# PBA Web Development

## Curriculum 2015





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### **1** Programme structure

			1st year of study	2nd year of study
	Web development Back end			
	(bridging course)	programming (10		
		ECTS) or	10 ECTS	
		Front end		
Core areas of study		programming (10 ECTS)		
	Development environments (10 ECTS)		10 ECTS	
	Databases (10 ECTS	10 ECTS		
	Interface design (10 ECTS)		10 ECTS	
Elective educational			20 ECTS	
components				
Internship				15 ECTS
Bachelor's degree project				15 ECTS
Total ECTS credits			60 ECTS	30 ECTS

## 2 Core areas of study

The study programme covers the following core areas of study

- Web development (bridging course),
  - Back end programming (10 ECTS) or
  - Front end programming (10 ECTS)
- Development environments (10 ECTS)
- Databases (10 ECTS)
- Interface design (10 ECTS)

40 ECTS credits total

#### 2.1 Core area: web programming (bridging course), back end programming

#### Contents

The purpose of this core area is to develop students' competencies to develop contemporary web applications using programming paradigms and taking advantage of current, standardised protocols and the possibilities of the client/server model.

#### **ECTS credits**

10 ECTS

#### Learning outcomes

#### Knowledge

Upon completion of the course, students should have acquired knowledge about:

- Design patterns
- Fundamental protocols of the World Wide Web

• The advantages and limitations of client/server architecture.

#### Skills

Upon completion of the course, students should have acquired the skills to:

- Create web-based programs
- Apply basic programming principles
- Use web APIs
- Document program structures.

#### Competencies

Upon completion of the course, students should have acquired the competencies to:

- Analyse a development request with a view to constructing a web-based application
- Select and apply suitable programming technologies for developing web-based applications mainly focusing on the server side.

#### 2.2 Core area: Web development (bridging course), front end programming

#### Contents

The purpose of this core area is to develop students' competencies to develop contemporary web applications using programming paradigms and taking advantage of current, standardised protocols and the possibilities of the client/server model. Furthermore, students should develop an understanding of basic design and visual communication. This core area should also enable students to design simple user interfaces using aesthetic and communicative principles.

#### **ECTS credits**

10 ECTS

### Learning outcomes

#### Knowledge

Upon completion of the course, students should have acquired knowledge about:

- Fundamental protocols of the World Wide Web
- Advantages and limitations of client/server architecture
- Particular characteristics, weaknesses and strengths of different media
- Communication strategies.

#### Skills

Upon completion of the course, students should have acquired the skills to:

- Program and implement a dynamic web application
- Master basic design principles
- Apply theories on user friendliness and the skills to plan and conduct user tests
- Document program structures.

#### Competencies

Upon completion of the course, students should have acquired the competencies to:

• Analyse a development request with a view to constructing a web-based application

• Select and apply suitable programming technologies for developing web-based applications — mainly focusing on the client side.

#### 2.3 Core area: Development environments

#### Contents

The purpose of this core area is to develop students' competencies in making a qualified choice of and applying a given development environment.

#### **ECTS credits**

10 ECTS

#### Learning outcomes

#### Knowledge

Upon completion of the course, students should have acquired knowledge about:

- Integrated development environments (IDE) and their advantages and limitations
- Common programming languages in a web context
- Quality assurance and version control of applications in a web context
- Types of content management systems and frameworks and their suitability in a web context
- Criteria for selection of Content Management Systems or frameworks
- Selection of relevant database technology for developing applications in a web context.

#### Skills

Upon completion of the course, students should have acquired the skills to:

- Apply Content Management Systems or frameworks for developing applications in a web context
- Use an integrated development environment when developing applications in a web context.

#### Competencies

Upon completion of the course, students should have acquired the competencies to:

Select a Content Management System or framework for developing applications for a given development assignment.

#### 2.4 Core area: Databases

#### Contents

The purpose of this core area is to develop students' competencies in analysing and applying relevant data-processing models.

#### **ECTS credits**

10 ECTS

Learning outcomes Knowledge

Upon completion of the course, students should have acquired knowledge about:

- At least one widely-used modelling language for data modelling
- Distributed databases and their prevalence and use in web contexts
- Describing problems concerning data exchange and the use of data formats in developing in web contexts.

#### Skills

Upon completion of the course, students should have acquired the skills to:

- Apply data models for development and maintenance in web contexts
- Apply complex database queries
- Apply transactions
- Embed business logic in the database layer
- Use data formats for data integration.

#### Competencies

Upon completion of the course, students should have acquired the competencies to:

- Analyse and select the tasks that would be suitably placed in the database layer and those that should be placed in the application layer
- Analyse and select a database technology/technologies that will resolve a given development task in a web context suitably.

#### 2.5 Core area: Interface design

#### Contents

The purpose of this core area is to develop students' competencies to enter complex usage scenarios and independently take part in the design process concerning the design of complex user interfaces.

#### **ECTS credits**

10 ECTS

#### Learning outcomes

#### Knowledge

Upon completion of the course, students should have acquired knowledge about:

- Common interface design development methods
- Human-computer interaction
- Communication theory.

#### Skills

Upon completion of the course, students should have acquired the skills to:

- Create convenient user interfaces adapted to relevant target groups based on the theory and methods of the relevant subject area
- Apply design methods pertaining to visual design, interaction design and information architecture when designing user interfaces, including prototyping
- Work on the development of communications solutions across platforms and media.

#### Competencies

Upon completion of the course, students should have acquired the competencies to:

- Analyse choices of devices and effects in user interfaces and situate these choices in a context
- Manage design processes based on analysis and planning
- Take part in complex usage situations and independently manage
- The design process when designing complex user interfaces.

