# Study and Examination Regulations for the Master Program Artificial Intelligence and Robotics at Hof University of Applied Sciences

## From 26<sup>th</sup> October 2022

# Only the German version of this document is legally binding. This English translation is for your convenience only.

Based on Art. 13 Para. 1 Clause 2 and Art. 43 Para. 5 Clause 2 of the Bavarian Higher Education Act - BayHSchG - (BayRS 2210-1-1-WFK), Hof University of Applied Sciences enacts the following statutes:

#### **§1**

#### **Purpose of the Study and Examination Regulations**

<sup>1</sup>These regulations govern access to the Master's program Artificial Intelligence and Robotics as well as the content and structure of the program. <sup>2</sup>In addition, it makes the necessary specifications for the examinations in this study program to fulfill the framework examination regulations for the universities of applied sciences - RaPO - (BayRS 2210-4-1-4-1-WFK) and the general examination regulations of the Hof University of Applied Sciences (APO).

#### § 2

#### Admission requirements für the Master's Program

(1) Admission requirements are

- a successfully completed first professional degree at a German or foreign university with at least 210 credits (credit points according to the European Credit Transfer and Accumulation System - ECTS) or an equivalent degree
  - a) in a computer science degree program or
  - b) in an engineering or natural science degree program that has provided a basic knowledge of computer science sufficient for studying in the master's degree program in Artificial Intelligence and Robotics, as well as
- 2. proof of suitability for the specific course of study in accordance with § 3.

(2) <sup>1</sup>A sufficient basic knowledge of computer science in the sense of paragraph 1 number 1 exists if the corresponding competences have been the subject of study and examination at least in the same breadth and depth as is the case if having successfully completed in the Bachelor's degree program in Computer Science (Informatik) the modules "Fundamentals of Programming/ Grundlagen der Programmierung", "Algorithms and Data Structures/ Algorithmen und Datenstrukturen" and "Statistics/ Statistik" or in the Bachelor's degree program in Engineering Sciences (Ingenieurwissenschaften) the modules "Programming for Engineers/ Programmieren für Ingenieure", "Measurement Technology/ Messtechnik" and "Statistics/ Statistik" at Hof University of Applied Sciences. <sup>2</sup>The examination board decides whether this requirement is fulfilled; in doing so, it is guided by the standard of Art. 63 Para. 1 Clause 1 BayHSchG (no significant differences). <sup>3</sup>The application documents must include descriptions of the modules relevant to the above decision from the relevant module catalogues and program curricula.

(3) The fulfillment of the admission requirement according to Paragraph 2 shall be deemed equivalent if one of the modules mentioned therein is successfully completed in accordance with the relevant study and examination regulations prior to taking up studies in the Master's program.

(4) <sup>1</sup> The minimum number of 210 credits pursuant to paragraph 1, sentence 1, number 1 shall be deemed to have been achieved if the course of study referred to therein was 180 credits in length, did not include an internship semester or similar practical study phases, and the following module is successfully completed by the end of the second semester in the master's program:

Module title	Credits	Examination	Admission requirement
Internship	30	Practice Report (10 to 15 pages)	Internship certificate

<sup>2</sup>The internship serves to build up experience in professional everyday life. <sup>3</sup>It must be conducted in a company, a public institution or a research institution. It must correspond to the degree pursuant to paragraph 1, sentence 1, number 1 in terms of subject orientation, significance and difficulty, and must be devoted to an activity related to artificial intelligence and robotics for a total of 900 hours. <sup>4</sup>Compliance with these requirements shall be evidenced by a certificate issued by the institution referred to in sentence 3, describing the subject of the practical experience in the required manner. <sup>5</sup>The practice report shall not be graded, but shall be awarded the marks "passed with success" or "passed without success". <sup>6</sup>The examination board shall decide whether the requirements of sentence 1 have been met.

#### § 3

#### Proof of suitability for the specific course of study

<sup>1</sup>The degree program in accordance with § 2 Paragraph 1 Sentence 1 Number 1 must have been completed with an overall examination grade of at least 2.5 or an equivalent grade. <sup>2</sup>A grade shall also be deemed equivalent if this grade or a better grade was achieved by no more than 50% of those who completed the relevant degree program in the same year.

