to the 7-point grading scale.

### Resit

Students who take a resit on the basis of a group-produced written assignment may not correct the assignment submitted for the ordinary exam. A possibly strengthening of the written assignment in connection with a resit must be submitted as an addendum to the assignment with a clear indication of who prepared the addendum and which assignment the addendum refers to.

## 6. The programme's exams in the 2nd. semester

Sem.	National subject elements	Local subject elements	ECTS	Assessment	Also called
2.	Cells		30	External	Second-semester exam

### The examination for the national subject element *Cells*

The second-semester exam tests the subject element *Cells* and the subjects under the subject fields:

- Control technology: 10 ECTS
- Control technology (regulation): 10 ECTS
- Robotics: 10 ECTS

### Scheduled time

The exam will take place at the end of the first semester. Further information about the time and venue as well as about submission of the written assignment can be found on the LMS portal and in WISEflow.

The student must participate in this exam before the end of the first year of study after the start of study start and must have passed this exam before the end of the first year of study in order for the student to continue on the programme. This applies regardless of the number of exam attempts. However, the student must have the opportunity to take at least two



attempts during the first year of study before the student can be discharged from the programme.

If the student has had the opportunity to take at least two attempts at this exam during the first year of study after study start but has not taken part in this exam before the end of the first year of study after study start or has not passed this exam before the end of the first year of study after the study start, the student is discharged from the programme.

However, if it is found to be justified in unusual circumstances, the educational institution can waive the above deadlines.

## ECTS weight

The national subject element *Cells* is worth 30 ECTS credits.

## Examination prerequisites

The student must meet the following requirements to sit the exam:

- The written project, which constitutes the assessment basis as well as the exam basis must:
  - meet the formal requirements, see below
  - be submitted in due time as per the exam plan.

If the student does not meet all the prerequisite requirements of the exam, the student has used one exam attempt, leaving him/her with two attempts remaining to pass the exam.

All exam prerequisites must be met before the student takes part in the exam of the subject element for the first time.

If the student does not meet all the exam requirements at the time of the ordinary exam of the subject element, the student cannot participate in the exam of the subject element and as a result has used one exam attempt - and then has two exam attempts left to pass the exam of the subject element.

## Examination procedure

The exam is an externally assessed group examination where students have the opportunity to choose an individual exam. The oral exam is made on the basis of a written group project and is assessed and graded according to the 7-point grading scale. The project constitutes both the assessment basis and the examination basis, and students receive a single, total grade for the exam.

### Exam form

The exam is oral based on a written group project.

The group must have 1-4 members.

As a minimum, the report must have a required length as indicated below:

- For students who work individually, the report must have a minimum of 20 standard pages and a maximum of 25 standard pages. Individual projects will further in this document be considered as one-person groups.
- For groups of 2 students, the report must have a minimum of 25 standard

pages and a maximum of 30 standard pages + appendices.

- For groups of 3 students, the report must have a minimum of 30 standard pages and a maximum of 35 standard pages + appendices
- For groups of 4 persons, the report must have a minimum of 35 standard pages and a maximum of 40 standard pages + appendices.

One standard page is 2,400 characters including spaces and footnotes. The cover page, title page, table of contents, reference list and appendices do not count toward the upper character limit.

The report will be rejected if it does not meet the formal requirements, and this means that the student will have used an exam attempt.

### **Rules governing the oral presentation of the project**

The group must present the written project report.

There will be ten minutes for the presentation plus 15-20 minutes per group member for the exam dialogue and questions to the presentation including responses from the supervisors.

(That is, for groups of 1 person, 30 min. are set aside. For groups of 2 students; 60 min. For groups of 3 students; 90 min. For groups of 4 students; 120 min.).

#### **Examination aids**

All aids are permitted.

#### **Examination language**

The examination language is Danish

### **Assessment criteria**

The assessment criteria for the exam are the learning objectives for the national subject element *Cells*. The learning objectives appear in the national curriculum for the programme.

The exam is carried out with internal assessment criteria and is graded according to the 7-point grading scale.

