According to Section 10 Paragraph 6 of the Basic Regulations of the Mediadesign University of Applied Sciences in the 10th version of May 1, 2021, the Academic Senate, in accordance with its resolution of February 19, 2025, issues the following study and examination regulations for the Bachelor's degree program "Information Technology" (Bachelor of Science):

These regulations were published on the website of the Mediadesign Hochschule (mdh) on June 15, 2025, and take effect on that date. They are valid from October 1, 2024.

Section 1 Scope

(1) These regulations apply to all students enrolled in the full-time bachelor's program "Information Technology" (Bachelor of Science) at the Mediadesign University of Applied Sciences for Design and Informatics (mdh) or applying for this program. They are supplemented by the university's general regulations in their currently valid version, in particular the mdh Basic Regulations (GO), the mdh Admission Regulations (ZO), and the general study and examination regulations for bachelor's and master's programs at the mdh (ASPO).

Section 2 Academic degree and study objective

(1) The bachelor's degree is awarded as the first academic qualification qualifying for a professional career. Completion of the program confirms that the graduate has acquired the skills necessary for the transition to professional practice. These include scientific fundamentals, methodological competence, and subject-independent key qualifications. The bachelor's degree represents a qualification comparable to bachelor's degrees from foreign universities and thus contributes to the international mobility of candidates. Likewise, the degree generally determines suitability for admission to a master's program.

(2) Upon passing the bachelor's examination (§ 8), the academic degree "Bachelor of Science" ("B.Sc.") is awarded.

(3) Graduates of the full-time bachelor's degree program "Information Technology with a specialization in Web Applications and Software Development" or "Information Technology with a specialization in Network Engineering and Cyber Security" or "Information Technology with a specialization in Artificial Intelligence and Data Analytics" have specialist knowledge based on the latest teaching and research in their field, broad academic skills, an overview of the subject matter and in-depth knowledge of the chosen specialization.

Graduates of the Bachelor of Science in Information Technology program develop a systematic and coherent understanding of information technology. In their chosen specialization, Network Engineering and Cyber Security or Web Applications and Software Development or Artificial Intelligence, Intelligence and Data Analytics they develop scientific knowledge and understanding that they can apply in the workplace.

The graduates have (knowledge):

- the ability to think critically to solve information technology challenges in a range of contexts and to communicate ideas effectively.
- knowledge of the selection, adaptation and application of a range of IT infrastructure, architecture and software development processes and solutions in their organizational or industrial context.
- basic knowledge of requirements analysis, design, development, implementation and quality assurance of IT projects and systems.
- basic knowledge of the application of ethical, legal and social practices within the industry.

Graduates are able to

- identify opportunities to apply expertise in a range of technical contexts, including security, systems deployment, and maintenance.
- lead and implement change management processes and procedures for an organization in their chosen area of specialization.
- lead projects to develop and communicate solutions that meet market or company needs.

The graduates can,

- make rationally based decisions and critically examine problems and possible solutions.
- develop holistic and methodically efficient solutions, even for interdisciplinary issues.
- recognize and assess the ethical, ideological, social and moral consequences of their decisions.
- work constructively, goal-oriented and efficiently with other people in different professional situations.

- work effectively individually or as a member of a project team, considering internal guidelines and external (customer) specifications.
- apply scientific methods in practice and implement innovative developments in everyday professional life.
- apply the methodology of design thinking in context to develop innovative solutions for customers.
- learn and further their education independently based on their bachelor's degree
- assert gender-specific findings.

Graduates of the specialization in Network Engineering and Cyber Security will be able to

- troubleshoot local and wide area enterprise networks with advanced security, voice, radio and video solutions.
- plan, configure, install, and verify the implementation of complex enterprise switching and routing networks using current network architectures.

Graduates of the specialization in Web Applications and Software Development will be able to

- design, develop and maintain software applications, web and mobile solutions and related technologies.
- critically evaluate and implement solutions for software and web environments.

Graduates of the Artificial Intelligence and Data Analytics specialization will be able to:

- master advanced analytics and AI tools: Understand and leverage data manipulation, visualization, and large-scale data processing with Python, R, Hadoop, Spark, and machine learning techniques to produce actionable results.
- apply ethical and responsible data practices: Communicate complex insights through clear visualizations and adhere to privacy, security, and ethical standards, while considering the social and societal impacts of data-driven decisions.

Section 3 Standard period of study, structure of the course and ECTS

(1) The program comprises 7 semesters (standard period of study). The number of credits required to obtain the bachelor's degree is 210 ECTS credits. One semester comprises a workload of 30 ECTS credits.

Table A illustrates the structure of the program:

Table A

1st semester	Academic Methods and Competencies (10 ECTS) Information Technology Fundamentals (20 ECTS)		
Choice of specialization:	**Specialization Web Applications and Software Development**	**Specialization Network Engineering and Cyber Security**	**Specialization Artificial Intelligence and Data Analytics**
2nd semester	Specialization (15 ECTS) Information Technology Projects (10 ECTS) Common Core Modules (5 ECTS)		
3rd semester	Specialization (10 ECTS) Information Technology Projects (10 ECTS) Common Core Modules (10 ECTS)		
4th semester	Specialization (10 ECTS) Information Technology Projects (10 ECTS) Common Core Modules (5 ECTS) Elective Module (5 ECTS)		
5th semester	Specialization (10 ECTS) Information Technology Projects (10 ECTS) Academic Methods and Competencies (5 ECTS) Elective Module (5 ECTS)		
6th semester	Specialization (10 ECTS) Information Technology Projects (10 ECTS) Information Technology Internship (10 of 30 ECTS)		
7th semester	Information Technology Internship (20 of 30 ECTS) Bachelor's Thesis and Colloquium (10 ECTS)		

(2) The necessary credits are acquired as follows:

- Study-related modules for acquiring various competencies, each assigned to a subject area (subject areas 1 – 6): 170 credit points
- Internship semester (Subject Area 7): 30 credit points
- Final examination (Subject Area 8): 10 credit points

(3) The course is divided into the module part, the internship semester and the final examination:

a) Study-related modules for acquiring various competencies, each assigned to a specific subject area: 170 credit points:

- Academic Methods and Competencies (15 ECTS)
- Information Technology Fundamentals (20 ECTS)
- Common Core Modules (20 ECTS)
- Elective Modules (10 ECTS)
- Information Technology Specialization (55 ECTS)
  - Web Applications and Software Development **or**
  - Network Engineering and Cyber Security **or**
  - Artificial Intelligence and Data Analytics
- Information Technology Projects (50 ECTS)

b) The internship semester usually takes place with 10 ECTS in the 6th semester and with 20 ECTS in the 7th semester.

c) The course of study ends in the 7th semester as part of the Bachelor phase with the final examination (Section 7).

Section 4 Access and admission requirements

(1) The access and admission requirements are based on the requirements of the Berlin Higher Education Act in its currently valid version and are also regulated in the mdh admission regulations (ZO).

(2) For applicants based on Section 11 Paragraph 2 of the BerlHG, the following vocational training courses completed in the Federal Republic of Germany are considered to be technically similar for this course of study (not exhaustive):

- IT Specialist for Application Development
- IT Specialist for System Integration
- IT Specialist for Data and Process Management
- IT Systems Management

(3) The examination board decides on the professional similarity of other completed vocational training courses.

Section 5 Examination and study plan

(1) The program consists of the study modules listed in the examination plan (Appendix 1), which candidates must take and complete. The course of study is conducted according to the curriculum (Appendix 2).

(2) The study modules are divided into basic knowledge in the first semester and advanced subjects in the second semester. The advanced subjects continue in the second and third years of study. The General Studies modules are completed in the first semester. The final year culminates in the IT-projects and the final thesis.

(3) Except for the final examination according to Section 7, all examinations are carried out alongside the course of study.

(4) The module handbook serves as a mandatory appendix to the present study and examination regulations to provide a more detailed explanation of the learning objectives, learning content, and minimum academic requirements in the individual study modules.

Section 6 Language

(1) The courses are held in English.

(2) Examinations are taken in English.

Section 7 Final exam

(1) The final exam is designed to determine whether the candidate has a comprehensive understanding of their subject and the ability to independently apply the principles of design thinking by evaluating, designing, and developing a solution for an industry-related IT project in their area of expertise using advanced information technology principles and techniques. It is an opportunity to manage projects of varying size, complexity, and associated risks from planning to implementation, while evaluating, justifying, and mitigating decisions.

(2) The final examination consists of a final thesis, which is usually divided into a written and a practical part, as well as a concluding colloquium. In exceptional cases, the final thesis may consist entirely of a written

part. Such an exception is decided upon by the responsible examination board during the topic selection process.

(3) The final examination is the responsibility of the responsible examination board and examination committee. Furthermore, the provisions of the mdh 's general study and examination regulations apply. The provisions of the ASPO (general study and examination regulations) in their current version apply.

Section 8 Final certificate, overall grade and bachelor's certificate

(1) The final certificate (Appendix 3) shows the respective subject area grades as a decimal number and the overall grade as a decimal number and grade.

(2) The calculation of the subject area grade is regulated by the general study and examination regulations of the mdh (ASPO).

(3) To calculate the overall rating, a weighted average (size X) is calculated from

- the unweighted arithmetic mean of the subject area grades (value X1); only the first two decimal places of the subject area grades are considered without rounding,
- the differentiated assessment of the final thesis (size X2) and
- the differentiated assessment of the colloquium (size X3),

formed according to the formula X = 0.75 X1 + 0.20 X2 + 0.05 X3.

The overall grade is calculated from the value X, where X is represented as an unrounded decimal with one decimal place. The scaling of the corresponding grade of the overall grade is determined by the mdh 's General Study and Examination Regulations (ASPO).

(4) The grade "with distinction" is awarded instead of the overall grade "very good" if the values X2 and X3 have the value 1.0 and the unrounded value X is less than or equal to 1.3.

(5) Together with the certificate, the candidate will receive a bachelor's degree certificate in German (Appendix 4) and a Diploma Supplement in German and English (Appendix 5). Upon request, a transcript will be provided. of Records in English (Annex 6).

Section 9 Come into effect

(1) These regulations come into force after their publication on the university's website.

(2) It is valid from 1 October 2024.

