Software Development

National section

Curriculum 2025

ERHVERVS AKADEMI SYDVEST

STUDIEORDNING

for

professionsbachelor i softwareudvikling

Gældende fra 15. januar 2024

Indhold

1. Uddannelsens mål for læringsudbytte 3

2. Uddannelsen indeholder fire nationale fagelementer 4

2.1. Udvikling af store systemer 4

2.2. Databaser 4

2.3. Systemintegration 5

2.4. Softwarekvalitet 6

3. Praktik 7

4. Krav til bachelorprojektet 7

5. Regler om merit 8

6. Ikrafttrædelse og overgangsordning 8

Denne nationale del af studieordningen for professionsbacheloruddannelsen i softwareudvikling er udstedt i henhold til § 22, stk. 1 i bekendtgørelse om tekniske og merkantile erhvervsakademiuddannelser og professionsbacheloruddannelser. Denne studieordning suppleres af institutionsdelen af studieordningen, som er fastsat af den enkelte institution, der udbyder uddannelsen.

Den er udarbejdet af uddannelsesnetværket for professionsbacheloruddannelsen i softwareudvikling og godkendt af alle de udbydende institutioner.

1. Uddannelsens mål for læringsudbytte

Viden

Den uddannede har viden om:

- softwarekvalitet i forbindelse med softwareudvikling
- systemarkitektur og dens strategiske betydning for virksomhedens forretning
- anvendt teori og metode samt udbredte teknologier inden for domænet
- forskellige databasetyper og deres anvendelse
- bæredygtig softwareudvikling

Færdigheder

Den uddannede kan:

- integrere it-systemer og udvikle systemer, som understøtter fremtidig integration
- anvende relevante styrings- og koordineringsmekanismer i udviklingsprocessen
- vurdere og vælge databasesystemer, samt designe, redesigne og driftsoptimere databaser
- planlægge og styre udviklingsforløb med mange evt. geografisk adskilte projektdeltagere
- identificere sammenhænge mellem anvendt teori, metode og teknologi og kan reflektere over disses egnethed i forskellige situationer
- håndtere planlægning og gennemførelse af kvalitetssikring af større it-systemer herunder test
- bidrage til fastlæggelse og realisering af en såvel forretningsmæssig som teknologisk hensigtsmæssig arkitektur for store systemer

Kompetencer

Den uddannede kan:

- indgå professionelt i samarbejde omkring udvikling af store systemer ved anvendelse af udbredte metoder og teknologier
- sætte sig ind i nye teknologier og standarder til håndtering af integration mellem systemer
- selvstændigt tilegne sig viden, færdigheder og kompetencer inden for softwareudvikling herunder softwarearkitektur

2. Uddannelsen indeholder fire nationale fagelementer

2.1 Udvikling af store systemer

Fagelementet indeholder og beskæftiger sig med udvikling af store IT-systemer, hvor skalerbarhed er en central og vigtig egenskab. Der er fokus på, hvordan centrale systemudviklingsmetoder håndterer problemstillinger knyttet til skalerbarhed og udvikling af store, distribuerede systemer, herunder design, implementering og vedligeholdelse. Der arbejdes med begreber, teknikker og teknologier til løbende kvalitetssikring og levering af software-baserede systemer.

Læringsmål:

Viden

Den studerende har viden om:

- problemstillinger knyttet til udvikling af distribuerede og store IT-systemer, og hvordan disciplinerede og agile udviklingsmetoder foreskriver hvordan disse problemstillinger håndteres
- fordele, ulemper og omkostninger ved at anvende et system til løbende kvalitetssikring og levering af IT-systemer
- kriterier for design af grænseflader til delsystemer
- konfigurations- og fejlrapporteringssystemer dedikeret til udvikling af store, distribuerede systemer

Færdigheder

Den studerende kan:

- anvende principper for opdeling af et system i delsystemer, herunder designe og specificere krav til delsystemer
- anvende virtualisering i softwareudvikling
- anvende versionsstyringsprincipper til udvikling af store distribuerede systemer
- anvende et system til løbende kvalitetssikring og levering
- anvende arkitekturmønstre dedikeret til udvikling af store distribuerede systemer

Kompetencer

Den studerende kan:

- samarbejde i store udviklingsorganisationer
- indgå i globalt distribueret udvikling
- tilpasse udviklingsmetoder og –processer til udvikling af store distribuerede systemer

ECTS-omfang:
Udvikling af store systemer har et omfang på 10 ECTS-point.

2.2 Databaser

Fagelementet indeholder og beskæftiger sig med udvælgelse og anvendelse af databasetyper hensigtsmæssigt i forhold til forskellige anvendelsesdomæner, herunder datadrevet beslutningsstøtte. Fokus er tillige på udvikling op mod store databaser, herunder redesign og driftsoptimering.