### **Resit**

Students who take a resit on the basis of a group-produced written assignment may not correct the assignment submitted for the ordinary exam. A possibly strengthening of the written assignment in connection with a resit must be submitted as an addendum to the assignment with a clear indication of who prepared the addendum and which assignment the addendum refers to.

## 7. The programme's exams in the 3rd. semester

Sem.	National subject elements	Local subject elements	ECTS	Assessment	Also called
3rd.		Business understanding	5	Internal	Project3A
		Systems	20	Internal	Project3B
		Elective	5	Internal	Elective

### Third-semester exam: Project 3A: *Business understanding*

The third-semester exam tests the local subject element *Business understanding* and the subjects under the subject fields:

- Business understanding and Project management: 5 ECTS

### Scheduled time

The exam will take place halfway through the third semester. Further information about the time and venue as well as about submission of the written assignment can be found on the LMS portal and in WISEflow.

### ECTS weight

The local subject element *Business understanding and Project management* is worth 5 ECTS credits

### Examination prerequisites

The student must meet the following requirements to sit the exam:

- The synopsis and presentation portfolio, which constitute the assessment basis as well as the exam basis, must:
  - meet the formal requirements, see below
  - be submitted in due time as per the exam timetable.

If a student does not meet all examinations prerequisites, the student will have used one exam attempt, leaving him/her with two attempts remaining to pass the exam.

### Examination procedure

The exam is an internally assessed group examination where students have the opportunity to choose an individual exam. The oral exam is based on the written products (the synopsis and presentation portfolio) and is assessed and graded according to the 7-point grading scale. The written products constitute both the assessment basis and the examination basis, and students receive a single, total grade for the exam.

## Examination form

The exam is oral based on the written products (synopsis and presentation portfolio).

The exam is organized as a group exam.

The group must have 1-4 members.

As a minimum, the synopsis must have a required length as indicated below:

- For students who work individually, the report must have a length of minimum of 2 standard pages and a maximum of 3 standard pages + appendices. Individual projects will further on in this curriculum be considered as individual groups.
- For groups of 2 students, the report must have a length of minimum of 3 standard pages and a maximum of 4 standard pages + appendices.
- For groups of 3 students, the report must have a length of minimum 4 standard pages and a maximum of 5 standard pages + appendices.
- For groups of 4 students, the report must have a length of minimum 5 standard pages and a maximum of 6 standard pages + appendices.

One standard page is 2,400 characters including spaces and footnotes. The cover page, title page, table of contents, reference list and appendices do not count toward the upper character limit.

The synopsis and any appendices must be submitted as a single PDF file.

## **The presentation portfolio should comprise:**

- Proposed solutions: Which challenges from our cooperation with institutions, companies or organizations in reality would I like to construct a proposed solution for?
- Description of practice: What observations have I made about this phenomenon in practice?
- Theoretical connection (formation of hypothesis): How should theory and literature help me?
- Analysis: How can I gain new experiences, realizations, or knowledge about practice through a systematic connection between practice and theory?
- Evaluation: What did I get out of the work in relation to my solution?
- Perspective: What should I do now with my proposal?

The presentation portfolio must be made individually and must have a required length of 5 to 10 standard pages + appendices.

One standard page is 2,400 characters including spaces and footnotes. The cover page, title page, table of contents, reference list and appendices do not count toward the upper character limit.

The presentation portfolio and any appendices must be submitted as a single PDF file.PDF-fil.

The written products will be rejected if they do not meet the formal requirements, and this means that the student will have used an exam attempt.

## **Rules governing the oral presentation of the synopsis and the presentation portfolio**

### **Presentation portfolio**

The group presents the written synopsis and the presentation portfolio.

There will be ten minutes for the presentation plus 15–20 minutes per group member for the exam dialogue and questions to the presentation including responses from the supervisors.

(This means that exam length will be 30 minutes for one-person groups; 60 minutes for groups of two students; 90 minutes for groups of three students and 120 minutes for groups of four students.)

### Examination aids

All aids are permitted.

### Examination language

The examination language is Danish

### **Assessment criteria**

The assessment criteria for the test are identical to the Learning objectives for the local subject element Business Understanding.

Learning objectives appear in the local curriculum.