Appendix 1 to § 5
Examination plan for the Information Technology (B.Sc.) program

Subject areas and related Study modules			Teaching method	Type of exam	Grade weighting	Credit points
1. Academic Methods and Competencies						**15**
	1.1	Scientific work	S, E, B	Sc	Diff.	5
	1.2	Applied Research	S, E, B	Sc	Undiff.	5
	1.3	Bachelor Thesis Setup	S, E, B	Sc	Undiff.	5
2. Information Technology Fundamentals						**20**
	2.1	Technical Support Fundamentals	B	Pr	Diff.	5
	2.2	Web Concepts	B	Pr	Diff.	5
	2.3	Information Systems	B	Pr	Diff.	5
	2.4	Software Development Fundamentals	B	Pr, Sc	Diff.	5
3 Common Core Modules						**20**
	3.1	Database Systems	S, E, B	Pr, Sc	Diff.	5
	3.2	Data Structures and Algorithms	S, E, B	Pr, Sc	Diff.	5
	3.3	Data and Cyber Security	S, E, B	Sc, Or	Diff.	5
	3.4	Cloud Computing	S, E, B	Pr, Sc	Diff.	5
4.A Information Technology Specialization: Web Applications and Software Development						**55**
	4.1 A	Back-End Development	S, E, B	Pr, Sc	Diff.	5
	4.2 A	Front-End Development	S, E, B	Pr, Sc	Diff.	5
	4.3 A	Agile Project Management	S, E, B	Pr, Sc	Diff.	5
	4.4 A	Mobile Development	S, E, B	Pr, Sc, Or	Diff.	5
	4.5 A	Web Application Development	S, E, B	Pr, Sc	Diff.	5
	4.6 A	Advanced Mobile Development	S, E, B	Pr, Sc, Or	Diff.	5
	4.7 A	Software testing and maintenance	S, E, B	Pr, Sc, Or	Diff.	5
	4.8 A	Advanced Programming	S, E, B	Pr	Diff.	5
	4.9 A	Interaction Design	S, E, B	Pr, Sc, Or	Diff.	5
	4.10 A	Web Technologies	S, E, B	Pr, Sc, Or	Diff.	10
4.B Information Technology Specialization: Network Engineering and Cyber Security						**55**
	4.1 B	Computer Servicing Skills	S, E, B	Pr, Sc, Or	Diff.	5
	4.2 B	Operating Systems	S, E, B	Sc	Diff.	5

Subject areas and related Study modules			Teaching method	Type of exam	Grade weighting	Credit points
	4.3 B	Networking	S, E, B	Pr, Sc, Or	Diff.	5
	4.4 B	Network Security	S, E, B	Pr, Sc, Or	Diff.	5
	4.5 B	Network Management	S, E, B	Pr, Sc, Or	Diff.	5
	4.6 B	Wireless Networking	S, E, B	Pr, Sc, Or	Diff.	5
	4.7 B	Unified Communications	S, E, B	Pr, Sc, Or	Diff.	5
	4.8 B	IP Switched Networks	S, E, B	Pr, Sc, Or	Diff.	5
	4.9 B	IP routing	S, E, B	Pr, Sc, Or	Diff.	5
	4.10 B	Troubleshooting IP Networks	S, E, B	Pr, Sc, Or	Diff.	10
4.C Information Technology Specialization: Artificial Intelligence and Data Analytics						**55**
	4.1 C	Fundamentals of AI and Data Analytics	S, E, B	Pr, Or	Diff.	5
	4.2 C	Programming for Data Analytics	S, E, B	Pr	Diff.	5
	4.3 C	Data mining	S, E, B	Pr, Sc	Diff.	5
	4.4 C	Data Acquisition and Visualization	S, E, B	Pr, Sc	Diff.	5
	4.5 C	Machine Learning	S, E, B	Pr, Sc	Diff.	5
	4.6 C	Data Ethics and Law	S, E, B	Sc, Or	Diff.	5
	4.7 C	Big Data Analytics	S, E, B	Pr	Diff.	5
	4.8 C	Data warehousing	S, E, B	Pr, Sc	Diff.	5
	4.9 C	Computational Intelligence	S, E, B	Pr	Diff.	5
	4.10 C	Advanced AI and Data Analytics	S, E, B	Pr, Sc, Or	Diff.	10
5 Elective modules						10
	5.1	Elective I	S, E, B	--	Diff.	5
	5.2	Elective II	S, E, B	--	Diff.	5
6 Information Technology Projects						**50**
	6.1	IT Project I	S, E, B	Pr, Sc	Undiff .	10
	6.2	IT Project II	S, E, B	Pr, Sc	Diff.	10
	6.3	IT Project III	S, E, B	Pr, Sc	Diff.	10
	6.4	IT Project IV	S, E, B	Pr, Sc	Diff.	10
	6.5	IT Project V	S, E, B-	Pr, Sc	Diff.	10
7 Information Technology Internship						**30**
	7.1	IT Internship	-	Sc, Or	Undiff.	30

Subject areas and related Study modules			Teaching method	Type of exam	Grade weighting	Credit points
8 Bachelor Qualification						**10**
	8.1	Thesis and Colloquium	-	Sc, Pr, K	Diff.	10

Legend:

Teaching format: L = Lecture, S = Seminar, Ü = Exercise, B = Blended

Blended (B): A series of individual and group activities designed to develop and consolidate knowledge, skills, and competencies. Activities may include class and group discussions, lectures, practical activities, self-directed inquiry, workshops, role-playing, and contextual skill practice. Learning environments utilize technological devices and software, and teaching, learning, and assessment can take place in the classroom or online. Online delivery is facilitated by a learning platform and can contribute to blended delivery. It can be synchronous (together, same time, same place) or asynchronous (separate, different time, different place). They may include online discussions, webinars, collaboration tools, embedded links, interactive activities, images, text, infographics, and videos, simulations, recorded demonstrations, appropriate software tools and guides, educational resources, and databases.

Examination type: Sc = written, Pr = practical, K = colloquium

Appendix 2 to § 5
Curriculum of the Information Technology (B.Sc.) program

Subject Areas and Associated Study Modules		Semester 1	Semester 2	Semester 3	Semester 4	Semester 5	Semester 6	Semester 7	Total ECTS ECTS	Total workload in h	Presence in h	Self-learning phase in h
1 Academic Methods and Competencies												
1.1.	Scientific work	5							5	130	36	94
1.2	Applied Research	5							5	130	45	85
1.3	Bachelor Thesis Setup					5			5	130	36	94
2 Information Technology Fundamentals												
2.1.	Technical Support Fundamentals	5							5	130	36	94
2.2.	Web Concepts	5							5	130	36	94
2.3.	Information Systems	5							5	130	36	94
2.4.	Software Development Fundamentals	5							5	130	36	94
3 Common Core Modules												
3.1	Database Systems		5						5	130	36	94
3.2	Data Structure and Algorithms			5					5	130	36	94
3.A.3	Data and Cyber Security			5					5	130	36	94
3.4	Cloud Computing				5				5	130	36	94
4 A Information Technology Specialization: Web Applications and Software Development												
4.1 A	Back-End Development		5						5	130	36	94
4.2 A	Front-End Development		5						5	130	36	94
4.3 A	Agile Project Management		5						5	130	36	94
4.4 A	Mobile Development			5					5	130	36	94
4.5 A	Web Services			5					5	130	36	94
4.6 A	Advanced Mobile Development				5				5	130	36	94
4.7 A	Software Testing & Maintenance				5				5	130	36	94
4.8 A	Advanced Programming					5			5	130	36	94
4.9 A	Interaction Design					5			5	130	36	94
4.10 A	Web Technologies						10		10	260	67,5	192,5
4 B Information Technology Specialization: Network Engineering and Cyber Security												

Subject Areas and Associated Study Modules			Semester 1	Semester 2	Semester 3	Semester 4	Semester 5	Semester 6	Semester 7	Total ECTS ECTS	Total workload in h	Presence in h	Self-learning phase in h
	4.1 B	Computer Servicing Skills		5						5	130	36	94
	4.2 B	Operating Systems		5						5	130	36	94
	4.3 B	Networking		5						5	130	36	94
	4.4 B	Network Security			5					5	130	36	94
	4.5 B	Network Management			5					5	130	36	94
	4.6 B	Wireless Networking				5				5	130	36	94
	4.7 B	Unified Communications				5				5	130	36	94
	4.8 B	IP Switched Networks					5			5	130	36	94
	4.9 B	IP routing					5			5	130	36	94
	4.10 B	Troubleshooting IP Networks						10		10	260	67.5	192.5
4 C Information Technology Specialization: Artificial Intelligence and Data Analytics													
	4.1 C	Fundamentals of AI and Data Analytics		5						5	130	36	94
	4.2 C	Programming for Data Analytics		5						5	130	36	94
	4.3 C	Data mining		5						5	130	36	94
	4.4 C	Data Acquisition and Visualization			5					5	130	36	94
	4.5 C	Machine Learning			5					5	130	36	94
	4.6 C	Data Ethics and Law				5				5	130	36	94
	4.7 C	Big Data Analytics				5				5	130	36	94
	4.8 C	Data warehousing					5			5	130	36	94
	4.9 C	Computational Intelligence					5			5	130	36	94
	4.10 C	Advanced AI and Data Analytics						10		10	260	67.5	192.5
5 Elective modules													
	5.1	Elective I				5				5	130	36	94
	5.2	Elective II					5			5	130	36	94
6 Information Technology Projects													
	6.1	IT Project I		10						10	260	81	179
	6.2	IT Project II			10					10	260	81	179

Subject Areas and Associated Study Modules			Semester 1	Semester 2	Semester 3	Semester 4	Semester 5	Semester 6	Semester 7	Total ECTS ECTS	Total workload in h	Presence in h	Self-learning phase in h
	6.3	IT Project III				10				10	260	81	179
	6.4	IT Project IV					10			10	260	67.5	192.5
	6.5	IT Project V						10		10	260	67.5	192.5
7 Information Technology Internship													
	7.1	IT Internship						10	20	30	780	4.5	775.5
8 Bachelors' Qualification													
	8.1	Thesis and Colloquium							10	10	260		260

Appendix 3 Grade Transcript

<Salutation>> <<first name surname>>

Born on <<Date of birth>>

in <<City>>

has successfully passed the examinations in the 210 ECTS-Points program of

Information Technology Specialization Web Applications and Software Development

(BACHELOR OF SCIENCE)

with following grades:

Subject Areas

Academic Methods and Competencies	<<Grade>>
Information Technology Fundamentals	<<Grade>>
Common Core Modules	<<Grade>>
Web Application and Software Development	<<Grade>>
Elective Modules	<<Grade>>
IT Projects	<<Grade>>
Bachelor-Thesis	<<Grade>>
Colloquium	<<Grade>>
Overall Grade	<<Grade>>

Thesis Topic

Berlin, <<Datum>>

Chairman, Examination Committee

Governing Board

<Salutation>> <<first name surname>>

Born on <<Date of birth>>

in <<City>>

has successfully passed the examinations in the 210 ECTS-Points program of

Information Technology Specialization Network Engineering and Cyber Security

(BACHELOR OF SCIENCE)

with following grades:

Subject Areas

Academic Methods and Competencies	<<Grade>>
Information Technology Fundamentals	<<Grade>>
Common Core Modules	<<Grade>>
Network Engineering and Cyber Security	<<Grade>>
Elective Modules	<<Grade>>
IT Projects	<<Grade>>
Bachelor-Thesis	<<Grade>>
Colloquium	<<Grade>>
Overall Grade	<<Grade>>

Thesis Topic

Berlin, <<Datum>>

Chairman, Examination Committee

Governing Board

TRANSCRIPT

<Salutation>> <<first name surname>>

Born on <<Date of birth>>

in <<City>>

has successfully passed the examinations in the 210 ECTS-Points program of

Information Technology Specialization Artificial Intelligence and Data Analytics

(BACHELOR OF SCIENCE)

with following grades:

Subject Areas

Academic Methods and Competencies	<<Grade>>
Information Technology Fundamentals	<<Grade>>
Common Core Modules	<<Grade>>
Artificial Intelligence and Data Analytics	<<Grade>>
Elective Modules	<<Grade>>
IT Projects	<<Grade>>
Bachelor-Thesis	<<Grade>>
Colloquium	<<Grade>>
Overall Grade	<<Grade>>