Læringsmål:

Viden

Den studerende har viden om:

- forskellige databasetyper og de bagvedliggende modeller
- et konkret databasesystems lagerorganisering og forespørgselsafvikling
- et konkret databasesystems optimeringsmuligheder – herunder fordele og ulemper

- databasespecifikke sikkerhedsproblemer og deres løsninger
- begreber og problemstillinger vedrørende skalering og datakompleksitet
- de særlige problemstillinger, som mange samtidige transaktioner rejser, herunder også i forbindelse med distribuerede databaser
- principper for at tilgå data fra applikationer

Færdigheder

Den studerende kan:

- analysere anvendelsesdomænet med henblik på valg af databasetype
- transformere logiske datamodeller til fysiske i forskellige databasetyper
- gennemføre optimeringen af databaser
- håndtere samtidige transaktioner i et konkret databasesystem
- anvende de faciliteter og programmeringsmuligheder, der stilles til rådighed af et moderne DBMS
- anvende tidssvarende værktøjer til at tilgå data

Kompetencer

Den studerende kan:

- sætte sig ind i forskellige databaseteknologier
- facilitere samarbejde med henblik på dataunderstøttelse af forretningsmæssige mål

ECTS-omfang:
Databaser har et omfang på 10 ECTS-point.

2.3 Systemintegration

Fagelementet indeholder og beskæftiger sig med teknisk integration af systemer, herunder integrere eksisterende systemer i forbindelse med udvikling af nye systemer, samt kunne udvikle nye systemer som understøtter fremtidig integration.

Læringsmål:

Viden

Den studerende har viden om:

- de forretningsmæssige overvejelser omkring systemintegration
- lagring, transformation og integration af data
- servicebegrebet og kan forstå dets sammenhæng med serviceorienteret arkitektur
- teknologier som kan bruges til at implementere en serviceorienteret arkitektur
- teknologier og værktøjer til integration
- sikkerhed ifm. integration

Færdigheder

Den studerende kan:

- anvende heterogene systemer i en serviceorienteret arkitektur
- designe integrerbare systemer og systemer, som anvender eksisterende services
- transformere eller udvide et system således at det kan fungere i en serviceorienteret arkitektur
- anvende mønstre der understøtter systemintegration
- vælge mellem forskellige metoder og teknologier til integration
- omsætte elementer i en forretningsstrategi til konkrete krav til integration af systemer

- vurdere fordele og ulemper ved forskellige tilgange til integration
- vurdere behov for sikkerhed og anvende tidssvarende metoder og teknologier til opnåelse af det ønskede sikkerhedsniveau

Kompetencer

Den studerende kan:

- tilegne sig viden om udviklingen indenfor integration
- deltage i udvikling og tilpasning af metoder og processer til integration

ECTS-omfang:
Systemintegration har et omfang på 10 ECTS-point.

2.4 Softwarekvalitet

Fagelementet indeholder og beskæftiger sig med centrale metoder og teknikker til opnåelse af softwarekvalitet både i forbindelse med nyudvikling og vedligeholdelse, herunder begreber og teknikker til design og konstruktion af testbare systemer. Endvidere design og gennemførelse af systematisk test på større systemer, herunder etablering af automatiseret test.

Læringsmål:

Viden

Den studerende har viden om:

- væsentlige teststrategier og -modeller samt deres rolle i systemudviklingen
- sikring af softwarekvalitet som en integreret del af et udviklingsprojekt
- forskellige testtyper og deres anvendelse

Færdigheder

Den studerende kan:

- designe testbare systemer
- sikre sporbarhed mellem systemkrav og softwaretest på alle niveauer
- anvende forskellige testformer
- anvende forskellige kriterier og metrikker for softwaretest
- anvende teknikker og værktøjer til automatisering af test

Kompetencer

Den studerende kan:

- deltage i udvikling og tilpasning af metoder og teknikker til sikring af softwarekvalitet
- indgå i samarbejde om softwarekvalitet
- identificer egne læringsbehov ift. softwarekvalitet

ECTS-omfang:
Softwarekvalitet har et omfang på 10 ECTS-point.

3. Praktik

Læringsmål:

Viden

Den studerende har viden om:

- den daglige drift i praktikvirksomheden

Færdigheder

Den studerende kan:

- anvende alsidige tekniske og analytiske arbejdsmetoder, der knytter sig til beskæftigelse inden for erhvervet
- vurdere praksisnære problemstillinger og opstilling af løsningsmuligheder
- håndtere strukturering og planlægning af daglige arbejdsopgaver i erhvervet
- formidle praksisnære problemstillinger og begrundede løsningsforslag

Kompetencer

Den studerende kan:

- håndtere udviklingsorienterede praktiske og faglige situationer i forhold til erhvervet
- tilegne sig ny viden, færdigheder og kompetencer i relation til erhvervet
- deltage i fagligt og tværfagligt samarbejde med en professionel tilgang

ECTS-omfang:
Praktik har et omfang på 15 ECTS-point.

Antal prøver:
Praktikken afsluttes med 1 prøve.