## 3 Compulsory educational components within the core areas of the study programme

The study programme's compulsory educational elements

- 1. Web development (bridging course),
  - a. Back end programming (10 ECTS) or
  - b. Front end programming (10 ECTS)
- 2. Development environments (10 ECTS)
- 3. Databases (10 ECTS)
- 4. Interface design (10 ECTS)

#### 40 ECTS credits total

The four compulsory educational components are equivalent to the four core areas of study, have the same name, contents, are worth the same number of ECTS credits and have the same learning objectives.

The four compulsory educational components are all finalised by examination.

#### Assessment

Each examination is assessed and graded according to the 7-point grading scale and is worth 10 ECTS credits.

The learning objectives for the educational component are identical to the learning objectives for the examination.

For the examination type and exam procedure, please see the institutional section of this Curriculum.

## 4 Number of examinations for the compulsory educational components

The four compulsory educational components are each finalised by a single examination. See the examinations for the study programme in the "Examination schedule" section.

ECTS credits for the core areas and the compulsory educational components are shown in the schedule below.

Compulsory educational	Web development	Development	Databases	Interface	
components	(bridging course),	environments		design	
	Back end				
	programming or				
	back				

	Front end programming				
Core areas of study					
Web development (bridging course), back end programming or front end programming	10 ECTS				10 ECTS
Development environments		10 ECTS			10 ECTS
Databases			10 ECTS		10 ECTS
Interface design				10 ECTS	10 ECTS
Total ECTS credits	10 ECTS	10 ECTS	10 ECTS	10 ECTS	40 ECTS

## 5 Internship

The internship is organised in order to contributes, in combination with the other elements of the study programme, to the student's development of practical competencies. The purpose of the internship is to enable the student to apply the methods, theories and tools acquired during the course of the study programme in the solution of specific, practical tasks in web development.

#### **ECTS credits**

15 ECTS

#### Learning outcomes Knowledge

Upon completion of the course, students should have acquired knowledge about:

• Daily operations in the whole of the internship host company.

#### Skills

Upon completion of the course, students should have acquired the skills to:

- Apply versatile technical and analytical working methods related to the occupation
- Evaluate practical problems and propose possible solutions
- Structure and plan daily tasks relevant to the occupation
- Communicate and convey practical problems and issues and well-argued solution proposals.

#### Competencies

Upon completion of the course, students should have acquired the competencies to:

- Manage the practical and discipline-related situations of the occupation
- Acquire new knowledge, skills and competencies related to the occupation
- Take a professional approach to professional and multidisciplinary collaboration with others.

The internship is finalised by examination.

The learning objectives for the educational component are identical to the learning objectives for the examination.

For the examination type and exam procedure, please see the institutional section of this Curriculum.

## 6 Bachelor's degree project

#### **ECTS credits**

15 ECTS

#### Requirements for the bachelor's degree project

In the bachelor's degree project, the student must demonstrate the ability to process a complex, practise-related problem related to a specific web development task in an analytical and methodical way. The problem statement, which must be central to the education and the profession, must be formulated by the student, in collaboration with a private or public company or business if possible. The educational institution must approve the problem statement.

The student must submit a project report and in some cases also a product.

The project report, which makes up the written element of the examination, must as a minimum contain the following:

- Cover page with title
- Contents
- Introduction including problem statement
- Research method
- Analysis
- Solution proposals
- Conclusion
- Reference list (including all sources that are referred to in the project)
- Appendix (only including appendices that are central to the report).

The maximum allowed length of the report is 20 standard pages + 20 standard pages per student.

The cover page, table of contents, reference list and appendices are not included in the required number of pages. Appendices are not assessed.

One standard page is 2,400 characters including spaces and foot notes.

#### Writing and spelling skills

Writing and spelling skills will be assessed as part of the assessment and grading of the final degree project. The assessment is expressed as an overall assessment of the professional and academic content as well as the student's spelling and writing skills.

Students may apply for an exemption from the requirement that spelling and writing skills form part of the assessment criteria if the application is supported by documentary evidence of a specific, relevant physical or mental impairment The application should be submitted to

the study programme and directed to the attention of the programme director not later than 4 weeks before the exam is to be held.

#### Learning outcomes

The bachelor's degree project is to demonstrate that the student has achieved the expected level of graduate competence, please see Schedule 1 to Ministerial Order no. 353 of 7 April 2015 on the Bachelor's Degree Programme in Web Development.

#### Knowledge

Upon completion of the course, graduates should have acquired knowledge of:

- The formal and de facto standardisation of the World Wide Web
- The Word Wide Web's standards as a platform for applications
- Development environments for web development
- Content Management Systems
- The role of web applications in society and its development, and
- Common development methods in web development, and graduates should be able to reflect on the suitability of such methods for different development scenarios.

#### Skills

Upon completion of the course, students should have acquired the skills to:

- Plan and develop applications based on specific development requests
- Evaluate and select a suitable programming language for the performance of development requests
- Evaluate and select a suitable database system to ensure data and application persistence
- Create user interfaces adapted to relevant target groups based on the theory and methods of the relevant subject area
- Create user interfaces that make use of the World Wide Web's particular possibilities in terms of design and aesthetics
- Prepare documentation adapted to the target audience and to the extent of the project of the functionality and development process of a project, and
- Use a suitable development environment to perform the development process.

#### Competencies

Upon completion of the course, students should have acquired the competencies to:

- Handle complex situations aimed for progression in web development
- Take a professional approach to disciplinary and multidisciplinary collaboration with others.
- Identify their learning needs and structure their learning in different learning environments.

#### Assessment

The examination is externally assessed and will be graded according to the 7-point grading scale.

The exam is made up of a project and an oral examination. The student will receive a single, joint grade for the written project and the oral examination. The exam cannot take place until the internship exam and the other exams of the study programme have been passed.

For the examination type and exam procedure, please see the institutional section of this Curriculum.

