

HOCHSCHULE FÜR TECHNIK UND WIRTSCHAFT BERLIN**Study and Examination Regulations
for the Further Education Master's Programme****Professional IT Business and Digitalization (ProITD)
Master of Science (M.Sc.)****at the School of Computing, Communication and Business****From 2 July 2025**

On the basis of § 16, section 1, sentence, no. 1 of the Statutes of the Hochschule für Technik und Wirtschaft Berlin (HTW Berlin) (Berlin University of Applied Sciences - HTW Berlin) dated the 16th of December 2024 (HTW Berlin Official Information Circular No. 12/25) in connection with § 31 of the BerlHG in the version dated the 26th of July 2011 (Law and Official Gazette p. 378), last legally amended on the 24th of February 2025 (Law and Official Gazette p. 149), the Faculty Council of the School of Computing, Communication and Business at HTW Berlin passed the Study and Examination Regulations for the further education Master's programme Professional IT Business and Digitalization on the 2nd of July 2025¹:

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¹ Confirmed by the Executive Committee of Berlin University of Applied Sciences (HTW Berlin) on the 18th of February 2026 (Only the original German version is binding.).

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§ 1 Application and Scope

(1) These Study and Examination Regulations apply to all those who, after said regulations have come into force, are enrolled at HTW Berlin as first semester students in the further education Master's programme Professional IT Business and Digitalization.

(2) These Study and Examination Regulations also apply to all students who, after changing university or study programme, are placed on the programme at the same stage as those in section 1 as a result of the accreditation of prior learning and examinations.

(3) The Study and Examination Regulations are supplemented by the Eligibility and Admission Regulations for the further education Master's programme Professional IT Business and Digitalization in the currently valid version.

§ 2 Applicability of the Study and Examination Framework Regulations (RStPO – Ba/Ma)

The valid version of the Study and Examination Framework Regulations for Bachelor's and Master's programmes of HTW Berlin (the *Rahmenstudien- und -prüfungsordnung für Bachelor- und Masterstudiengänge*, abbreviated henceforth as RStPO – Ba/Ma) shall apply, unless the exemption clause § 1, Section 2 RStPO – Ba/Ma has been invoked and deviating regulations have been set forth in this document.

§ 3 Tuition Fees

The further education Master's programme Professional IT Business and Digitalization is subject to tuition fees. Details are set out in § 2 of HTW Berlin's regulations governing fees for further education Master's programmes (*Erhebung von Gebühren für weiterbildende Master-Studienprogramme an der HTW Berlin – MasterGebO*) and the finalized contractual agreement between the student and HTW Berlin.

§ 4 Allocation of Study Places

(1) The allocation of study places is based on the current versions of the Berlin Higher Education Act, the Berlin Higher Education Admissions Act and the Berlin Higher Education Admissions Ordinance in conjunction with the current version of the Eligibility and Admission Regulations pertaining to the further education Master's programme Professional IT Business and Digitalization.

(2) As a general rule, the admissions capacity for the further education Master's programme Professional IT Business and Digitalization comprises 20, and a maximum of 25, study places per semester.

§ 5 Programme Aims

(1) The programme provides sound knowledge in the field of business IT and is aimed at professionals already working in the IT sector, as well as graduates in business informatics and related disciplines. The focus is placed on providing comprehensive support for IT-driven change projects. Graduates learn to analyse and evaluate business environments, plan their reorganisation, implement changes in a managerial role, describe software systems, and deliver IT projects in accordance with the principles of test-driven development and agile project management.

(2) Graduates acquire sound knowledge of key topics in data-driven innovation, such as the generation and collection of data (IoT, mobile computing), the analysis and modelling of data (data science), and the development of infrastructure for storage, data provision, and application development and operation (cloud computing). In addition, the course enables them to gain sound knowledge of the core areas of IT business. These include, in particular, IT project management, ensuring the quality of IT systems, IT security, requirements engineering and software design. In addition to the practical implementation of a project within a business context, particular emphasis is placed on social skills, especially in the areas of communication, leadership and sales. Thanks in no small part to the Project Study and the completion of an independent research project (Project Studies on Current Topics), the learning objectives cover all six levels of the cognitive domain: know, understand, apply, analyse, synthesise and evaluate.