4. Krav til bachelorprojektet

Bachelorprojektet dokumenterer sammen med uddannelsens øvrige prøver og praktikprøven, at uddannelsens mål for læringsudbytte er opnået. Bachelorprojektet skal endvidere dokumentere den studerendes forståelse af praksis og central anvendt teori og metode i relation til en praksisnær problemstilling. Problemstillingen skal tage udgangspunkt i en konkret opgave inden for uddannelsens område. Problemstillingen, der skal være central for uddannelsen og erhvervet, formuleres af den studerende, eventuelt i samarbejde med en privat eller offentlig virksomhed. Institutionen skal godkende problemstillingen.

Prøven i bachelorprojektet:

Bachelorprojektet afslutter uddannelsen, når alle forudgående prøver er bestået.

ECTS-omfang:

Bachelorprojektet har et omfang på 15 ECTS-point.

Prøveform:

Prøven består af et projekt og en mundtlig del. Prøven er med ekstern censur, og der gives en samlet individuel karakter efter 7-trin skalaen for projektet og den mundtlige del.

5. Regler om merit

Bestående uddannelseselementer ækvivalerer de tilsvarende uddannelseselementer ved andre uddannelsesinstitutioner, der udbyder uddannelsen.
Den studerende har pligt til at oplyse om gennemførte uddannelseselementer fra en anden dansk eller udenlandsk videregående uddannelse og om beskæftigelse, der må antages at kunne give merit. Uddannelsesinstitutionen godkender i hvert enkelt tilfælde merit på baggrund af gennemførte uddannelseselementer og beskæftigelse, der står mål med fag, uddannelsesdele og praktikdele. Afgørelsen træffes på grundlag af en faglig vurdering.

Den studerende har ved forhåndsgodkendelse af studieophold i Danmark eller udlandet pligt til efter endt studieophold at dokumentere det godkendte studieopholds gennemførte uddannelseselementer. Den studerende skal i forbindelse med forhåndsgodkendelsen give samtykke til, at institutionen efter endt studieophold kan indhente de nødvendige oplysninger. Ved godkendelse efter ovenstående anses uddannelseselementet for gennemført, hvis det er bestået efter reglerne om den pågældende uddannelse.

6. Ikrafttrædelse og overgangsordning

Denne nationale del af studieordningen træder i kraft den 15.01.2024.

Studieordningen gælder for alle studerende på uddannelsen fra ikrafttrædelsesdatoen.

Software Development

Institutional section

Curriculum 2025

ERHVERVS
AKADEMI
SYDVEST

Table of contents

1. Curriculum framework ... 3
   1.1 Effective date and transition period ... 3
   1.2 The graduates title in Danish and English ... 3
   1.3 Scope of the programme ... 3
2. The subject elements of the programme ... 4
3. Overview of the programme ... 4
   3.1. National programme elements ... 4
   3.2. Local programme elements ... 5
4. Teaching and working methods ... 5
5. Exams and prerequisites ... 5
   5.1. Scope and criteria for examinations ... 6
      5.1.1 The Study Start Test ... 6
      5.1.2 Development of Large Systems ... 7
      5.1.3 Databases for Developers ... 7
      5.1.4 System Integration ... 8
      5.1.5 Software Quality ... 8
6. Internship ... 9
7. Final bachelor project ... 10
8. Educational elements completed abroad ... 11
9. Credits for local and elective educational elements ... 11
10. Participation requirements ... 11
11. Study activity ... 12
12. Exam terms and conditions ... 12
   12.1 Use of aids ... 12
   12.2 Special examination conditions ... 12
   12.3 Re-examinations due to illness, failing or non-attendance ... 12
      12.3.1 Re-examination due to illness ... 12
      12.3.2 Re-examination due to failing or non-attendance ... 13
13. Errors or omisssions during the exam ... 13
14. Cheating offences and disruptive behaviour ... 13
   14.1 Using one's own work and that of others - plagiarism ... 14
   14.2 Disciplinary procedures ... 14
15. Complaints about examinations and appeal decisions ... 14

15.1 Complaints about exams 15
15.2 Appeal of decision 15
15.3 Complaints concerning legal matters 16
15.4 Re-assessment and re-examination 16
16. Exemptions 17
Appendix - Electives 18

1. Curriculum framework

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

This curriculum is based on:

- Applicable Ministerial Order on Academies of Professional Higher Education
- Applicable Ministerial Order on Academy Profession Programmes and Professional Bachelor Programmes
- Applicable Ministerial Order on Examinations and Tests on Professionally and Business Oriented Higher Education Programmes (the Examination Order)
- Applicable Ministerial Order on Grading Scale for Education Programs at the Ministry of Higher Education and Science (the Grading Scale Order)
- Applicable Ministerial Order on Technical and Commercial Academy Profession Programmes and Professional Bachelor Programmes
- Applicable Ministerial Order on Admission to and Enrolment on Academy Profession Programmes and Professional Bachelor Programmes (the Admissions Order).

All can be found here: https://www.retsinformation.dk/

1.1 Effective date and transition period

This institution-specific section of the curriculum takes effect on 01.08.2025 and applies to all students enrolled on the programme on this date or later.

