

Examination Regulations for the Master Course Digital Transformation of the Faculty of Computer Science of Dortmund University of Applied Sciences and Arts (Fachhochschule Dortmund)

As of 12th April, 2018

Whilst every effort has been made to ensure the above information is an accurate translation of the Examination Regulations for the Master Course Digital Transformation of the Faculty of Computer Science of Dortmund University of Applied Sciences and Arts (Fachhochschule Dortmund) - Official Notes – Public Announcement, Volume 39, no. 17, 20.04.2018 - Fachhochschule Dortmund accepts no legal liability for its contents and reserves the right to make alterations and amendments if and when required.

Programme Examination Regulations for the Master Course Programme Digital Transformation of the Faculty of Computer Science of Dortmund University of Applied Sciences and Arts (Fachhochschule Dortmund)

As of 12th April, 2018

In accordance with § 2 subsection 4 clause 1 and § 64 subsection 1 in conjunction with § 22 subsection 1 no. 3 of the "Gesetz über die Hochschulen des Landes Nordrhein-Westfalen" (North-Rhine Westphalian University Act, abbreviated: HG) as amended by article I of the "Hochschulzukunftsgesetz" (Future Higher Education Act) of 16th September 2014 (Law and Ordinance Gazette NRW. p. 547) last changed by law of 17th October 2017 (Law and Ordinance Gazette NRW. p. 806) Dortmund University of Applied Sciences and Arts (Fachhochschule Dortmund), has issued the following Programme Examination Regulations:

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I. Preamble

The master study course Digital Transformation leads to a degree which qualifies individuals both in the field of scientific research as well as in areas of professional practice. They are being prepared for technical careers but also for senior management assignments in technical projects. Furthermore, a subsequent career in academic research is also an option. The programme is intended to provide students with the required technical knowledge, skills and methods. In order to meet the requirements and changes in the professional world, the contents of the individual modules are taught in an application-oriented manner, based on research findings. Students are thus enabled to analyse processes and problems met in practice and to work out professional solutions while recognizing the wider implications of their actions. Furthermore, students are enabled to participate in the academic debate within their area of expertise. Apart from acquiring technical and methodical competence, students are encouraged to develop their personal and social skills. Students acquire professional skills and are able to act responsibly. International competences are promoted by studies abroad, in particular at the partner universities during the optional third semester abroad.

The master programme Digital Transformation enables students to develop their distinctive profile within the scope of their main focus areas while simultaneously completing the compulsory courses of the first and second semester. In particular through the subject range offered by the Ruhr Master School (RMS), the compulsory elective modules are integrated in a cross-university network. The RMS aims at creating a joint master programme offered by universities in the Ruhr Area in the technical disciplines to provide a special offer of master programmes with a comprehensive research curriculum. This offer is completed by international, project-oriented components and summer schools as well as symposia. The RMS also allows students of the participating universities a simplified transition from the bachelor programmes to the joint master programmes. The RMS strives to facilitate the positioning of the master programmes by transferring the latest research findings into practical applications and ensuring the universities' contribution to the transition of the Ruhr Area to a high-tech location.

The language of instruction is English.

The master course programme Digital Transformation was developed and organised by the Faculties of Computer Science and Information Technology. The Faculty of Computer Science assumes the responsibility for the organization and delivery of the course programme.

Gender equality is observed in the design and structure of the course programme and its contents.

II. General Regulations

§ 1

Scope of Application of the Course Programme Examination Regulations, General Examination Regulations

(1) The following Programme Examination Regulations (PER) apply to the master course programme Digital Transformation of the Faculty of Computer Science of Dortmund University of Applied Sciences and Arts (Fachhochschule Dortmund). They govern the master's examination in this course programme according to § 64 subsection 2 of the North-Rhine Westphalian University Act (HG NRW) in conjunction with the General Examination Regulations of Dortmund University of Applied Sciences and Arts (Fachhochschule Dortmund) of 20th August 2013 (Official Notes – Offical Journal – of Dortmund University of Applied Sciences and Arts (Fachhochschule Dortmund), volume

34, no. 78 of 23.08.2013) in the relevant issue.

(2) These PER specify the General Examination Regulations — hereafter referred to as GER — for the master course programme Digital Transformation. They specify complementary as well as alternative regulations which do not contradict the General Examination Regulations.