(3) Graduates may take on operational management roles in the field of IT projects, in project management, or as architects in the development of modern application and big data systems, as well as in the consultancy sector. The Master's degree qualifies graduates for a career in IT project management or as specialists or managers in the fields of software architecture, IT project management, requirements engineering, product management, quality assurance and change management.

§ 6 Regular Study Period, Programme Plan, Modules

(1) The Master's programme Professional IT Business and Digitalization constitutes a further education professional development course. The programme has a duration of 3 semesters (regular study period) and comprises 90 ECTS credits. One ECTS credit corresponds to a student workload of 30 working hours. The annual workload amounts to 1,800 working hours.

(2) All courses, with the exception of foreign languages, are conducted in English.

(3) The programme is structured according to the Programme Plan in Annex 1 and employs a modular format as per § 4 of the RStPO –Ba/Ma. The curriculum in Annex 1 contains a list of all compulsory modules of the further education Master's programme Professional IT Business and Digitalization. Annex 2 contains a list of elective modules. Annexes 1 and 2 list the module designation, level, form and type (compulsory/elective), attendance time (in Weekly Study Hours (SWS), basic learning time in terms of ECTS credits and the compulsory and recommended prerequisites for each module.

(4) Learning outcomes and skills for each module are also set out in Annex 3 and form part of these regulations.

(5) A detailed description of the modules is provided in the module descriptions.

§ 7 Programme Structure

(1) The further education Master's programme Professional IT Business and Digitalization starts annually in the winter semester.

(2) The Master's programme is a course of study with compulsory attendance.

(3) Students complete the modules 'Project Study (Programming)' and 'Project Studies (Management)', which are worth a total of 10 ECTS credits. To this end, they are offered a selection of up-to-date, real-world IT topics to work on, preferably in small teams and in collaboration with a company. It is also possible to undertake the project as part of an existing research project at HTW Berlin or within a company. Progress is regularly discussed with the lecturer and reviewed during a joint seminar. The aim is, on the one hand, to ensure continuous improvement in problem-solving and, on the other, to strengthen feedback and discussion skills among all participants.

(4) The elective modules are listed in Annex 2. In EM 1: IT Technology 1 and EM 2: IT Technology 2, students familiarise themselves with a specific area of IT. Four modules per semester are offered for EM 1: IT Technology 1 and EM 2: IT Technology 2. Students in the 2nd semester may choose two of these four modules. In EM 3: IT in Business and Society, students familiarise themselves with a non-technical area of IT. Two modules per semester are offered for EM 3: IT in Business and Society. Students in the 2nd semester may choose one of these two modules. The programme representative decides which modules are offered for each specialisation in a timely manner. The Faculty Council may decide to offer further elective modules, taking into account developments in the relevant subject areas. Elective modules are generally offered if at least ten participants are registered.

(5) Students who do not have German language skills at CEFR level C1.1 are advised to take a course in German as a Foreign Language at the appropriate level during their first semester. Students who have reached CEFR level C1.1 may enrol on module M312: Intercultural Competence.

(6) The degree programme concludes with the successful completion of all modules, the Master's thesis and the final oral examination. The Master's thesis is accompanied by a seminar (Master's thesis seminar), which concludes with the oral examination. The Master's Thesis's module comprises 25 ECTS credits. The Master's Thesis must be completed during the semester. The Final Oral Examination module comprises 5 ECTS credits. The programme is deemed completed when all modules, including the Master's Thesis and Final Oral Examination modules, have been passed successfully.

§ 8 Module Examinations

(1) All modules are assessed by means of a differentiated grade.

- (2) Successful completion of a module is evidenced by the student passing a standardised module examination. The respective examination forms and components for each module are described in the module descriptions document for the further education Master's programme Professional IT Business and Digitalization.
- (3) If a module incorporates multiple examination components, the module grade is calculated via a weighted mean of the component grades, with the weighting factors for the examination components set out in the module description.
- (4) Passing the module examination is a requirement for the awarding of ECTS credits. The number of ECTS credits awarded for the respective modules is listed in Annexes 1 and 2.
- (5) If the examination for an elective module has been passed, this module may not be replaced by another elective module.
- (6) Admission to an examination or the submission of continuously assessed course work are subject to registration on the corresponding module in accordance with the provisions of the HTW Berlin University Regulations (Hochschulordnung - HO) in their valid version.
- (7) The process of accepting a study place or re-registering each semester automatically registers the student for participation in modules and examinations for the respective semester.
- (8) For the modules M11: Project Studies (Programming) and M21: Project Studies (Management), there is only one examination opportunity per semester, as the module examination consists solely of coursework assessed throughout the module. If a module is not passed, it must be retaken.
- (9) Within a set period announced at the start of the semester, students may submit a request for withdrawal from modules and associated examinations.