## 7 Examination schedule

Overview of all examinations and their scheduled semesters

Examination	90 ECTS credits distributed across exams	Assessment
Possible academic aptitude	-	Pass/fail
examination1		
Web development (bridging course),	10	7-point grading scale
Back end programming (10 ECTS) or		
Front end programming (10 ECTS)		
Development environments (10 ECTS)	10	7-point grading scale
Databases (10 ECTS)	10	7-point grading scale
Interface design (10 ECTS)	10	7-point grading scale
Elective component examination(s)2	20	7-point grading scale
Internship examination	15	7-point grading scale
Bachelor's degree project	15	7-point grading scale

## 8 Credit transfer

Passed educational components are equivalent to corresponding educational components offered by other educational institutions providing the programme.

The student has a duty to inform the educational institution about educational components that were studied and passed at other Danish or foreign higher education institutions and to inform about occupations that can be assumed to earn the student transfer credit. The educational institution will grant transfer credit in each individual case based on completed/passed educational components and occupations that match course units, parts of the study programme or parts of the internship. The decision to award transfer credit is based on an assessment of academic elements.

## 8.1 Pre-approved credit transfer

The student can apply for pre-approval of credit transfer. In cases of pre-approved credit transfer of studies in Denmark or abroad, the student is under a duty to document completion of the pre-approved educational components, upon completion of the study-abroad period. When applying for pre-approval, the student must consent to allow the

<sup>1.</sup> If an academic aptitude examination is held, the examination will be described in the institutional section of this Curriculum.

<sup>2.</sup> The elective component(s) and the related examination(s) are described in the institutional section of this Curriculum.

educational institution to collect any required information upon the student's completion of the study-abroad period.

For the final approval of pre-approved credit transfer, the educational component is considered completed if it is passed in accordance with the regulations applying to the study programme.

## 8.2 Credit transfer agreements

None

## 9 Admission

If all applicants applying for the education cannot be admitted for reasons of capacity, one or more of the following criteria will be considered important (not listed in order of priority):

- The grade average from the completed education that allows the applicant to apply for admission to the study programme
- The applicant's previous experience relevant to the study programme
- A personal talk where the applicant's motivation and academic ability will be identified.

## **10 Exemption**

The educational institution may grant exemption from those rules in the national section of this Curriculum that were laid down solely by the educational institutions, when exemption is substantiated by exceptional circumstances. The educational institutions co-operate on a uniform exemption practice.

## **11 Effective date and transition regulations**

This institutional section of this Curriculum comes into effect on 01 August 2015 and applies to all students who are and will be registered for the programme and to all examinations commenced on said date or thereafter.

Any transition regulations applying to students registered for studies prior to August 2015 can be found in the institutional section of this Curriculum.

## Institutional section 2015





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## 1 Exam Overview

Time Frame	Exam	ECTS Credits	Internal/External	Evaluation
1st Year	Web Development (bridging modules), Backend programming (for multimedia designers) Frontend programming (for software developers)	10	External	7 – point grading scale
1st Year	Development Environments	10	Internal	7 – point grading scale
1st Year	Databases	10	Internal	7 – point grading scale
1st Year	Interface Design	10	External	7 – point grading scale
1st Year	Elective courses	20	Internal	7 – point grading scale
3rd Semester	Internship	15	Internal	7 – point grading scale
3rd Semester	Bachelor project	15	External	7 – point grading scale

Overview of examinations and time frame:

Information about time and place for the examinations will be posted on EASV SharePoint

## 2 Scope and criteria for examinations

## 2.1 Exam: Web Development, Backend programming (bridging module for multimedia designers)

#### Prerequisites for the exam

Mandatory participation requirements must be met in order to be qualified to take the exam. These requirements are described on EASV SharePoint. Failure to meet these requirements without a valid reason (e.g. illness, maternity leave or exceptional circumstances) is considered to indicate a lack of academic activity and can lead to suspension of any state education grant. Decisions on the consequences of lack of participation are made by the student counsellor in consultation with the head of the degree program after meeting with the student in question, and will be based on an individual assessment.

#### The written project, on which the examination and assessment are based, must:

- Meet all formal requirements, see below
- Be submitted on time, see examination schedule available on EASV SharePoint.

If one or more of the participation requirements is not met, or the written project, which comprises the written part of the exam, is not submitted correctly the student will not be allowed to take the exam, and one examination attempt will have been used.

#### Formal requirements for the written project report

The following should be included:

- Front page with title of the report
- Table of contents
- Introduction, including main issues, problem statement and approaches
- Main section
- Conclusion
- Bibliography (including all sources referred to in the report)
- Appendices (including only those documents that are central to the report)

The maximum number of pages for the project is 15 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.

If one or more of these prerequisites is not met, the student will not be allowed to take the exam and it is counted as one exam attempt.

#### The examination

The exam is an individual oral exam based on the written project. It is assessed externally according to the 7-point scale

One individual grade is given based on an overall evaluation of the written project and oral presentation.

30 minutes is allotted to each student including assessment and announcement of grade.

The exam amounts to 10 ECTS credits

#### Assessment criteria

Assessment criteria for the exam = learning objectives for the compulsory educational component: Web Development, Backend programming

Learning objectives appear in the joint national part of the curriculum.

#### Time Frame

The exam takes place during the first year of study.

Further information regarding time and place can be found on EASV-Sharepoint.

#### Exam language

Danish or English

## 2.2 Exam: Web Development, Frontend programming (bridging module for software developers)

#### Prerequisites for the exam

Mandatory participation requirements must be met in order to be qualified to take the exam. These requirements are described on EASV SharePoint. Failure to meet these requirements without a valid reason (e.g. illness, maternity leave or exceptional circumstances) is considered to indicate a lack of academic activity and can lead to suspension of any state education grant. Decisions on the consequences of lack of participation are made by the student counsellor in consultation with the head of the degree programme after meeting with the student in question, and will be based on an individual assessment.

