

Study and examination regulations for the Master's degree program in Digital Factory and Operational Excellence (full-time / part-time) at the HDBW University of Applied Sciences

valid for students starting their studies from winter semester 2024/25

from 16.09.2024

This translation serves to inform our international students. The valid legal reference can be found in the original „Studien- und Prüfungsordnung für den Masterstudiengang Digital Business Modelling and Entrepreneurship (Vollzeit / Teilzeit) an der Hochschule der Bayerischen Wirtschaft für angewandte Wissenschaften“

Based on Art. 9, Art. 80 para. 1, Art. 84 para. 2, para. 3, para. 4, para. 6, Art. 85, Art. 86 of the Bavarian Higher Education Innovation Act (BayHIG) of August 5, 2022 (GVBl. p. 414, BayRS 2210-1-3-WK) and based on the agreement of the Bavarian State Ministry of Science and the Arts of July 22, 2024, the Bavarian University of Applied Sciences (hereinafter HDBW) issues the following study and examination regulations:

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§ 1

Purpose of the study and examination regulations

These study and examination regulations serve to complete and supplement the General Examination Regulations of the HDBW (APO) for the Master's degree program *Digital Factory and Operational Excellence* in the currently valid version.

§ 2

Study objective

- (1) ¹The *Digital Factory and Operational Excellence* program is designed as a consecutive Master's degree course in industrial engineering. ²Students learn fundamental analysis and design options in production, logistics and the entire supply chain. ³In addition to optimization methods of lean production, the focus is also on digital applications of factory planning, business management methods of ergonomics as well as investment and decision theory. ⁴The Master's degree program is assigned to the "application-oriented" profile type. ⁵The degree program therefore includes the following qualification objectives:
- a. Students know the components and action dimensions of factory design, planning and optimization.
 - b. Students are familiar with classic analysis and design methods as well as digital tools for planning and optimizing production and logistics areas (programming, simulation, Industry 4.0).
 - c. Students can develop strategies in the international production network and the supply chain and evaluate them on the basis of key figures.
 - d. Students can apply the methods of lean management / lean production and other management methods.
 - e. Students are familiar with the business and legal principles of investment theory and labor law.
 - f. Students are familiar with the concepts of business intelligence, big data and the associated IT applications.
 - g. Students learn the special features of international and intercultural project work.
- (2) ¹The basic content of this degree program is a combination of information technology, entrepreneurial processes along the value chain and business analysis and evaluation methods. ²The focus is on modern factory and process design in the context of industrial engineering in national and international production and logistics networks.

- (3) ¹The Master's degree program also promotes skills that are important for professional practice, such as social competence, communication skills and cooperative teamwork. ²In addition, students should be able to independently develop scientific methods that are useful in practice. ³Particular emphasis is therefore placed on the integration of project studies.

§ 3

Qualification for the study program

- (1) Qualification requirements for admission to the Master's degree program *Digital Factory and Operational Excellence* are:
- a. Proof of a degree in business administration with a corresponding focus, mechanical engineering, industrial engineering, production management or logistics management at a university or an equivalent degree comprising at least 180 ECTS credits and at least six theoretical semesters of study.
 - b. ¹Proof of good written and spoken English language skills. ²Proof is provided by the language certificates of competence level B2 specified in the European Framework of Reference (Annex 2). ³Proof is also deemed to have been provided if the applicant has successfully completed an English-language course at a secondary school or university or is a native English speaker.
- (2) ¹The Examination Board (see §3 APO) decides on the equivalence of university degrees and other degrees according to para. 1 a. and proof according to b. in compliance with Art. 86 para. 1 BayHIG. ²The equivalence of university degrees (including first degrees without credit points) shall be assumed provided that no significant differences in the competencies acquired in this degree program are identified and justified.

§ 4

Standard period of study, structure of the degree program, academic degree

- (1) ¹The Master's degree program is offered full-time and part-time. ²The standard period of study for the full-time course is three theoretical semesters including the Master's thesis. ³The standard period of study for the part-time course is five theoretical semesters including the Master's thesis. ⁴Details are set out in the curriculum.
- (2) ¹If a student can provide evidence of a completed university degree for which fewer than 210 ECTS credits (but at least 180 ECTS credits) have been awarded, the prerequisite for passing the Master's examination is proof of the missing ECTS credits from the

relevant undergraduate degree program in Industrial Engineering and Management at the HDBW. ²For this purpose, the Examination Board (see §3 APO) determines which competencies (learning outcomes) the student has not acquired in his/her completed first degree program compared to a university degree program comprising 210 ECTS credits and determines the modules and examinations to be completed by the student. ³The modules and examinations determined by the examination board will be communicated to the student upon enrolment. ⁴They must be completed by the start of the third semester.