Thesis Topic

Berlin, <<Datum>>

Chairman, Examination Committee

Governing Board

Appendix 4 Certificate

CERTIFICATE

The **MEDIADESIGN HOCHSCHULE**
University of Applied Sciences

Does hereby confer on

<Mr/Mrs>> <<first name surname>>

Born on <<date of birth>>

in <<city>>

Who has successfully completed the studies

on <<date>> in the 210 ECTS-Points degree program

INFORMATION TECHNOLOGY

Specialization:
Web Applications and Software Development

the degree

BACHELOR OF SCIENCE

Berlin, <<date>>

Governing Board
Seal

CERTIFICATE

The **MEDIADESIGN HOCHSCHULE**
University of Applied Sciences

Does hereby confer on

<Mr/Mrs>> <<first name surname>>

Born on <<date of birth>>

in <<city>>

Who has successfully completed the studies

on <<date>> in the degree programme

INFORMATION TECHNOLOGY

Specialisation:

Network Engineering and Cyber Security

the degree

BACHELOR OF SCIENCE

Berlin, <<date>>

Governing Board
Seal

CERTIFICATE

The **MEDIADESIGN HOCHSCHULE**
University of Applied Sciences

Does hereby confer on

<Mr/Mrs>> <<first name surname>>

Born on <<date of birth>>

in <<city>>

Who has successfully completed the studies

on <<date>> in the 210 ECTS-Points degree program

INFORMATION TECHNOLOGY

Specialization:
Artificial Intelligence and Data Analytics

the degree

BACHELOR OF SCIENCE

Berlin, <<date>>

Governing Board
Seal

Appendix 5 Diploma Supplement (in German and English)

[Mediadesign Hochschule]

Diploma Supplement

Diese Diploma Supplement-Vorlage wurde von der Europäischen Kommission, dem Europarat und UNESCO/CEPES entwickelt. Das Diploma Supplement soll hinreichende Daten zur Verfügung stellen, die die internationale Transparenz und angemessene akademische und berufliche Anerkennung von Qualifikationen (Urkunden, Zeugnisse, Abschlüsse, Zertifikate, etc.) verbessern. Das Diploma Supplement beschreibt Eigenschaften, Stufe, Zusammenhang, Inhalte sowie Art des Abschlusses des Studiums, das von der in der Originalurkunde bezeichneten Person erfolgreich abgeschlossen wurde. Die Originalurkunde muss diesem Diploma Supplement beigefügt werden. Das Diploma Supplement sollte frei sein von jeglichen Werturteilen, Äquivalenzaussagen oder Empfehlungen zur Anerkennung. Es sollte Angaben in allen acht Abschnitten enthalten. Wenn keine Angaben gemacht werden, sollte dies durch eine Begründung erläutert werden.

1. ANGABEN ZUM INHABER/ZUR INHABERIN DER QUALIFIKATION

1.1 Familienname(n) / 1.2 Vorname(n)

<<Nachname>>, <<Vorname>>

1.3 Geburtsdatum (TT/MM/JJJJ)

<<Geburtsdatum>>

1.4 Matrikelnummer oder Code zur Identifizierung des/der Studierenden (wenn vorhanden)

<<Matrikelnummer>>

2. ANGABEN ZUR QUALIFIKATION

2.1 Bezeichnung der Qualifikation und (wenn vorhanden) verliehener Grad (in der Originalsprache)

Bachelor of Science

2.2 Hauptstudienfach oder -fächer für die Qualifikation

Information Technology mit den Spezialisierungen

- Web Applications and Software Development
- Network Engineering and Cyber Security
- Artificial Intelligence and Data Analytics

2.3 Name und Status (Typ/Trägerschaft) der Einrichtung, die die Qualifikation verliehen hat (in der Originalsprache)

Mediadesign Hochschule für Design und Informatik

University of Applied Sciences

Franklinstraße 28-29

10587 Berlin, Deutschland

Private Hochschule, staatlich anerkannt

2.4 Name und Status (Typ/Trägerschaft) der Einrichtung (falls nicht mit 2.3 identisch), die den Studiengang durchgeführt hat (in der Originalsprache)

same

2.5 Im Unterricht / in der Prüfung verwendete Sprache(n)

Englisch

3. ANGABEN ZU EBENE UND ZEITDAUER DER QUALIFIKATION

3.1 Ebene der Qualifikation

erster berufsqualifizierender Hochschulabschluss (Bachelor-Grad)

3.2 Offizielle Dauer des Studiums (Regelstudienzeit) in Leistungspunkten und/oder Jahren

3,5 Jahre (=210 ECTS-Punkte in 7 Semestern); Vollzeitstudium mit einem Arbeitsaufwand von 1560 Stunden / Jahr und 26 Stunden pro ECTS-Punkt.

3.3 Zugangsvoraussetzung(en)

Allgemeine Hochschulzugangsberechtigung oder nach deutschem Recht anerkannte im Ausland erworbene Hochschulzugangsberechtigung.

[Mediadesign Hochschule]

Diploma Supplement

This Diploma Supplement model was developed by the European Commission, Council of Europe and UNESCO/CEPES. The purpose of the supplement is to provide sufficient independent data to improve the international 'transparency' and fair academic and professional recognition of qualifications (diplomas, degrees, certificates etc.). It is designed to provide a description of the nature, level, context, content and status of the studies that were pursued and successfully completed by the individual named on the original qualification to which this supplement is appended. It should be free from any value judgements, equivalence statements or suggestions about recognition. Information in all eight sections should be provided. Where information is not provided, an explanation should give the reason why.

1. INFORMATION IDENTIFYING THE HOLDER OF THE QUALIFICATION

1.1 Family name(s) / 1.2 First name(s)

<<Nachname>>, <<Vorname>>

1.3 Date of birth (dd/mm/yyyy)

<<Geburtsdatum>>

1.4 Student identification number or code (if applicable)

<<Matrikelnummer>>

2. INFORMATION IDENTIFYING THE QUALIFICATION

2.1 Name of qualification and (if applicable) title conferred (in original language)

Bachelor of Science (B.Sc.)

2.2 Main field(s) of study for the qualification

Information Technology with the specializations

- Web Applications and Software Development
- Network Engineering and Cyber Security
- Artificial Intelligence and Data Analytics

2.3 Name and status of awarding institution (in original language)

Mediadesign Hochschule für Design und Informatik
Fachbereich Design
Franklinstraße 28-29
10969 Berlin, Federal Republic of Germany
Status
Private Institution, state-recognized

2.4 Name and status of institution (if different from 2.3) administering studies (in original language)

Same

2.5 Language(s) of instruction/examination

English

3. INFORMATION ON THE LEVEL AND DURATION OF THE QUALIFICATION

3.1 Level of the qualification

First degree, by research with thesis; 3,5 years one-tier programme

3.2 Official duration of programme in credits and/or years

3,5 years (=210 Credit Points); full time programme with an increased workload of 1560 hours / year and 26 hours per Credit Point

3.3 Access requirement(s)

Higher Education Entrance Qualification (HEEQ), general; or foreign equivalent. The HEEQ after 12 to 13 years of schooling gives access to all higher education studies

4. INFORMATION ON THE PROGRAMME COMPLETED AND THE RESULTS OBTAINED

4.1 Mode of study

Full-time

4.2 Programme learning outcomes

Graduates of the full-time bachelor's degree program "Information Technologies with specialization in Web Applications and Software Development" or "Information Technologies with specialisation in Network Engineering and Cyber Security" or "Information Technologies with specialization in Artificial Intelligence and Data Analytics" have expertise on the current state of teaching and research in their field of expertise, broad academic skills, overview knowledge and in-depth knowledge in the chosen field of specialization.

Graduates of the Bachelor of Science in Information Technology develop a systemic and coherent understanding of information technology. In their chosen specialisation Network Engineering and Cyber Security or Web Applications and Software Development or Artificial Intelligence and Data analytics, they develop scientific knowledge and understanding that they can apply in the workplace.

The graduates have:

- The ability to think critically to solve IT challenges in a range of contexts and to communicate ideas effectively.
- Know how to select, adapt and apply a range of IT infrastructure, architecture and software development processes and solutions in their organisational or industrial context.
- Basic knowledge of requirements analysis, design, development, implementation and quality assurance of IT projects and systems.
- Basic knowledge of the application of ethical, legal and social practices within the industry

The graduates are able to:

- Identify opportunities to apply expertise in a range of technical contexts, including security, system deployment and maintenance.
- Manage and implement change management processes and procedures for an organisation in its chosen area of specialisation.
- Manage projects to develop and communicate solutions that meet the needs of the market or the company.

Graduates can:

- make rational decisions and critically examine problems and possible solutions.
- develop holistically and methodically efficient solutions, also for interdisciplinary issues.
- identify and assess the ethical, philosophical, social and moral consequences of their decisions.
- Work constructively, purposefully and efficiently with other people in different professional situations.
- work effectively individually or as a member of a project team, considering internal requirements and external (customer) specifications.
- apply scientific methods in practice and implement innovative developments in everyday working life.
- apply the methodology of Design Thinking in context to develop innovative solutions for clients.
- learn and educate themselves independently based on the bachelor's degree.

Graduates specialising in Network Engineering and Cyber Security are able to:

- troubleshoot local and wide area enterprise networks with advanced security, voice, radio and video solutions.
- plan, configure, install and validate the implementation of complex enterprise switch and routing networks using current network architectures.

Graduates specializing in Web Application and Software Development are able to:

- Design, develop and maintain software applications, web and mobile solutions and related technologies.
- Critically assess and implement solutions for software and web environments.

Graduates specialising in Artificial Intelligence and Data Analytics are able to:

- Master advanced analytics and AI tools: Understanding and leveraging data manipulation, visualization, and large-scale data processing using Python, R, Hadoop, Spark, and machine learning techniques to get actionable results.
- Apply ethical and responsible data practices: Communicate complex insights through clear visualizations and adhere to privacy, security and ethical standards while respecting the social and societal impact of data-driven decisions.

4.3 Programme details, individual credits gained and grades/marks obtained

See Transcript for list of courses and grades; and ,,Bachelorzeugnis" (Final Examination Certificate) for subjects offered in final examinations (written and oral), and topic of thesis, including evaluations

4.4 Grading system and, if available, grade distribution table

General grading scheme cf. Sec. 8.6 – In absence of a statistical base (it is the first graduate class) grades are absolute in the award year ,,Sehr gut" (7%) - ,,Gut" (11%) ,,Befriedigend" (14 %) - ,,Ausreichend" (18%) - ,,Nicht ausreichend" (50%)

4.5 Overall classification of the qualification (in original language)

<<Prädikat>>

5. INFORMATION ON THE FUNCTION OF THE QUALIFICATION

5.1 Access to further study

Qualifies to apply for admission to M.Sc. programmes

5.2 Access to a regulated profession (if applicable)

The Bachelor of Science degree in this discipline entitles its holder to do professional work in the field(s) for which the degree was awarded.

6. ADDITIONAL INFORMATION

6.1 Additional information

n.a.

6.2 Further information sources

On the institution: http://www.mediadesign.de;
on the program: https://www.mediadesign.de/de/bachelor/information-technology

For national information sources cf. Sect. 8.8

7. CERTIFICATION

This Diploma Supplement refers to the following original documents:
Document on the award of the academic degree (Urkunde über die Verleihung des Akademischen Grades) [date]
Certificate(Zeugnis) [date]
Transcript of Records [date]

Certification Date:

Chairwoman/Chairman Examination Committee

(Official Stamp/Seal)

8. NATIONAL HIGHER EDUCATION SYSTEM

The information on the national higher education system on the following pages provides a context for the qualification and the type of higher education institution that awarded it.