### **Resit**

Students who take a resit on the basis of a group-produced written assignment may not correct the assignment submitted for the ordinary exam. A possibly strengthening of the written assignment in connection with a resit must be submitted as an addendum to the assignment with a clear indication of who prepared the addendum and which assignment the addendum refers to.

## The 3rd. semester examination: Project 3B Systems

The 3rd-Semester exam, which includes the subject element *Systems* and the subjects in the subject areas:

- Control technology: 5 ECTS
- Control technology (Regulation): 10 ECTS
- Robotics 5 ECTS

### Scheduled time

The exam is placed at the end of the 3rd. semester. More information about time and place and about handing in the written assignment can be found on the LMS portal and in WISEflow.

### ECTS weight

The examination is worth 20 ECTS credits.

### Examination prerequisites

The student must meet the following requirements to sit the exam:

- The written project, which constitutes the assessment basis as well as the exam basis must:
  - meet the formal requirements, see the semester plan
  - be submitted in due time as per the exam plan.

If the student does not meet all the prerequisite requirements of the exam, the student has used one exam attempt, leaving him/her with two attempts remaining to pass the exam.

All exam prerequisites must be met before the student takes part in the exam of the subject element for the first time.

### Examination procedure

The exam is an internal assessed oral group examination, where the student has the option of choosing an individual exam. The oral examination takes place on the basis of the written products (synopsis and presentation portfolio) and is graded according to the 7-point grading scale. The written products form the assessment and examination basis, and the students receive a single, total grade for the exam.

### Examination form

The exam is oral based on the written product.

The exam is organized as a group exam.

The group must have 1-4 members.

As a minimum, the report must have a required length as indicated below:

- For students who work individually, the report must have a length of minimum of 15 standard pages and a maximum of 19 standard pages + appendices. Individual projects will further on in this curriculum be considered as individual groups.
- For groups of 2 students, the report must have a length of minimum of 19 standard pages and a maximum of 23 standard pages + appendices.
- For groups of 3 students, the report must have a length of minimum 23 standard pages and a maximum of 27 standard pages + appendices.
- For groups of 4 students, the report must have a length of minimum 27 standard pages and a maximum of 31 standard pages + appendices.

One standard page is 2,400 characters including spaces and footnotes. The cover page, title page, table of contents, reference list and appendices do not count toward the upper character limit.

The report and any appendices must be submitted as a single PDF file.

## **Rules governing the oral presentation of the project**

The group must present the written report.

There will be ten minutes for the presentation plus 15–20 minutes per group member for the exam dialogue and questions to the presentation including responses from the supervisors.

(This means that exam length will be 30 minutes for one-person groups; 60 minutes for groups of two students; 90 minutes for groups of three students and 120 minutes for groups of four students.)

### **Examination aids**

All aids are permitted.

### **Examination language**

The examination is in Danish.

## **Assessment criteria**

The assessment criteria for the examination are identical to the learning objectives for the local subject element *Systems*.

Learning objectives appear in the local curriculum.

## **Resit**

Students who take a resit on the basis of a group-produced written assignment may not correct the assignment submitted for the ordinary exam. A possibly strengthening of the written assignment in connection with a resit must be submitted as an addendum to the

assignment with a clear indication of who prepared the addendum and which assignment the addendum refers to.

## **Local subject element *Elective***

### **Scheduled time**

The exam will take place at the end of the 3rd. semester. Further information about the time and venue as well as about submission of the written assignment can be found on the LMS portal and in WISEflow.

### **Examination procedure**

The exam is an individual internal written report. The report forms the assessment criteria and examination basis, and one overall grade is given. The exam is graded according to the 7-point grading scale.

#### **Examination form**

As a minimum, the report must have a required length as indicated below:

- The report must have a minimum length of 15 standard pages and maximum 19 standard pages + appendices.

One standard page is 2,400 characters including spaces and footnotes. The cover page, title page, table of contents, reference list and appendices do not count toward the upper character limit.

The report and any appendices must be submitted as a single PDF file.

#### **Examination aids**

All aids are permitted.

#### **Examination language**

The examination is in Danish.

### **Assessment criteria**

The assessment criteria for the examination are identical to the learning objectives for the local subject element *Elective*.

