

These degree program and examination regulations have been worded carefully to be up to date; however, errors cannot be completely excluded. The official German text available from L1 – Legal Affairs and Academic Quality Management is the version that is legally binding.

**Degree Program and Examination Regulations for the Master's Degree Program in Artificial Intelligence at the Faculty of Engineering of Friedrich-Alexander-Universität Erlangen-Nürnberg (FAU)
– FPOAI –
dated November 11, 2020**

amended by statute of
July 26, 2022

Based on Section 13 (1)(2), Section 43 (5)(2), Section 58 (1) and Section 61 (2)(1) of the Bavarian Higher Education Act (Bayerisches Hochschulgesetz, **BayHSchG**), FAU enacts the following General Degree Program and Examination Regulations:

Contents:

Part I: General Provisions.....	1
Section 35 Scope	2
Section 36 Master's Degree Program, Part-time Study, Start of Degree Program, Teaching and Examination Language, Related Degree Programs	2
Part II: Special Provisions.....	2
Section 37 Qualification for a Master's Degree, Certificates, Admission Requirements	2
Section 38 Master's Degree Examinations	3
Section 39 Compulsory Elective Modules.....	3
Section 40 Projects	4
Section 41 Module Group Advanced Seminar	5
Section 42 Minor Subject.....	5
Section 43 Master's Thesis.....	6
Part III: Final Provisions.....	6
Section 44 Legal Validity and Transitory Provisions	6
Appendix 1: Structure of the Master's Degree Program in Artificial Intelligence – Full-time study	7
Appendix 2: Structure of the Master's Degree Program in Artificial Intelligence – Part-time study	8

Part I: General Provisions

Section 35 Scope

The degree program and examination regulations for the Master's degree program in Artificial Intelligence complement the current version of the General Examination Regulations for the Bachelor's and Master's degree programs at the Faculty of Engineering of FAU (**ABMPO/TechFak**).

Section 36 Master's Degree Program, Part-time Study, Start of Degree Program, Teaching and Examination Language, Related Degree Programs

(1) ¹The Master's degree program in Artificial Intelligence builds on the content covered in the Bachelor's degree program in Computer Science and consists of compulsory elective modules (total workload of 50 ECTS credits), the modules Project I (10 ECTS credits) and Project II (10 ECTS credits), an advanced seminar (5 ECTS credits), as well as modules in a minor subject (15 ECTS credits total) and the Master's thesis (30 ECTS credits). ²The type and scope of the examinations and the distribution of modules across the semesters in the standard duration of study are included in the following provisions and **Appendix 1** (full-time study) and **Appendix 2** (part-time study).

(2) ¹The Master's degree program in Artificial Intelligence can be completed as a full-time or as a part-time degree program. ²It can be started in either the summer or the winter semester.

¹Notwithstanding Section 4 (5) **ABMPO/TechFak**, the teaching and examination language in the Master's degree program in Artificial Intelligence shall be English; individual teaching units and examinations may be held in German. ²The Master's thesis shall be written in English. ³Exceptions shall require the approval of the chairperson of the Degree Program Committee for Computer Science. ⁴This shall not affect the rest of Section 4 (4) **ABMPO/TechFak**.

(4) The provisions in Section 30 (3)(2) **ABMPO/TechFak** do not apply to related degree programs.

Part II: Special Provisions

Section 37 Qualification for a Master's Degree, Certificates, Admission Requirements

(1) ¹A subject-specific degree as defined in Section 29 (1)(1) **ABMPO/TechFak** is a Bachelor's degree program in computer science from FAU or a degree from a university in Germany or another country with equivalent content. ²In accordance with (5)(4) of the **Appendix to ABMPO/TechFak**, applicants with a subject-related degree or an equivalent degree as defined in Section 29 (1)(1) **ABMPO/TechFak** shall only be admitted to the Master's degree program after passing an oral admission examination according to (3).

(2) ¹As stipulated in section (2)(3) of the **Appendix to ABMPO/TechFak**, applicants are required to provide additional proof of English language skills equivalent to at least Level B2 of the Common European Framework of Reference (CEFR) by submitting either relevant school reports or certificates issued by a language school or university. ²Proof of language skills can in particular be provided by submitting a school leaving certificate or another certificate issued by the school providing evidence that English courses have been taken at school up until a level equivalent to B2 CEFR. ³Proof of

language proficiency does not need to be submitted if the applicant acquired their university entrance qualification or relevant undergraduate degree in English.

