CURRICULUM

for

Professional Bachelor's Degree in Web Development

Revised 01.08.2019

ERHVERVSAKADEMI
KOLDING

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The national part of the curriculum for the Professional Bachelor's Degree in Web Development is issued in accordance with Section 18 (1) of the Executive Order on Technical and Mercantile Academy Profession Programmes and Professional Bachelor Educations ('bekendtgørelse om tekniske og merkantile erhvervsakademiuddannelser og professionsbacheloruddannelser'). This curriculum is supplemented by the institutional part of the curriculum, which is determined by the individual institution offering the educational programme.
It is compiled by the education network for professional bachelor's degrees in web development and approved by the boards of all the providers - or by the principal by order of the board - and after a hearing of the institutions' education committees and the education's chairmanship of the external examiners.

1. The programme’s goals for learning outcomes

Knowledge
The student has development-based knowledge of:

- standards within web development,
- development environments for web development,
- broad development methods within web development, and can also reflect upon their practical application in the profession.

The student has an understanding of:

- web applications' role in society.

Skills
The student can:

- use methods and tools within web development to plan and develop applications based on specific development wishes,
- master a suitable programming language to implement these development wishes,
- evaluate and justify their choice of a suitable system for ensuring both data and application persistence,
- use the domain's theory and method to develop user experiences adapted to relevant target groups and assess user experiences based upon the domain's theory and method,
- use methods to develop user interfaces that exploit the special design and aesthetic potential of web technologies, and also assess and justify their value as a solution,
- use and master a suitable development environment in the implementation of the development process,
- communicate specialist problems and solution models to collaborative partners and users as well as peers and non-specialists.

Competencies
The student can:

- handle complex and development-oriented situations in web development,
- independently enter into a professional and interdisciplinary cooperation within web development with a professional approach and take responsibility within the framework of professional ethics,
- identify and structure their own learning needs and develop their personal skills and competencies in relation to web development.

2. The programme includes three national subject elements

2.1. Web Programming

Contents
The subject elements comprise the development and modelling of web applications, including architecture, robustness, internet and web protocols, use of debugging techniques and techniques for installation and maintenance. The subject area also includes data security, data storage, data modelling and exchange of data sources based on recognised standards.

Learning goals for Web Programming

Knowledge
The student has development-based knowledge of: practice, applied theory and development methods in:

- relevant internet and web protocols,
- data storage, modelling, exchange and security,
- quality assurance.

The student can understand and reflect upon:

- development methods in web development,
- web architecture and design patterns.

Skills
The student can:

- master all phases of development including planning, developing and implementing web applications based on specific development wishes, as well as evaluate practice-based and theoretical problems and select and justify relevant solution models in relation to the development of web applications,
- evaluate and justify the choice of a suitable programming language and relevant methods for the implementation of web applications,
- master a suitable programming language for the development of web applications,
- use and model data sources as well as justify proposals for solutions,
- implement and evaluate web user interfaces as well as justify and communicate solution proposals to collaborative partners and users,
- use relevant theories and methods for the quality assurance of all phases of development.

Competencies
The student can:

- handle complex web development and must be able to handle complex and development-oriented situations in web development,

- independently enter into professional and interdisciplinary cooperation with a professional approach and take responsibility within the framework of professional ethics in relation to web programming,
- identify and structure their own learning needs and develop personal skills and competencies in relation to web programming.

ECTS credits

The subject element web programming is worth 40 ECTS credits, comprising 20 ECTS credits in the national part and 20 ECTS credits in the local part.

Local subject elements of the programme are in the subject element web programming.

National and local subject elements can be tested in the same exam.

2.2. Development Environments

Contents
This subject element comprises tools and platforms for the development of web-based applications, as well as selection and justification of the choice. Focus is on normally used development tools (IDE and other platforms) as well as tools for version control and quality assurance.

Learning goals for Development Environments

Knowledge
The student has development-based knowledge of applied theory and methods:

- in development environments,
- in practice, methods and systems for version control.

The student can understand and reflect upon:

- types of and selection criteria for development platforms.

Skills
The student can:

- master version control in a development context,
- apply methods and tools for quality assurance in the development process, as well as evaluate and justify the choice of specific tools,
- apply methods and tools in development environments for the publication of web applications,
- communicate their choice of methods and tools used in the development process.

Competencies
The student can:

- methodically evaluate and handle development platforms and environments for a specific task in complex development-oriented situations,
- manage development platforms and environments in the development process of advanced web applications,
- independently enter into professional and interdisciplinary cooperation with a professional approach and take responsibility within the framework of professional ethics in relation to development environments.