Learning objectives appear in the local curriculum.

### **Resit**

In the event that the student has to resit, the supervisor will assess whether the student can make improvements to the previously submitted written product or whether a new written product must be prepared. This assessment is done individually on a case-by-case basis.



## 8. The programme's exams in the 4th. semester

### *Internship*

Sem.	National Subject elements	Local subject elements	ECTS	Assessment	Also called
4.	Internship		15	Internal	Internship exam

### Examination in connection with internship

#### Scheduled time

The exam will take place in the end of the fourth semester.

Further information about time, venue and submission of the written project can be found on the LMS platform and in WISEflow.

#### ECTS weight

The Internship examination is worth 15 ECTS credits.

### Internship requirements and expectations

In the internship, the student works with academically relevant issues and gains knowledge of relevant occupational functions. The connection between the theoretical instruction and the internship is the starting point for the student's objectives for the internship.

Based on the learning objectives for the internship, as stated in the national part of the study programme, the student and the supervisor/contact person determine specific objectives goals for the student's internship period.

The goals are recorded in writing in the Internship portal. These goals subsequently provide guidance for the organization of the student's work during the internship period, including the preparation of the internship report. The internship period is to be equated with a full-time job with the requirements for working hours, effort, commitment, and flexibility that the student can be expected to meet on the labor market.

The internship course can be organized flexibly and differentiated and can form the basis for the student's work in the final exam project.

The student must meet the following requirements for the internship to be considered completed:

- Completed internship without significant absence at the internship site
- The logbook is filled in regularly during the internship period

## Examination prerequisites

The internship must be completed. See the previous section which requirements the student must meet in order for the internship to be considered completed.

The internship report must be submitted on time and correctly and must meet the formal requirements for this. See the section below.

Completion of the internship contract, including matching of expectations, learning objectives, logbook, and problem formulation in the Internship portal

The student must have made an oral internship presentation.

All exam prerequisites must be met before the student can take part in the Internship exam for the first time.

If the student does not meet all the exam requirements at the time of the subject element's ordinary exam, the student cannot participate in the subject element's exam and as a result has used one exam attempt - and then has two exam attempts left to pass the programme element's exam.

The student is entitled to one offer of an internship per internship course. However, if it is found to be justified in unusual circumstances, the educational institution can waive this rule.

### Form requirements for the logbook and the internship report

- The Internship report must contain excerpts from the electronic logbook and answer the problem statement that was formulated earlier.
- The logbook must be updated at least weekly during the internship period.
- The logbook is supposed to be a tool for reflection for systematically describing specific work assignments and how they were dealt with while including what the student has learnt in class.
- The written assignment must be written based on a problem that originates in possible work assignments during the internship, the electronic logbook as well as the learning objectives in the curriculum, see above.
- The written assignment must feature a clear connection between theoretical lessons and the specific solution to the problem.

The internship report must have a length of maximum of 10 standard pages dealing with a professional issue from the internship company. A standard page is 2,400 characters incl. spaces and footnotes. Front page, table of contents, bibliography and appendices are not included. Attachments are outside the assessment criteria.

The report is prepared individually.

## Examination procedure

### Examination form

The exam is written and assessed on the basis of the written internship report, which is prepared during the internship period.

The exam is organized as an individual exam.

### Examination aids

All aids are permitted.

### Examination language

The examination is in Danish.

### Assessment criteria

The assessment criteria for the exam are the learning objectives for the internship. The learning objectives appear in the national curriculum for the programme.

An overall assessment is given based on the submitted internship report and the oral examination.

The exam has internal assessment and is graded according to the 7-point grading scale.

### Resit

Students who take a resit on the basis of a group-produced written assignment may not correct the assignment submitted for the ordinary exam. A possibly strengthening of the written assignment in connection with a resit must be submitted as an addendum to the assignment with a clear indication of who prepared the addendum and which assignment the addendum refers to.

## 9. The final degree project

### Fourth-semester *Final degree project*

Sem.	National subject elements	Local subject elements	ECTS	Assessment	Also called
4.	Final degree project		15	External	Final degree project

For the requirements to the final degree project as well as learning objectives, please see the national part of the Curriculum.