§ 9 Master's thesis

- (1) The student shall offer proposals for a thesis title and supervisors with their registration or examination application for permission to begin the Master's thesis.
- (2) The Examination Board shall determine in writing the composition of the examination panel, the topic of the final thesis and the start and submission dates.
- (3) Students are admitted to the Master's thesis if they have successfully completed all modules in the first two semesters of the Master's programme Professional IT Business and Digitalization, totalling 60 ECTS credits, and have registered with the Student Services Department to complete the thesis at the latest by the 20th of September in the winter semester, and by the 20th of February in the summer semester. Candidates may also be admitted if they have not yet successfully completed modules totalling up to ten ECTS credits.
- (4) The Master's thesis can be completed as a group thesis by 2 people, provided the examiners agree and the topic is suitable. In the event of a group thesis, the contributions of each candidate must always be definable and subject to individual assessment.

(5) The Examination Board shall decide on the suitability of the topic proposed by the student in consultation with the first grader, as well as the proposed Examination Committee, and shall confirm this by the chair's signature on the application for admission. A topic may only be assigned once in the same semester.

(6) The Examination Board shall determine the start date and submission deadline for the Master's thesis in writing. The time required to complete the Master's thesis corresponds to 25 ECTS credits. The completion time is 19 weeks. The Examination Board is required to approve applications for the winter semester by the 15th of October at the latest and for the summer semester by the 15th of April at the latest.

(7) The Master's thesis must be submitted to the programme administration on the submission deadline at the latest, in the format specified by HTW Berlin.

§ 10 Final Oral Examination

(1) The final oral examination constitutes the module examination in the module entitled "Master's Thesis Seminar and Final Oral Examination". To be eligible to take the final oral examination, students must have passed their Master's thesis and successfully completed all modules totalling 60 ECTS credits on the Master's programme Professional IT Business and Digitalization.

(2) Students unable to provide evidence of 210 credits upon admission to the Master's programme may only be admitted to the final oral examination if they are able to provide evidence of a total of 270 ECTS credits from their first degree and the Master's programme and have submitted a Master's thesis which has received a passing grade. The fulfilment of the stipulations made in the protocol of the selection committee for the acquisition of missing ECTS credits must be proven to the Student Services Department at HTW Berlin without the student being requested to do so.

(3) The main focus of the final oral examination is the topic explored in the Master's thesis. This is connected with the taught content of the further education Master's programme Professional IT Business and Digitalization. The final oral examination should establish whether the student can independently verify the methodological procedures and the outcomes of Master's thesis, possesses secure knowledge of the field addressed by the thesis and has mastered the requisite presentation and communication skills.

§ 11 Module Grades on the Master's Grade Transcript

(1) The modules are listed on the Master's grade transcript in the following order:

(a) Compulsory modules:

Test-Driven Software Development

Scientific Work

IT Security Basics

Distributed Ledger Technology

Requirements Engineering and Software Design

Scientific Writing

(b) Elective modules

Project Studies (Programming)

Project Studies (Management)

(EM 1: module designation)

(EM 2: module designation)

(EM 3: module designation)

(German as a Foreign Language or Intercultural Competence: module designation)

(2) The following module grades are listed on the Master's grade transcript, but are not included in the calculation of the final degree grade:

Project Study (Programming)

Scientific Writing

German as a Foreign Language or Intercultural Competence

§ 12 Calculation of the Final Degree Grade

(1) The final degree grade is calculated using the overall grade (X), which is, in turn, derived from the weighted mean of the component grades (X_1 , X_2 , X_3) according to the formula

$$X = aX_1 + bX_2 + cX_3$$

truncated after two decimal places and rounded to one decimal place. The component grades are:

- a) a) The weighted mean of the module grades used to calculate the final grade (factor X_1 ; here, the grade achieved is truncated after two decimal places,
- b) b) The grade awarded to the Master's thesis (factor X_2) and,
- c) c) The grade of the final oral examination (factor X_3).