(3) In the oral admission examination according to paragraph (5)(3) et seq of the **Appendix to ABMPO/TechFak**, applicants shall be evaluated according to the following criteria:

1. Sound knowledge of the foundations of the subject, in particular abstract and analytical thinking skills and knowledge of programming concepts, algorithms, theoretical computer science and foundations of statistics (90%),
2. A positive prognosis demonstrated by the applicant's academic progress; discussion of results from the applicant's previous degree (in particular from the transcript of records) (10%).

Section 38 Master's Degree Examinations

(1) The Master's degree program comprises the following module groups in accordance with **Appendix 1** and **Appendix 2**:

1. 50 ECTS credits from modules from the compulsory elective module area pursuant to Section 39,
2. A total of 20 ECTS credits from the project module group in accordance with Section 40.
3. 5 ECTS credits from the advanced seminar pursuant to Section 41,
4. 15 ECTS credits from the minor subject pursuant to Section 42,
5. 30 ECTS credits from the Master's thesis in accordance with Section 43.

(2) ¹One interim grade each is given for the compulsory elective module area and the minor subject that receive a weighting of 50 and 15 ECTS credits respectively in the overall grade of the Master's examination. ²Section 40 (5) and Section 41 (2) shall apply to the weighting of the projects and the advanced seminar module group when calculating the overall grade.

(3) The Master's examination shall have been passed if the modules specified in paragraph 1 have been passed.

(4) Notwithstanding Section 28 (2)(2) clause 2 **ABMPO/TechFak**, failed attempts in elective modules of the Master's degree program shall not be counted when changing to alternative modules and in the event of a failure to pass there is no obligation to repeat the failed examination within the legally stipulated period pursuant to Section 28 (1)(5) **ABMPO/TechFak**.

Section 39 Compulsory Elective Modules

(1) Compulsory elective modules are offered in the following three specializations:

1. Symbolic Artificial Intelligence,
2. Subsymbolic AI/Machine Learning,
3. AI Systems and Applications.

(2) ¹Students choose compulsory elective modules worth 50 ECTS credits from a catalog defined by the Degree Program Committee for each of the three specializations defined in paragraph 1 above. ²Of the 50 ECTS credits in the compulsory electives, 10 ECTS credits must come from each of the three specializations defined in paragraph

1 above; the other 20 ECTS credits can be chosen freely. ³The elective modules available are published each semester in a module catalog. ⁴The module catalog is published in accordance with local practice.

(3) ¹The learning outcome of the compulsory elective modules is to allow students to gain a more in-depth knowledge of selected skills. ²The second learning outcome has a research focus, with students learning subject-related methods of research and exploring their subject in more depth. ³Thirdly, the element of choice allows students to tailor their profile in view of their career plans.

(4) ¹The type and scope of examinations depend on the skills taught in modules that are worth 5, 7.5, 10 and 15 ECTS credits respectively. Depending on the student's choice, modules may also be worth 2.5 ECTS credits. The type and scope of examinations are described in the module handbook. ²One examination achievement is stipulated per module. ³Examinations in the modules shall take one of the following forms: written examination (60, 90, 120 min), oral examination, seminar achievement, tutorial achievement or laboratory achievement pursuant to Section 6 (3) **ABMPO/TechFak**. ⁴Section 6 (2)(3) **ABMPO/TechFak** stipulates that in justified exceptional circumstances, combinations of the individual achievements stated in sentence 3 may also be possible.

(5) ¹Compulsory elective modules amounting to 5 ECTS credits usually consist of a lecture (2 SWS) and a tutorial (2 SWS) or a lecture (3 SWS) and a tutorial (1 SWS). ²Any exceptions (and further details on module credits) are provided in the module handbook.

Section 40 Projects

(1) ¹The first learning outcome of the project module group is to allow students to expand the knowledge they have already gained in areas of interest to them in the field of Artificial Intelligence, in particular by working on complex problems within the scope of research-oriented projects. ²A second learning outcome is aimed at promoting personal and social skills through independently preparing, reporting on, and presenting a topic from current research and defending ideas in a discussion at the Master's level, as well as working in a group to develop and test subject-related applications and possibilities for implementation with respect to the chosen subject. ³Thirdly, the element of choice allows students to tailor their profile in view of their career plans.