8. INFORMATION ON THE GERMAN HIGHER EDUCATION SYSTEM[1]

8.1 Types of Institutions and Institutional Status

Higher education (HE) studies in Germany are offered at three types of Higher Education Institutions (HEI).[2]

- *Universitäten* (Universities) including various specialised institutions, offer the whole range of academic disciplines. In the German tradition, universities focus in particular on basic research so that advanced stages of study have mainly theoretical orientation and research-oriented components.

- *Fachhochschulen (FH)/Hochschulen für Angewandte Wissenschaften (HAW)* (Universities of Applied Sciences, UAS) concentrate their study programmes in engineering and other technical disciplines, business-related studies, social work, and design areas. The common mission of applied research and development implies an application-oriented focus of studies, which includes integrated and supervised work assignments in industry, enterprises or other relevant institutions.

- *Kunst- und Musikhochschulen* (Universities of Art/Music) offer studies for artistic careers in fine arts, performing arts and music; in such fields as directing, production, writing in theatre, film, and other media; and in a variety of design areas, architecture, media and communication.

Higher Education Institutions are either state or state-recognised institutions. In their operations, including the organisation of studies and the designation and award of degrees, they are both subject to higher education legislation.

8.2 Types of Programmes and Degrees Awarded

Studies in all three types of institutions have traditionally been offered in integrated "long" (one-tier) programmes leading to *Diplom*- or *Magister Artium* degrees or completed by a *Staatsprüfung* (State Examination).

Within the framework of the Bologna-Process one-tier study programmes are successively being replaced by a two-tier study system. Since 1998, two-tier degrees (Bachelor's and Master's) have been introduced in almost all study programmes. This change is designed to enlarge variety and flexibility for students in planning and pursuing educational objectives; it also enhances international compatibility of studies.

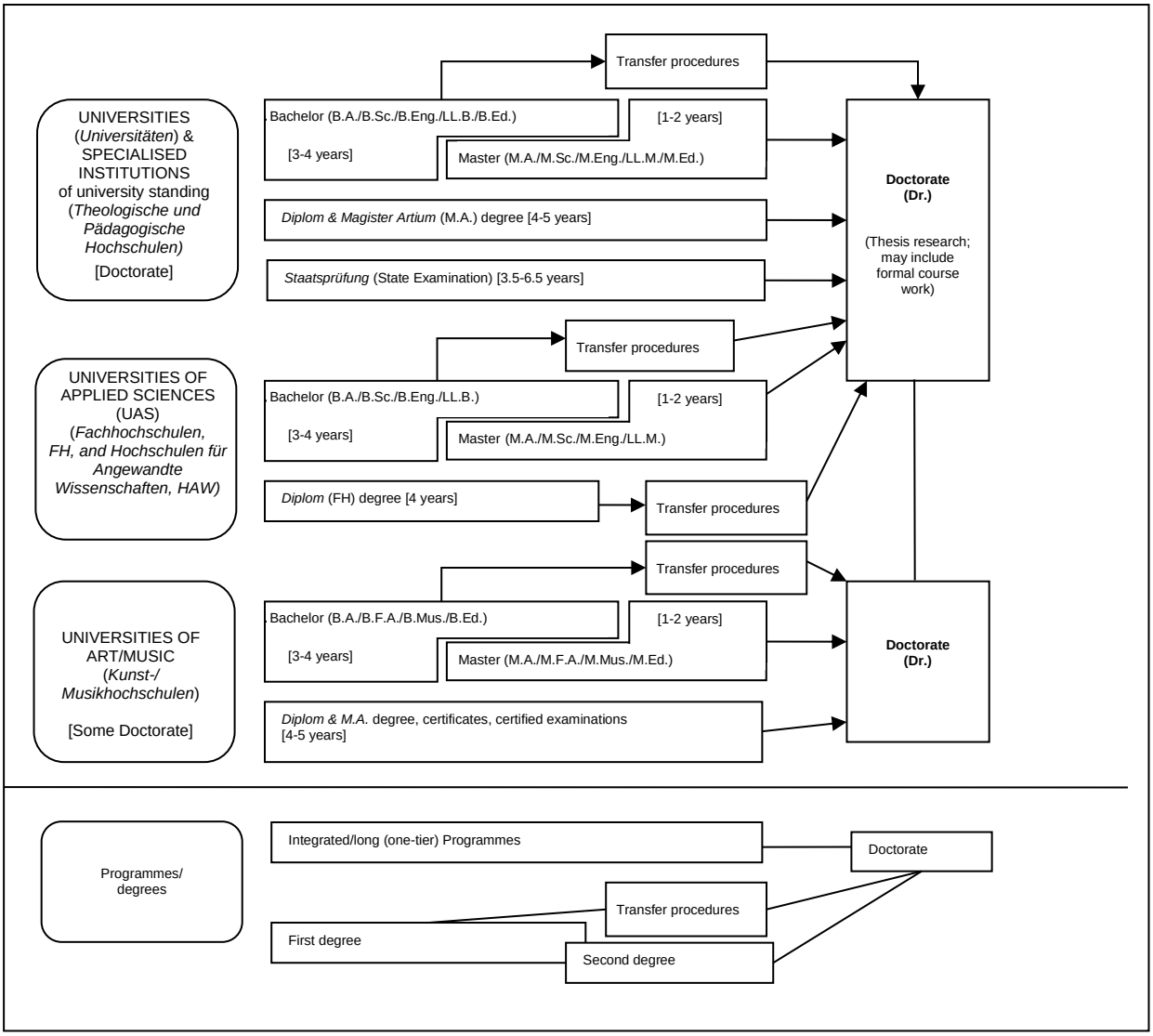
The German Qualifications Framework for Higher Education Qualifications (HQR)[3] describes the qualification levels as well as the resulting qualifications and competences of the graduates. The three levels of the HQR correspond to the levels 6, 7 and 8 of the German Qualifications Framework for Lifelong Learning[4] and the European Qualifications Framework for Lifelong Learning[5].

For details cf. Sec. 8.4.1, 8.4.2, and 8.4.3 respectively. Table 1 provides a synoptic summary.

8.3 Approval/Accreditation of Programmes and Degrees

To ensure quality and comparability of qualifications, the organisation of studies and general degree requirements have to conform to principles and regulations established by the Standing Conference of the Ministers of Education and Cultural Affairs of the *Länder* in the Federal Republic of Germany (KMK).[6] In 1999, a system of accreditation for Bachelor's and Master's programmes has become operational. All new programmes have to be accredited under this scheme; after a successful accreditation they receive the seal of the Accreditation Council.[7]

Table 1: Institutions, Programmes and Degrees in German Higher Education



8.4 Organisation and Structure of Studies

The following programmes apply to all three types of institutions. Bachelor's and Master's study programmes may be studied consecutively, at various higher education institutions, at different types of higher education institutions and with phases of professional work between the first and the second qualification. The organisation of the study programmes makes use of modular components and of the European Credit Transfer and Accumulation System (ECTS) with 30 credits corresponding to one semester.

8.4.1 Bachelor

Bachelor's degree programmes lay the academic foundations, provide methodological competences and include skills related to the professional field. The Bachelor's degree is awarded after 3 to 4 years.
The Bachelor's degree programme includes a thesis requirement. Study programmes leading to the Bachelor's degree must be accredited according to the Interstate study accreditation treaty.[8]
First degree programmes (Bachelor) lead to Bachelor of Arts (B.A.), Bachelor of Science (B.Sc.), Bachelor of Engineering (B.Eng.), Bachelor of Laws (LL.B.), Bachelor of Fine Arts (B.F.A.), Bachelor of Music (B.Mus.) or Bachelor of Education (B.Ed.).
The Bachelor's degree corresponds to level 6 of the German Qualifications Framework/ European Qualifications Framework.

8.4.2 Master

Master is the second degree after another 1 to 2 years. Master's programmes may be differentiated by the profile types "practice-oriented" and "research-oriented". Higher Education Institutions define the profile.
The Master's degree programme includes a thesis requirement. Study programmes leading to the Master's degree must be accredited according to the Interstate study accreditation treaty.[9]
Second degree programmes (Master) lead to Master of Arts (M.A.), Master of Science (M.Sc.), Master of Engineering (M.Eng.), Master of Laws (L.L.M.), Master of Fine Arts (M.F.A.), Master of Music (M.Mus.) or Master of Education (M.Ed.). Master´s programmes which are designed for continuing education may carry other designations (e.g. MBA).
The Master's degree corresponds to level 7 of the German Qualifications Framework/ European Qualifications Framework.

8.4.3 Integrated "Long" Programmes (One-Tier): *Diplom* degrees, *Magister Artium, Staatsprüfung*

An integrated study programme is either mono-disciplinary (*Diplom* degrees, most programmes completed by a *Staatsprüfung*) or comprises a combination of either two major or one major and two minor fields (*Magister Artium*). The first stage (1.5 to 2 years) focuses on broad orientations and foundations of the field(s) of study. An Intermediate Examination (*Diplom-Vorprüfung* for *Diplom* degrees; *Zwischenprüfung* or credit requirements for the *Magister Artium*) is prerequisite to enter the second stage of advanced studies and specialisations. Degree requirements include submission of a thesis (up to 6 months duration) and comprehensive final written and oral examinations. Similar regulations apply to studies leading to a *Staatsprüfung*. The level of qualification is equivalent to the Master's level.

- Integrated studies at *Universitäten (U)* last 4 to 5 years (*Diplom* degree, *Magister Artium*) or 3.5 to 6.5 years (*Staatsprüfung*). The *Diplom* degree is awarded in engineering disciplines, the natural sciences as well as economics and business. In the humanities, the corresponding degree is usually the *Magister Artium* (M.A.). In the social sciences, the practice varies as a matter of institutional traditions. Studies preparing for the legal, medical and pharmaceutical professions are completed by a *Staatsprüfung*. This applies also to studies preparing for teaching professions of some *Länder*.
The three qualifications (*Diplom*, *Magister Artium* and *Staatsprüfung*) are academically equivalent and correspond to level 7 of the German Qualifications Framework/European Qualifications Framework.
They qualify to apply for admission to doctoral studies. Further prerequisites for admission may be defined by the Higher Education Institution, cf. Sec. 8.5.

- Integrated studies at *Fachhochschulen (FH)/Hochschulen für Angewandte Wissenschaften (HAW)* (Universities of Applied Sciences, UAS) last 4 years and lead to a *Diplom (FH)* degree which corresponds to level 6 of the German Qualifications Framework/European Qualifications Framework.
Qualified graduates of FH/HAW/UAS may apply for admission to doctoral studies at doctorate-granting institutions, cf. Sec. 8.5.

- Studies at *Kunst- and Musikhochschulen* (Universities of Art/Music etc.) are more diverse in their organisation, depending on the field and individual objectives. In addition to *Diplom/Magister* degrees, the integrated study programme awards include certificates and certified examinations for specialised areas and professional purposes.