The weighting factors are as follows: $a = 0.50$; $b = 0.40$, $c = 0.10$.

(2) The calculation of factor X_1 for the final degree grade is performed via the calculation of a weighted mean of all modules based on their respective number of credits according to the formula:

$$X_1 = \frac{\sum (F_i \cdot a_i)}{\sum a_i} .$$

Where:

- F_i : The individual module grades.
- a_i : The weighting factors (ECTS credits) of the individual modules.

(3) The weighting factors of the individual modules are as stated in the following table:

Module Designation	Weighting Factor a_i
M12 Test-Driven Software Development	5
M13 Scientific Work	5
M14 Security Basics	5
M15 Distributed Ledger Technology	5
M21 Project Study (Management)	5
M22 Requirements Engineering and Software-Design	5
M23 IT Technology 1	5
M24 IT Technology 2	5
M25 IT in Business and Society	5
Total	45

§ 13 Graduation Documents

(1) Graduates shall receive graduation documents in accordance with § 28 of the RStPO - Ba/Ma in its currently valid version. Conferral of the academic degree Master of Science (M.Sc.) is certified via the Master's degree certificate.

(2) Specific information on the Diploma Supplement of the further education Master's programme Professional IT Business and Digitalization is included in Annex 4.

§ 14 Entry into Force/Publication

This regulation comes into force on the day after its publication in HTW Berlin's Official Information Circular with effect from the 1st of October 2026.

Anlage 1 Programme Overview**1st semester**

No.	Module Designation	Type	Form	WSH	Cr	Lev	CP	RP
M11	Project Studies (Programming)	EM	PS	4	5	2a	-	-
M12	Test-Driven Software Development	CM	SSL/PCE	2/2	5	2a	-	-
M13	Scientific Work	CM	PS	4	5	2a	-	-
M14	IT Security Basics	CM	SSL/PCE	2/2	5	2a	-	-
M15	Distributed Ledger Technology	CM	SSL/PCE	2/2	5	2a	-	-
M16	German as a Foreign Language or Intercultural Competence	EM	PA	4	5	2a	-	-
	Total per semester				30			

2nd semester

No.	Module Designation	Type	Form	WSH	Cr	Lev	CP	RP
M21	Project Studies (Management)	EM	PS	4	5	2b	-	M11 M12
M22	Requirements Engineering and Software Design	CM	SSL/PCE	2/2	5	2b	-	M12
M23	EM 1: IT Technology 1	EM	SSL/PCE	2/2	5	2a	-	-
M24	EM 2: IT Technology 2	EM	SSL/PCE	2/2	5	2a	-	-
M25	EM 3: IT in Business and Society	EM	SSL/PE	2/2	5	2a	-	-
M26	Scientific Writing	CM	PA	4	5	2a	-	-
	Total per semester				30			

3rd semester

No.	Module Designation	Type	Form	WSH	Cr	Lev	CP	RP
M31	Master's thesis ¹	CM	MP		25	2b	§ 9	
M32	Master's Thesis Seminar and Oral Examination	CM	PS	2	5	2b	§ 10	
	Total per semester				30			
	Overall total				90			

Notes:

Form of teaching:

PA	Practical Exercise	PS	(Project) Seminar
PCE	PC Exercise	MP	Master's thesis

Type of module:

CM	Compulsory Module	EM	Elective Module
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General:

Cr	ECTS credits	WSH	Weekly Study Hours
Lev	Level (2a = prerequisite-free modules/2b = modules with prerequisites)		
RP	Recommended Prerequisite (modules for which the completion of previous module examinations is recommended)		
CP	Compulsory Prerequisite (modules for which the completion of previous module examinations is required)		

Explanatory notes:

One ECTS credit equates to student learning time (workload) of 30 hours (60 minutes).

¹ The Master's thesis must be completed in the third semester. The completion time begins with the admission to the Master's thesis. The workload amounts to 25 credits, each comprising 30 hours, totalling 750 hours. The completion time is 19 weeks.

Anlage 2 Elective Modules

Options for Elective Modules 1 to 3

For the modules M23, EM 1: IT Technology 1 and M24, EM 2: IT Technology 2, four modules from the list below are offered each semester. Students in the 2nd semester may choose two of these four modules.

