Curriculum for Software Development

Bachelor's Degree Programme in Software Development
Professionsbachelor i softwareudvikling

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1. FRAMEWORK

This curriculum, covering the study programme for Software Development hereinafter referred to as the study programme or the programme, is composed in compliance with the ministerial order no. 1521 of 16 December 2013 on academy profession programmes and bachelor programmes (*LEP-bekendtgørelsen*) by the Danish institutions of higher education approved to offer the particular programme.

Joint parts and institution specific parts of the curriculum
Parts of the curriculum have been stipulated conjointly with these institutions in the respective national education network for the business academies, whilst others have been determined by Cphbusiness alone. The joint parts are incorporated in this document and constitute the following subsections: 3.2, 3.4, 5.2, 5.3 and 6.1. The remaining parts are institution specific.

The joint parts have been co-created by the institutions mentioned below, which have committed themselves to ensuring national competence and qualifications.

The joint parts of the curriculum have been imposed by:

Business Academy Aarhus
www.baaa.dk

EA Business Academy SouthWest
www.easv.dk/index.php/en/

Copenhagen Business Academy
www.cphbusiness.dk/english

Lillebaelt Academy of Professional Higher Education
www.eal.dk/eal/International-58.aspx

Copenhagen School of Design and Technology
www.kea.dk/en/

University College of Northern Denmark
www.ucnorth.dk

The joint parts of the curriculum have been approved by the national education network for the business academies in the summer of 2014.

The curriculum as a whole has been approved by Cphbusiness in compliance with the institution's internal approvals procedure on 25 August 2014.

1.1. Purpose and Objectives of the Study Programme

The programme aims at qualifying the graduate to work independently as an IT-specialist focusing on integration and architecture and to enter into a professional co-operation about the development of large data heavy distributed IT systems in IT firms, IT consultancies or internal IT development departments.

Learning objectives and outcomes

The learning outcome includes the knowledge, skills and competences a Bachelor in Software Development will achieve from the programme, cf. the ministerial order no. 975 of 19 October 2009 on the Bachelor's Degree programme in Software Development, appendix 1.

F*ollowing are English translations of Danish texts published in the Danish Official Gazette (Lovtidende). In the event of a discrepancy between the translated version and the Danish version, the latter is valid.*

Knowledge

The graduate will possess knowledge of:

- the strategic role of tests in system development
- globalisation of software production
- system architecture and the understanding of its strategic importance for the company's business
- knowledge of applied theory and method as well as widespread technologies within the domain and the
- relation among applied theory and method and technology and the ability to reflect upon their applicability in different situations

Skills

The graduate will be able to:

- integrate IT systems and develop systems that support future integration
- apply contracts as a management and coordinating system in the development process
- assess and select database systems, as well as design, redesign and optimize the operation of databases
- plan and manage development with many geographically separated project participants and
- lay down and use a relevant degree of formality in connection with communication and coordination internally in development projects.

Competences

The graduate will be able to:

- manage the planning and implementation of tests of large IT systems
- co-operate professionally about the development of large systems by applying widespread methods and technologies.
- study new technologies and standards to handle integration between systems
- develop one's own competence profile from being primarily a backend developer profiler to manage tasks as a system architect and
- manage the laying down and realisation of a business relevant architecture as well as a technologically relevant one for large systems.

1.2. Title, Duration and Certificate

Title
Upon completion of the programme, graduates are entitled to use the title *Bachelor of Software Development* (in Danish: *professionsbachelor i softwareudvikling*).
In agreement with the Danish Qualification Framework for Lifelong Learning, the programme is graded at level 6.

Duration and maximum length of study
With 60 ECTS credits (European Credit Transfer System) corresponding to one full-time year of study, cf. section 9 in the ministerial order no. 1521 of 16 December 2013 on academy profession programmes and bachelor programmes (*BEK nr. 1521 af 16/12/2013: Bekendtgørelse om erhvervsakademiuddannelser og professionsbacheloruddannelser*), the programme amounts to 90 credits in total.