## Scheduled time

The exam in the final degree project can only take place after the final exam in the internship and the other exams of the programme have been passed.

The exam will take place at the end of the final semester (the fourth semester) of the study programme. Further information about the time and venue for each exam can be found on the LMS platform and in WISEflow.

## ECTS weight

The examination is worth 15 ECTS credits.

## Examination prerequisites

The student must meet the following requirements to sit the exam:

- The written project, which constitutes both the assessment criteria and examination basis, must:
  - meet the formal requirements for the final degree project/professional bachelor project as specified in the national part of the Curriculum
  - be timely and correctly submitted and uploaded in UC-Knowledge

All exam prerequisites must be met before the student takes part in the subject element's exam for the first time.

If the student does not meet all the exam requirements at the time of the subject element's ordinary exam, the student cannot participate in the subject element's exam and as a result has used one exam attempt - and then has two exam attempts left to pass the subject element's exam.

## Examination procedure

### Examination form

The exam consists of a project and an oral part, where one individual overall grade is given based on an overall assessment of the written and the oral performance.

The exam is organized as a group exam.

The group must consist of 1-4 students.

The report, which forms the written part of the exam, must have the following length, depending on the size of the group:

- For students who work individually, the report must have a length of minimum of 19 standard pages and a maximum of 23 standard pages + appendices. Individual projects will further on in this curriculum be considered as individual groups. min- +
- For groups of 2 students, the report must have a length of minimum of 19 standard pages and a maximum of 23 standard pages + appendices. con-

- For groups of 3 students, the report must have a length of minimum 27 standard pages and a maximum of 31 standard pages + appendices.
- For groups of 4 students, the report must have a length of minimum 31 standard pages and a maximum of 35 standard pages + appendices.

One standard page is 2,400 characters including spaces and footnotes. The cover page, title page, table of contents, reference list and appendices do not count toward the upper character limit.

### **Rules governing the oral presentation of the project**

The group must present the written project report.

The following number of minutes are allowed for the examination, including time for deliberations, depending on the number of students in the group:

- Students who work alone:
  - 50 min., presentation time: 20 min.
- Groups of two students:
  - 50 min. per person, of which 20 min. for individual presentations; 100 min. total
- Groups of three students:
  - 50 min. per person, of which 20 min. for individual presentations; 150 min. total.
- Groups of four students:
  - 50 min. per person, of which 20 min. for individual presentations; 200 min. total.

Late submission or failure to meet all formal requirements for the written project, which constitutes the written part of the exam, means that the student cannot take part in the exam, and an examination attempt has been used.

The exam can only take place after the final internship exam and the other exams of the study programme have been passed.

The student has the right to prepare a final written assignment individually and make an individual oral defense. The student also has the right to make an individual oral defense in connection with a final written assignment prepared in a group.

If the student wishes to give an individual oral defense in connection with a final written assignment prepared in a group, the student must notify the programme in writing no later than 14 days before the oral defense. UCN can waive this period if it is justified by unusual circumstances.

### **Examination aids**

All aids are permitted.

## Examination language

The examination is in Danish.

## Assessment criteria

The exam in the final degree project, together with the exam after the internship and the programme's other exams, must document that the programme's goals for the learning objectives have been achieved.

For requirements for the final degree project and learning objectives, please see the national part of the curriculum.

The student's spelling and formulation skills must be included in the assessment criteria of the final degree project. The educational institution can, however, exempt from this for students with physical or mental disabilities, when the institution considers that this is necessary in order to put these students on an equal footing with other students. It is a prerequisite that the offer does not change the professional level.

Dispensation applications must be submitted in writing to the programme using UCN's digital form no later than 4 weeks before the exam is held. Documentation must be attached for the basis on which the student applies for exemption.

UCN can waive the deadline of the exemption application if this is justified by unusual circumstances

Spelling and writing skills will be part of the assessment of the written exam project. Spelling and writing skills may have the weight of up to one grade. The assessment is expressed as an overall assessment of the professional and academic content as well as the student's spelling and writing skills.

The exam has external assessment and is graded according to the 7-point grading scale.