8.5 Doctorate

Universities as well as specialised institutions of university standing, some of the FH/HAW/UAS and some Universities of Art/Music are doctorate-granting institutions. Formal prerequisite for admission to doctoral work is a qualified Master's degree (UAS and U), a *Magister* degree*,* a *Diplom*, a *Staatsprüfung*, or a foreign equivalent. Comparable degrees from universities of art and music can in exceptional cases (study programmes such as music theory, musicology, pedagogy of arts and music, media studies) also formally qualify for doctoral work. Particularly qualified holders of a Bachelor's degree or a *Diplom (FH)* degree may also be admitted to doctoral studies without acquisition of a further degree by means of a procedure to determine their aptitude. The universities respectively the doctorate-granting institutions regulate entry to a doctorate as well as the structure of the procedure to determine aptitude. Admission further requires the acceptance of the Dissertation research project by a professor as a supervisor.
The doctoral degree corresponds to level 8 of the German Qualifications Framework/ European Qualifications Framework.

8.6 Grading Scheme

The grading scheme in Germany usually comprises five levels (with numerical equivalents; intermediate grades may be given): "*Sehr Gut*" (1) = Very Good; "*Gut*" (2) = Good; "*Befriedigend*" (3) = Satisfactory; "*Ausreichend*" (4) = Sufficient; "*Nicht ausreichend*" (5) = Non-Sufficient/Fail. The minimum passing grade is "*Ausreichend*" (4). Verbal designations of grades may vary in some cases and for doctoral degrees. In addition, grade distribution tables as described in the ECTS Users' Guide are used to indicate the relative distribution of grades within a reference group.

8.7 Access to Higher Education

The General Higher Education Entrance Qualification (*Allgemeine Hochschulreife*, *Abitur*) after 12 to 13 years of schooling allows for admission to all higher educational studies. Specialised variants (*Fachgebundene Hochschulreife*) allow for admission at *Fachhochschulen (FH)/Hochschulen für Angewandte Wissenschaften (HAW)* (UAS), universities and equivalent higher education institutions, but only in particular disciplines. Access to study programmes at *Fachhochschulen (FH)/Hochschulen für Angewandte Wissenschaften (HAW)* (UAS) is also possible with a *Fachhochschulreife*, which can usually be acquired after 12 years of schooling. Admission to study programmes at Universities of Art/Music and comparable study programmes at other higher education institutions as well as admission to a study programme in sports may be based on other or additional evidence demonstrating individual aptitude.
Applicants with a qualification in vocational education and training but without a school-based higher education entrance qualification are entitled to a general higher education entrance qualification and thus to access to all study programmes, provided they have obtained advanced further training certificates in particular state-regulated vocational fields (e.g. *Meister/Meisterin im Handwerk, Industriemeister/in, Fachwirt/in (IHK), Betriebswirt/in (IHK) und (HWK), staatlich gebrüfte/r Techniker/in, staatlich geprüfte/r Betriebswirt/in, staatlich geprüfte/r Gestalter/in, staatlich geprüfte/r Erzieher/in*). Vocationally qualified applicants can obtain a *Fachgebundene Hochschulreife* after completing a state-regulated vocational education of at least two years' duration plus professional practice of normally at least three years' duration, after having successfully passed an aptitude test at a higher education institution or other state institution; the aptitude test may be replaced by successfully completed trial studies of at least one year's duration.[10]
Higher Education Institutions may in certain cases apply additional admission procedures.

8.8 National Sources of Information

- *Kultusministerkonferenz (KMK)* [Standing Conference of the Ministers of Education and Cultural Affairs of the *Länder* in the Federal Republic of Germany]; Graurheindorfer Str. 157, D-53117 Bonn; Phone: +49[0]228/501-0; www.kmk.org; E-Mail: hochschulen@kmk.org
- Central Office for Foreign Education (ZAB) as German NARIC; www.kmk.org; E-Mail: zab@kmk.org
- German information office of the *Länder* in the EURYDICE Network, providing the national dossier on the education system; www.kmk.org; E-Mail: Eurydice@kmk.org
- *Hochschulrektorenkonferenz (HRK)* [German Rectors' Conference]; Leipziger Platz 11, D-10117 Berlin, Phone: +49 30 206292-11; www.hrk.de; E-Mail: post@hrk.de
- "Higher Education Compass" of the German Rectors' Conference features comprehensive information on institutions, programmes of study, etc. (www.higher-education-compass.de)

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1 The information covers only aspects directly relevant to purposes of the Diploma Supplement.

2 *Berufsakademien* are not considered as Higher Education Institutions, they only exist in some of the *Länder*. They offer educational programmes in close cooperation with private companies. Students receive a formal degree and carry out an apprenticeship at the company. Some *Berufsakademien* offer Bachelor courses which are recognised as an academic degree if they are accredited by the Accreditation Council.

3 German Qualifications Framework for Higher Education Degrees. (Resolution of the Standing Conference of the Ministers of Education

and Cultural Affairs of the *Länder* in the Federal Republic of Germany of 16 February 2017).

4 German Qualifications Framework for Lifelong Learning (DQR). Joint resolution of the Standing Conference of the Ministers of Education and Cultural Affairs of the *Länder* in the Federal Republic of Germany, the German Federal Ministry of Education and Research, the German Conference of Economics Ministers and the German Federal Ministry of Economics and Technology (Resolution of the Standing Conference of the Ministers of Education and Cultural Affairs of the *Länder* in the Federal Republic of Germany of 15 November 2012). More information at www.dqr.de

5 Recommendation of the European Parliament and the European Council on the establishment of a European Qualifications Framework for Lifelong Learning of 23 April 2008 (2008/C 111/01 – European Qualifications Framework for Lifelong Learning – EQF).

6 Specimen decree pursuant to Article 4, paragraphs 1 – 4 of the interstate study accreditation treaty (Resolution of the Standing Conference of the Ministers of Education and Cultural Affairs of the Länder in the Federal Republic of Germany of 7 December 2017).

7 Interstate Treaty on the organization of a joint accreditation system to ensure the quality of teaching and learning at German higher education institutions (Interstate study accreditation treaty) (Decision of the Standing Conference of the Ministers of Education and Cultural Affairs of the Länder in the Federal Republic of Germany of 8 December 2016), Enacted on 1 January 2018.

8 See note No. 7.

9 See note No. 7.

10 Access to higher education for applicants with a vocational qualification, but without a school-based higher education entrance qualification (Resolution of the Standing Conference of the Ministers of Education and Cultural Affairs of the *Länder* in the Federal Republic of Germany of 6 March 2009).

4. ANGABEN ZUM INHALT DES STUDIUMS UND ZU DEN ERZIELTEN ERGEBNISSEN

4.1 Studienform

Vollzeitstudium

4.2 Lernergebnisse des Studiengangs

Die Absolventen und Absolventinnen des Bachelor of Science in Information Technology entwickeln ein systemisches und kohärentes Verständnis der Informationstechnologie. In der von ihnen gewählten Spezialisierung Network Engineering and Cyber Security oder Web Applications and Software Development bzw. Artificial Intelligence and Data Analytics entwickeln sie wissenschaftliches Wissen und Verständnis, das sie am Arbeitsplatz anwenden können.

Die Absolventen haben (Kenntnisse):

- die Fähigkeit zum kritischen Denken, um informationstechnologische Herausforderungen in einer Reihe von Kontexten zu lösen und Ideen effektiv zu kommunizieren.
- Kenntnisse über die Auswahl, Anpassung und Anwendung einer Reihe von IT-Infrastruktur-, Architektur- und Softwareentwicklungsverfahren und -lösungen in ihrem organisatorischen oder industriellen Kontext.
- grundlegende Kenntnisse der Anforderungsanalyse, das Design, die Entwicklung, die Implementierung und die Qualitätssicherung von IT-Projekten und -Systemen.
- grundlegende Kenntnisse zur Anwendung ethischer, rechtlicher und sozialer Praktiken innerhalb der Branche.

Die Absolventen sind in der Lage,

- Möglichkeiten zur Anwendung von Fachwissen in einer Reihe von technischen Zusammenhängen, einschließlich Sicherheit, Systembereitstellung und Wartung zu erkennen.
- Change-Management-Prozesse und -Verfahren für eine Organisation in ihrem gewählten Spezialisierungsbereich zu führen und zu implementieren.
- Projekte zu leiten, um Lösungen zu entwickeln und zu kommunizieren, die den Anforderungen des Marktes oder des Unternehmens entsprechen.

Die Absolventen können,

- rational begründete Entscheidungen treffen und Probleme und Lösungsmöglichkeiten kritisch prüfen.
- ganzheitlich und methodisch effiziente Lösungen, auch für interdisziplinäre Fragestellungen, erarbeiten.
- die ethischen, weltanschaulichen, sozialen und moralischen Konsequenzen ihrer Entscheidungen erkennen und beurteilen.
- konstruktiv, zielorientiert und effizient mit anderen Menschen in unterschiedlichen beruflichen Situationen zusammenarbeiten.
- einzeln oder als Mitglied eines Projektteams effektiv arbeiten und dabei interne Vorgaben und externe (Kunden)-Spezifikationen berücksichtigen.
- wissenschaftliche Methoden in der Praxis anwenden und innovative Entwicklungen im Berufsalltag umsetzen.
- die Methodik des Design Thinking im Kontext anwenden, um innovative Lösungen für Kunden zu erarbeiten.
- auf Basis des Bachelorabschlusses selbstständig lernen und sich weiterbilden
- genderspezifische Erkenntnisse geltend machen.

Absolventen der Spezialisierung in Network Engineering and Cyber Security sind in der Lage,

- in lokalen und Weitverkehrs-Unternehmensnetzwerken mit fortschrittlichen Sicherheits-, Sprach-, Funk- und Videolösungen Fehler zu beheben.
- die Implementierung komplexer Unternehmens-Switch- und Routing-Netzwerke unter Verwendung aktueller Netzwerkarchitekturen zu planen, zu konfigurieren, zu installieren und zu überprüfen.

Absolventen der Spezialisierung in Web Applications and Software-Development sind in der Lage,

- Softwareanwendungen, Web- und mobile Lösungen und verwandte Technologien zu entwerfen, zu entwickeln und zu warten.
- Lösungen für Software- und Webumgebungen kritisch zu bewerten und zu implementieren.

Absolventen der Spezialisierung künstliche Intelligenz und Datenanalyse sind in der Lage sein:

- Fortgeschrittene Analyse- und KI-Tools zu beherrschen: Verstehen und Nutzen von Datenmanipulation, Visualisierung und groß angelegter Datenverarbeitung mit Python, R, Hadoop, Spark und Techniken des maschinellen Lernens, um verwertbare Ergebnisse zu gewinnen.
- Ethische und verantwortungsvolle Datenpraktiken anwenden: Kommunizieren komplexer Erkenntnisse durch klare Visualisierungen und Einhalten der Datenschutz-, Sicherheits- und ethische Standards unter Beachtung der sozialen und gesellschaftlichen Auswirkungen datengesteuerter Entscheidungen.

4.3 Einzelheiten zum Studiengang, individuell erworbene Leistungspunkte und erzielte Noten

Für die Einzelheiten des Aufbaus des Studiengangs, insbesondere eine Übersicht der Module und Noten siehe Transcript of Records;

Bezüglich der Themengebiete der Abschlussprüfung (schriftliche Abschlussarbeit und Kolloquium) sowie der Bewertung der Bachelor-Arbeit siehe Bachelorzeugnis.

4.4 Notensystem und, wenn vorhanden, Notenspiegel

Das nationale Notensystem entspricht Abschnitt 8.6.

Mangels einer Kohorte von mindestens drei Abschlussjahrgängen in diesem Studiengang, die zur Bildung der relativen Note notwendig ist, wird lediglich die absolute Note ausgewiesen.