Study programmes that do not exceed 120 ECTS shall be completed within the number of years corresponding to twice the nominal length of study, and the remaining programmes shall be completed no later than the nominal length of study plus two years. Under exceptional circumstances, Cphbusiness is entitled to grant exemptions from this rule, cf. subsection 1.2. (further details about exemptions at Cphbusiness can be found in subsection 6.6.).

Certificate
Upon completion of the Software Development programme, a certificate is issued to the student by Cphbusiness.

1.3. Commencement and Interim Provisions/Transitional Arrangements

This curriculum is effective as of 1 August 2014, and the terms and conditions stated herein apply to students starting the programme in the autumn of 2014. Simultaneously, any curriculum prior to the present is repealed.

Students enrolled at an earlier point in time, and thus covered by curricula prior to the present, are entitled to complete their studies in line with the curricula they were covered by originally.
Students covered by curricula prior to the present may however request that they be covered by these until their completion of the programme, provided that they meet the previously listed requirements regarding the maximum length of study, cf. subsection 1.2.
Under special circumstances, including circumstances relevant to the individual student, Cphbusiness may grant exemptions from the rule stipulated in this subsection, cf. subsection 1.3., entailing that an otherwise repealed curriculum still applies.

As regards the release of a new curriculum, or in the event of substantial alterations to the present, transitional arrangements will be laid down in the new curriculum.

1.4. Legal Framework

The legal framework that applies to this study programme is constituted by the latest versions of the following acts and ministerial orders:

(Following are English translations of Danish texts published in the Danish Official Gazette (Lovtidende). In the event of a discrepancy between the translated version and the Danish version, the latter is valid)

- Act no. 214 of 27 February 2013 on academies of professional higher education (the Academy Profession Act) (*Erhvervsakademiloven*)
- Act no. 467 of 8 May 2013 on academy profession programmes and professional bachelor programmes (*LEP-loven*)
- Ministerial order no. 1521 of 16 December 2013 on academy profession programmes and bachelor programmes (*LEP-bekendtgørelsen*)
- Ministerial order no. 1519 of 16 December 2013 on examinations (the Examination Order) (*Eksamensbekendtgørelsen*)
- Ministerial order no. 223 of 11 March 2014 on admission and enrolment on academy profession programmes and bachelor programmes (*Adgangsbekendtgørelsen*)
- Ministerial order no. 262 of 20 March 2007 on the grading scale and other forms of assessment (the Grading Scale Order) (*Karakterbekendtgørelsen*)
- Ministerial order no. 975 of 19 October 2009 on the academy profession programme in Software Development (*Uddannelsesbekendtgørelsen*)

The respective acts and orders can be obtained through *Retsinformation* at www.retsinfo.dk (in Danish).

2. ADMISSION TO THE PROGRAMME

2.1. Entry Requirements

Admission to the programme requires a qualifying examination as well as fulfilment of the programme specific entry requirements. The entry requirements are stipulated in the order on admission and enrolment on academy profession programmes and bachelor programmes in force, and should doubts arise from the formulations used in this subsection, the formulations in the order apply.

Bachelor of Software Development is a top-up programme of the Computer Science diploma (AP Degree) programme, which gives direct admission to the programme. Other applicants may be accepted based on a concrete assessment of their actual competencies, cf. "Bekendtgørelse nr. 8 af 10. januar 2008 om individual kompe-

tencevurdering i videregående voksenuddannelse (VVU) og diplomuddannelse i videreuddannelsessystemet for voksne": an individual competency assessment in further education for adults, corresponding to an AP-degree, and diploma courses in further education for adults.

2.2. Eligibility for Admission

In order to become eligible for admission to the programme, applicants must meet the entry requirements stated in subsection 2.1. If these are fulfilled, the applicant is qualified for, however not guaranteed, admission to the programme.

Provided that the number of eligible applicants, cf. subsection 2.1., exceeds the number of spaces available, Cphbusiness may specify additional selection criteria on the grounds of which applicants are accepted as long as spaces are available.

The additional selection criteria will be published at Cphbusiness' website taking due account of the time limits provided by the Ministry of Higher Education and Science.