## Resit

Students who take a resit on the basis of a group-produced written assignment may not correct the assignment submitted for the ordinary exam. A possibly strengthening of the written assignment in connection with a resit must be submitted as an addendum to the assignment with a clear indication of who prepared the addendum and which assignment the addendum refers to.

## 10. Foreign language

The study programme is approved with Danish as programme language, and the instruction is organized in Danish.

However, instruction in English can be organized for up to 49% of the total scope of the education measured in ECTS credits. The language of instruction will appear in the description of the individual local subject element/elective.

If instruction is organized in English in compulsory subject elements, the student will have to meet a language requirement in English of at least upper secondary B level in connection with admission to the education.

If electives are offered only where the instruction is organized in English, and the student will therefore not have the opportunity to choose between electives offered in Danish or

English, the student will have to meet a language requirement in English of at least upper secondary B level in connection with admission to the education.

It will appear from [www.optagelse.dk](http://www.optagelse.dk), whether there are language requirements that must be met in connection with admission to the individual study programme.

Language requirements in English of at least upper secondary B level can be met through a language test. It appears from UCN's website which language tests, scores, etc. that UCN acknowledges.

## **11. Special examination conditions**

The educational institution may waive its own set examination or test conditions, including offering special conditions to students with physical or mental disabilities or to students whose mother tongue is other than Danish, when the institution considers that this is necessary to equate these students with other students. It is a prerequisite that the offer does not change the professional level.

Applications for exemption from UCN's exam or test conditions, including applications for special conditions, must be submitted in writing to the programme using UCN's digital forms no later than 4 weeks before the examination is held. Documentation for the foundation on which the student is applying for exemption must be attached.

UCN can waive the deadline of the exemption application if this is justified by unusual circumstances.

## **12. Compulsory participation and compulsory attendance**

To achieve the learning objectives and outcomes of the study programme and for the associated forms of teaching and learning to work, it is also important to underline that students are subject to compulsory participation in the shape of

- submission/presentation of assignments/semester examinations/projects etc.
- assignment submission may be expressed as an examination prerequisite.

Non-compliance with compulsory participation/the examination prerequisite, e.g., if a written assignment is rejected, or cases of non-compliance with formal requirements, means that the student will have used an exam attempt. Subsequently, the student will only have two attempts remaining to pass the examination.

The study programme will offer help and guidance as soon as possible if a student is neglecting his/her obligation to participate.

## **13. Criteria for determining study activity**

The student is obliged to keep informed about information regarding the time and place of lessons and exams, which can be found on MitUCN.

The enrolment is terminated for the student who has not passed any exams for a continuous period of at least 1 year.

UCN can waive this if this is justified by unusual circumstances.

Before enrolment is terminated, the student will be informed in writing about this.

## 14. Learning and teaching methods

UCN's programmes are based on Reflective Practice-based Learning (RPL), which contributes to students building competencies to act professionally in a changing world. Through the course, professional, social, and personal competences are developed, so that the student is able to connect theoretical reflection with actions in practice as well as reflect and incorporate relevant theory and knowledge.

In the programmes, RPL aims to work with practice-based learning activities that connect practical knowledge, theoretical knowledge, and research-based knowledge. The various learning activities are organized based on six basic principles that create good conditions for reflection:

**Basic principle 1:** The student's own experiences are included in the teaching activities.

**Basic principle 2:** Lessons are planned with appropriate disruptions

**Basic principle 3:** The teaching is organized as exploration

**Basic principle 4:** The teaching content is based on the good example

**Basic principle 5:** Teachers and students collaborate on learning processes

**Basic principle 6:** Teachers and students create space for dialogue

The six basic principles can be expressed in different ways in different programmes, semesters, and subjects. What they have in common is that they require active participation and involvement of students in relation to their own and fellow students' learning.

## 15. Subject elements that can be completed abroad

After the programme's approval of an applied credit transfer the student can carry out each individual subject element abroad.

In case of pre-approval of a study stay abroad, the student has the obligation to document the completed subject elements after the end of the study stay abroad.

In connection with the preapproval, the student must consent to the institution being able to obtain the necessary information after the end of the study period.