#### §4

#### **Degree Program Objective**

<sup>1</sup>The aim of the master's degree program is to prepare students to take on demanding specialist tasks in the fields of artificial intelligence (AI) and robotics. <sup>2</sup>Students acquire a qualification specifically targeted at these fields. <sup>3</sup>This includes in-depth knowledge of the current methods of AI, for example Deep Learning, descriptive and generative AI as well as intelligent robotics. <sup>4</sup>The graduates are able to apply their knowledge to concrete situations and enhance it independently. <sup>5</sup>Their intercultural competences enable them to work in international cooperation.

#### § 5

#### Standard period of study, Full-time degree program

<sup>1</sup> The standard period of study is three semesters. <sup>2</sup>The program is designed as a full-time study program.

### § 6

#### Modules

(1) The modules required to pass the Master's examination, the type and scope of the courses, the form of the examinations including the processing times for the preparation of the scheduled supervisory work as well as the assessment according to the ECTS are specified in the Annex.

(2) <sup>1</sup>Students who have neither acquired their university entrance qualification nor a university degree or equivalent degree in German shall complete the module "German as a Foreign Language A2.1 / Deutsch als Fremdsprache A2.1", unless they already have a knowledge of German that at least corresponds to the language level that is achieved with the successful completion of this module. <sup>2</sup>In this case, they have to complete the module "German as a foreign language ..." which directly builds on their respective previous knowledge.

(3) <sup>1</sup>Students who have acquired their university entrance qualification or a university degree or equivalent degree in German cannot study the modules "German as a foreign language ...". <sup>2</sup>Instead, they must complete modules in accordance with paragraph 4 or paragraph 5.

(4) <sup>1</sup>In the context of paragraph 3, the module Intercultural Competence can be attended, if the faculty offers it. <sup>2</sup>There is no entitlement to this course being offered.

(5) <sup>1</sup>The completion of the module referred to in paragraph 4 shall be deemed equivalent to the completion of modules in accordance with the study and examination regulations for courses of the Center for Languages and Intercultural Competence or the study and examination regulations for the study-accompanying training for the acquisition of the UNIcert<sup>®</sup> foreign language certificate modules, which comprise a total of at least five credits and meet the requirements of the following sentences. <sup>2</sup>Only modules can be selected which aim at a language level of at least B2 or which concern a language in which the student in question has already completed at least one module. 3In the latter case, only modules that - together, if applicable - lead to higher competences than the modules already completed in this language are eligible..

#### § 7

#### Module Catalogue, Program curriculum

(1) <sup>1</sup>The Department of Computer Science shall prepare a module catalogue. <sup>2</sup>The module catalogue specifies the teaching content and learning objectives of the modules in detail. <sup>3</sup>In addition, it contains, in particular, more detailed provisions on the examinations listed in the appendix as well as the professional supervision during the preparation of the final thesis and the internship regulated in § 2 paragraph 4 sentence 1.

(2) <sup>1</sup>In addition, the Department of Computer Science shall draw up a program curriculum. <sup>2</sup>The program curriculum informs in detail about the courses offered by the Department and the recommended course of study.

(3) <sup>1</sup>The module catalogue and the program curriculum are adopted by the Departmental Council in agreement with the Examination Committee and are to be made public at the university. 2The announcement of new regulations must be made at the latest at the beginning of the lecture period of the semester in which the regulations are to be applied for the first time.

#### § 8

#### **Master's Thesis**

(1) In the Master's thesis, students will demonstrate their ability to apply the knowledge acquired during their studies in an independent, application-oriented scientific work to solve a holistic problem.

(2) <sup>1</sup>The assignment of the topic requires the acquisition of at least 30 credits in the modules of the Master's degree program. <sup>2</sup>The time from the assignment of the topic to the submission is five months.

#### § 9

#### Language of teaching and examination

<sup>1</sup> The language of instruction and examination in general is English. <sup>2</sup>The language of instruction and examination in the modules "German as a foreign language ..." is German. <sup>3</sup>In the module "Master Thesis", students may choose German as the language of instruction and examination in whole or in part.

#### §10

#### **Academic Degree**

Based on the successful completion of the Master's examination, Hof University of Applied Sciences awards students the degree of Master of Science (M.Sc.).