3. PROGRAMME CONTENT

3.1. Programme Structure

As a prerequisite for completing the study programme, students must attend and pass educational elements equivalent to a total workload of 90 ECTS credits. A full-time semester encompasses educational elements, including the internship, corresponding to 30 ECTS credits.

The programme comprises compulsory educational elements equivalent to 50 ECTS credits, electives equivalent to 10 credits, an internship equivalent to 15 credits and a bachelor project equivalent to 15 ECTS credits.

Educational Elements		**1st year**	**2nd year**
Key Subject Areas	Development of Large Systems (10 ECTS)	10 ECTS	
	Databases for System Developers (10 ECTS)	10 ECTS	
	Contract Based Systems Development (10 ECTS)	10 ECTS	
	System Integration (10 ECTS)	10 ECTS	
	Test (10 ECTS)	10 ECTS	
Electives		10 ECTS	
Internship			15 ECTS
Bachelor Project			15 ECTS
I alt ECTS	(50 ECTS)	**60 ECTS**	**30 ECTS**

The sum of all educational elements and other study activities may not exceed the prescribed 90 ECTS credits. All educational elements, including the bachelor project, are assessed and evaluated according to the subsection on examinations in this curriculum, cf. chapter 5, and where the outcome of the assessment is either 'passed' or at a minimum the grade 02, the educational element concerned is perceived as passed. For more information on examinations, please read chapter 5.

3.2. Key Subject Areas

The programme covers a number of overarching subject areas to which the educational elements are related. The subject areas comprise educational elements corresponding to 50 ECTS credits. The contents of the subject areas as well as the distribution of ECTS credits have been determined collaboratively by the institutions of higher education approved to offer the particular programme. The subject areas include the following:

Development of Large Systems
Scope: 10 ECTS
Content: The purpose of the module is to enable the student to work with the development of large systems, i.e. the student must be able to partly plan and manage a development process with many project members and partly to design and implement large systems, which are divided into smaller parts and developed by independent development groups
Learning objectives: *Knowledge* The graduate will possess knowledge of: • problems connected to manage large projects • techniques to manage large projects • the roles that form part of large development projects • challenges connected to the distributed development of systems that cut across organisations and country boundaries. • quality systems used to measure and assure quality • different techniques that can be used in connection with the deployment of large systems • launch a system in a technical distributed environment (move it from a development to an operation environment *Skills* The graduate will be able to: • specify demands for interaction among sub systems • assure the quality of the implementation of changed requirements across sub systems through documentation, among others, traceability • apply patterns and frameworks in design and implement large systems at architect level • split up a software system in smaller parts

- apply and develop components with a view to recycling
- specify the co-operation between the parts at an abstract level
- apply techniques for configuration management (version management, document management and release management)
- apply a professional multiple user development environment
- apply techniques for internal quality assurance between the development groups
- apply techniques to managing changes of demands between sub systems

Competences
The graduate will be able to:
- be a part of and fill a specific role
- adjust a development method to the development of large systems
- participate in cross-cultural global development projects
-

Examination and Assessment:
- Development of Large Systems. One grade assessment.

Databases for System Developers

Scope: 10 ECTS

Content: The purpose of the module is to qualify the student to be able to choose and apply different database types efficiently to different application domains. The student must also be capable of analysing and working with large databases, including redesign and operation optimisation.

Learning objectives:
Knowledge
The graduate will possess knowledge of:
- different database types and underlying models
- the storage organisation and execution of requests of a specific database system
- the optimisation options of a concrete database system–including advantages and disadvantages, and possible trade offs
- specific database security problems and their solutions
- an administrative tool for monitoring and the optimisation of a concrete database
- the specific problems which are caused by many simultaneous transactions, among others, in connection with web and distributed databases
- relational algebra

Skills
The graduate will be able to:
- transform logical data models for physical database types
- implement the optimisation of databases
- apply a concrete database security system
- apply parts of the administrative system for optimisation and improve performance of existing databases
- apply the tools of a concrete database system to handle simultaneous trans-

actions
- apply the facilities and programme options which a modern DBMS
- apply and object relational mapping facility
- apply relational algebra to understand optimisation options

Competences
The graduate will be able to:
- analyse the application domain with a view to the choice of database type

Examination and Assessment:
- Databases for System Developers. One grade assessment.