For the module M25, EM 3: IT in Business and Society, two modules from the list below are offered each semester. Students in the 2nd semester may choose one of these two modules.

The programme representative decides which modules are offered for each specialisation in a timely manner. The Faculty Council may decide to offer further elective modules, taking into account developments in the relevant subject areas.

Elective modules are generally offered if at least ten participants are registered.

No.	Module Designation	Form	WSH	Lev	CP	RP
EM 1: IT Technology 1 and EM 2: IT Technology 2						
M101	Data Science	EM	4	2a	-	-
M102	Cloud Computing	EM	4	2a	-	-
M103	Internet of Things	EM	4	2a	-	-
M104	Blockchain Technology	EM	4	2a	-	-
EM 3: IT in Business and Society						
M201	Business Applications	EM	4	2a	-	-
M202	Data Ethics, Privacy and Governance	EM	4	2a	-	-
M203	IT Controlling	EM	4	2a	-	-

Options for the elective module M16: German as a Foreign Language or Intercultural Competence

Students who do not have German language skills at CEFR level C1.1 are advised to take a course in German as a Foreign Language at the appropriate level during their first semester. Students who have reached CEFR level C1.1 may enrol on module M312: Intercultural Competence.

No.	Module Designation	Form	WSH	Lev	CP	RP
German as a Foreign Language						
M301	The current course schedule for the elective modules within the module M16: German as a Foreign Language, will be announced by the Foreign Languages Centre at the start of the semester.					
Intercultural Competence						
M302	Intercultural Competence	EM	4	2a	-	-

Anlage 3 Learning Outcomes and Competences for each Module**Compulsory modules:**

Module Designation	M11 Project Studies (Programming)
Learning outcomes and competences	Upon completion of the module – students are better able to work in a specific programming environment. They are proficient in using specific developer tools, – students understand the phases of an IT implementation project and are able to match common developer tools to a specific project phase, – students are better able to work as part of a team and recognise the typical challenges involved in implementation work.

Module Designation	M12 Test-Driven Software Development
Learning outcomes and competences	Upon completion of the module – students understand software as a system made up of components, – students understand that software systems are accessed via application programming interfaces (APIs) and are able to implement such interfaces, – students understand the need to break systems down into subsystems, are familiar with the methodology of unit and integration testing, and are able to implement unit tests, – students are familiar with basic project management methodologies, such as agile software development.

Module Designation	M13 Scientific Work
Learning outcomes and competences	Upon completion of the module – students are familiar with how to approach a research question in applied research and gained practical experience in evaluating information sources, – students understand that IT systems, in particular, and science in general, are not static but are constantly evolving, – students are familiar with intellectual property rights (IPRs) and understand the issues surrounding plagiarism, – students have gained knowledge in an IT-related field of research, – students have gained practical experience in presenting and discussing research findings.

Module Designation	M14 IT Security Basics
Learning outcomes and competences	Students are able to explain the key concepts of information security, such as integrity, availability, confidentiality and authenticity. Students are familiar with the basics of encryption and understand the purpose of a public key infrastructure (PKI). They know how certificates can be generated and verified. They know how information can be encrypted. They know how a digital signature is created and verified. They are familiar with attack scenarios and risks. They can use relevant tools for generating certificates, encryption and signing/verification. They have explored the risks associated with web applications and are familiar with various methods of securing them.

Module Designation	M15 Distributed Ledger Technology
Learning outcomes and competences	The students – understand the fundamentals of blockchain technology; – are able to analyse and evaluate the various protocols available on the market for their own specific application; – are able to identify the technical requirements for designing a model or mock-up; – can design both the front end and the back end of their model; – are able to create a simple prototype based on their model assumptions, using their preferred languages and software; – can prepare the necessary documentation.

Module Designation	M21 Project Studies (Management)
Learning outcomes and competences	Upon completion of the module – students can set up and manage an IT implementation project, – students can manage a small IT project, – students have developed their ability to organise a team, identify problems, find solutions and present them.

Module Designation	M22 Requirements Engineering and Software-Design
Learning outcomes and competences	Upon completion of the module – students are able to record requirements in a structured manner and know how to scrutinise them critically, – students know how change management works and understand the role of stakeholders in these processes, – students are able to describe IT systems using international standards (such as the Unified Modelling Language (UML)).