Current students at the Academy will complete their studies according to the curriculum valid at the initiation of their studies. With the exception of students on leave, they will continue their studies according to the curriculum valid at the time of enrolment.

1.2 The graduates title in Danish and English

The programme gives the graduate the right to use the title Bachelor of Software Development. The Danish title is Professionsbachelor i softwareudvikling.

1.3 Scope of the programme

The scope of the programme is to qualify the graduate to be able to independently work as an IT specialist with focus on integration and architecture, and to participate in professional collaborations on the development of large data-intensive distributed IT systems in IT companies, IT consulting companies or internal IT development departments.
The programme is placed at level 6 in the qualification framework for higher education.

The programme corresponds to 90 ECTS-credits, which includes:

- ✓ Educational elements with a total scope of 60 ECTS-credits which are organized within the professional areas of the programme
- ✓ Internship with a total scope of 15 ECTS-credits
- ✓ Final examination project with a total scope of 15 ECTS-credits

2. The subject elements of the programme

The educational elements are organized within the following subject elements with a total scope of 60 ECTS-points and are mutually weighted in the ratio 1:1.

Development process: The subject element contains design, implementation, maintenance and quality assurance of large, distributed IT systems, where scalability is a central and important characteristic. Focus is on system development methods, techniques and technologies for continuous integration and delivery, including the work in distributed development teams as well as in quality assurance through design and implementation of tests of larger systems, including automated testing and techniques for the design and construction of testable system.

System interaction: The subject element contains technical integration of systems, including integration of existing systems, integration of existing systems in the development of new systems as well as the development of new systems which support future integration. More specifically the subject element includes different types of databases, the selection and use of databases based on different application domains, including analysis and development towards large datasets, as well as redesign and optimization of databases.

3. Overview of the programme

<table>
<tr><th colspan="2">1st Year</th><th>2nd Year</th></tr>
<tr><td>Databases for Developers
10 ECTS</td><td>Software Quality
10 ECTS</td><td rowspan="2">INTERNSHIP 15 ECTS</td></tr>
<tr><td>System Integration
10 ECTS</td><td rowspan="2">Elective Educational elements
20 ECTS</td></tr>
<tr><td>Development of Large Systems
10 ECTS</td><td>BACHELOR PROJECT 15 ECTS</td></tr>
</table>

3.1. National programme elements

Appears in the national part of this curriculum.

3.2. Local programme elements

In addition to the national part of this curriculum, the programme includes 20 ECTS local elements, organized as elective elements. Electives appear in the catalogue on Moodle – recent electives appear in the appendix to this curriculum.

4. Teaching and working methods

At EASV, we believe that business competencies are best developed when learning is driven by practical challenges and real-world issues. Further we believe that working to create real value is what inspires and motivates our students and strengthens their commitment.

Our way of teaching at EASV is based on:

- Facilitating a motivating and engaging learning environment based on practice
- Transposing and disseminating relevant knowledge from research and industry in a concrete practice
- Supporting students' active participation and study intensity through relevant study activities
- Involving students' knowledge and work experience as a resource so that students are co-creators of learning
- Supporting learning through ongoing dialogue and a common feedback culture
- Flexible work, involving digital learning activities, focusing on using our resources and improving student-learning outcomes, independent of time and place.

5. Exams and prerequisites

Time Frame	Exam	ECTS credits	Internal/external	Evaluation
Within the first 2 month of studying	The Study Start Test	-	Internal	Approved/Not approved
1st Year	Databases for Developers	10	Internal	7-point grading
1st Year	Development of Large Systems	10	External	7-point grading
1st Year	Software Quality	10	Internal	7-point grading
1st Year	System Integration	10	External	7-point grading
1st Year	Elective Educational elements	20	Internal	7-point grading
2nd Year	Internship	15	Internal	7-point grading
2nd Year	Bachelor final project	15	External	7-point grading

Information about time and place for the examinations will be posted on Moodle.
Joining the semester, the education element, etc. is also a registration for the corresponding exams. The student has three attempts for each exam, except for the Study Start Test where the student has two

attempts. If the student has used all assigned attempts, the student cannot continue the study programme, and the enrolment will consequently be cancelled according to the rules in the Admissions Order.

All examinations are to be submitted/presented in understandable English or Danish. Students with other native languages can seek exemption from the fact that formulation and spelling skills can influence the evaluation of the final examination project or any exam for which the curriculum specifies that such skills are included in the evaluation. Application for the exemption should be sent to the head of department at least four weeks prior to the examination.

Prerequisites for the exam

In order to sit the exam, there may be one or more prerequisites that must be met. Prerequisites are described in the following at each exam.
Prerequisites can be several different things, e.g. submission of a written project, participation in class, a presentation, etc.
Note that if one or more of the prerequisites is not met the student will not be allowed to sit the exam and will have used one exam attempt.

5.1. Scope and criteria for examinations

In the following, exams in each of the national compulsory elements is described, including:

- Prerequisites for taking the exam
- Exam form
- Assessment criteria
- Formal requirements if a written product is included, including requirements for individualization in group projects

5.1.1 The Study Start Test

According to the Executive Order on Examinations, the student must participate in and pass a study start test in order to continue on the study programme. The purpose of the study start test is to clarify: whether the student has actually started the programme.
The study start examination is held no later than two months after the commencement of the study programme.