Contract Based Systems Development
Scope: 10 ECTS
Content: The purpose of the module is to enable the student to apply contracts at different abstraction levels and with different degrees of formalism in connection with the development of large systems

Learning objectives:
Knowledge
The graduate will possess knowledge of:
- the importance of separating specification and implementation
- the connection between contracts and verification of performing contracts
- practical programming with contracts
- tools that support contract based programming and design
- fundamental mathematical structures (sets, multisets, functions and relations)
- mathematical proof techniques
- programme statements, validity and accuracy of programmes

Skills
The graduate will be able to:
- work out functional specifications
- specify parts of a system, both sub systems and programme modules
- apply contracts at model level
- implement parts of a system based on contracts
- apply contracts to different levels of abstraction and formalisation and handle their connection and transformation
- work out contracts expressed in predicate logic
- apply contracts to the verification of programme elements
- apply contracts as an integral part of the development process
- apply contracts to the classification, coordination and integration of large systems
- assess the degree of formalism which is relevant in different contexts

Competences
The graduate will be able to:
- apply contracts in cross-cultural global development projects
- participate in the implementation of the use of contracts in development projects

• acquire knowledge and skills within software development that require knowledge of mathematical concepts and structures
Examination and Assessment: • Contract Based Systems Development. One grade assessment.

System Integration
Scope: 10 ECTS
Content: The purpose of this module is to enable the student to work with technical integration of systems. The student must be able to (1) integrate existing systems (2) integrate existing systems in connection with the development of new systems, and (3) develop new systems that support future integration.
Learning objectives: *Knowledge* The graduate will possess knowledge of: • commercial deliberations about system integration • standards and standardisation organisation • techniques used in connection with data conversion • the service concept, and understand its connection with service oriented architecture • similarities and differences between object oriented and service oriented architecture • tools for integration *Skills* The graduate will be able to: • apply an object oriented system in a service oriented architecture • design a system that is easy to integrate with other systems, so it uses existing services • transform or expand a system in a way that it can function in a service oriented architecture • apply patterns that support system integration develop additional patterns for generic systems • can integrate generic and other systems *Competences* The graduate will be able to: • choose among different methods for integration • convert elements in a business strategy to concrete demands for the integration of systems • adapt a systems development method to support system integration • acquire knowledge about the development of standards for integration
Examination and Assessment: • System Integration. One grade assessment.

Test
Scope: 10 ECTS
Content: The purpose of this module is to qualify the student to work with the planning and implementation of test. Furthermore, the student should be able to see the strategic role of the test in the total development process, and be responsible for the internal quality control of a project.
Learning objectives: *Knowledge* The graduate will possess knowledge of: • important test strategies and test models as well as their role in the systems development • test as an integral part of a development project • different test types and their applicability *Skills* The graduate will be able to: • plan a test based on a test model • apply both black box and white box test forms • apply techniques for both verification and validation • ensure traceability between system demands and test at all levels • apply test as a part of quality control in the project work • make test which can be used to verify the performance of contracts, among others, internal contracts among part systems • apply techniques and tools for the automation of different test types • build systems to control test and the process of removing errors in development projects *Competences* The graduate will be able to: • analyse and apply a test strategy, a test model and test techniques adapted to the development model in question • plan and control the implementation of an internal as well as an external test of a system • design a test with a relevant test coverage • lay down principles for systems design that contribute to making it possible to test the system
Examination and Assessment: • Test. One grade assessment.

3.3. Electives

In addition to the compulsory elements, the programme comprises elective study activities corresponding to 10 ECTS credits. Information on the available electives is available in the the Electives Catalogue.

3.4. Internship

The Software Development programme includes both theory and practical experience with the purpose of supporting the students' continuous learning process and contributing to the fulfilment of the learning objectives specified for the study programme. During the internship, students are faced with professionally relevant issues, just as they become familiarised with relevant job functions. The student actively and independently seeks a placement with one or more private or public companies, and Cphbusiness ensures that the internship settings are satisfactory.