Module Designation	M26 Scientific Writing
Learning outcomes and competences	Students are familiar with both theoretical texts and practical aspects of scientific writing. They are familiar with the individual stages of scientific writing and are aware of the difficulties, prerequisites and requirements of the writing process. They are able to critically evaluate and scrutinise their own writing. Students are also able to structure longer pieces of work, formulate scientific questions and develop a methodology for answering these questions.

Module Designation	M31 Master's Thesis
Learning outcomes and competences	Students are familiar with the formal requirements relating to a Master's thesis. They have learnt the techniques and methods required to write a Master's thesis. They are able to work with academic sources and to assess and evaluate the information required for the preparation of a thesis. Upon completion of the module, each student has successfully addressed a clearly defined, practice-oriented problem using the specialist and methodological knowledge they have acquired, in accordance with academic standards, and has written a corresponding academic dissertation.

Module Designation	M32 Master's Thesis Seminar and Oral Examination
Learning outcomes and competences	Students are able to analyse a topic using scientific methods and findings from an academic and operational perspective and develop solutions. They demonstrate that they are familiar with scientific working methods, argumentation techniques and the requirements of scientific work and are able to fulfil them. They have mastered the preparatory work required for writing an academic paper, such as conducting research across various media, and are able to familiarise themselves with unfamiliar topics and, taking into account the existing literature, the knowledge they have acquired and the specified requirements, develop and thoroughly evaluate alternative courses of action. During the final oral examination, students present their research approaches and findings to an expert audience in a structured manner and defend them during an academic debate.

Elective Modules:

Module Designation	M101 Data Science
Learning outcomes and competences	Students have a sound understanding of the benefits of data analysis and are familiar with a wide range of applications and relevant types of data sources. Students are able to carry out descriptive and exploratory data analysis and visualise the results using standard graphical representations. They are familiar with the various classifications of algorithmic approaches to machine learning, such as the distinction between supervised and unsupervised learning. They are able to identify which type of algorithms can be used to solve a specific use case. They also have a firm grasp of the fundamental methods, techniques and algorithms used in statistics and machine learning, such as linear and logistic regression, decision trees, distance-based methods such as the k-Nearest Neighbor algorithm, support vector machines and neural networks. The students are familiar with the various stages involved in carrying out a data science project and have explored process models for implementing such projects. Students are able to design and develop analytical solutions to describe, predict and improve business outcomes. They have knowledge of selected advanced concepts and are able to apply a number of them. They are able to carry out data analysis and modelling independently, for example using the Python programming language, and are capable of prototyping data pre-processing steps, feature engineering, and training and testing algorithms. Furthermore, they are able to identify the specific challenges involved in operating data-driven software in a production environment and are familiar with the concepts and measures required to successfully transfer prototype approaches into production. Students have gained an overview of the risks associated with the use of machine learning applications, such as training based on biased data, and have explored various approaches to understanding and ensuring the transparency of algorithmic decisions.

Module Designation	M102 Cloud Computing
Learning outcomes and competences	Students are familiar with the theoretical principles of centralised data management, such as synchronisation, transactions and replication strategies. They have a thorough understanding of the fundamental concepts and technologies involved in operating virtualised data centres, in particular system virtualisation (virtual machines) and operating system-level virtualisation (containerisation). They are familiar with current methods and technologies for managing distributed virtual resources and can explain how distributed cloud resources can be used for scalable applications. Furthermore, students are able to adopt the user's perspective on cloud computing and explain how cloud infrastructure can be used to develop scalable and fault-tolerant applications. Students are familiar with the main commercial cloud applications (e.g. Amazon, Google, Apple) as well as key alternative platforms (on-premises clouds) and are aware of their main advantages and disadvantages. They are able to carry out both quantitative and qualitative comparisons of cloud-based applications and platforms. In the process, they gain an understanding of both the perspective of a cloud provider and that of users of a cloud-based infrastructure. Students are able to explain the legal principles underlying cloud-based applications and have an overview of the current state of the public debate on cloud computing.