The written project, on which the examination and assessment are based, must:

- Meet all formal requirements, see below
- Be submitted on time, see examination schedule available on EASV SharePoint.

If one or more of the participation requirements is not met, or the written project, which comprises the written part of the exam, is not submitted correctly the student will not be allowed to take the exam, and one examination attempt will have been used.

#### Formal requirements for the written project report

The following should be included:

- Front page with title of the report
- Table of contents
- Introduction, including main issues, problem statement and approaches
- Main section
- Conclusion
- Bibliography (including all sources referred to in the report)
- Appendices (including only those documents that are central to the report)

The maximum number of pages for the project is 15 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.

If one or more of these prerequisites is not met, the student will not be allowed to take the exam and it is counted as one exam attempt.

#### The examination

The exam is an individual oral exam based on the written project. It is assessed externally according to the 7-point scale.

One individual grade is given based on an overall evaluation of the written project and oral presentation.

30 minutes is allotted to each student including assessment and announcement of grade.

The exam amounts to 10 ECTS credits

#### **Evaluation criteria**

Evaluation criteria for the exam = learning objectives for the compulsory educational component: Web Development, Frontend programming

Learning objectives appear in the joint national part of the curriculum.

#### **Time Frame**

The exam takes place during the first year of study. Further information regarding time and place can be found on EASV-Sharepoint.

#### Exam language

Danish or English

#### 2.3 Exam: Development environments

#### Prerequisites for the exam

Mandatory participation requirements must be met in order to be qualified to take the exam. These requirements are described on EASV SharePoint. Failure to meet these requirements without a valid reason (i.e. illness, maternity leave or exceptional circumstances) is considered to indicate a lack of academic activity and can lead to suspension of any state education grant. Decisions on the consequences of lack of participation are made by the student counsellor in consultation with the head of the degree programme after meeting with the student in question, and will be based on an individual assessment.

The written project, on which the examination and assessment are based, must:

- Meet all formal requirements, see below
- Be submitted on time, see examination schedule available on EASV SharePoint.

If one or more of the participation requirements is not met, or the written project, which comprises the written part of the exam, is not submitted correctly the student will not be allowed to take the exam, and one examination attempt will have been used.

#### Formal requirements for the written project report

The following should be included:

- Front page with title of the report
- Table of contents
- Introduction, including main issues, problem statement and approaches
- Main section
- Conclusion
- Bibliography (including all sources referred to in the report)
- Appendices (including only those documents that are central to the report)

The maximum number of pages for the project is 15 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.

If one or more of these prerequisites is not met, the student will not be allowed to take the exam and it is counted as one exam attempt.

#### The examination

The exam is an individual oral exam based on the written project. It is assessed internally according to the 7-point scale.

One individual grade is given based on an overall evaluation of the written project and oral presentation.

30 minutes is allotted to each student including assessment and announcement of grade.

The exam amounts to 10 ECTS credits

#### **Evaluation criteria**

Evaluation criteria for the exam = learning objectives for the compulsory educational component: Web Development, Development Environments

Learning objectives appear in the joint national part of the curriculum.

#### **Time Frame**

The exam takes place during the first year of study.

Further information regarding time and place can be found on EASV-Sharepoint.

#### Exam language

Danish or English

#### 2.4 Exam: Databases

#### Prerequisites for the exam

Mandatory participation requirements must be met in order to be qualified to take the exam. These requirements are described on EASV SharePoint. Failure to meet these requirements without a valid reason (i.e. illness, maternity leave or exceptional circumstances) is considered to indicate a lack of academic activity and can lead to suspension of any state education grant. Decisions on the consequences of lack of participation are made by the student counsellor in consultation with the head of the degree programme after meeting with the student in question, and will be based on an individual assessment.

The written project, on which the examination and assessment are based, must:

- Meet all formal requirements, see below
- Be submitted on time, see examination schedule available on EASV SharePoint.

If one or more of the participation requirements is not met, or the written project, which comprises the written part of the exam, is not submitted correctly the student will not be allowed to take the exam, and one examination attempt will have been used.

#### Formal requirements for the written project report

The following should be included:

- Front page with title of the report
- Table of contents
- Introduction, including main issues, problem statement and approaches
- Main section
- Conclusion
- Bibliography (including all sources referred to in the report)
- Appendices (including only those documents that are central to the report)

The maximum number of pages for the project is 15 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.

If one or more of these prerequisites is not met, the student will not be allowed to take the exam and it is counted as one exam attempt.

#### The examination

The exam is an individual oral exam based on the written project. It is assessed internally according to the 7-point scale.

One individual grade is given based on an overall evaluation of the written project and oral presentation.

30 minutes is allotted to each student including assessment and announcement of grade.

The exam amounts to 10 ECTS credits

#### **Evaluation criteria**

Evaluation criteria for the exam = learning objectives for the compulsory educational component: Web Development, Databases

Learning objectives appear in the joint national part of the curriculum.

#### **Time Frame**

The exam takes place during the first year of study.

Further information regarding time and place can be found on EASV-Sharepoint.

#### Exam language

Danish or English

#### 2.5 Exam: Interface Design

#### Prerequisites for the exam

Mandatory participation requirements must be met in order to be qualified to take the exam. These requirements are described on EASV SharePoint. Failure to meet these requirements without a valid reason (e.g. illness, maternity leave or exceptional circumstances) is considered to indicate a lack of academic activity and can lead to suspension of any state education grant. Decisions on the consequences of lack of participation are made by the student counsellor in consultation with the head of the degree programme after meeting with the student in question, and will be based on an individual assessment.

The written project, on which the examination and assessment are based, must:

- Meet all formal requirements, see below
- Be submitted on time, see examination schedule available on EASV SharePoint.

If one or more of the participation requirements is not met, or the written project, which comprises the written part of the exam, is not submitted correctly the student will not be allowed to take the exam, and one examination attempt will have been used.