- (3) There is no entitlement for the Master's degree program to be carried out if the number of applicants is insufficient.
- (4) Upon successful completion of the Master's examination, the academic degree "Master of Science", abbreviated to "M.Sc.", is awarded.

§ 5

Credit points

- (1) ¹Credit points (ECTS points) are awarded for the successful completion of modules. ²One credit point corresponds to a study load of approximately 30 hours. ³The number of credit points per module can be found in Appendix 1 to these study and examination regulations.
- (2) Successful completion of the degree program requires 90 credit points.

§ 6

Courses and certificates of achievement

- (1) ¹The courses (modules), their number of hours, the type of courses, the number of credit points, the course-related certificates of achievement and further provisions are set out in Annex 1 to these study and examination regulations.
- (2) All modules are either compulsory modules or compulsory elective modules:
 - a. Compulsory modules are the modules of the degree program that are mandatory for all students.
 - b. ¹Compulsory elective modules are the modules of the degree program that are offered individually or in groups as an alternative. ²Each student must make a specific selection from among them in accordance with these study and examination regulations. ³Once the student has decided on a module at the beginning of the semester, this module must be taken and is included in the transcript of records.

- (3) ¹All modules and examinations and/or performance assessments are held in English; further details can be found in the module handbook. ²The examinations take place in the specified examination periods after the end of the lecture period or during the semester.
- (4) ¹The form of the examination is announced by the examination board in accordance with Section 5 (3) APO. ²A combination of different examinations is possible (partial examinations).
- (5) ¹Insofar as Annex 1 of these study and examination regulations does not contain any conclusive provisions, the module handbook shall contain further specifications. ²If several partial examinations are required to pass the module, it must be clearly defined how the parts are weighted and whether it is necessary to pass all parts in order to pass the module as a whole.

§ 7 **Final module**

- (1) ¹The final module consists of two components in accordance with § 24 APO:
 - a. ¹The independent preparation of a Master's thesis. This comprises at least 70 pages of content and should not exceed 120 pages. ²Cover sheet, all lists, index and additional pages in the introduction and credits do not count.
 - b. ¹The defense and presentation of the results of the Master's thesis with an examination discussion in which the content of the Master's thesis is also linked to other content of the degree program. ²The defense and presentation of the results of the Master's thesis should not exceed 15 minutes. ³The total duration of the defense should not exceed 30 minutes
- (2) ¹The topic of the Master's thesis can be issued by a professor responsible for the subject at the earliest after the end of the lecture period of the second semester. ²A prerequisite for the issue of the topic is the acquisition of 55 ECTS credits.
- (3) ¹The Master's thesis is assessed in a written report, in which the qualitative and/or quantitative-empirical research methodology is to be presented in particular. ²If the Master's thesis is assessed as "insufficient", it can be repeated once with a new topic. ³The new topic must be assigned no later than one month after notification of the result of the failed Master's thesis. ⁴With regard to the processing time, the regulations for the first attempt apply.

§ 8 Passing the Master's examination

The Master's examination is passed if

- a. at least the grade "sufficient" or the grade "passed" was achieved in all modules required for passing the Master's examination according to Annex 1 Module Overview of the Master's degree program *Digital Factory and Operational Excellence*, including the Master's thesis
- b. and a total of at least 90 credit points have been earned.

§ 9 Entry into force

These study and examination regulations come into force on 16.09.2024 and apply to students of the Master's degree program *Digital Factory and Operational Excellence* at the HDBW starting in the winter semester 2024/25.

Appendix 1: Module overview of the Master's degree program Digital Factory and Operational Excellence (full-time / part-time)