Die Verteilung der absoluten Note in diesem Jahrgang ist:
,,Sehr gut" (X%) - ,,Gut" (X%) ,,Befriedigend" (X %) - ,,Ausreichend" (X%) - ,,Nicht ausreichend" (X%)

4.5 Gesamtnote (in Originalsprache)

<<Prädikat>>

5. ANGABEN ZUR BERECHTIGUNG DER QUALIFIKATION

5.1 Zugang zu weiterführenden Studien

Der Grad Bachelor of Science qualifiziert den Inhaber sich für ein Master-Studium zu bewerben.

5.2 Zugang zu reglementierten Berufen (sofern zutreffend)

Durch den Grad Bachelor of Science qualifiziert sich der Inhaber zur professionellen Arbeit in dem Tätigkeitsfeld, für den der Grad ausgezeichnet ist.

6. WEITERE ANGABEN

6.1 Weitere Angaben

6.2 Weitere Informationsquellen

Informationen zu dieser Institution:
https://www.mediadesign.de/de/bachelor/information-technology
Nationale Informationsquellen: siehe Punkt 8.8

7. ZERTIFIZIERUNG DES DIPLOMA SUPPLEMENTS

Dieses Diploma Supplement nimmt Bezug auf folgende Original-Dokumente:
Urkunde über die Verleihung des Grades vom [Datum]
Prüfungszeugnis vom [Datum]
Transkript vom [Datum]

Datum der Zertifizierung:

Vorsitzende/ Vorsitzender des Prüfungsausschusses

Offizieller Stempel/Siegel

8. ANGABEN ZUM NATIONALEN HOCHSCHULSYSTEM

Die Informationen über das nationale Hochschulsystem auf den folgenden Seiten geben Auskunft über die Qualifikation und den Status der Institution, die sie vergeben hat.

8. INFORMATIONEN ZUM HOCHSCHULSYSTEM IN DEUTSCHLAND[1]

8.1 Die unterschiedlichen Hochschulen und ihr institutioneller Status

Die Hochschulausbildung wird in Deutschland von drei Arten von Hochschulen angeboten.[2]

- *Universitäten*, einschließlich verschiedener spezialisierter Institutionen, bieten das gesamte Spektrum akademischer Disziplinen an. Traditionell liegt der Schwerpunkt an deutschen Universitäten besonders auf der Grundlagenforschung, so dass das fortgeschrittene Studium vor allem theoretisch ausgerichtet und forschungsorientiert ist.

- *Fachhochschulen (FH)/Hochschulen für Angewandte Wissenschaften (HAW)* konzentrieren ihre Studienangebote auf ingenieurwissenschaftliche technische Fächer und wirtschaftswissenschaftliche Fächer, Sozialarbeit und Design. Der Auftrag von angewandter Forschung und Entwicklung impliziert einen praxisorientierten Ansatz und eine ebensolche Ausrichtung des Studiums, was häufig integrierte und begleitete Praktika in Industrie, Unternehmen oder anderen einschlägigen Einrichtungen einschließt.

- *Kunst- und Musikhochschulen* bieten Studiengänge für künstlerische Tätigkeiten an, in Bildender Kunst, Schauspiel und Musik, in den Bereichen Regie, Produktion und Drehbuch für Theater, Film und andere Medien sowie in den Bereichen Design, Architektur, Medien und Kommunikation.

Hochschulen sind entweder staatliche oder staatlich anerkannte Institutionen. Sowohl in ihrem Handeln einschließlich der Planung von Studiengängen als auch in der Festsetzung und Zuerkennung von Studienabschlüssen unterliegen sie der Hochschulgesetzgebung.

8.2 Studiengänge und -abschlüsse

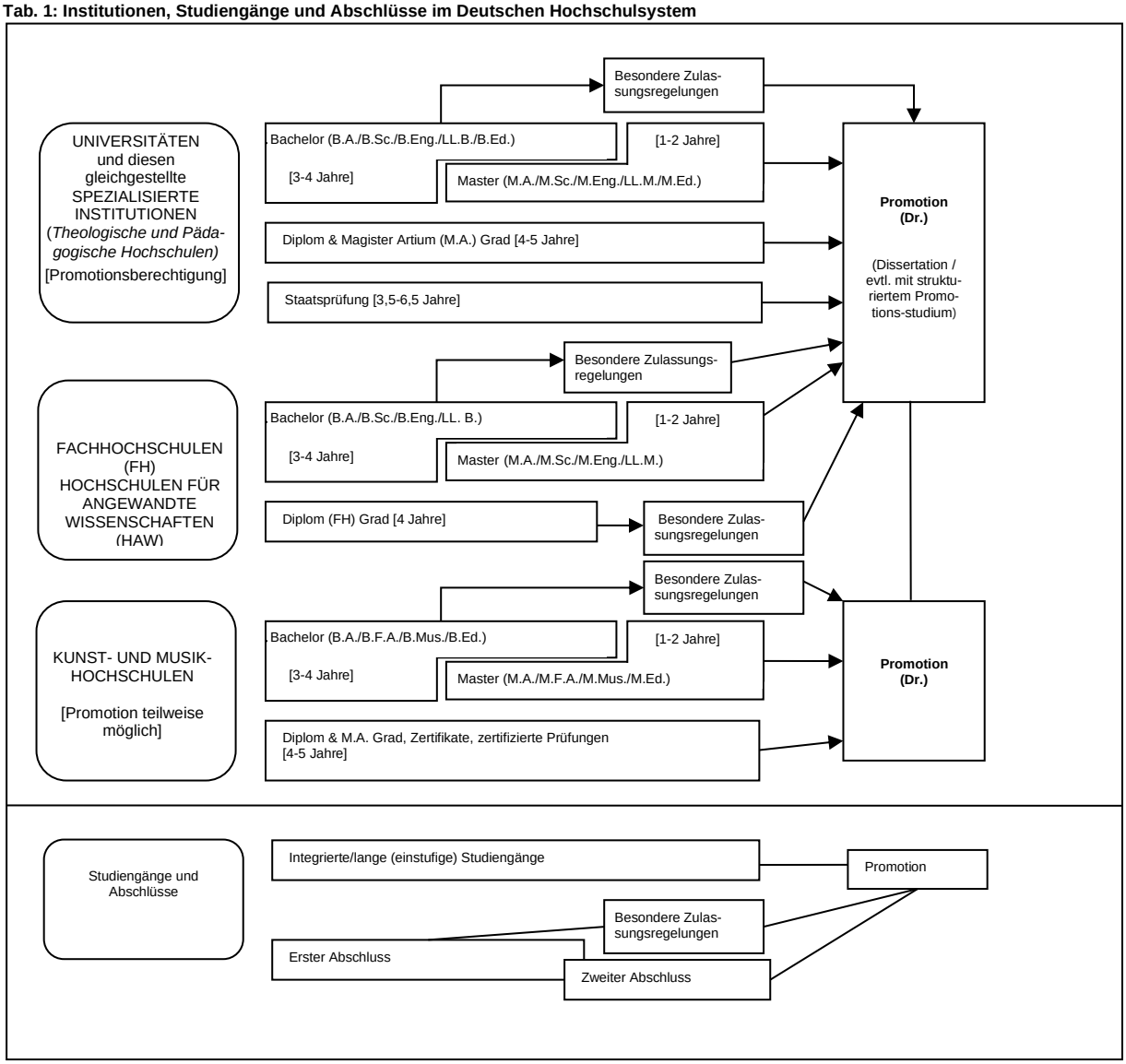
In allen Hochschularten wurden die Studiengänge traditionell als integrierte „lange“ (einstufige) Studiengänge angeboten, die entweder zum Diplom oder zum Magister Artium führten oder mit einer Staatsprüfung abschlossen.

Im Rahmen des Bologna-Prozesses wird das einstufige Studiensystem sukzessive durch ein zweistufiges ersetzt. Seit 1998 wurden in fast allen Studiengängen gestufte Abschlüsse (Bachelor und Master) eingeführt. Dies soll den Studierenden mehr Wahlmöglichkeiten und Flexibilität beim Planen und Verfolgen ihrer Lernziele bieten sowie Studiengänge international kompatibler machen.

Die Abschlüsse des deutschen Hochschulsystems einschließlich ihrer Zuordnung zu den Qualifikationsstufen sowie die damit einhergehenden Qualifikationsziele und Kompetenzen der Absolventinnen und Absolventen sind im Qualifikationsrahmen für deutsche Hochschulabschlüsse (HQR)[3] beschrieben. Die drei Stufen des HQR sind den Stufen 6, 7 und 8 des Deutschen Qualifikationsrahmens für lebenslanges Lernen (DQR)[4] und des Europäischen Qualifikationsrahmens für lebenslanges Lernen (EQR)[5] zugeordnet.

Einzelheiten s. Abschnitte 8.4.1, 8.4.2 bzw. 8.4.3. Tab. 1 gibt eine zusammenfassende Übersicht.

Tab. 1: Institutionen, Studiengänge und Abschlüsse im Deutschen Hochschulsystem



8.3 Anerkennung/Akkreditierung von Studiengängen und Abschlüssen

Um die Qualität und die Vergleichbarkeit von Qualifikationen sicherzustellen, müssen sich sowohl die Organisation und Struktur von Studiengängen als auch die grundsätzlichen Anforderungen an Studienabschlüsse an den Prinzipien und Regelungen der Ständigen Konferenz der Kultusminister der Länder (KMK) orientieren.[6] Seit 1999 existiert ein bundesweites Akkreditierungssystem für Bachelor- und Masterstudiengänge, nach dem alle neu eingeführten Studiengänge akkreditiert werden. Akkreditierte Studiengänge sind berechtigt, das Qualitätssiegel des Akkreditierungsrates zu führen.[7]

8.4 Organisation und Struktur der Studiengänge

Die folgenden Studiengänge können von allen drei Hochschularten angeboten werden. Bachelor- und Masterstudiengänge können nacheinander, an unterschiedlichen Hochschulen, an unterschiedlichen Hochschularten und mit Phasen der Erwerbstätigkeit zwischen der ersten und der zweiten Qualifikationsstufe studiert werden. Bei der Planung werden Module und das Europäische System zur Übertragung und Akkumulierung von Studienleistungen (ECTS) verwendet, wobei einem Semester 30 Kreditpunkte entsprechen.

8.4.1 Bachelor

In Bachelorstudiengängen werden wissenschaftliche Grundlagen, Methodenkompetenz und berufsfeldbezogene Qualifikationen vermittelt. Der Bachelorabschluss wird nach 3 bis 4 Jahren vergeben.
Zum Bachelorstudiengang gehört eine schriftliche Abschlussarbeit. Studiengänge, die mit dem Bachelor abgeschlossen werden, müssen gemäß dem Studienakkreditierungsstaatsvertrag akkreditiert werden.[8]
Studiengänge der ersten Qualifikationsstufe (Bachelor) schließen mit den Graden Bachelor of Arts (B.A.), Bachelor of Science (B.Sc.), Bachelor of Engineering (B.Eng.), Bachelor of Laws (LL.B.), Bachelor of Fine Arts (B.F.A.), Bachelor of Music (B.Mus.) oder Bachelor of Education (B.Ed.) ab.
Der Bachelorgrad entspricht der Qualifikationsstufe 6 des DQR/EQR.