(2) ¹A total of 20 ECTS credits must be obtained as part of the project module group. ²Modules worth 5 or 10 ECTS credits are available for students to choose from. (2) ³The projects shall each have a workload of approximately 300 hours (10 ECTS credits) or 150 hours (5 ECTS credits), enabling students to complete them within six months. ⁴The projects must be selected from one of the specializations listed in Section 39 (1) and may not all be chosen from the same specialization. ⁵If the projects are split into more than two modules, only a total of 10 ECTS credits may be taken from one specialization.

(3) ¹The type and scope of the examination are dependent on the specific project. Details can be found in the module handbook. ²Students must complete one assessed task as an examination achievement and one laboratory achievement as a course achievement per module.

(4) ¹Project modules amounting to 10 ECTS credits usually consist of an advanced seminar (2 SWS) and a research laboratory course (6 SWS). ²Any exceptions, particularly for the modules amounting to 5 ECTS credits, are detailed in the module handbook.

(5) Each of the projects contribute individually to the overall grade with the respective number of their ECTS credits.

Section 41 Module Group Advanced Seminar

(1) ¹The learning outcome of the module group advanced seminar is to allow students to gain initial insights into the topics of the areas of interest to them in the field of Artificial Intelligence and to gather, analyze and interpret information relevant to their subject. ²A second learning outcome is aimed at promoting personal and social skills through preparing, reporting on and presenting a topic relating to the subject for a specialist audience at a Master's level and in a manner tailored to suit the target group, as well as working under supervision in a group to develop and test subject-related applications and possibilities for implementation with respect to the chosen subject. ³Thirdly, the element of choice allows students to tailor their profile in view of their career plans.

(2) ¹The module group advanced seminar generally consists of a seminar module amounting to 5 ECTS credits, but may also consist of two seminar modules each amounting to 2.5 ECTS credits. ²If two modules worth 2.5 ECTS credits are chosen, each module shall contribute individually to the overall grade

(3) ¹The type and duration of the examination is set forth in the module handbook. ²The examination achievement per module shall be taken as an assessed task pursuant to Section 6 (3) **ABMPO/TechFak**. ³The module catalog is published before the beginning of the semester in accordance with local practice.

Section 42 Minor Subject

(1) ¹The learning outcome of the minor subject is to allow students to gather, analyze and interpret information relevant to their subject from an area of application of artificial intelligence that has a practical professional or subject-related relevance to the field of artificial intelligence. ²Secondly, a further learning outcome is aimed at promoting personal and social skills by providing a wide range of interdisciplinary qualifications in the area of application, as well as working under supervision to develop and test subject-related applications and possibilities for implementation with respect to the chosen subject. ³Thirdly, the element of choice allows students to tailor their profile in view of their career plans.

(2) ¹At least 15 ECTS credits must be completed from modules that are related to each other that are offered by FAU examiners and that have a practical professional or subject-related relevance to the field of artificial intelligence. ²The selected combination of modules must be approved as a minor subject by the Degree Program Committee pursuant to Section 8a (4) of **ABMPO/TechFak**. ³The combinations of minor subjects that can be selected are listed in the relevant catalog that is announced in accordance with local practice. ⁴Exceptions can be granted by the Degree Program Committee upon receiving a justified request. ⁵Due to the specific subject competencies that must be acquired as part of the qualification goals of the Master's degree program as defined in the module description, only modules which have not already been taken as a compulsory elective module may be taken as a minor subject.

(3) ¹The type and scope of teaching units and examinations in the modules accounting for 2.5, 5, 7.5, 10 or 15 ECTS credits respectively depend on the specific manner in which the respective module is taught and are regulated by the applicable **degree program and examination regulations** and/or the module handbook. ² The type of examinations and the number of semester hours depend on the specific manner in which the respective module is taught and are regulated by the applicable **degree program and examination regulations** or the relevant module description.

Section 43 Master's Thesis

(1) The requirements for allocating a subject for the Master's thesis shall be as follows:

1. achievement of at least 60 ECTS credits in the Master's degree program
2. submission of relevant certificates if admission to the Master's degree program was granted subject to conditions according to Section 29 (2) or (3) **ABMPO/TechFak**.

(2) ¹The Master's thesis module shall be worth 30 ECTS credits. ²It comprises a written Master's thesis (27 ECTS credits) and a presentation (3 ECTS credits) about the Master's thesis.