#### § 11

#### **Examination Board**

<sup>1</sup>In the Department of Computer Science an examination board for the Master's program Artificial Intelligence and Robotics is established. <sup>2</sup>The examination board consists of three members, whereas one of them is the chairperson. <sup>3</sup>The members are elected by the Departmental Council.

#### §12

#### **Effective Date**

These statutes shall enter into force with effect from October 1, 2022.

Issued on the basis of the resolution of the Senate of Hof University of Applied Sciences of October 19, 2022 and the approval of the President of the University of Applied Sciences of October 26, 2022.

Hof, October 26, 2022

signed

Prof. Dr. Dr. h. c. Jürgen Lehmann

President

These bylaws were deposited at the university on October 26, 2022. The laying down was announced by notice in the university on October 26, 2022. The day of announcement is therefore October 26, 2022.

## Annex (to § 6)

1	2	3	4	5	6	7
					Exami	inations
No.	Modules	sws	Credits	LV	Form	zv
1	Core Modules					
1.1	Applied Deep Learning	4	6	SU, Ü	schrP90	
1.2	Generative Al	4	6	SU, Ü	schrP90	
1.3	Intelligent Robotics	4	6	SU, Ü	StA	
1.4	Advanced Architectures in AI	4	6	SU, Ü	schrP90	
2	Project Seminars					
2.1	New Technologies in Computer Science	2	3	s	SA mit Ref	
2.2	New Technologies in AI and Ro- botics	2	3	S	SA mit Ref	
2.3	Al Project	4	7	Pr	StA mit Ref	
3	Interdisciplinary Modules					
3.1	Predictive Maintenance and Con- dition Monitoring	4	6	SU, Ü	schrP90	TN80
3.2	Industry 4.0 and Data Manage- ment	4	6	SU, Ü	schrP90	TN80
3.3	Fachbezogenes Wahlpflicht- modul <sup>1</sup> / Subject-related elective module <sup>1</sup>	4	6	SU oder S	P <sup>2</sup>	ZV <sup>3</sup>
4	Intercultural Competence					
4.1	Deutsch als Fremdsprache A2.1		5	SU, Ü	KI90	TN75
4.2	Deutsch als Fremdsprache A2.2		5	SU, Ü	Kl90	TN75
4.3	Deutsch als Fremdsprache B1.1		5	SU, Ü	Kl90	TN75
4.4	Deutsch als Fremdsprache B1.2		5	SU, Ü	Kl90	TN75
4.5	Deutsch als Fremdsprache B2.1		5	SU, Ü	KI90	TN75
4.6	Deutsch als Fremdsprache B2.2		5	SU, Ü	KI90	TN75
4.7	Deutsch als Fremdsprache C1.1		5	SU, Ü	KI90	TN75
4.8	Deutsch als Fremdsprache C1.2		5	SU, Ü	KI90	TN75
4.9	Intercultural Competence	4	5	SU, Ü	StA, Ref⁴	

5	Master Thesis	30	AA	
		90		

#### **Annotations:**

<sup>1</sup> These modules serve to broaden and deepen competencies in selected subfields of computer science of particular relevance. The modules available for selection in the respective semester are determined in the module catalogue, taking into account demand.

<sup>2</sup> Possible examinations (P) are written examinations of 90 minutes duration (schrP90), student research projects (StA), presentations (Ref) or oral examinations (mdIP). A student research project (StA) may include a presentation of the paper or a colloquium on the paper. Further details are specified in the module catalogue.

<sup>3</sup> Possible admission requirements (ZV) are a testat or proof of participation (TN). Further details are specified in the module catalogue.

<sup>4</sup> For the calculation of the final grade of the module, each of the two exams is to be weighted with 50%. Both examinations must be passed.

#### **Explanation of abbreviations:**

AA	final thesis
Kl90	Written exam with 90 minutes processing time
LV	Courses
Р	Examination(s)
Pr	Internship
Ref	Presentation (duration 20 to 30 minutes)
S	Seminar
schrP90	written exam (processing time 90 minutes)
SA	Seminar paper (regular workload 25 hours))
StA	Student research project (regular workload 50 hours)
SU	Seminar teaching
SWS	hours per week
TN	Proof of participation (with indication of the participation rate in percent)
Ü	Exercise
ZV	Admission requirement