MoNo.	Course / Module	Lectures	SHW	Exam	ECTS	Sem (FT)	Sem (PT*)
DFOE01	Business Planning, Finance and Entrepreneurship			sP 60-120 min or mP 15-30 min or PR 15-30 min	5	1	3
DFOE01	Business Planning, Finance and Entrepreneurship	VL/UE	4				
DFOE02	Business Analysis and Optimization Processes			sP 60-120 min and PA 5-10 P.	5	1	1
DFOE02	Business Analysis and Optimization Processes	VL/UE	4				
DFOE04	Big Data, Analytics, Business Intelligence			PA 10-20 P. and PR 10-30 min	5	1	1
DFOE04	Big Data, Analytics, Business Intelligence	VL/UE	4				
DFOE16	Work Science			sP 60-120 min and PA 20-30 P.	5	1	1
DFOE16	Work Science	VL/UE	4				
DFOE11	Agile Project Management in International Project Teams			PA 10-30 P. and PR 20-40 min	5	1	1
DFOE11	Agile Project Management in International Project Teams	VL/SPJ	2				
DFOE17	Production Strategy and Manufacturing in Global Networks			sP 60-120 min or mP 15-30 min or PR 15-30 min	5	1	3
DFOE17	Production Strategy and Manufacturing in Global Networks	VL/UE	4				
DFOE10	Employee Management and Change Management			sP 60-120 min or mP 15-30 min or PR 15-30 min	5	2	2
DFOE10	Employee Management and Change Management	VL/UE	4				
DFOE07	Lean Production and Production Optimization			sP 60-120 min or mP 15-30 min or PR 15-30 min	5	2	2
DFOE07	Lean Production and Production Optimization	VL/UE	4				
DFOE09	Digital Value Chain and Smart Logistics			sP 60-120 min or (PA 20-40 S. and PR 20-40 min)	5	2	2
DFOE09	Digital Value Chain and Smart Logistics	VL/UE	4				
DFOE12	Project Work			PA 20-40 P. and PR 20-30 min	5	2	2
DFOE12	Project Work	SPJ	2				
DFOE03	Global Supply Chain Management, Risk Management, Global Procurement Sourcing			sP 60-120 min or mP 15-30 min or PR 15-30 min	5	2	4
DFOE03	Global Supply Chain Management, Risk Management, Global Procurement Sourcing	VL/UE	4				
DFOE14	Decision Theory and Key Performance Indicator Development			sP 60-120 min or mP 15-30 min or PR 15-30 min	5	2	4
DFOE14	Decision Theory and Key Performance Indicator Development	VL/UE	4				
DFOE08	Digital Factory Planning and Process Simulation			sP 60-120 min or (PA 15-30 P. and PR 15-30 min)	5	3	3
DFOE08	Digital Factory Planning and Process Simulation	VL/UE	4				
DFOE15	Introduction to Cyber Security			sP 60-120 min or (PR 10-20 min and mP 10-20 min)	5	3	3
DFOE15	Introduction to Cyber Security	VL/UE	4				
DFOEMT	Master's Thesis						
DFOEMT1	Master's Thesis	SSt		HA 70-120 P.	18	3	5
DFOEMT2	Final Examination	mP		mP 15-30 min	2		

Credit points (CP) are awarded according to the European Credit Transfer System (ECTS).

Part-time students must choose between 3 and a maximum of 6 modules per semester. It is therefore possible to complete the course between 3 and 6 semesters as a part-time student. The illustrated study plan shows a recommendation for 5 semesters.

Legend

A	Application-oriented specialization	AM	Final module
B	Business administration	BP	Work placement
BS	Block seminar	MT	Master's thesis
BL	Blended learning	F	Professional specialization
G	Basic studies	HA	Term paper
KO	Colloquium	L	Laboratory lessons
LP	Credit points	LVF	Type of course
MoNo.	Module number	mP	Oral examination
MoP	Module examination	N.N.	Not named
P	Compulsory event	PA	Project work
PB	Internship report	PL	Practice-oriented course
PR	Presentation	PS	Practical semester
R	Presentation or short paper	S	Seminar
SK	Language course	sP	Written examination
SPJ	Study project	SSt	Self-study
SWS	Semester hours per week	TZ	Part-time
UE	Exercise	V	Liability
VE	Defense	VL	Lecture
VZ	Full-time	WL	Workload
WP	Compulsory elective course		

Appendix 2: Recognition of English language certificates

Overview of the recognition of English language certificates that must be provided in accordance with the European Framework of Reference for Languages at level B2:

¹The study and examination regulations stipulate the following standardized test procedures with the corresponding "minimum scores" as proof of language competence level B2:

- Test of English as a Foreign Language (TOEFL) internet based at least 89 points or
- International English Language Testing System (IELTS) at least 7.0 or
- Test of English for International Communications (TOEIC), minimum score: 700 points

²Proof of the required language competence can also be provided by a Cambridge First Certificate in English (FCE), a Cambridge Certificate of Proficiency (CPE) or the Business English Certificate (BEC) Vantage.

Issued on the basis of the decision of the HDBW Senate on 13.12.2023 and on the basis of the agreement of the Bavarian State Ministry of Science and the Arts of 22.07.2024, AZ L.3-H6484.3.16/2/13.

Munich, 16.09.2024

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Prof. Dr. Kerstin Fink, President

The statutes were deposited at the university on 16.09.2024, the deposit was announced on 16.09.2024 by posting at the university. The date of the announcement is therefore 16.09.2024.