Test form

The study start test in an individual, written test, based on the student's reflection on prior knowledge and motivation for the study programme.

Assessment criteria

The study start test is internal assessed and is assessed with "Approved" or "Not approved".

If the student does not fulfil the study start test requirement in the first attempt, the student has another attempt, which must be conducted no later than three months after the commencement of the study programme. If the student does not fulfil the test in the second attempt, the student cannot continue on the study programme and his/her enrolment will consequently be cancelled.

5.1.2 Development of Large Systems

Prerequisites for the exam

Two compulsory assignments must be completed and approved in order to qualify for the exam.

In addition, it may be required by the teacher that the student completes minimum 50% of a specified number of weighted online activities.

Exam form

This examination is an individual external oral exam based on a written synopsis discussing a topic of interest, relevant for the course. The exam lasts for 30 minutes including assessment. It is assessed externally according to the 7-pointscale.

Assessment criteria

The evaluation criteria for the examination are based on the learning objectives of the educational element. Grading is based on an overall assessment of the oral presentation and examination, and not on the written synopsis itself.

Formal requirements

The synopsis must contain theoretical as well as practical parts covering issues related to the chosen topic.

5.1.3 Databases for Developers

Prerequisites for the exam

There are 2 compulsory assignments that must be completed and approved by the teacher to be qualified to do the exam.
In addition, it may be required by the teacher that the student completes minimum 50% of a specified number of weighted online activities.

Exam form

This examination is an individual internal oral exam based on a written synopsis discussing a topic of interest, relevant for the course. The exam lasts for 20 minutes including assessment. It is assessed internally according to the 7-pointscale.

Assessment criteria

The evaluation criteria for the examination are based on the learning objectives of the educational element. Grading is based on an overall assessment of the oral presentation and examination, but not on the written synopsis itself.

Formal requirements

The synopsis must contain theoretical as well as practical parts covering issues related to the chosen topic.

5.1.4 System Integration

Prerequisites for the exam

There are 2 compulsory assignments that must be completed and approved by the teacher to be qualified to do the exam.
In addition, it may be required by the teacher that the student completes minimum 50% of a specified number of weighted online activities.

Exam form

This examination is an individual external oral exam based on a written synopsis discussing a topic of interest, relevant for the course. The exam lasts for 30 minutes including assessment. It is assessed externally according to the 7-pointscale.

Assessment criteria

The evaluation criteria for the examination are based on the learning objectives of the educational element. Grading is based on an overall assessment of the oral presentation and examination, but not on the written synopsis itself.

Formal requirements

The synopsis must contain theoretical as well as practical parts covering issues related to the chosen topic.

5.1.5 Software Quality

Prerequisites for the exam

There are 3 compulsory assignments that must be completed and approved by the teacher to be qualified to do the exam.
In addition, it may be required by the teacher that the student completes minimum 50% of a specified number of weighted online activities.

Exam form

This examination is an individual internal oral exam based on a written synopsis discussing a topic of interest, relevant for the course. The exam lasts for 20 minutes including assessment. It is assessed internally according to the 7-pointscale.

Assessment criteria

The evaluation criteria for the examination are based on the learning objectives of the educational element. Grading is based on an overall assessment of the oral presentation and examination, but not on the written synopsis itself.

Formal requirements

The synopsis must contain theoretical as well as practical parts covering issues related to the chosen topic.

6. Internship

The learning objectives for the internship appear in the national part of this curriculum. The internship corresponds to 15 ECTS-credits.

Requirements and expectations

The internship allows the student to work with relevant issues and gain knowledge about relevant job functions.
During the internship the student are linked to one or more companies. The internship can be organized flexibly and differentiated and can form the basis for the student's final examination project.

The relation between theoretical learning and actual practice forms the basis for the student's objectives for the internship period.

Based on the learning objectives for the internship (see the national section of the Curriculum), the student, the internship company and the school supervisor collaborate to identify specific objectives for the internship period.

This then forms the basis for organizing the student's work during the internship period.

The internship can be compared to a full-time job, with demands regarding working hours, work to be done, involvement and flexibility that correspond to those that the students can expect to meet in their first job. If, for documented health reasons, the student cannot complete an internship for 37 hours per week, the student can apply for a dispensation to organize the internship period appropriately.

Prerequisites for the exam

- The student must have actively participated in the internship,
- internship report, on which the examination and the evaluation are based, must meet the requirements cf. below,
- the internship report must be handed in on time, cf. the exam schedule available on Moodle,
- and the student must have completed the evaluation of the internship (questionnaire).

The Examination and assessment criteria

This examination is an individual internal exam based on the internship report.

The assessment criteria will be the learning objectives for the internship.

Evaluation is graded according to the 7-point grading scale based on an overall assessment of the written internship report and the oral presentation.