§ 2 Objective of the Course Programme, Master's Degree

[with reference to § 2 GER (RahmenPO)]

- (1) The course of studies leading to the master's examination, taking into consideration the general aims of study courses (§ 58 HG), includes in particular the application-related contents of the curriculum on the basis of scientific findings, and is designed to enable students to independently analyse problems using scientific methods and to apply these according to engineering methods while observing aspects relevant to society in general. The course of studies is designed to develop the inventive and creative skills of the students and to prepare them for the master's examination.
- (2) Students complete their course of studies with the master's examination. The master's examination serves to determine whether the students have acquired the advanced professional expertise as well as the methodological and key skills required in order to work independently in their profession, and whether they are able to work independently in an entrepreneurial context on the basis of scientific findings and methods.
- (3) If the master's examination has been passed, Dortmund University of Applied Sciences and Arts, Fachhochschule Dortmund, awards the degree Master of Science (M.Sc.).
- (4) For the rest, § 2 of the General Examination Regulations applies.

§ 3 Modular Structure and Credit Point System

[with reference to § 3 GER (RahmenPO)]

- (1) The workload for the course of studies amounts to a total of 3,600 hours (900 hours per semester), including time for the master's thesis. From the total, 48 weekly hours per semester (Semesterwochenstunden, SWS, 1 SWS = 45 mins.) are allotted to attendance at lecture sessions. Based on these examination regulations, the course of studies is organized in such a way that it allows for completion within the standard course duration (Regelstudienzeit, RSZ).
- (2) To successfully complete the course of studies, a total of 120 credit points according to the European Credit Transfer and Accumulation System (ECTS) must be obtained.
- (3) The modules of the master course programme Digital Transformation, including its number of hours per week and their distribution over the semesters, are specified in detail in **Attachments 1 and 2**. The descriptions of the modules and lectures are listed in the current version of the module handbook of the master course programme Digital Transformation.
- (4) Provided they meet the entry requirements and within the scope of the defined intake capacity limits, students in RMS master course programmes can complete compulsory elective modules as cross-registered students at the participating universities by sitting an examination. The maximum number of corresponding credit points to be obtained in the compulsory elective modules outside the primary course programme is 12 credit points. The participating universities define the cross-university offer of the

- compulsory elective modules for each course programme in a catalogue which is published on the RMS website.
- (5) No claims can be asserted with regard to the realization of the complete spectrum of the planned compulsory elective modules. Nor is there any guarantee that these lectures will be held if the number of participants is insufficient. The catalogues of lectures offered will be published before the start of the lecture period of each semester.
- (6) For the rest, § 3 of the General Examination Regulations applies.

§ 4 Entry requirements

[with reference to § 4 GER (RahmenPO)]

- (1) Requirements before commencing the course of studies are
 - 1. the completion of a "Diplom" or bachelor course of study of Information Technology, Business Computer Science, Software Engineering, Computer Science or a course programme closely related to the master study course Digital Transformation at a university of applied sciences (Fachhochschule) or a university, or the completion of a corresponding accredited bachelor qualification programme at a university of cooperative education (Berufsakademie) with an overall grade of at least "good" (2.5). The qualifying degree course of study must have included instruction in the relevant competences in the areas of Software Engineering, Business Computing, Digital Systems and Systems Engineering equalling the required amount at the required level (cf. Attachment 3).

and

2. evidence of sufficient English skills provided by a TOEFL-ITP test with at least 550 points or a TOEFL-iBT test amounting to a minimum of 90 points passed within the two years before the application was submitted. The evidence may also be provided by other test methods equivalent to the TOEFL test (e.g. IELTS with at least 6.5 points) or by equivalent credit points and examination results. In exceptional cases the evidence can be submitted by means of an equivalent certificate or test results demonstrating the relevant minimum requirements (equivalent to C1 of the Common European Framework of Reference for Languages (CEFR)). The Expert Committee decides whether equivalence is demonstrated. Course programmes completed at foreign universities defined under 1 must also include a final thesis comparable to the course programmes at German universities with regard to the minimum quality requirements.

In addition, the courses of study defined in 1 must amount to a minimum of 180 credit points of the European Credit Transfer and Accumulation System (ECTS). Degrees obtained outside the ECTS-System must be converted into the ECTS-System.

- (2) The Examination Board of the master course Digital Transformation elects a joint Expert Committee to verify whether a course of studies can be defined as relevant according to § 4 subsection 1 no. 1. If there is doubt regarding the comparability of the final thesis in terms of sub. 1 no. 2 the expert committee decides. It can request further documents for a review.
- (3) The Expert Committee consists of the professors and academic staff of the Examination Board as elected under § 7.
- (4) The Expert Committee discusses and decides in closed meetings. It has a quorum if at least three members are present.