#### Formal requirements for the written project report

The following components should be included:

- Front page with title of the report
- Table of contents
- Introduction, including main issues, problem statement and approaches
- Main section
- Conclusion
- Bibliography (including all sources referred to in the report)
- Appendices (including only those documents that are central to the report)

The maximum number of pages for the project 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.

Or If one or more of these prerequisites is not met, the student will not be allowed to take the exam and it is counted as one exam attempt.

#### The examination

The exam is an individual oral exam based on the written project. It is assessed externally according to the 7-point scale.

One individual grade is given based on an overall evaluation of the written project and oral presentation.

30 minutes is allotted to each student including assessment and announcement of grade.

The exam amounts to 10 ECTS credits

#### **Evaluation criteria**

Evaluation criteria for the exam = learning objectives for the compulsory educational component: Web Development, Interface Design

Learning objectives appear in the joint national part of the curriculum.

#### **Time Frame**

The exam takes place during the first year of study.

Further information regarding time and place can be found on EASV-Sharepoint.

#### Exam language

Danish or English

### 3 Elective modules

#### Content

The elective modules offer students the opportunity to enhance their individual profile and professional competencies relating to areas of Web development. This is achieved through specialisation and academic immersion within the programme's subject areas.

The elective modules are planned by the individual programme and adjusted annually. See EASV-Sharepoint.

Students may also arrange their own elective programme module as a practical and/or theoretical course of study. This must be approved by the head of the department.

ECTS credits: The elective modules can be offered with the following ECTS credits: 5, 10 and 20 ECTS.

## Learning objectives

#### Knowledge

Upon completion of the module, students should have acquired knowledge about:

- The chosen elective's theory and practice
- The chosen elective's relevance to web development in theory and practice

#### Skills

Upon completion of the module, students should have acquired the skills to:

- Select, describe and undertake a liturature search of a selected it problem
- Discuss the process and analytical skills related to the selected topic
- Assess problems and propose possible solutions relative to the selected topics
- Convey significant results

#### Competencies

Upon completion of the module, students should have acquired the competencies to:

- Independently familiarize themselves with new topics within the subject's theory or practice
- Relate to and set into perspective the elective areas to the programme's other subject areas.

### Time Frame:

The elective programme modules are in the first year of study

### 3.1 Exam: Elective Programme Module(s)

#### Prerequisites for the exam

Mandatory participation requirements must be met in order to be qualified to take the exam. These requirements are described on EASV SharePoint. Failure to meet these requirements without a valid reason (e.g. illness, maternity leave or exceptional circumstances) is considered to indicate a lack of academic activity and can lead to suspension of any state education grant. Decisions on the consequences of lack of participation are made by the student counsellor in consultation with the head of the degree programme after meeting with the student in question, and will be based on an individual assessment.

The written project, on which the examination and assessment are based, must:

- Meet all formal requirements, see below
- Be submitted on time, see examination schedule available on EASV SharePoint.

If one or more of the participation requirements is not met, or the written project, which comprises the written part of the exam, is not submitted correctly the student will not be allowed to take the exam, and one examination attempt will have been used.

#### Formal requirements for the written project report

The following should be included:

- Front page with title of the report
- Table of contents
- Introduction, including main issues, problem statement and approaches
- Main section
- Conclusion
- Bibliography (including all sources referred to in the report)
- Appendices (including only those documents that are central to the report)

The maximum number of pages for the project is 15 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.

If one or more of these prerequisites is not met, the student will not be allowed to take the exam and it is counted as one exam attempt.

#### The examination

The exam is an individual oral exam based on the written project. It is assessed internally according to the 7-point scale.

30 minutes is allotted to each student including assessment and announcement of grade.

#### **Evaluation criteria**

Evaluation criteria for the exam = learning objectives for the elective programme module

#### Exam language

Danish or English

## 4 Internship

#### Requirements and expectations for internship completion

In the internship the student works with subject relevant issues within the programme's core areas of study 1 and obtains knowledge of the relevant functions of the profession. The internship can take place in one or more companies.

The internship may be planned to allow for both flexibility and differentiation. It may form the basis for the student's Bachelor project.

Based on the learning objectives for the internship, described in the joint national part of the curriculum, the student and supervisor/contactperson together define the concrete objectives for the student's internship.

Correlation between the theoretical teaching and the internship is the basis for the student's learning objectives for the internship.

The internship period is equivalent to a full time job, in regards to the requirements for work hours, effort, commitment and flexibility, which the graduate web developer can expect to meet in his first job.

1. Jf. LEP-BEK § 10, stk. 2, nr. 1), § 11, stk. 2, nr. 1) og § 12, stk. 2, nr. 1).

## 4.1 Exam: Internship

#### Prerequisites for the exam

The internship report, on which the examination and assessment are based, must:

- Meet all formal requirements, see below
- Be submitted on time, see examination schedule available on EASV SharePoint.

If one or more of the participation requirements is not met, or the written project, which comprises the written part of the exam, is not submitted correctly the student will not be allowed to take the exam, and one examination attempt will have been used.

#### Formal requirements for the written internship report

An internship report must be submitted.

The internship report, which constitutes the written part of the exam, must at a minimum contain:

- Front page with name, internship company, institution, internship period
- Preface
- Introduction
- Description of the business (its main activities, number of employees, their profession, etc.)
- Reflection on the concrete learning objectives achieved
- Description of concrete tasks
- Conclusion
- Company reference
- Bibliography, if any (including all sources that have been referenced)
- Any further appendices (only include appendices essential to the report)

The maximum number of pages for the internship report is 10 standard pages, exclusive appendices.

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.

If one or more of these prerequisites is not met, the student will not be allowed to take the exam and it is counted as one exam attempt.

#### The examination

The exam is an individual oral exam based on the internship report. It is assessed internally according to the 7-point scale.