The student will present relevant parts of the internship report in approximately 10 minutes, followed by an examination dialogue where all parts of the internship can be included. The exam lasts for 20 minutes including evaluation.

The presentation can be held via video conference if approved by the head of department.

The exam is held at the 3rd semester after the internship. Further information regarding time and place and about handing in the internship report can be found on Moodle.

Requirements for the internship report

The following internship report requirements apply:

- Front page with student name, internship company, and internship period
- Introduction, including main issues and approaches
- Description of specific jobs done during the internship
- Reflection of the learning outcome
- Conclusion
- Bibliography (including all sources referred to in the report)
- Appendix: Statement from the internship company and the student's diary/internship log (optional)
- Other Appendices (including only those documents that are central to the report) (optional)

The maximum number of pages for the internship report is 10 standard pages. A standard page is defined as 2400 characters, including spaces and footnotes, but excluding the front page, table of contents, bibliography and appendices. Appendices are not included in the grading evaluation.

The internship report is submitted in English or Danish for Software Development.

7. Final bachelor project

The final bachelor project and the internship exam together with the other exams must document that the learnings objectives of the programme are met.

Requirements regarding the final bachelor project as well as learning objectives can be found in the national section of this curriculum.

The examination is held at the end of 3rd semester. Further information regarding time and place for the examination can be found on Moodle.

Prerequisites for the exam

Failure to submit the written project correctly means that the student will not be allowed to attend the exam, the student will use one exam attempt.

The examination in the final project cannot be held until the internship exam and all other exams in the education have been passed.

The exam and organization

This examination is an individual external oral exam, based on the final project report.

The student presents relevant parts of the final project report in approximately 15 minutes, followed by an examination dialogue. The exam lasts for 30 minutes including assessment.

Assessment criteria

The evaluation criteria for the examination are based on the learning objectives for the final project in the national section of the Curriculum.

Formulation and spelling skills can influence the evaluation of the final examination project.

Requirements for the written report

The minimum number of pages is 15 standard pages. The maximum number of pages for the final project report is 50 standard pages. A standard page is defined as 2400 characters, including spaces and footnotes, but excluding the front page, table of contents, bibliography and appendices. Appendices are not included in the grading evaluation.

The examination will be in Danish or English for Software Development.

8. Educational elements completed abroad

The student can – with pre-approval – obtain credit for any of the educational elements that the student complete abroad. In such cases the student must, after completion of the studies abroad, document the educational elements that have been completed. In connection with pre-approval the student must agree that the school is entitled to secure any necessary information about the educational elements.

With prior acceptance of credits, the specific educational element will be considered completed if the student has passed the course according to existing and relevant rules for the programme.

9. Credits for local and elective educational elements

Any elective and local educational element that has been passed is considered to be equivalent to the corresponding educational element offered by other educational institutions offering the education.

The student is to apply for prior approval if credit is wished for educational elements that are not included in the education.

10. Participation requirements

In order for the teaching methods to work and to achieve the learning objectives the student has participation requirements in the form of handing in/presenting assignments/projects etc.

Handing in/presenting assignments/projects etc. can be expressed as exam prerequisites that must be met before the student can take part in the exam. Prerequisites are described in section 5.

If a student does not comply with the participation requirements, the study programme will provide help and guidance.

11. Study activity

At EASV the student must be academically active to remain enrolled in the study programme. At EASV lack of study activity is defined as *the student not having passed any of the exams in the study programme for a continuous period of 1 year.*

Lack of study activity will imply the enrolment to be cancelled according to the rules of the Admissions Order.

12. Exam terms and conditions

Joining the semester, the education element, etc. is also a registration for the corresponding exams

Deregistration from an exam is only possible under special circumstances such as illness (documented with a medical certificate), death in the family or exceptional circumstances that affect the student's well-being. Exemption can be granted if the student is an elite athlete, and on that basis needs to deregistrate from the exam. Deregistration shall be provided to the head of department no later than at the start of the exam or as soon as possible thereafter. Written documentation must be provided before any dispensation can be granted for the used exam attempt.

12.1 Use of aids

Any rules for restrictions in the use of aids will be made clear in the specifications for the individual examination.

12.2 Special examination conditions

The student can apply for special examination conditions when warranted by physical or mental impairment. The application should be submitted to the head of department at least four weeks prior to the date of the examination. An exemption from this deadline can be given in the case of suddenly occurring health issues.

The application must be accompanied by a medical certificate, a statement from e.g. an institute dealing with speech, hearing or sight impairment or dyslexia, or other forms of documentation certifying serious health issues or relevant functional impairment.

12.3 Re-examinations due to illness, failing or non-attendance

12.3.1 Re-examination due to illness

If the student has not been able to sit an examination due to documented illness or other unforeseen circumstance, the student is given the opportunity to sit a re-examination as quickly as possible. In the case of an examination taking place at the end of the last examination period, the student is given the opportunity to sit the examination in the same examination period or immediately thereafter.

This examination can be identical to the next ordinary examination. It is the student's responsibility to investigate when the re-examination will be held.
Information about time and place for these re-examinations can be found on Moodle.