(5) For the rest, § 4 of the General Examination Regulations applies.

§ 5 Student Advisory Services

§ 5 of the General Examination Regulations applies.

§ 6 Start of Study, Normal Course Duration

[with reference to § 1 subsection 2 clause 2 no. 2 GER (RahmenPO)]

- (1) Students start the master course Digital Transformation in the winter semester.
- (2) The normal course duration, including all examinations, is four semesters.

§ 7 Examination Board

[with reference to § 6 GER (RahmenPO)]

(1) The Examination Board for the master course Digital Transformation of the Faculty of Computer Science is responsible for the organization of the examinations and any further tasks following from these Examination Regulations or from the General Examination Regulations.

The Examination Board comprises

- 1. a professor acting as the chair;
- 2. a professor acting as deputy;
- 3. two other persons from the circle of professors;
- 4. a member of the academic staff (§ 11 sub. 1 No. 2 HG);
- 5. one student.
- (2) For the rest, § 6 of the General Examination Regulations applies.

§ 8 Examiners, Observers

§ 7 of the General Examination Regulations applies.

§ 9 Transfer of Credits and Recognition of Examination Results

§ 8 of the General Examination Regulations applies.

§ 10 Assessment of Examinations

§ 9 of the General Examination Regulations applies.

§ 11 Retaking Examinations, Compensation [with reference to § 10 GER (RahmenPO)]

"inadequate", this may be compensated by passing another module examination from

l) If a module examination in the compulsory elective modules is finally graded

the catalogue of compulsory elective modules. This compensation is only possible once.

(2) For the rest, § 10 of the General Examination Regulations applies.

§ 12 Absence, Withdrawal, Fraudulent Behaviour, Breach of Regulations

§ 11 of the General Examination Regulations applies.

§ 13 Invalidity of Examinations

§ 12 of the General Examination Regulations applies.

§ 14 Inspection of Examination Papers

§ 13 of the General Examination Regulations applies.

§ 15 Appeal Procedure

§ 14 of the General Examination Regulations applies.

§ 16 Retention Periods for Examination Documents

§ 15 of the General Examination Regulations applies.

III. Mentoring, Student Monitoring, Modules Requiring Intensive Support

Section II General Examination Regulations (§§ 16 and 17) does not apply.

IV. Special Programme Contents

§ 17 Key Qualifications

§ 18 of the General Examination Regulations does not apply.

§ 18 Semesters Abroad, Work Placement in Germany and Abroad, Practical Semesters

§ 19 of the General Examination Regulations does not apply.

V. Examination Elements of the Module Examinations

§ 19 Objective and Form

[with reference to § 20 GER (RahmenPO)]

- (1) Module examinations are held in the modules as laid down in **Attachments 1 and 2**.
- (2) Admissible forms of examination are written examinations (§ 22) lasting no more than four clock hours, oral examinations (§ 24) lasting no more than 45 minutes per candidate, assignment papers and seminar presentations (§ 25), or project related work with documentation and presentation with an oral examination lasting approximately 20 minutes. (§ 24). The project related work must be submitted at the oral examination.
- (3) The module MOD3-03 Research Project (Thesis) must be executed in the form of a research and development project, either individually or as a team effort. The project must be carried out at a university or research institution or as a company project. Alternative project forms must be approved by the examination board. The research project comprises a project thesis and a final presentation.
- (4) For the rest, § 20 of the General Examination Regulations applies.

§ 20 Admission to the Module Examinations

[with reference to § 21 GER (RahmenPO)]

- (1) Admission to a module examination is only granted to persons who
 - are enrolled in the master course programme Digital Transformation at Dortmund University of Applied Sciences and Arts (Fachhochschule Dortmund), or who are admitted as cross-registered students and who are not on leave. Regarding students on leave, § 21 sub. 1 clause 1 no. 1 GER applies;
 - 2. have made fewer than three valid attempts at an examination in the same or a comparable module in a master course programme Digital Transformation, or in a course programme closely related to the master course programme Digital Transformation.
- (2) Admission must be denied if
 - a) the prerequisites stated in subsection 1 are not met or
 - b) the candidate has failed the same or a comparable examination in Germany in the master course programme Digital Transformation or in a course programme closely related to the master course programme Digital Transformation or has definitively failed the master's Examination in a master course programme Digital Transformation.
- (3) Via the Online-Portal, the student can withdraw from module or partial module examinations until ten days before the examination date at the latest without this examination then counting towards the possible attempts at the examination.