8.4.2 Master

Der Master ist der zweite Studienabschluss nach weiteren 1 bis 2 Jahren. Masterstudiengänge können nach den Profiltypen „anwendungsorientiert“ und „forschungsorientiert“ differenziert werden. Die Hochschulen legen das Profil fest.
Zum Masterstudiengang gehört eine schriftliche Abschlussarbeit. Studiengänge, die mit dem Master abgeschlossen werden, müssen gemäß dem Studienakkreditierungsstaatsvertrag akkreditiert werden.[9]
Studiengänge der zweiten Qualifikationsstufe (Master) schließen mit den Graden Master of Arts (M.A.), Master of Science (M.Sc.), Master of Engineering (M.Eng.), Master of Laws (LL.M.), Master of Fine Arts (M.F.A.), Master of Music (M.Mus.) oder Master of Education (M.Ed.) ab. Weiterbildende Masterstudiengänge können andere Bezeichnungen erhalten (z.B. MBA).
Der Mastergrad entspricht der Qualifikationsstufe 7 des DQR/EQR.

8.4.3 Integrierte „lange“ einstufige Studiengänge: Diplom, Magister Artium, Staatsprüfung

Ein integrierter Studiengang ist entweder mono-disziplinär (Diplomabschlüsse und die meisten Staatsprüfungen) oder besteht aus einer Kombination von entweder zwei Hauptfächern oder einem Haupt- und zwei Nebenfächern (Magister Artium). Das Vorstudium (1,5 bis 2 Jahre) dient der breiten Orientierung und dem Grundlagenerwerb im jeweiligen Fach. Eine Zwischenprüfung (bzw. Vordiplom) ist Voraussetzung für die Zulassung zum Hauptstudium, d.h. zum fortgeschrittenen Studium und der Spezialisierung. Voraussetzung für den Abschluss sind die Vorlage einer schriftlichen Abschlussarbeit (Dauer bis zu 6 Monaten) und umfangreiche schriftliche und mündliche Abschlussprüfungen. Ähnliche Regelungen gelten für die Staatsprüfung. Die erworbene Qualifikation entspricht dem Master.

- Die Regelstudienzeit an *Universitäten* beträgt bei integrierten Studiengängen 4 bis 5 Jahre (Diplom, Magister Artium) oder 3,5 bis 6,5 Jahre (Staatsprüfung). Mit dem Diplom werden ingenieur-, natur- und wirtschaftswissenschaftliche Studiengänge abgeschlossen. In den Geisteswissenschaften ist der entsprechende Abschluss in der Regel der Magister Artium (M.A.). In den Sozialwissenschaften variiert die Praxis je nach Tradition der jeweiligen Hochschule. Juristische, medizinische und pharmazeutische Studiengänge schließen mit der Staatsprüfung ab. Dies gilt in einigen Ländern auch für Lehramtsstudiengänge.
Die drei Qualifikationen (Diplom, Magister Artium und Staatsprüfung) sind akademisch gleichwertig und auf der Qualifikationsstufe 7 des DQR/EQR angesiedelt. Sie bilden die formale Voraussetzung zur Promotion. Weitere Zulassungsvoraussetzungen können von der Hochschule festgelegt werden, s. Abschnitt 8.5.

- Die Regelstudienzeit an *Fachhochschulen (FH)/Hochschulen für Angewandte Wissenschaften* (HAW) beträgt bei integrierten Studien-gängen 4 Jahre und schließt mit dem Diplom (FH) ab. Dieses ist auf der Qualifikationsstufe 6 des DQR/EQR angesiedelt. Qualifizierte Absolventinnen und Absolventen von Fachhochschulen/Hochschulen für Angewandte Wissenschaften können sich für die Zulassung zur Promotion an promotionsberechtigten Hochschulen bewerben, s. Abschnitt 8.5.

- Das Studium an *Kunst- und Musikhochschulen* ist in seiner Organisation und Struktur abhängig vom jeweiligen Fachgebiet und der individuellen Zielsetzung. Neben dem Diplom- bzw. Magisterabschluss gibt es bei integrierten Studiengängen Zertifikate und zertifizierte Abschlussprüfungen für spezielle Bereiche und berufliche Zwecke.

8.5 Promotion

Universitäten, gleichgestellte Hochschulen sowie einige Fachhochschulen (FH)/Hochschulen für Angewandte Wissenschaften (HAW) und einige Kunst- und Musikhochschulen sind promotionsberechtigt. Formale Voraussetzung für die Zulassung zur Promotion ist ein qualifizierter Masterabschluss (Fachhochschulen und Universitäten), ein Magisterabschluss, ein Diplom, eine Staatsprüfung oder ein äquivalenter ausländischer Abschluss. Entsprechende Abschlüsse von Kunst- und Musikhochschulen können in Ausnahmefällen (wissenschaftliche Studiengänge, z.B. Musiktheorie, Musikwissenschaften, Kunst- und Musikpädagogik, Medienwissenschaften) formal den Zugang zur Promotion eröffnen. Besonders qualifizierte Inhaber eines Bachelorgrades oder eines Diploms (FH) können ohne einen weiteren Studienabschluss im Wege eines Eignungsfeststellungsverfahrens zur Promotion zugelassen werden. Die Universitäten bzw. promotionsberechtigten Hochschulen regeln sowohl die Zulassung zur Promotion als auch die Art der Eignungsprüfung. Voraussetzung für die Zulassung ist außerdem, dass das Promotionsprojekt von einem Hochschullehrer als Betreuer angenommen wird.
Die Promotion entspricht der Qualifikationsstufe 8 des DQR/EQR.

8.6 Benotungsskala

Die deutsche Benotungsskala umfasst üblicherweise 5 Grade (mit zahlenmäßigen Entsprechungen; es können auch Zwischennoten vergeben werden): „Sehr gut“ (1), „Gut“ (2), „Befriedigend“ (3), „Ausreichend“ (4), „Nicht ausreichend“ (5). Zum Bestehen ist mindestens die Note „Ausreichend“ (4) notwendig. Die Bezeichnung für die Noten kann in Einzelfällen und für die Promotion abweichen.
Außerdem findet eine Einstufungstabelle nach dem Modell des ECTS-Leitfadens Verwendung, aus der die relative Verteilung der Noten in Bezug auf eine Referenzgruppe hervorgeht.

8.7 Hochschulzugang

Die Allgemeine Hochschulreife (Abitur) nach 12 bis 13 Schuljahren ermöglicht den Zugang zu allen Studiengängen. Die Fachgebundene Hochschulreife ermöglicht den Zugang zu allen Studiengängen an Fachhochschulen, an Universitäten und gleichgestellten Hochschulen, aber nur zu bestimmten Fächern. Das Studium an Fachhochschulen ist auch mit der Fachhochschulreife möglich, die in der Regel nach 12 Schuljahren erworben wird. Der Zugang zu Studiengängen an Kunst- und Musikhochschulen und entsprechenden Studiengängen an anderen Hochschulen sowie der Zugang zu einem Sportstudiengang kann auf der Grundlage von anderen bzw. zusätzlichen Voraussetzungen zum Nachweis einer besonderen Eignung erfolgen.
Beruflich qualifizierte Bewerber und Bewerberinnen ohne schulische Hochschulzugangsberechtigung erhalten eine allgemeine Hochschulzugangsberechtigung und damit Zugang zu allen Studiengängen, wenn sie Inhaber von Abschlüssen bestimmter, staatlich geregelter beruflicher Aufstiegsfortbildungen sind (zum Beispiel Meister/in im Handwerk, Industriemeister/in, Fachwirt/in (IHK), Betriebswirt/in (IHK) und (HWK), staatlich geprüfte/r Techniker/in, staatlich geprüfte/r Betriebswirt/in, staatlich geprüfte/r Gestalter/in, staatlich geprüfte/r Erzieher/in). Eine fachgebundene Hochschulzugangsberechtigung erhalten beruflich qualifizierte Bewerber und Bewerberinnen mit einem Abschluss einer staatlich geregelten, mindestens zweijährigen Berufsausbildung und i.d.R. mindestens dreijähriger Berufspraxis, die ein Eignungsfeststellungsverfahren an einer Hochschule oder staatlichen Stelle erfolgreich durchlaufen haben; das Eignungsfeststellungsverfahren kann durch ein nachweislich erfolgreich absolviertes Probestudium von mindestens einem Jahr ersetzt werden.[10]
Die Hochschulen können in bestimmten Fällen zusätzliche spezifische Zulassungsverfahren durchführen.

8.8 Informationsquellen in der Bundesrepublik

- Kultusministerkonferenz (KMK) (Ständige Konferenz der Kultusminister der Länder in der Bundesrepublik Deutschland); Graurheindorfer Str. 157, D-53117 Bonn; Tel.: +49(0)228/501-0; www.kmk.org; E-Mail: hochschulen@kmk.org
- Zentralstelle für ausländisches Bildungswesen (ZAB) als deutsche NARIC; www.kmk.org; E-Mail: zab@kmk.org
- Deutsche Informationsstelle der Länder im EURYDICE-Netz, für Informationen zum Bildungswesen in Deutschland; www.kmk.org; E-Mail: eurydice@kmk.org
- Hochschulrektorenkonferenz (HRK); Leipziger Platz 11, D-10117 Berlin, Tel.: +49 30 206292-11; www.hrk.de; E-Mail: post@hrk.de
- „Hochschulkompass“ der Hochschulrektorenkonferenz, enthält umfassende Informationen zu Hochschulen, Studiengängen etc. (www.hochschulkompass.de)

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1 Die Information berücksichtigt nur die Aspekte, die direkt das Diploma Supplement betreffen.

2 Berufsakademien sind keine Hochschulen, es gibt sie nur in einigen Bundesländern. Sie bieten Studiengänge in enger Zusammenarbeit mit privaten Unternehmen an. Studierende erhalten einen offiziellen

Abschluss und machen eine Ausbildung im Betrieb. Manche Berufsakademien bieten Bachelorstudiengänge an, deren Abschlüsse einem Bachelorgrad einer Hochschule gleichgestellt werden können, wenn sie vom Akkreditierungsrat akkreditiert sind.

3 Qualifikationsrahmen für deutsche Hochschulabschlüsse (Beschluss der Kultusministerkonferenz vom 16.02.2017).

4 Deutscher Qualifikationsrahmen für lebenslanges Lernen (DQR), Gemeinsamer Beschluss der Ständigen Konferenz der Kultus-minister der Länder in der Bundesrepublik Deutschland, des Bundesministeriums für Bildung und Forschung, der Wirtschafts-ministerkonferenz und des Bundesministeriums für Wirtschaft und Technologie (Beschluss der Kultusministerkonferenz vom 15.11.2012). Ausführliche Informationen unter www.dqr.de.

5 Empfehlung des Europäischen Parlaments und des Europäischen Rates zur Einrichtung des Europäischen Qualifikationsrahmens für lebenslanges Lernen vom 23.04.2008 (2008/C 111/01 – Euro-päischer Qualifikationsrahmen für lebenslanges Lernen – EQR).

6 Musterrechtsverordnung gemäß Artikel 4 Absätze 1 – 4 Studien-akkreditierungsstaatsvertrag (Beschluss der Kultusminister-konferenz vom 07.12.2017).

7 Staatsvertrag über die Organisation eines gemeinsamen Akkredi-tierungssystems zur Qualitätssicherung in Studium und Lehre an deutschen Hochschulen (Studienakkreditierungsstaatsvertrag) (Beschluss der KMK vom 08.12.2016) In Kraft getreten am 01.01.2018.