One individual grade is given based on an overall evaluation of the internship report and oral presentation.

20 minutes is allotted to each student including assessment and announcement of grade.

The exam starts with a 5 minute presentation by the student based on the internship, followed by a 15 minute oral examination, including assessment and announcement of grade.

The exam amounts to 15 ECTS credits

#### **Evaluation criteria**

Evaluation criteria for the exam = learning objectives for the Internship

#### **Time Frame**

The exam takes place after completion of the internship.

Further information regarding time and place, and hand-in of internship report can be found on EASV-Sharepoint.

#### Exam language

Danish or English

## 5 Bachelor project

See the joint joint national part of the curriculum for a description of the requirements for the bachelor project and the learning objectives for Bachelor of web development

#### Prerequisites for the exam

The written project, on which the examination and assessment are based, must:

- Meet all formal requirements for the bachelor's degree project, see the national joint section of the curriculum
- Be submitted on time, see examination schedule available on EASV SharePoint.

If the written project, which comprises the written part of the exam, is not submitted correctly the student will not be allowed to take the exam, and one examination attempt will have been used.

The examination can only take place after completion of the internship examination, and all of the programme's other examinations have been passed.

#### The examination

The exam is an individual oral exam based on the written group project. It is assessed externally according to the 7-point scale.

One individual grade is given based on an overall evaluation of the written project and oral presentation.

Groups may be no larger than 4 students

The project is presented by the project group, 10 min. pr. student.This is followed by an examination of the members of the group.30 minutes is allotted to each student, including assessment and announcement of grade.

The exam amounts to 15 ECTS credits

#### **Evaluation criteria**

Evaluation criteria for the exam = learning objectives for the Bachelor project, see the joint national part of the curriculum.

#### Time Frame

The exam takes place at the end of the 3rd semester. Further information regarding time and place can be found on EASV-Sharepoint.

#### Exam language

Danish or English

## 6 Programme modules that can be taken abroad

The student can apply for pre-approved credit transfer, and with the institution's approval, take each programme module abroad.

In the case of pre-approval of credit, the student must document each approved and completed programme module, at the end of the study abroad period.

The student must in connection with the pre-approval of credit, consent that the institution can collect the necessary information, at the end of the study abroad period.

With the approval of pre-approved credit, the programme module is considered completed, if it is passed in compliance with the rules for the programme.

## 7 Applied Teaching Methods

The Bachelor of web development programme applies a variety of teaching methods, which promote the achievement of the learning objectives, described in the curriculum.

The teaching methods are dialog based classroom teaching, assignments and group projects.

However, working in study groups, individual assignments and projects, group and class presentations, interdisciplinary cases and much more are also included.

All of these activities ensure that the programme always sets clear objectives and expectations for the learning activities.

## 8 Credit for The Elective Modules

Credit for passed, corresponding elective modules from other institutions, which offer this programme is equivalent and transferable.

Approval of credit must be applied for, if credit is desired for electives not offered by the programmeme.

## 9 Mandatory participation

Mandatory participation and mandatory attendance, which is a prerequisite for attending exams appear in the description of the individual exam.

## 10 Criteria for the evaluation of active participation in studies

Enrollment will be terminated for Students who have not passed at least one exam in a consecutive period of minimum one year. (do not meet the criteria for active participation in studies)

Periods during which the student has not been active due to leave, maternity/paternity leave, adoption, a documented illness or military service, do not count. The student may be required to provide documentation for these circumstances.

The institution may grant exemptions from these provisions if there are exceptional circumstances. The exemption application must be sent to the institution.

Prior to the student's enrollment being terminated, the student will be advised in writing and the student will be made aware of the above rules. The letter to the student must make it apparent that the student has 14 days to submit evidence that the lack of activity in the programme should not count and must indicate the deadline for the application of an exemption.

If the student has not responded within the time limit, their enrollment will be terminated.

If the student requests that their enrollment not be terminated, termination is delayed until the institution has decided on the case.

The student can complain about the decision to the head of studies within two weeks of receipt of the decision. The complaint will delay any further action. If the head of studies upholds the decision, the student may appeal to the Ministry of Higher Education and Science within two weeks of receipt of the decision with respect to any legal issues.

Rules for the exams that the student must have participated in, in accordance with the exam regulations prior to the end of the 2nd semester and passed prior to the end of the 2nd semester, and where there in the regulations for this programme have set time frames for completion of the programme, are enforced independently from these rules.

## 11 Foreign Language

The majority of the programme's teaching materials are in English, and some of the teaching can be in English.

No additional knowledge of a foreign language is required, other than what is stated in the admission requirements.

#### Exam language

Exams must be presented in comprehensible Danish/English

Students whose native language is not Danish/English can apply for exemption from the requirement, that the ability to spell and correctly phrase, are included in the evaluation of the final exam's project

The application must be sent to the programme no later than 4 weeks before the test.

## 12 Re-exams

#### Re-exams due to illness or exceptional circumstances

A student who has been prevented from taking an exam due to a documented illness or another unforeseen circumstance will be given the opportunity to take a re-exam as soon as possible. If it is an exam that should take place in the final exam period, the student will be given the opportunity to take the exam in the same semester or immediately thereafter.

The re- exam may be the same as the next regular exam. The student is responsible for finding out when the re-exam is to take place.

Information about the time and place re-exams due to illness or exceptional circumstances can be found on EASV-Sharepoint.

A medical certificate must document the illness. The institution must receive the medical certificate no later than three working days after the scheduled exam. Students, who become acutely ill during an exam, must prove that they have been sick on that day.

If the illness is not documented according to the above rules, the student will have used an exam attempt.

The student bears the cost of the medical certificate.

#### Re-exam due to not passing or not attending the exam

With a failed exam, or failure to appear for an exam, the student is automatically registered for the re-exam, provided the student has exam attempts left. The re- exam may be the same as the next regular exam.