ECTS credits
The subject element Development Environments is worth 10 ECTS points.

2.3. User Experiences

Contents
The subject element comprises analysis, understanding of and reflection upon the user's experiences and needs in different use contexts.

The subject element includes the design of user interfaces and usability, and considerations about information architecture and instruments and the use of web media tools.

There is a focus on understanding and organising user experiences in relation to design and development.

Learning goals for User Experiences

Knowledge
The student has development-based knowledge of:

- practice, applied theory and methods of designing user experiences, and also reflect upon the web developer's practice in designing user experiences,
- information architecture,
- aesthetics and trends in interaction design.

The student can understand and reflect upon:

- the use of user survey methods.

Skills
The student:

- can use methods and tools to design user experiences for relevant target groups with the involvement of users,

- evaluate practice-based and theoretical problems in the design of user interfaces and select and justify relevant solution models,
- communicate practice-based and specialist problems in the design of user experiences and communicate central problems to collaborative partners and users.

Competencies
The student can:

- handle complex design processes based on analysis and planning,
- both independently and in groups, understand the design and organisation of user interfaces and user experiences for complex systems,
- identify and structure personal learning needs and develop personal skills and competencies in relation to the design of user experiences.

ECTS credits
The subject element User Experiences is worth 10 ECTS credits.

2.4. Exams in the national subject elements

National subject elements in the first year of study make up 40 ECTS credits. Two exams are held in the national subject elements plus an additional exam in the bachelor's project.

For the number of exams in the work placement, see section 3.

For a complete overview of all the programme's exams, please refer to the institution part of the curriculum, in that the national subject elements described in this curriculum can be tested together with subject elements laid out in the institution part of the curriculum.

3. Work placement

Learning goals for the programme's work placement
Knowledge
The student can:

- understand and reflect upon theories and methods and their practical application.

Skills
The student can:

- apply one or more of the subject area's methods and tools, and can also apply the skills related to employment in the subject area(s) or profession,
- evaluate theoretical and practical problems and also justify and select relevant solution models,
- communicate specialist problems and solution models to peers and non-specialists or collaborative partners and users.

Competencies
The student can:

- handle complex and development-oriented specialist situations in relation to the profession,
- identify personal learning needs and structure their own learning in different learning environments,
- independently participate in an expert and interdisciplinary collaboration with a professional approach.

ECTS credits
The work placement is worth 15 ECTS credits.

Number of exams
The placement is completed with one exam.

4. Requirements for the bachelor's project

The learning goals for the final examination project are identical to the programme's learning goals, which are listed above under item 1.
Together with the other exams and the placement exam, the final examination project documents that the programme's goals for learning outcomes have been achieved.

In the bachelor's project, the student must be able to document their ability to process, on an analytical and methodical basis, a complex and practice-oriented problem in relation to a specific task within the field of web development. The problem, which must be central to the programme and the profession, is formulated by the student, possibly in collaboration with a private or public sector company. The institution approves the problem.

For specific formatting requirements for the bachelor's project, please refer to the institutional part of the curriculum.

Exam in the final examination project
The final examination project concludes the course in the last semester, once all prior exams have been passed.

ECTS credits
The final examination project is worth 15 ECTS credits.

Exam format
The exam consists of both an oral and written test with an external examiner, where an overall individual grade is given according to the 7-point grade scale for the written project and the oral presentation.
For format etc. of the exam, see the institutional part of the curriculum.

5. Rules on credit

Passed programme elements are equivalent to similar programme elements taken at other educational institutions offering this programme.
The students are obliged to inform us of any completed educational elements from another Danish or foreign higher education programme or any employment which are likely to provide credit.
In each individual case, the educational institution approves credit on the basis of completed educational elements and any employment that meets the objectives of the subjects, the educational part and placement part.
The decision is made on the basis of a professional evaluation.

For prior approval of study in Denmark or abroad, the student is obliged to document, upon completion of their studies, the completed educational elements of the approved study programme.
In connection with prior approval, the student must consent to the institution collecting the necessary information at the end of the study programme.
Upon approval in accordance with the above, the educational element is regarded as completed if it has been passed according to the rules for the relevant programme.

6. Academic criteria for the selection of applicants for the top-up programme

Refer to the institutional part of the curricula.

7. Entry into force and transitional period

Entry into force
This national part of the curriculum enters into force on 01.08.2019 and is valid for students who are enrolled after 01.08.2019.

Transitional period
Students who are admitted up to 01.08.2019 will transfer to this curriculum from 01.08.2019; however, students enrolled on an earlier curriculum can complete their programme in accordance with that one.