Module Designation	M103 Internet of Things
Learning outcomes and competences	Upon successful completion of the module, students are familiar with the business fundamentals of the Internet of Things (IoT). They can identify and explain the key concepts of the Internet of Things (IoT). They have an overview of market prospects and trends in the IoT sector. They are familiar with current IoT applications in various sectors, such as smart cities, manufacturing facilities, retail and healthcare. They have an understanding of prototyping and scaling IoT products and are familiar with business models and monetisation strategies for IoT products. In the module on the technical fundamentals of the IoT, students gain a deeper understanding of the IoT reference model. They are familiar with the core components of IoT systems, such as microcontrollers, sensors and actuators, and can explain their intended use. Students are familiar with connectivity technologies for the IoT, such as 5G, LoRaWAN, Bluetooth and related use cases. Students have a thorough understanding of the requirements and solutions relating to IoT security. They are familiar with the architecture, functionalities and key figures of IoT platforms. They can explain the most important IoT protocols (e.g. MQTT, COAP). They are able to use tools for IoT data storage and visualisation.

Module Designation	M104 Blockchain Technology
Learning outcomes and competences	Upon completion of the module, students have a sound understanding of the cryptographic principles underlying blockchain technology, particularly Merkle trees. They understand the different methods used to validate and verify transactions (particularly proof-of-work and proof-of-stake) and can explain their advantages and disadvantages. They are familiar with attack scenarios and defence strategies. Students understand the various approaches to digital currencies and are familiar with the fundamental problem of double-spending. They are familiar with centralised and decentralised approaches to solving this problem and can discuss their advantages and disadvantages. Students can implement distributed applications using at least one blockchain platform.

Module Designation	M201 Business Applications
Learning outcomes and competences	Upon successfully completing the module, students know: – what types of business applications are typically used within the company, – how standard business processes are mapped using Enterprise Resource Planning (ERP) systems, – what role business applications, particularly ERP systems, play in establishing integrated IT architectures within a company, – how business applications can be used in conjunction with engineering applications, – principles and methods of business process analysis and modelling for the selection, optimisation and customisation of business applications, – which process models are used for the implementation of business applications within the organisation. Upon successful completion of the module, students are able to: – map selected standard processes using ERP systems and have some practical experience in using ERP systems, – map business processes independently using business process models and thereby design the implementation of business applications, – assess the cost-effectiveness of IT use within the company using metrics.

Module Designation	M202 Data Ethics, Privacy and Governance
Learning outcomes and competences	Upon successful completion of the module, students are familiar with key ethical considerations relating to the protection of personal data. The students have explored the impact of data science on today's society and developed an understanding of principles such as fairness, accountability and transparency. Students are familiar with examples of data breaches, particularly in the use of machine learning and artificial intelligence algorithms such as profiling and automated decision-making, and are therefore aware of the ethical and legal risks associated with the use of such algorithms. They have an overview of common data anonymisation methods and can identify their advantages and disadvantages. They are also able to analyse the privacy requirements of specific use cases and select an appropriate method, taking into account the utility-privacy trade-off of anonymisation approaches. Students gain an overview of regulatory approaches to data protection in the context of big data, as well as constructive data protection mechanisms. They can develop data governance policies and implement them within the business context, whilst taking into account legal, ethical and business requirements.

Module Designation	M203 IT-Controlling
Learning outcomes and competences	Students recognise the importance of implementing strategic IT controlling. Students have a thorough understanding of the economic models and methods used to plan and manage complex IT infrastructures. They are able to identify opportunities and risks for a specific context by assessing technologies. Students are able to apply IT controlling tools (e.g. key performance indicator systems, portfolio analysis, benchmarking, IT reporting). Students are able to assess IT application environments holistically.

Module Designation	M301 German as a Foreign Language
Learning outcomes and competences	The module descriptions for the elective module M16 German as a Foreign Language are published on the HTW Berlin Foreign Languages Centre website.

Module Designation	M302 Intercultural Competence
Learning outcomes and competences	Students recognise cultural influences and their impact on perception, communication and behaviour; reflect on their own cultural values, norms and prejudices; acquire theoretical knowledge of cultural concepts and intercultural communication; develop communication and social skills for successfully interacting with culturally diverse groups; learn strategies for conflict resolution and culturally sensitive behaviour in intercultural contexts, and are able to critically analyse and professionally manage intercultural encounters.

Anlage 4 Diploma Supplement Details

Specific information on the Diploma Supplement of the further education Master's programme Professional IT Business and Digitalization is included below.