§ 21 Conduct of Examinations

§ 22 of the General Examination Regulations applies.

§ 22 Written Examinations

§ 23 of the General Examination Regulations applies.

§ 23 Project-related Work

§ 24 of the General Examination Regulations applies.

§ 24 Oral Examinations

§ 25 of the General Examination Regulations applies.

§ 25 Assignment Papers and Seminar Presentations

§ 26 of the General Examination Regulations applies.

§ 26 Bonus Points for Work during the Course of a Semester

§ 27 of the General Examination Regulations does not apply.

VI. Thesis and Colloquium

§ 27 Thesis

[with reference to § 28 GER (RahmenPO)]

- (1) The thesis is a written work of scientific research in the field of Digitalization, written in English or German. It serves to document that the candidate is capable of independently applying scientific and practical techniques to the processing of challenging tasks taken from his area of specialization, including their specialized technical details as well as their wider implications.
- (2) As a rule, the application for admission to the thesis should take place before the end of the third semester.
- (3) For the rest, § 28 of the General Examination Regulations applies.

§ 28 Admission to the Thesis

[with reference to § 29 GER (RahmenPO)]

- (1) Candidates are admitted to the thesis provided they
 - meet the requirements of the module examinations according to § 20 subsection
 1;
 - 2. have passed all module examinations according to **Attachment 1** but for one compulsory module or one compulsory elective module respectively.
- (2) The application must include the following documents unless these have already been provided:

- 1. documents confirming the admission requirements according to subsection 1;
- 2. a declaration whether the candidate has previously not passed, or has definitively not passed, a final thesis or the master examination in a master course programme Digitalization.
- (3) Admission must be denied if
 - a) the requirements according to subsection 1 are not met, or
 - b) the documents according to subsection 2 are incomplete, or
 - c) in a master course programme Digitalization in Germany a corresponding final thesis of the candidate, taking into account the possibility to retake the examination, has been graded "inadequate" (5.0), or the candidate has definitively not passed the master examination.
- (4) For the rest, § 29 of the General Examination Regulations applies.

§ 29 Issue of and Work on the Thesis

[with reference to § 30 GER (RahmenPO)]

- (1) The time allocated to the writing of the thesis is a single, full time period of 26 weeks.
- (2) For the rest, § 30 of the General Examination Regulations applies.

§ 30 Submission of the Thesis

[with reference to § 31 GER (RahmenPO)]

- (1) Three copies of the final thesis must be submitted to the examination committee within the time limit. The full texts of the online sources used in the thesis as well as the text of the thesis itself must be submitted stored on a standard storage device together with the printed version of the thesis. The electronic transfer is inadmissible for the submission of the thesis within the time limit.
- (2) In order to further the students' competence to reflect on their work, an abstract of the key contents and results of the thesis must be provided. If possible, the abstract should not exceed one DIN A4 page and present the approach and the result in abstract form. It must be submitted in English, together with the thesis.
- (3) For the rest, § 31 of the General Examination Regulations applies.

§ 31 Colloquium

[with reference to § 32 GER (RahmenPO)]

- (1) The colloquium supplements the thesis and both are assessed as a single examination.
- (2) The colloquium lasts approximately 60 minutes and consists of a 30-minute presentation followed by an oral examination of 30 minutes.
- (3) For the rest, § 32 of the General Examination Regulations applies.

§ 32 Assessment of the Thesis and the Colloquium

[with reference to § 33 GER (RahmenPO)]

- (1) The thesis and the colloquium are related examinations and must be assigned an overall grade by two examiners. One examiner must supervise the final thesis. The proportionate weighting is 90 % for the thesis and 10 % for the colloquium.
- (2) For the rest, § 33 of the General Examination Regulations applies.

VII. Master Examination, Certificates, Records

§ 33

Results of the Master Examination

[with reference to § 34 GER (RahmenPO)]

- (1) A candidate has passed the master's examination when all prescribed module examinations and the thesis including the colloquium have been awarded a grade equal to or better than "pass" (4.0).
- (2) For the rest, § 34 of the General Examination Regulations applies.