The student is responsible for finding out when the re-exam is to take place. Information about the time and place of re-exams can be found on EASV-Sharepoint.

The institution may grant an exemption from the automatic registration provided this is justified by exceptional circumstances, including documented disabilities.

## 13 Aids and assistance

Regulations for the limitations of the use of aids and assistance will be listed in the description of each exam.

## 14 Special exam conditions

Students may, where this is justified by physical or mental disabilities, apply for special exam conditions. Applications must be submitted to the institution no later than four weeks before the exam. Application requirements will be waived in cases of sudden health problems. A

medical certificate, a statement from a speech, hearing, dyslexic or blind institution or any other documentation, which indicates a medical condition or relevant disability, must accompany the application.

Students whose native language is not English can apply to bring dictionaries, when aids or assistance is not allowed.

Applications for permission to bring any additional assistance must be submitted to the institution, no later than four weeks before the exam is held.

## **15 Cheating**

Upon the submission of a written assignment, the student must confirm, that the project has been prepared without wrongful assistance.

#### Use of own or other's work - plagiarism

Cheating by plagiarism includes situations where the written assignment completely or partially appears as produced by the student or students, in which the written assignment:

- Includes identical or nearly identical reproduction of someone else's words or works, without being properly marked with quotation marks, italics, indentation or other clear marking with reference to the source, in accordance with the institution's requirements for written work.
- Includes use of other's words or ideas, without these being properly credited.
- Includes major sections with a choice of words that is so close to another work that by comparison, can be seen that the section could not have been written without the use of the other work.
- Includes re-used text and/or main ideas from previously assessed work without the provisions of point 1 and 2.

### Disciplinary measures in case of cheating and disruptive behavior during exams

If during exams a student, who without doubt:

- Wrongfuly receives help during an exam
- Wrongfuly gives help to others during an exam
- Uses assistance or aids which are not allowed for the exam in question
- Displays disruptive behavior

The Head of the department, or a person authorized by the head of department or the examinators, can in agreement expel the student from the exam while it is still in progress.

In this case , justification of the expulsion is evaluated in connection with the subsequent decision.

A warning wil be given in less serious cases of disruptive behavior

#### Presumtion of cheating, including plagiarism during and after the exam

- If during or after an exam there is a suspicion that a student:
  - Wrongfuly obtains or provides help
  - Passes someone else's work as their own (plagiarism)
  - Uses previously assessed own work or parts thereof without references (plagiarism)

This must be reported to the head of department

#### The process of clarification of cheating, including plagiarism

#### Postponement of the exam

If the report of cheating is plagiarism in a written assignment, where this forms the basis of evaluation with a subsequent oral exam, the head of the department must postpone the exam if it is not possible to determine the situation before the date of the exam.

#### Format and content of the report

The report must be prepared without undue delay. The report should include a written presentation of the case, which includes information that can identify those reported, as well as a brief explanation and documented evidence of the situation. If one or more of the reported persons are repeat offenders, this should be disclosed.

When reporting plagiarism, the plagiarized parts must be marked with a clear reference to the sources that have been plagiarized. The plagiarized text must also be marked in the source text.

#### Involvement of the student - hearing of evidence

The head of the department determines whether the consultation with the student happens orally, in writing or a combination thereof.

For an oral hearing of evidence, the student is summoned to an interview, which aims to shed light on the case. The aim here is to present documentation of the suspected cheating and to hear the student's side of it. The student has the right to have a representative accompany them to this meeting.

For the written hearing of evidence, the documentation for the suspected cheating is sent to the student in order to request a written statement.

#### Sanctions for cheating and disruptive behavior during an exam

If, after having the case explained, the head of the department can confirm the suspicion of cheating, and if the action has or could have an impact on the evaluation, the student is expelled from the exam by the head of the department.

In less severe cases, a warning is given first.

If the cheating occurs under aggravated circumstances, the student can be expelled from the programme for a shorter or longer period. With expulsion for cheating under aggravated circumstances, a written warning will be given stating that repetition could lead to a permanent expulsion from the programme.

Expulsion from an exam for cheating means that the grade will be annulled and that one exam attempt has been used by the student.

The student may not participate in a re-exam but must wait until the programme's next ordinary exam.

The institution can, in the case of aggravated circumstance, decide that the student must be expelled from the programme for a shorter or longer period. In this case, a written warning

will be given stating that repetition could lead to a permanent expulsion from the programme.

The student may not attend classes or take any exams during their period of expulsion

#### Complaints

The decision of expulsion, and that an exam attempt has been used due to cheating, is final, and cannot be appealed to a higher administrative authority.

Complaints about legal issues (for example incapacity, hearing of evidence appeal guidelines, whether the Executive Order or Examinations has been interpreted correctly, etc.) may be submitted to the Ministry of Higher Education and Science. The complaint must be submitted to the institution and must be addressed to the the head of the department, which must then submit a report that the complainant has the opportunity to comment within a period of normally one week. The institution then sends the complaint, the report and the complainant's comments (if any) to the Ministry of Higher Education and Science. The deadline for complaints to the institution is two weeks from the day the decision was communicated to the complainant, cf. Executive Order of exams § 51. 2

## 16 Complaints regarding exams and the appeal of decisions 2

#### **Complaints regarding exams**

It is recommended that the student seek guidance from a study and career counselor for the appeal procedure and for the preparation of a complaint.

The rules for exam complaints can be found in section 10 of the Executive Order of Examinations.<sup>1</sup>

In the Executive Order of Examinations, complaints are distinguished as either based on the:

- Basis of the exam etc., the exam procedure and/or the evaluation
- Complaints concerning legal matters.

The two types of complaints are handled differently.