Upon approval of credit transfer, the subject element is considered to be completed if it has been passed in accordance with the rules of the programme.

UCN has a wide network of collaborators abroad and UCN's international department can be helpful with information about stays abroad. UCN's international department can be contacted for further information. It should be noted, however, that it requires a greater amount of work from the individual student if a stay abroad is desired. It is the individual student who investigates which subjects can be studied abroad, at the desired university. The International Department is helpful with good advice etc. but cannot contribute to the actual planning of the stay abroad.



## 16. Credit transfer for subject elements

Credit transfer evaluations take place in different situations.

### **Subject elements from the same study programme passed at another educational institution**

Passed subject elements are equivalent to corresponding subject elements offered by another educational institutions providing the same study programme.

### **Credit transfer assessment (compulsory credit transfer) in connection with application for admission/enrolment on a study programme**

When a student has met his/her duty to disclose information about passed subject elements from another Danish or foreign higher education programme and about any work experience that may be assumed to warrant credit transfer, the study programme will decide whether or not to grant credit transfer in each individual case and based on completed educational elements and work experience that compare with subjects, course units or internship elements. The decision whether to award credit transfer is based on an academic assessment.

### **In the event that a student does not meet their duty to disclose information on admission/enrolment**

Twice a year (in July and January, respectively, in connection with the start of studies), any applications submitted by students subsequent to a failure to disclose information about prior education and work experience on admission/enrolment, are assessed to determine whether or not credit transfer should be granted.

This means that students may have to wait longer than anticipated for a decision of credit transfer.

It is therefore the student's choice to run the risk that a decision of credit transfer is not made in due time before the examination concerned.

- *IF the student does not sit the examination*, and UCN later decides NOT to grant the student transfer credit, the student will have used an exam attempt.
- *IF the student decides to sit the exam before UCN has made a credit transfer decision* and if UCN would have granted the credit transfer, credit transfer will NOT be awarded because the student has decided to sit the exam. In this instance, the grade from the 'new' exam will be applicable irrespective of whether the 'old' exam grade – which might have resulted in credit transfer, had the student applied for it in due time – is higher than the 'new' exam grade, and irrespective of whether the student failed the 'new' exam.

Once the student has decided to attend an examination this will exclude the possibility of awarding transfer credit after the application has been processed, even in cases where transfer credit would have been awarded.

## **Pre-approval of credit transfer and final credit transfer**

If a student wishes to obtain credit transfer for a subject element under this Curriculum, the student must apply for pre-approval of credit transfer prior to leaving UCN for another educational institution in Denmark or abroad.

Pre-approval of credit transfer is carried out by UCN.

When the student has successfully completed the requested subject element, and once the application for final credit transfer with the appropriate documentation has been received, final credit transfer will be granted.

If the student has not completed/passed the requested subject element, the student must sit an exam according to the regulations for said subject element as set out in this Curriculum.

For an in-depth description of the rules, please refer to the current Examination regulations for UCN's undergraduate programmes.

## **17. Dispensation**

If it is justified by unusual circumstances, the educational institution may dispense with what the institution or institutions themselves have determined in the Curriculum.

According to UCN's practice, unusual conditions will generally be characterized by suddenly arising conditions against which the student has not been able to protect him/herself. For example, it could be a sudden serious illness or death in the immediate family.

In each individual case, a concrete assessment will have to be made as to whether there are unusual circumstances, - just as it will have to be assessed whether there are circumstances in the individual case that justify deviating from the starting point.

## **18. Effective date and transition regulation**

This institutional part of the Curriculum comes into force on 1<sup>st</sup>. September 2022 and is effective for all students who are admitted/enrolled including re-enrolled in the programme on or after this date.

The institutional part of the Curriculum from 1<sup>st</sup>. February 2020 is canceled with effect as from 1<sup>st</sup>. September 2022.

Students who were admitted/enrolled including re-enrolled in the programme before 1<sup>st</sup>. September 2022 will transfer to this institutional part of the Curriculum on 1<sup>st</sup>. September 2022.

However, exams that have already started will be completed according to the Curriculum from 1<sup>st</sup>. February 2020 until 1<sup>st</sup>. January 2023.

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