Illness must be documented by a medical certificate received by the institution three days at the latest after the examination has been conducted. If the student becomes acutely ill during an examination the student must document illness on the day in question.

If illness is not documented according to the above rules, the examination will count as one examination attempt spent.

Any costs for the medical certificate are the responsibility of the student.

12.3.2 Re-examination due to failing or non-attendance

By not passing or by not attending the examination, the student is automatically registered to sit the re-examination, provided that the student has not spent all three examination attempts. The re-examination can be identical with the next ordinary examination.

It is the student's responsibility to investigate when the re-examination will be held. Information about time and place for these re-examinations can be found on Moodle.

13. Errors or omisssions during the exam

If errors and omissions are brought to attention during the exam, the head of department decides how the error or the omission can be remedied.

In the case of serious errors or omissions, or where it must be considered to be the most correct way to remedy the error, the head of department may cancel the exam in question and arrange a re-examination. In the case of a cancelled exam the assessment lapses.

In the case of other significant errors or omissions and extraordinary exam may be offered. The offer is given to all affected students. The student may choose to keep their original assessment even if they have participated in the extraordinary exam.

14. Cheating offences and disruptive behaviour

During any exam the student must behave considerately and follow the instructions given by the examination supervisor, examiner or censor.

Cheating on exams will be dealt with according to the rules in the existing Ministerial Order on Examinations on Professionally Oriented Higher Education Programmes (The examination order).

It is referred to as cheating offences when the student:

- plagiarizes cf. section 14.1,
- counterfeits,
- conceals or misleads about own efforts or results,
- takes part in an unauthorized collaboration,
- receives or tries to receive help during the exam, or helps other students when it is not a group exam,
- uses unauthorized aids,
- has wrongfully obtained prior knowledge of the examination assignment,
- provides wrongful attendance information, or
- seeks to circumvent, disable or otherwise obstruct the intent of EASV's use of monitoring programs.

When submitting written material, the student must verify by signature that the material has been produced without undue assistance.

14.1 Using one's own work and that of others - plagiarism

Cheating in exams through plagiarism comprises instances where a written answer appears to be completely or partially produced personally by the examinee or examinees, but:

1. Comprises identical or almost identical rendering of the wording or work of others, without clearly identifying this using quotation marks, italics, indentation or other clear indications stating the source of the material, cf. the educational institution's requirements to written work on Moodle.
2. Comprises major pieces of text with choice of words or formulations so close to that of another piece of writing that it is possible to determine through comparison that the text could not have been written without using the source in question.
3. Comprises the use of words or ideas of others without giving reference to the source in an appropriate manner.
4. Re-uses text and/or central ideas from own previously assessed answers (self-plagiarism) without observing the provisions laid down in items 1 and 3 above.

14.2 Disciplinary procedures

Cheating or disruptive behaviour during an exam will result in the student not having the exam assessed and one examination attempt will be counted as used.
The student may also receive a written warning. Aggravating circumstances or repeated offences could lead to temporary or permanent expulsion.

15. Complaints about examinations and appeal decisions

Complaints about examinations will be dealt with according to the rules in chapter 11 in the existing Ministerial Order on Examinations on Professionally Oriented Higher Education Programmes (The examination order)

15.1 Complaints about exams

Complaints about the Study Start Test

Complaints about the study start test can be submitted to the educational institution, which will make a decision. The complaint must be sent to the head of department no later than 2 weeks (14 calendar days) after the assessment has been conducted. Academic questions regarding the institution's decision cannot be referred to another administrative authority. Legal questions regarding the institution's decision can be referred to the Danish Agency for Higher Education and Science, cf. section 15.2

Complaints about exams in educational elements and subtests

The student can submit a written complaint about legal or academic issues; including the examination process during an examination in an educational element or a subtest.

The complaint must be submitted to the head of department no later than 2 weeks (14 calendar days) after the assessment of the exam has been conducted. If the deadline is on a public holiday, the first workday hereafter will be considered the deadline.

If the complaint concerns academic issues, the educational institution will immediately request a statement from the examiners, i.e., the examiner and censor for the examination in question. The statement from the examiners must provide a basis for the institution’s decision on academic questions. The institution normally sets a deadline of 2 weeks for submitting the statements, excluding the month of July. As soon as the examiners’ statements are available, the complainant is given the opportunity to comment on the statements within a typical deadline of one week.

The decision is made by the institution based on the complaint, the examiners response and the complainant’s potential comments on the statement. The decision must be in writing and justified, and can:

1. Offer the possibility of a new assessment (re-assessment). This applies to written exams only.
2. Offer the possibility of a new exam (re-examination) with new examiners.
3. Reject the complaint.
4. A combination of 1-3 if the exam includes a written assignment with oral examination.

15.2 Appeal of decision

Academic questions regarding the educational institution’s decision, cf section 15.1, may be brought before an appeals panel. The appeal must be submitted two weeks at the latest after the decision has been communicated to the student.