The internship is unpaid.

Internship
Timing: 3rd semester
Work load: 15 ECTS
Purpose: The internship will take place in one or more companies where the student must participate in, and acquire knowledge of relevant business functions. The internship can be organised in a flexible and differentiated way, and should form the basis for the student's final bachelor project. The purpose of the internship is to give the student the opportunity to test the first two semesters of learning in practice by performing in a job situation relevant to the profession and the job function. During the internship, the student has an internship tutor respectively from the academy and the company.
Learning objectives: *Knowledge* The student will possess knowledge about • the day-to-day operations in the entire internship company *Skills* The student will be able to • use diverse technical and analytical work methods normally applied when working in the IT industry • assess practice-related problems and suggest different solutions • structure and plan the daily assignments in the industry • communicate practice-related problems and substantiated suggested solutions *Competences* The student will be able to • manage development-oriented practical and professional situations in relation to the industry • acquire new knowledge, skills, and competencies related to the industry • participate in professional and interdisciplinary cooperation

Assessment:
Internship exam. Oral examination based on written work (report). Details about the examination can be found in "Catalogue for examinations and other tests for Softare Development".

3.5. Rules Regarding the Internship

Requirements for the parties involved

The hosting company, offering the internship, provides a contact person who must be at the student's disposal for the duration of the internship. The contact person and the student must draw up an internship agreement in collaboration, and this agreement, which must be in writing, should outline the types of tasks and assignments the student will face during his/her internship period. The internship agreement must take into account not only the learning objectives of the internship stipulated in this curriculum but also the student's prior knowledge, training and qualifications.

The internship agreement should afterwards be submitted for approval at Cphbusiness.

Close contact will be established between the student and one of the Cphbusiness appointed internship supervisors, who will act as the student's sparring partner for the entire duration of the internship and in addition hereto the examiner on the report.

A manual describing the internship process in greater detail is available.

Upon completion of the internship period, both the student and the hosting company will have to participate in an evaluation of the internship period. The student must complete the evaluation in order to attend the exam.

Roles and responsibilities of the parties involved

<table>
<tr><th>Student</th><th>Company</th><th>Cphbusiness</th></tr>
<tr><td>Seeks a placement with a company</td><td>Provides a contact person</td><td>Ensures satisfactory internship settings

Appoints a Cphbusiness internship supervisor</td></tr>
<tr><td colspan="2">The student and hosting company collaboratively draw up an internship agreement that takes into account the learning objectives of the internship</td><td>Discusses the internship agreement

Approves the submitted internship agreements that meet Cphbusiness' demands</td></tr>
<tr><td colspan="3">The student and hosting company cooperate during the internship</td></tr>
</table>

The contact person and the internship supervisor support the student for the duration of the internship		
(Prepares for the internship examination)		
Participates in an evaluation of the internship	Participates in an evaluation of the student and the internship	
(Attends the exam)		(Conducts the exam)

3.6. Teaching and Working Methods

At Cphbusiness, various teaching methods are practised. Among these are lectures, cases, assignments, practical and theoretical exercises, laboratory work, oral presentations, homework/study assignments, excursions/field trips, etc.
The teaching may be thematised, just as it may be divided into different courses.

The purpose of the varied teaching methods is that students, by means of the selected teaching modes, acquire knowledge, skills and competences within the programme's key subject areas, and that students apply these in accordance with the programme's learning objectives.

3.7. Language of Instruction

Software Development is an English taught programme, and all teaching is in English. In some cases, students may be able to choose electives in Danish, and students are free to enter into an internship agreement with a company in which the spoken language is Danish.[1]

4. INTERNATIONALISATION

4.1. Study Abroad

All full-time studies at Cphbusiness shall be organised in a manner that allows students the opportunity to take at least one of the study programme components

[1] The Software Development programme is offered as a Danish taught programme as well. For a description of the study programme with Danish as the language of instruction, please consult the Danish version of this curriculum (Studieordning for softwareudvikling).

abroad within the nominal length of study.