§ 34

Certificate, Overall Grade, Diploma Supplement, Transcript of Records

[with reference to § 35 GER (RahmenPO)]

- (1) Candidates who have passed the master's examination, receive the results as a certificate, usually within four weeks of the last examination. The certificate contains information about the course, names of the modules and module grades, the topic of the thesis and the combined grades of the thesis and oral defence, as well as the final grade.
- (2) The final grade for the master's examination is calculated from the weighted arithmetic mean of the individual grades of the module examinations and the thesis including colloquium according to § 9 General Examination Regulations. The following weighting of the grades is applied:

Thesis and Colloquium25 %

Arithmetic mean of the grades achieved in the module examinations 75 %

The weighting of the grades for the individual module examinations is in proportion with the ECTS-points allocated to the individual modules.

(3) For the rest, § 35 of the General Examination Regulations applies.

§ 35 Additional Modules

§ 36 of the General Examination Regulations applies.

§ 36 Master's Certificate

[with reference to § 37 GER (RahmenPO)]

(1) Candidates who have passed the master's examination receive a Master's Degree Certificate. It certifies that the master's degree (Master of Science, abbreviated M.Sc.) has been awarded according to § 2 subsection 3.

(2) For the rest, § 37 of the General Examination Regulations applies.

VIII. Final Provisions

§ 37 Entry into Force and Publication

- (1) These Examination Regulations enter into force on 1 April, 2018.
- (2) These examination regulations are published in the Official Notes Official Journal -- of Dortmund University of Applied Sciences and Arts, Fachhochschule Dortmund.

Issued based on the resolutions of the Faculty Council of the Faculty of Computer Science of 29.11.2017 as well as the Rectorate of Dortmund University of Applied Sciences and Arts (Fachhochschule Dortmund) of 20.12.2017.

Dortmund, 12th April, 2018

The Rector of Dortmund University of Applied Sciences and Arts (Fachhochschule Dortmund)

The Dean of the Faculty of Computer Science of Dortmund University of Applied Sciences and Arts (Fachhochschule Dortmund)

Prof. Dr. Hirsch

Prof. Dr. Schwick

Attachment 1: Modules

Modules, module examinations and periods; student workload; credit points according to the European Credit Transfer and Accumulation System (ECTS)

Cicait iransici and Accamatation Syst	credit Hansier and Accumulation System (EC13)						
1 st semester (winter semester)							
			student workload		ECTS		
Module	module examination	conta	t hours	t hours self-study (hrs)			
	examination	SWS hours	SWS hours setr-st		points		
Innovation Driven SE	MOD1-01	4	60	120	6		
Software Architectures	MOD1-02	4	60	120	6		
Digital Systems 1	MOD1-03	4	60	120	6		
R&D Project Management	MOD1-04	4	60	120	6		
Scientific & Transversal Skills 1	MOD1-05	4 60 120					
Total	5	20	300	600	30		

2 nd semester (summer semester)							
			student workload				
Module	module examination	contac	contact hours		ECTS points		
	examination	SWS hours self-study		self-study (hrs)	points		
Usability Engineering	MOD2-01	4	60	120	6		
Software-intensive Solutions	MOD2-02	4	60	120	6		
Digital Systems 2	MOD2-03	4	60	120	6		
Scientific & Transversal Skills 2	MOD2-04	4	60	120	6		
Elective 1 *	MOD2-05	4	6				
Total	5	20	300	600	30		

3 rd semester (winter semester)							
	student workload						
	module examination	contac	contact hours		ECTS		
	examination	SWS	hours	self-study (hrs)	points		
Elective 2 *	MOD3-01	4	60	120	6		
Elective 3 *	MOD3-02	4	60	120	6		
Research Project (Thesis)	MOD3-03	0	0	540	18		
Total	3	8	120	780	30		

4th semester (summer semester)						
			ECTS			
	module examination	contact hours SWS hours		contact hours		
	examination			self-study (hrs)	points	
Thesis and Colloquium	Р	0 0		900	30	
Total	5	0 0 900 30				