HTW Berlin

Diploma Supplement

– Further education Master's programme Professional IT Business and Digitalization –

1.	INFORMATION ON THE HOLDER OF THE QUALIFICATION
1.1/1.2	Surname(s) / first name(s)
1.3	Date of birth (dd/mm/yyyy)
1.4	Matriculation number or student identification code (if available)
2.	Information Regarding the Qualification
2.1	Title of qualification and (if applicable) degree awarded (in the original language) Master of Science, M.Sc.
2.2	Main fields of study for the qualification Professional IT Business and Digitalisation
2.3	Name and status (type/body/organisation) of the institution that awarded the qualification (in original language) Berlin University of Applied Sciences (HTW Berlin) (University (of Applied Sciences)/state)
2.4	Name and status (type/funding body) of the institution (if not identical to 2.3) which implemented the programme (in the original language) Ditto
2.5	Language(s) of instruction/examination English
3.	Information on the Level and Duration of the Qualification
3.1	Qualification level Postgraduate professional university degree with a strongly practice-orientated profile following completion of a Bachelor or German <i>Diplom</i> programme (see sections 8.1 and 8.4.2) including a Master's thesis

3.2	Official length of studies (regular study period) in credits and/or years
	Regular study period: 3 semesters
	Workload: 2,700 hours
	ECTS credits: 90
	Master's Thesis incl. Final Oral Examination: 30
3.3	Admission requirement(s)
	At least a Bachelor of Arts or Bachelor of Science or Bachelor of Engineering or Bachelor of Laws or international equivalent and specific selection criteria
4.	Information on the Content of the Study Programme and Desired Learning Outcomes
4.1	Form of study
	Full-time programme with compulsory attendance
4.2	Learning outcomes of the study programme
	Graduates possess sound knowledge of the core areas of IT entrepreneurship. These include, in particular, IT project management, IT quality assurance (particularly test-driven quality assurance), agile project management, IT software design and requirements engineering. In addition, graduates receive intensive training in communication, negotiation and leadership skills. They also have (optionally, and depending on the elective modules chosen) a sound understanding of key aspects of data-driven innovation, such as data generation, collection, storage, accessibility, and application development and operation (cloud computing, IoT), as well as data analysis and modelling (software design, data science). Graduates can take on operational management roles within the field of IT projects, working in project management or as architects in the development of modern application systems, as well as in the consultancy sector. The Master's degree qualifies graduates for a career in IT project management or as specialists or managers in the fields of software architecture, IT project management, requirements engineering, product management and quality assurance. The Master's degree demonstrates a combination of technical, business and organisational knowledge within the IT sector. Graduates are able to analyse and plan complex IT architectures. They are proficient in both business applications (ERP) and enterprise content management applications, as well as the concepts and techniques involved in application integration and the creation of security infrastructures, and the methods of requirements engineering. Graduates are able to understand information systems as socio-technical systems, the starting points for which are corporate objectives and strategies. They have a thorough understanding of both the concepts of strategic information management and the methods of operational information management, as well as their implementation using business applications. They are familiar with leadership qualities and styles and have mastered a range of leadership techniques.

They have developed and improved their German language skills, which facilitates working in German-speaking countries.

Programme components:

Compulsory modules 30 ECTS credits

Elective modules 30 ECTS credits

Master's Thesis 25 ECTS credits

Master's Thesis Seminar and Final Oral Examination 5 Cr credits

4.3 Details of the degree programme, individually acquired credits and grades achieved

See the Master's Degree Grade Transcript for further details regarding specialist modules and the Master's thesis topic, including grades.

4.4 Grading scheme and notes on grading if available

4.5 Overall grade (in original language)

Final grade (not rounded off)

Composition of final grade:

50 % module grades

40 % Master's Thesis

10 % Final Oral Examination

5. **Entitlement of Qualification**

5.1 Access to further study

This degree entitles the holder to take up doctoral studies; additional requirements may be stipulated by doctoral admissions regulations. (see section 8)

5.2 Access to regulated professions (if applicable)

The Master's degree allows entry to higher grade public service professions in Germany.

6. **Additional Information**

6.1 Additional Information

On the 31st of May 2021, HTW Berlin was awarded system re-accreditation by the accreditation commission of the agency AQAS. This means that all HTW Berlin programmes which were and are subject to internal quality assurance in accordance with the stipulations of the accrediting system are accredited. This also applies to this programme (see: www.akkreditierungsrat.de).

6.2 Further information

HTW Berlin: <http://www.HTW-Berlin.de>