The possibility of studying abroad pertaining to the Software Development programme include:

- Entire 2nd semester
- The internship

Educational elements taken abroad can be approved for credit transfer provided that they are compatible with and meet the requirements regarding contents and level stipulated in this curriculum.

Students wishing to study abroad have to apply for credit transfer before the period is initiated in due time to receive a pre-approval of credit transfer. The decision as to whether the educational elements can be approved for credit transfer rests on Cphbusiness' evaluation of the contents and standards offered by the educational institution or host company.

When the period abroad is completed, students who have received a pre-approval of credit transfer have to document that they have successfully completed the pre-approved educational elements. As part of the pre-approval process, students shall concur that Cphbusiness has the right to obtain information relevant to the final credit transfer following the period of study abroad. A pre-approved educational element will be regarded as successfully completed, if the student has passed the element in accordance with the regulations in effect at the hosting educational institution.

5. EXAMINATION AND ASSESSMENT

5.1. General rules regarding the exam

For exams at Cphbusiness, the following rules apply:

- The ministerial order no. 1519 of 16 December 2013 on examinations (the Examination Order), as well as
- The ministerial order no. 262 of 20 March 2007 on the grading scale and other forms of assessment (the Grading Scale Order) (*Karakterbekendtgørelsen*)

In addition, the Cphbusiness rules and regulations regarding examination in effect at the time in question apply to examinations.

5.2. Description of assessment of educational elements

In the following, an overview of the examinations at the Software Development programme is provided. Requirements and details on the specific examinations, including

examination period, form and materialities, the use of aid during examination, etc., are available in the "Catalogue of examinations and other tests for Software Development."

The student will be tested in several educational elements at each examination. Each examination will appear with one grade on the final diploma. See the table below for an outline of the examinations of the study programme.

Diagrammatic outline of the connection of the examinations, the educational elements and the structure of the study programme

Year	Name of the examination	Educational element (key subject area)	ECTS	Noted on the final diploma	Internal/ external
1st year	Development of Large Systems exam	Development of Large Systems	10	One grade	Internal
	Databases for System Developers exam	Databases for System Developers	10	One grade	External
	Contract Based Systems Development exam	Contract Based Systems Development	10	One grade	Internal
	System Integration exam	System Integration	10	One grade	External
	Test exam	Test	10	One grade	Internal
	Electives exam	Electives	10	One grade	External
2nd year	Internship exam	Internship	15	One grade	Internal
	Bachelor project exam	Bachelor project	15	One grade	External

Examinations are described in the "Catalogue for examinations and other tests for Software Development"

5.3 Other requirements for completion of activities

Besides the examinations mentioned above, students are required to attend and have a number of obligatory study activities approved in order to attend the exam and continue their studies, cf. the Examination Order section 9 and section 5, subsection 2.

5.3.1 Mandatory activities: Requirements for Participation and Submissions

In order to attend some of the exams, students must have a number of mandatory learning activities approved. In case the mandatory learning activity is not approved, the student cannot attend the exam, which counts as an attempt at the exam. The student is automatically signed up for the re-examination, however, the student must still pass the mandatory learning activity, as it is the prerequisite for attending the exam.
The mandatory learning activities vary, depending on the educational elements. Examples of mandatory learning activities include requirements for participation, presentations, assignments, etc. The mandatory learning activities for Software Development can be found in the "Catalogue of Examinations and other Tests for Software Development".

5.3.2 The study start test

Cphbusiness conducts study starts test on all full time study programmes. A student must fulfil the study start test requirement in order to stay enrolled at the study programme, cf. the ministerial order about exams section 9.

Study start test
Timing: The study start test must be conducted no later than two months after the commencement of the study programme
Form: Details about the study start test are described in the "Catalogue for examinations and other test for Software Development"
Assessment: Approved/Not approved.
Admission requisite: None
Consequences of not passing: If the student does not fulfill the study start test requirements in the first attempt, it is possible to participate in a "re-examination". This new test must be conducted no later than three months after the commencement of the study programmer. If the new test is not approved, the student cannot continue on the study programme and his/her enrolment will consequently be cancelled, cf. the ministerial order about exams section 9.
Specific for the study start test: The study start test is not covered by the regulations about examination complaints; cf. the ministerial order about examinations section 9, subsection. 4. Cphbusiness can grant a dispensation from the appointed time required to fulfill the study start test requirement. Dispensations can be granted in cases of serious illness, child birth or unusual circumstances. Such cases must be documented.