(3) ¹The thesis shall deal with a scientific subject from the field of artificial intelligence. ²The requirements for the written Master's thesis shall be such that it can be completed with a workload of approximately 900 hours within six months. ³The Master's thesis shall be allocated by a university lecturer in Computer Science who is responsible for one of the compulsory elective modules pursuant to Section 39.

(4) ¹The presentation shall last around 30 minutes and deal with the topic of the written Master's thesis. ²The date of the presentation shall be determined by the supervising lecturer either after the student has submitted their Master's thesis or during the final stage of thesis work and the student shall be informed of the date at least one week in advance. ³The presentation is graded pursuant to Section 18 (1) of **ABMPO/TechFak**.

Part III: Final Provisions

Section 44 Legal Validity and Transitory Provisions

(1) ¹These degree program and examination regulations shall come into effect on the day after their publication. ²They shall apply to all students who enter the degree program in summer semester 2021 or later.

(2) The first amendment statute shall come into effect on the day after its publication.

Appendix 1: Structure of the Master's Degree Program in Artificial Intelligence – Full-time study

Module name ¹	Teaching unit	SWS (semester hours)				Total ECTS credits	Distribution of workload per semester in ECTS credits				Type and scope of the examination
		L	T	P	S		1st sem.	2nd sem.	3rd sem.	4th sem.	
Compulsory elective module area	see Section 39 (5)					50	20	20	10		EA, see Section 39 (4)
Projects ²⁾	see Section 40 (4)					20		10	10		Each EA and CA, see Section 40 (3)
Advanced seminar					2–4	5			5		EA, see Section 41 (2)
Minor subject	see Section 42 (3)					15	10		5		EA or CA, see Section 42 (3)
Master's thesis						30				30	See Section 32 (1)(5) ABMPO/TechFak and Section 43 (4)
Total SWS and ECTS credits³⁾:					2–4		30	30	30	30	
						120					

Abbreviations:

SWS = semester hours

S = seminar

L = lecture

EA = examination achievement

T = tutorial

CA = course achievement

Lab = laboratory course

- 1) Due to the specific subject competencies that must be acquired as part of the learning outcome of the Master's degree program, students are expected to prove on the basis of the module description that they will acquire additional skills compared to the skills acquired in their previous Bachelor's degree. This is detailed in the relevant module description in the context of the qualification goals of the Master's degree program.
- 2) see Section 40 Students must select modules amounting to a total of 20 ECTS credits; modules worth 5 and 10 ECTS credits are available.
- 3) The total number of required semester hours (SWS) depends on the chosen modules and teaching units.

Appendix 2: Structure of the Master's Degree Program in Artificial Intelligence – Part-time study

Module name ¹	Teaching unit	SWS (semester hours)				Total ECTS credits	Distribution of workload per semester in ECTS credits								Type and scope of the examination
		L	T	P	S		1st sem.	2nd sem.	3rd sem.	4th sem.	5th sem.	6th sem.	7th sem.	8th sem.	
Compulsory elective module area	see Section 39 (5)				50	15	15	10	10					EA, see Section 39 (4)	
Projects ²⁾	see Section 40 (4)				20					10	10			EA and CA, see Section 40 (3)	
Advanced seminar				2-4	5						5			EA, see Section 41 (2)	
Minor subject	see Section 42 (3)				15			5	5	5				EA or CA, see Section 42 (3)	
Master's thesis					30							15	15	See Section 32 (1)(5) ABMPO/TechFak and Section 43 (4)	
Total semester hours and ECTS credits³⁾:				2-4	120	15	15	15	15	15	15	15	15		

Abbreviations:

SWS = semester hours

S = seminar

L = lecture

EA = examination achievement

T = tutorial

CA = course achievement

P = practical course

- 1) Due to the specific subject competencies that must be acquired as part of the learning outcome of the Master's degree program, students are expected to prove on the basis of the module description that they will acquire additional skills compared to the skills acquired in their previous Bachelor's degree. This is detailed in the relevant module description in the context of the qualification goals of the Master's degree program.
- 2) see Section 40 Students must select modules amounting to a total of 20 ECTS credits; modules worth 5 and 10 ECTS credits are available.
- 3) The total number of required semester hours (SWS) depends on the chosen modules and teaching units.