#### Complaints about the basis of the exam etc., exam procedure and evaluation

A student may submit a written and substantiated complaint within a period of two weeks after the assessment of the exam has been announced in the usual way concerning:

- The basis of the exam, including exam questions, reports/assignments, etc., as well as its relation to the programme's learning objectives and requirements of the programme
- The exam procedure
- The assessment

The complaint can relate to all exams, including written, oral and combinations thereof, as well as practical exams.

<sup>&</sup>lt;sup>1</sup> See the Executive Order of Examinations section 10: (only available in Danish) https://www.retsinformation.dk/Forms/R0710.aspx?id=160839

The complaint must be sent to the head of the department.

The complaint must immediately be submitted to the original examiners, i.e. the internal and external examiners from the exam. The opinion of the examiners will form the basis of the institution's decision regarding academic issues. The institution will usually decide a deadline of two weeks for the submission of their opinions.

Immediately after the examiners' opinion is made available, the complainant has the opportunity to comment on the decision, usually with a week's deadline.

The institution's decision is based on the examiners' academic opinion and any possible comments the complainant may have regarding the opinion of the examiners.

The decision and grounds for the decision must be submitted in writing, and can be as follows:

- Provision for a new evaluation (re-evaluation) only for written exams
- Provision for a new exam (re-exam)
- That the student's complaint has been dismissed

Should it be determined that a re-evaluation or re-exam will be offered; the institution must appoint new examiners. Re-evaluation can only be offered for written exams where there is material for evaluation; this is because the new examiners cannot (re) evaluate an already held oral exam and the original examiners' notes are personal and may not be disclosed.

If the decision is an offer for re-evaluation or re-exam, the complainant must be advised that a re-evaluation or re-exam may result in a lower grade. The student must, within a period of two weeks after the decision has been made, accept the offer. This decision is binding and may not be changed. If the student does not accept the offer within the time limit, the reevaluation or re-exam will not take place.

The re-evaluation or re-exam must take place as soon as possible.

With a re-evaluation, the examiners must submit all relevant documents i.e., the exam, the answer/s, the complaint, the original examiners' opinions along with the complainant's remarks as well as the institution's decision.

The examiners will then notify the institution of the outcome of the re-evaluation, including a written justification and evaluation, which may be a lower grade.

If it has been decided that a new evaluation will be made or if there is an offer of a re- exam, the decision will be binding for all the students whose exams have the same shortcomings as the subject of the complaint.

The complaint must be sent to the institution within two weeks (14 calendar days) after the evaluation of the exam in question has been announced. If the deadline falls on a public holiday, the first working day thereafter is the deadline.

A dispensation from the deadline can be granted if there are exceptional circumstances.

#### Appeal

The complainant can appeal the institution's decision regarding any academic issues to an appeals board. The appeal board's activities are covered by the Public Administration Act, which includes incapacity and confidentiality.

The appeal must be sent to the head of the department.

The deadline for an appeal is two weeks after the student has been informed of the decision. The same requirements as mentioned above under complaint (in writing, with grounds etc.) also apply to the appeal.

The Appeals Board consists of two external examiners appointed by the chairman of external examiners, as well as a lecturer eligible to examine and a student within the same field of study (programme), who are both appointed by the head of the department.

The Appeals Board makes a decision based on the original material that formed the basis for the institution's decision and the student's substantiated appeal.

The Board deals with the appeal and the resultant decision can be as follows:

- Provision for a new evaluation by new examiners, though this is only a possibility with written exams
- Provision for a new exam (re-exam) by new examiners
- That the student's appeal has been unsuccessful

If the decision offers re-evaluation or re-exam, the complainant must be advised that a reevaluation or re-exam may result in lower grade. The student must, within a period of two weeks after the decision has been made, accept the offer. The decision is binding and may not be changed.

If the student does not accept the offer within the time limit, the re-evaluation or re- exam will not take place.

The re-evaluation or re-exam must take place as soon as possible.

With a re-evaluation, the examiners must submit all relevant documents i.e., the exam, the answer/s, the complaint, the original examiners' opinions along with the complainant's remarks as well as the institution's decision.

Appeals must be decided within two months after the appeal has been filed. For summer exams appeals must be decided within three months after the appeal has been filed.

The Appeals Board's decision is final, which means that the case cannot be appealed to a higher administrative authority with regard to the academic part of the complaint.

#### **Complaints concerning legal issues**

Complaints concerning legal issues in the decisions made by the examiners for the reevaluation or re-exam or the Appeal Board's decision must be submitted to the institution within a period of two weeks from the day the decision is communicated to the complainant.

Complaints concerning legal issues in the decisions taken by the institution in accordance with an Executive Order (for example incapacity, hearing of evidence, whether the Executive Order or Exams has been interpreted correctly, etc.) may be submitted to the institution who must submit a report that the complainant has the opportunity to comment within a period of normally one week. The institution then sends the complaint, the report and the complainant's comments (if any) to the Ministry of Higher Education and Science. The deadline for submission of the complaint to the Institution is two weeks (14 calendar days) from the day the decision was communicated to the complainant.

## 17 Rules of exemption

The educational institution can exempt from what the institution or the institutions themselves have stated in the curriculum<sup>2</sup> if this is justified by exceptional circumstances. The various institutions cooperate in order to have a homogenous rules of exemption policy.

## 18 Entry into force and transitional provisions

The institutional part of the curriculum enters into force August 1, 2015 and is effective for all students, who are enrolled or enroll in the programme and for all tests/exams starting on the above-mentioned date or thereafter.

The joint national part of the curriculum from September 2012 is repealed with effect from August 31, 2015. All tests/exams started before August 1, 2015, will be concluded in accordance to the joint national part of the curriculum no later than January 31, 2016.

<sup>&</sup>lt;sup>2</sup> this means that the individual institution can not deviate from the rules, which come from the order of exams. e.g. the rule that the internship exam must be assessed following the 7-point grading system, or that all exams must be passed before the student can participate in the final examproject.

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