8 Siehe Fußnote Nr. 7.

9 Siehe Fußnote Nr. 7.

10 Hochschulzugang für beruflich qualifizierte Bewerber ohne schulische Hochschulzugangsberechtigung (Beschluss der Kultus-ministerkonferenz vom 06.03.2009).

Appendix 6 Transcript of Records

1. Holder of the Qualification

Family Name, First Name <<Nachname>>, <<Vorname>>

Date, Place, Country of Birth <<DateofBirth>>, <<BirthPlace>>, <<BirthCountry>>

Student ID Number Code <<Matrikelnummer>>

2. Qualification

Course		Certification Date	Absolute Grade[1]	Relative Grade	ECTS
1.1.	Scientific Work	<<ExDate>>	<<Grade>>	n.a.[2]	5
1.2.	Applied Research	<<ExDate>>		n.a.[2]	5
1.3.	Bachelor Thesis Set Up	<<ExDate>>		n.a.[2]	5
2.1.	Introduction to Information Technology	<<ExDate>>	<<Grade>>	n.a.[2]	5
2.2.	Web Concepts	<<ExDate>>	<<Grade>>	n.a.[2]	5
2.3.	Information Systems	<<ExDate>>	<<Grade>>	n.a.[2]	5
2.4.	Software Development Fundamentals	<<ExDate>>	<<Grade>>	n.a.[2]	5
3.1.	Data Base Systems	<<ExDate>>	<<Grade>>	n.a.[2]	5
3.2.	Data Structures and Algorithms	<<ExDate>>	<<Grade>>	n.a.[2]	5
3.3.	Data and Cyber Security	<<ExDate>>	<<Grade>>	n.a.[2]	5
3.4.	Cloud Computing	<<ExDate>>	<<Grade>>	n.a.[2]	5
4.1 A	Back-End Development	<<ExDate>>	<<Grade>>	n.a.[2]	5
4.2 A	Front-End Development	<<ExDate>>	<<Grade>>	n.a.[2]	5
4.3 A	Agile Project Management	<<ExDate>>	<<Grade>>	n.a.[2]	5
4.4 A	Mobile Development	<<ExDate>>	<<Grade>>	n.a.[2]	5
4.5 A	Web Application Development	<<ExDate>>	<<Grade>>	n.a.[2]	5
4.6 A	Advanced Mobile Development	<<ExDate>>	<<Grade>>	n.a.[2]	5
4.7 A	Software Testing and Maintenance	<<ExDate>>	<<Grade>>	n.a.[2]	5
4.8 A	Advanced Programming	<<ExDate>>	<<Grade>>	n.a.[2]	5
4.9 A	Interaction Design	<<ExDate>>	<<Grade>>	n.a.[2]	5
4.10 A	Web Technologies	<<ExDate>>	<<Grade>>	n.a.[2]	10
5.1.	Elective I	<<ExDate>>	<<Grade>>	n.a.[2]	5
5.2.	Elective II	<<ExDate>>	<<Grade>>	n.a.[2]	5
6.1.	IT Project I	<<ExDate>>		n.a.[2]	10

[1] The absolute graduation scheme used, is greater than 96% - 1.0, 91% -1.3, 86% -1.7, 81% - 2.0, 76% -2.3, 71% -2.7, 66% -3.0, 61% -3.3, 56% - 3.7, 50% - 4.0, 45% - 4,3, less than 45% - 5.0

[2] For building relative grades is a statistical base of at least three classes necessary.

6.2.	IT Project II	<<ExDate>>		n.a.[2]	10
6.3.	IT Project III	<<ExDate>>		n.a.[2]	10
6.4.	IT Project IV	<<ExDate>>		n.a.[2]	10
6.5.	IT Project IV	<<ExDate>>		n.a.[2]	10
7.1.	Information Technology Internship	<<ExDate>>		n.a.[2]	30
8.1.	Thesis and Colloquium	<<ExDate>>	<<Grade>>	n.a.[2]	10

Certification Date: <<Date>>

Chairman, Examination Committee
(Official Stamp/ Seal)

Max Mustermann
Governing Board

1. Holder of the Qualification

Family Name, First Name <<Nachname>>, <<Vorname>>

Date, Place, Country of Birth <<DateofBirth>>, <<BirthPlace>>, <<BirthCountry>>

Student ID Number Code <<Matrikelnummer>>

2. Qualification

Course		Certification Date	Absolute Grade[1]	Relative Grade	ECTS
1.1.	Scientific Work	<<ExDate>>	<<Grade>>	n.a.[2]	5
1.2.	Applied Research	<<ExDate>>		n.a.[2]	5
1.3.	Bachelor Thesis Set Up	<<ExDate>>		n.a.[2]	5
2.1.	Introduction to Information Technology	<<ExDate>>	<<Grade>>	n.a.[2]	5
2.2.	Web Concepts	<<ExDate>>	<<Grade>>	n.a.[2]	5
2.3.	Information Systems	<<ExDate>>	<<Grade>>	n.a.[2]	5
2.4.	Software Development Fundamentals	<<ExDate>>	<<Grade>>	n.a.[2]	5
3.1.	Data Base Systems	<<ExDate>>	<<Grade>>	n.a.[2]	5
3.2.	Data Structures and Algorithms	<<ExDate>>	<<Grade>>	n.a.[2]	5
3.3.	Data and Cyber Security	<<ExDate>>	<<Grade>>	n.a.[2]	5
3.4.	Cloud Computing	<<ExDate>>	<<Grade>>	n.a.[2]	5
4.1 B	Computer Servicing Skills	<<ExDate>>	<<Grade>>	n.a.[2]	5
4.2 B	Operating Systems	<<ExDate>>	<<Grade>>	n.a.[2]	5
4.3 B	Networking	<<ExDate>>	<<Grade>>	n.a.[2]	5
4.4 B	Network Security	<<ExDate>>	<<Grade>>	n.a.[2]	5
4.5 B	Network Management	<<ExDate>>	<<Grade>>	n.a.[2]	5
4.6 B	Wireless Networking	<<ExDate>>	<<Grade>>	n.a.[2]	5
4.7 B	Unified Communications	<<ExDate>>	<<Grade>>	n.a.[2]	5
4.8 B	IP Switched Networks	<<ExDate>>	<<Grade>>	n.a.[2]	5
4.9 B	IP Routing	<<ExDate>>	<<Grade>>	n.a.[2]	5
4.10 B	Troubleshooting IP Networks	<<ExDate>>	<<Grade>>	n.a.[2]	10
5.1.	Elective I	<<ExDate>>	<<Grade>>	n.a.[2]	5
5.2.	Elective II	<<ExDate>>	<<Grade>>	n.a.[2]	5
6.1.	IT Project I	<<ExDate>>		n.a.[2]	10

[1] The absolute graduation scheme used, is greater than 96% - 1.0, 91% -1.3, 86% -1.7, 81% - 2.0, 76% -2.3, 71% -2.7, 66% -3.0, 61% -3.3, 56% - 3.7, 50% - 4.0, 45% - 4,3, less than 45% - 5.0

[2] For building relative grades is a statistical base of at least three classes necessary.

6.2.	IT Project II	<<ExDate>>		n.a.[2]	10
6.3.	IT Project III	<<ExDate>>		n.a.[2]	10
6.4.	IT Project IV	<<ExDate>>		n.a.[2]	10
6.5.	IT Project IV	<<ExDate>>		n.a.[2]	10
7.1.	Information Technology Internship	<<ExDate>>		n.a.[2]	30
8.1.	Thesis and Colloquium	<<ExDate>>	<<Grade>>	n.a.[2]	10

Certification Date: <<Date>>

Chairman, Examination Committee
(Official Stamp/ Seal)

Max Mustermann
Governing Board

1. Holder of the Qualification

Family Name, First Name <<Nachname>>, <<Vorname>>

Date, Place, Country of Birth <<DateofBirth>>, <<BirthPlace>>, <<BirthCountry>>

Student ID Number Code <<Matrikelnummer>>

2. Qualification

Course		Certification Date	Absolute Grade[1]	Relative Grade	ECTS
1.1.	Scientific Work	<<ExDate>>	<<Grade>>	n.a.[2]	5
1.2.	Applied Research	<<ExDate>>		n.a.[2]	5
1.3.	Bachelor Thesis Set Up	<<ExDate>>		n.a.[2]	5
2.1.	Introduction to Information Technology	<<ExDate>>	<<Grade>>	n.a.[2]	5
2.2.	Web Concepts	<<ExDate>>	<<Grade>>	n.a.[2]	5
2.3.	Information Systems	<<ExDate>>	<<Grade>>	n.a.[2]	5
2.4.	Software Development Fundamentals	<<ExDate>>	<<Grade>>	n.a.[2]	5
3.1.	Data Base Systems	<<ExDate>>	<<Grade>>	n.a.[2]	5
3.2.	Data Structures and Algorithms	<<ExDate>>	<<Grade>>	n.a.[2]	5
3.3.	Data and Cyber Security	<<ExDate>>	<<Grade>>	n.a.[2]	5
3.4.	Cloud Computing	<<ExDate>>	<<Grade>>	n.a.[2]	5
4.1 C	Fundamentals of AI and Data Analytics	<<ExDate>>	<<Grade>>	n.a.[2]	5
4.2 C	Programming for Data Analytics	<<ExDate>>	<<Grade>>	n.a.[2]	5
4.3 C	Data Mining	<<ExDate>>	<<Grade>>	n.a.[2]	5
4.4 C	Data Aquisition and Visualisation	<<ExDate>>	<<Grade>>	n.a.[2]	5
4.5. C	Machine Learning	<<ExDate>>	<<Grade>>	n.a.[2]	5
4.6 C	Data Ethics and Law	<<ExDate>>	<<Grade>>	n.a.[2]	5
4.7 C	Big Data Analytics	<<ExDate>>	<<Grade>>	n.a.[2]	5
4.8 C	Data Warehousing	<<ExDate>>	<<Grade>>	n.a.[2]	5
4.9 C	Computational Intelligence	<<ExDate>>	<<Grade>>	n.a.[2]	5
4.10 C	Advanced AI and Data Analytics	<<ExDate>>	<<Grade>>	n.a.[2]	10
5.1.	Elective I	<<ExDate>>	<<Grade>>	n.a.[2]	5
5.2.	Elective II	<<ExDate>>	<<Grade>>	n.a.[2]	5
6.1.	IT Project I	<<ExDate>>		n.a.[2]	10

[1] The absolute graduation scheme used, is greater than 96% - 1.0, 91% -1.3, 86% -1.7, 81% - 2.0, 76% -2.3, 71% -2.7, 66% -3.0, 61% -3.3, 56% - 3.7, 50% - 4.0, 45% - 4,3, less than 45% - 5.0

[2] For building relative grades is a statistical base of at least three classes necessary.

6.2.	IT Project II	<<ExDate>>		n.a.[2]	10
6.3.	IT Project III	<<ExDate>>		n.a.[2]	10
6.4.	IT Project IV	<<ExDate>>		n.a.[2]	10
6.5.	IT Project IV	<<ExDate>>		n.a.[2]	10
7.1.	Information Technology Internship	<<ExDate>>		n.a.[2]	30
8.1.	Thesis and Colloquium	<<ExDate>>	<<Grade>>	n.a.[2]	10

Certification Date: <<Date>>

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