The appeals panel consists of two authorised censors appointed by the chairman of the censors, a lecturer authorised to conduct examinations and a student studying the subject area (the degree programme), both of which are appointed by the head of department.

The appeals panel makes decisions based on the material used by the educational institution in making its decision and the student’s complaint. The appeals panel must make its decision no later than 2 months for winter exams and 3 months for summer exams after the appeal has been submitted.

The appeals panel's decision can:

1. Offer the possibility of a new assessment with new examiners (re-assessment). This applies to written exams only.
2. Offer the possibility of a new exam with new examiners (re-examination).
3. Reject the appeal.
4. A combination of 1-3 if the exam includes a written assignment with oral examination.

Academic questions regarding the appeals panel's decision cannot be referred to another administrative authority.

Legal questions regarding the appeals panel's decision can be referred to the institution which will make a decision. The complaint must be submitted to the institution no later than two weeks after the student has received the institution's decision. The institution's decision regarding legal matters can be referred to the Danish Agency for Higher Education and Science, cf. section 15.3.

15.3 Complaints concerning legal matters

The educational institution's final decisions can be referred to the Danish Agency for Higher Education and Science when the complaint concerns legal matters. The deadline for submitting a complaint is two weeks from the day the decision is communicated to the complainant. The complaint is submitted to the institution, which prepares a statement that the complainant must have the opportunity to comment on within a minimum period of one week. The institution then forwards the entire case for review by the agency.

15.4 Re-assessment and re-examination

If the decision is to offer re-assessment or re-examination, the complainant must be informed of the fact that the re-assessment or re-examination may result in a lower grade.

The student must accept the offer for re-assessment og re-examination within a deadline of 2 weeks after the decision has been communicated. If the student does not accept within the deadline, the re-assessment or re-examination will not be conducted.

The re-assessment or re-examination must take place as soon as possible. If the diploma has been issued, it must be withdrawn until the final assessment is available, after which a new diploma will be issued.

If the decision is to offer a re-assessment or re-examination, the head of department appoints new examiners. The chairman of the censors may appoint a censor. The new examiners must assess the submission based on the assignment text and task. The new examiners will then notify the institution of the reassessment result, accompanied by a written justification.

Academic questions regarding reassessment or re-examination cannot be brought before the educational institution again or another administrative authority. Legal questions can be referred to the institution, which will make a decision.

16. Exemptions

The institute can grant exemptions from rules in this institution-specific section of the curriculum in cases where such exemption is justified due to exceptional circumstances. The institutions offering this education cooperate to ensure a uniform exemption practice.

Appendix - Electives

Machine Learning

Timing: 1st year of study **Scope: 10** ECTS

The purpose of the course is to introduce the student to Machine Learning, so that the student can develop applications by using some of the most common Machine Learning techniques and model architectures.

Knowledge

The student must have knowledge of:

- What Machine Learning is good for, and its limitations
- Several popular applications of Machine Learning
- Supervised, unsupervised and reinforcement learning
- The types of predictions that machine learning solutions can make, including regression as well as binary and multiclass classification
- A few of the most common Machine Learning model architectures, including artificial neural network
- The development process for Machine Learning applications
- Key issues after having trained a model, such as over- and underfitting
- Large language models (LLMs), their structure, capabilities and applications
- Available open source LLM frameworks and tools
- Methods and practices for fine-tuning LLMs to specifics tasks

Skills

The student can:

- develop Machine Learning applications that are based on supervised learning
- develop a Machine Learning application using a deep learning neural network architecture, and at least one other model architecture that is not based on neural networks
- use basic techniques for validation and fine-tuning of trained models
- use basic techniques for data preparation
- use at least one popular programming framework to develop Machine Learning applications
- utilize existing frameworks to fine-tune pre-trained LLM
- implement AI agent capable of performing specific tasks autonomously
- assess the performance and deploy AI agents

Competencies

The student can:

- compare different model architectures, and reason about which one will be best suited to solve a specific problem
  design application features that are using machine learning models

The examination:
Internal oral exam based on a mini project. The exam duration is 20 min.

Assessment:
7 point grading scale

Secure Software Development

Timing: 1st year of study **Scope: 10** ECTS

The purpose of the course is to train the student in developing secure software systems with a focus on Security by Design. The student will be able to use applied cryptography and consider security as an integral part of all phases in the software development life cycle.

Knowledge
The student must have knowledge of:

- Key cryptographic primitives
- Federated authentication
- Common vulnerabilities and mitigation techniques
- Management of passwords and other secrets
- Secure design principles
- Proactive security controls
- Privacy concerns (GDPR)

Skills
The student can:

- Demonstrate practical application of cryptography, including:
  - Encryption/decryption
  - Deriving keys
  - Password hashing
- Design software systems with focus on security
- Understand and model threats
- Assess security posture of software systems

Competency
The student can:

- Apply security measures and best practices throughout entire software development life cycle

The examination:
Internal oral exam. The exam duration is 20 min.

Assessment:
7 point grading scale

ERHVERVS
AKADEMI
SYDVEST