5.3. The Bachelor Project

The bachelor project concluding the Software Development programme must document the students' abilities to understand and analyse a practice-based problem related to their respective fields of study by means of relevant theory and methodology. Thus, central subjects from the programme should be covered by the project, and a problem statement, which must be key to not only the programme but also the respective type of industry/profession, has to be formulated by the student and if desired in cooperation with a private or public company. Cphbusiness will subsequently approve the problem statement.

The bachelor project is conducted as an external examination, which, together with the internship report and other programme examinations, should document that the programme's learning objectives and requirements are met. The examination comprises a written part and an oral part that result in a single joint grade. The examination can only take place after the student has passed all other educational elements (the internship report as well as all other programme examinations). For more about the bachelor project, see this curriculum section 5.2 and the manual for the bachelor project.

Bachelor project
Timing: 3rd semester
Work load: 15 ECTS
Content: In the final bachelor project, the student must demonstrate the ability, on an analytical and methodical basis, to process a complex and practice-related problem to a specific task in the IT field
Learning Objectives: The bachelor project must document that learning objectives for the entire study programme have been met, cf. the ministerial order no. 975 of 19 October 2009 on the Bachelor's Degree programme in Software Development, appendix 1. *Knowledge* The graduate will possess knowledge of: • the strategic role of tests in system development • globalisation of software production • system architecture and the understanding of its strategic importance for the company's business • knowledge of applied theory and method as well as widespread technologies within the domain and the • relation among applied theory and method and technology and the ability to reflect upon their applicability in different situations *Skills* The graduate will be able to: • integrate IT systems and develop systems that support future integration • apply contracts as a management and coordinating system in the development process • assess and select database systems, as well as design, redesign and opti-

mize the operation of databases • plan and manage development with many geographically separated project participants and • lay down and use a relevant degree of formality in connection with communication and coordination internally in development projects. *Competences* The graduate will be able to: • manage the planning and implementation of tests of large IT systems • co-operate professionally about the development of large systems by applying widespread methods and technologies. • study new technologies and standards to handle integration between systems • develop one's own competence profile from being primarily a backend developer profiler to manage tasks as a system architect and • manage the laying down and realisation of a business relevant architecture as well as a technologically relevant one for large systems.
Assessment: • 3rd semester: Oral examination based on written work. External exam, 7 point grading scale.

6. OTHER RULES

6.1. Credit Transfer and change of study programme

In some cases, Cphbusiness may be able to transfer credits for educational elements, or parts hereof, completed at other educational institutions, provided that the elements in question correspond to elements included in this curriculum.
Cphbusiness bases the decision about a possible credit transfer on an assessment of the element's content, level etc.

An educational element transferred from a stay abroad is considered for completed, if it has been passed according to the rules of that study programme. Students are obliged to notify Cphbusiness of any previously passed educational elements at a higher educational level, which includes both Danish and foreign higher educations, presumed to be transferable. Cphbusiness handles all applications for credit transfer after these rules.

Change of study programme
Change of study programme to the same or to another educational institution is regulated by the rules of the new study programme.

Change of study programme to the same education at Cphbusiness or another institution cannot, unless special circumstances apply, take place until the student has passed examinations corresponding to the first year of studies on the study pro-

gramme potentially receiving the student; cf. the ministerial order of admission and enrolment section 35, subsection 2. Change of study programme prerequisites availability on the relevant level of the study programme potentially receiving the student.

6.2. Exemptions from the Curriculum

Under special circumstances, Cphbusiness is entitled to grant exemptions from rules stipulated in this curriculum laid down by Cphbusiness. Students will have to submit a request for exemption, which must specify and document the reasons for exemption. Cphbusiness will subsequently process the request and notify the student of the decision once it is made.