Attachment 2: Catalogue of Compulsory Elective Modules

Catalogue of Compulsory Module (Electives 1, 2 and 3)*

Compulsory Elective Module						
	module	student workload			FCTC	
Module	examin-	contact hours		self-study (hrs)	ECTS- Punkte	
	ation	SWS ¹	hours	Seti-Study (IIIS)	runkte	
Software Engineering Project	MOD-E01	4	60	120	6	
Requirements Engineering	MOD-E02	4	60	120	6	
Human Centered Digitalization	MOD-E03	4	60	120	6	
Formal Methods	MOD-E04	4	60	120	6	
Digital Business Ecosystems	MOD-E05	4	60	120	6	
Research Seminar	MOD-E06	4	60	120	6	
Information Processing and Data Analytics	MOD-E07	4	60	120	6	
Managing Digital Change	MOD-E08	4	60	120	6	
Smart Home & Smart Building & Smart City	MOD-E09	4	60	120	6	
Edge Computing	MOD-E10	4	60	120	6	
Module(s) from cooperating institutions						
Module(s) from study courses of the home institution**						

^{*} From the Catalogue of Compulsory Electives a minimum of 3 modules must be completed with an examination (MOD2-05, MOD3-01 and MOD3-02). More than 18 credit points may be obtained which will be marked in the certificate. (Subsidiary subject with no relevance for the final grade)

Upon application, modules of the course programmes participating in the RMS may be elected.

^{**} If compulsory elective modules of the Ruhr Master School (RMS) are part of the course programmes of Dortmund University of Applied Sciences and Arts (Fachhochschule Dortmund), students must complete the examinations within their own course programme.

Attachment 3: Expert Committee Admission Procedure

The Competence-Profile is regularly evaluated and adapted by the Expert Committee (Fachausschuss) prior to the beginning of the application period. With regard to the application for the respective winter semester, the following fields of competence are relevant:

- Software Engineering (such as Modelling Techniques, Modern Programming Languages, Software Architectures)
- Business Computing
- Digital Systems
- Systems Engineering (processes such as INCOSE, Modelling, Requirements Engineering)

The competences are classified into 5 levels:

Level	Software Engineering	Business Computing	Digital Systems	Systems Engineering
	A	В	С	D
1	uC-Programming,	Office IT Systems,	Microcontrollers,	R&D-Project
	Structured programming	Databases, Mobile	basic Computer	Management, Domain
	languages (C,VB),	Devices, (min. 18 ECTS)	Engineering,	knowledge, (min. 18
	Scripting languages,		(min. 18 ECTS)	ECTS)
	(min. 18 ECTS)			
2	OOP (e.g. C++, Java),	ERP-Systems, PPS	Communication	Processes for Software
	operating Systems,	Systems, Database	Technology (e.g.	Design, Software
	RTOS, (min. 30 ECTS)	Programming,	TCP/IP), Digital	Engineering, (min. 30
		(min. 30 ECTS)	Electronics,	ECTS)
			(min. 30 ECTS)	
3	Modelling (UML), SW	Business Process	Basic Signal Theory	Systems Modelling,
	architectures, SW	Engineering Web and UI	and Signal	e.g. sysML, System
	platforms (e.g. Java	Programming,	Processing, Protocol	Verilog, (min. 30 ECTS)
	platform),	(min. 30 ECTS)	Stacks,	
	(min. 30 ECTS)		(min. 30 ECTS)	
4	SW engineering, DSLs,	HMI development,	Communication	Model Based Systems
	model driven design,	CSCW and Groupware	Systems (e.g. UMTS),	Engineering (MBSE),
	(min. 48 ECTS)	Systems, Digital Value	Microelectronics,	Requirements
		Chain, (min. 48 ECTS)	basic Security,	Engineering (RE), (min.
			(min. 48 ECTS)	36 ECTS)
5	SW engineering for large	Digital Business	Advanced Security,	Modelling
	SW systems, SW quality	Ecosystems, Mobile	Advanced Signal	Frameworks,
	& test, distributed	Business,	Theory, Data	Traceability, (min. 36
	systems (min. 48 ECTS)	(min. 48 ECTS)	Transmission,	ECTS)
			HW/SW Codesign,	
			(min. 48 ECTS)	

Explanation:

The levels build on one another. It is assumed that once a levels' content has been processed, the competences of the lower level have been acquired. Level 5 is informational.

Decision Matrix - minimum requirements:

For the qualifying bachelor degrees' relevance the following combination of minimum requirements is necessary:

A3 and C2 and B4 and D4

A2 and C3 and B4 and D4

A4 and C2 and B4

A4 and C2 and D4

A2 and C4 and B4

A2 and C4 and D4

A4 and C3 and B3

A4 and C3 and D3

A3 and C4 and B3

A3 and C4 and D3

A3 and C3 and B4

A3 and C3 and D4