

Note: Only the German version is legally binding, the English translation serves information purposes only!

Annex to the Study and Examination Regulations for the Bachelor's Programme "Computer Science and Artificial Intelligence at Ingolstadt University of Applied Sciences from 22.02.2021

Overview of the modules and credits

1. First study phase (semester 1-2)

1	2	3	4	5	6	7	8	9
No.	Modules	SWS hrs	Type of course	Examinations		Course-related credit certificates	Weighting for the final examination grade	Credit Points (ECTS)
				Type and duration in minutes	Admission prerequisites			
1	Programming 1						0,5	7
1.1	Programming 1	4	SU/Ü	schrP, 90-120	LN of 1.2			
1.2	Practical Course Programming 1	2	Pr			LN 1) 6)		
2	Introduction to Computer Science 1						0,5	7
2.1	Introduction to Computer Science I	4	SU	schrP, 90-120				
2.2	Exercise Course Introduction to Computer Science I	2	Ü					
3	Mathematics 1						0,5	7
3.1	Mathematics 1	4	SU	schrP, 90-120				
3.2	Exercise Course Mathematics 1	2	Ü					
4	Probability and Statistics						0,5	7
4.1	Probability and Statistics	4	SU	schrP, 90-120				
4.2	Exercise Course Probability and Statistics	2	Ü					

1	2	3	4	5	6	7	8	9
No.	Modules	SWS hrs	Type of course	Examinations		Course-related credit certificates	Weighting for the final examination grade	Credit Points (ECTS)
				Type and duration in minutes	Admission prerequisites			
5	Introductory Project	2	Prj			LN 1) 5)		2
6	Programming 2						0,5	7
6.1	Programming 2	4	SU	schrP, 90-120	LN of 6.2			
6.2	Practical Course Programming 2	2	Pr			LN 1) 6)		
7	Introduction to Computer Science 2						0,5	7
7.1	Introduction to Computer Science 2	4	SU	schrP, 90-120				
7.2	Exercise Course Introduction to Computer Science 2	2	Ü					
8	Mathematics 2						0,5	7
8.1	Mathematics 2	4	SU	schrP, 90-120				
8.2	Exercise Course Mathematics 2	2	Ü					
9	Algorithms for AI 1						0,5	7
9.1	Algorithms for AI 1	4	SU/Ü	schrP, 90-120	LN of 9.2			
9.2	Practical Course Algorithms for AI 1	2	Pr			LN 1) 6)		
10	Scientific Research Methods	2	SU/Ü			LN 1) 5)		2
	Total	52					4	60

2. Second study phase

2.1. Theoretical study semesters

1	2	3	4	5	6	7	8	9
Lfd. No.	Modules	SWS hrs	Type of course	Exams		Course-related credit certificates	Weighting for the final examination grade	Credit Points (ECTS)
				Type and duration in minutes	Admission prerequisites			
11	Software Engineering						1	7
11.1	Software Engineering	4	SU/Ü	schrP, 90-120	LN of 11.2			
11.2	Practical Course Software Engineering	2	Pr			LN 1) 6)		
12	Web Technologies						1	7
12.1	Web Technologies	4	SU/Ü	schrP, 90-120	LN of 12.2			
12.2	Practical Course Web Technologies	2	Pr			LN 1) 6)		
13	Optimization Algorithms	4	SU/Ü	schrP, 90-120			1	5
14	Algorithms for AI 2						1	7
14.1	Algorithms for AI 2	4	SU/Ü	schrP, 90-120	LN of 14.2			
14.2	Practical Course Algorithms for AI 2	2	Pr			LN 1) 6)		
15	Data Visualization and Data Analytics	4	SU/Ü	schrP, 90-120			1	5
16	Database Systems and Big Data Technologies						1	7
16.1	Database Systems and Big Data Technologies	4	SU/Ü	schrP, 90-120	LN of 16.2			
16.2	Practical Course Database Systems and Big Data Technologies	2	Pr			LN 1) 6)		

1	2	3	4	5	6	7	8	9
Lfd. No.	Modules	SWS hrs	Type of course	Exams		Course-related credit certificates	Weighting for the final examination grade	Credit Points (ECTS)
				Type and duration in minutes	Admission prerequisites			
17	Spoken and Natural Language Understanding						1	7
17.1	Spoken and Natural Language Understanding	4	SU/Ü	schrP, 90-120	LN of 17.2			
17.2	Practical Course Spoken and Natural Language Understanding	2	Pr			LN 1) 6)		
18	Computer Vision						1	7
18.1	Computer Vision	4	SU/Ü	schrP, 90-120	LN of 18.2			
18.2	Practical Course Computer Vision	2	Pr			LN 1) 6)		
19	Algorithms for AI 3						1	7
19.1	Algorithms for AI 3	4	SU/Ü	schrP, 90-120	LN of 19.2			
19.2	Practical Course Algorithms for AI 3	2	PR			LN 1) 6)		
20	Seminar	2	S			SA	1	3
21	Cyber Security						1	7
21.1	Cyber Security	4	SU/Ü	schrP, 90-120	LN of 21.2			
21.2	Practical Course Cyber Security	2	Pr			LN 1) 6)		

1	2	3	4	5	6	7	8	9
Lfd. No.	Modules	SWS	Type of course	Exams		Course-related credit certificates	Weighting for the final examination grade	Credit Points (ECTS)
				Type and duration in minutes	Admission prerequisites			
22	Human-Computer Interaction and Explainable AI						1	7
22.1	Human-Computer Interaction and Explainable AI	4	SU/Ü	schrP, 90-120	LN of 22.2			
22.2	Practical Course Human-Computer Interaction and Explainable AI	2	Pr			LN 1) 6)		
23	Business Administration and Entrepreneurship	4	SU/Ü			LN 2) 4)	1	5
24	Project Management	4	SU/Ü	schrP, 90-120			1	5
25	Project	2	Pr			ProjA	1	5
26	Ethics and Law	4	SU/Ü			LN 4)	1	5
27	Elective Modules	8	SU/Ü/Pr			2 LN 2) 3) 4)	total 2	10
28	Bachelor's Thesis						3	
28.1	Seminar Bachelor's Thesis	2	S	SA ¹				3
28.2	Bachelor's Thesis			BA				12
	Total	88					21	121

2.2. Practical semester

1	2	3	4	5	6	7	8	9
Lfd. No.	Modules	SWS hrs	Type of course	Exams		Course-related credit certificates	Weighting for the final examination grade	Credit Points (ECTS)
				Type and duration in minutes	Admission prerequisites			
29	Pre-Internship Seminar	1	S			LN 1) 5)		2
30	Internship (18 weeks)		Pr			PrB 1)		25
31	Post-Internship Seminar	1	S			LN 1) 5)		2
	Total	2						29

3. Overview

1	2	3	4	5	6	7	8	9
No.	Modules	SWS hrs	Type of course	Exams		Course-related credit certificates	Weighting for the final examination grade	Credit Points (ECTS)
				Type and duration in minutes	Admission prerequisites			
	First study phase	52					4	60
	Theoretical study semesters in the second study phase	88					21	121
	Practical semester	2						29
	Total	142					27	210

Notes

- ¹⁾ Assessment: „passed“ or „failed“. The credit certificate must have been passed.
- ²⁾ Each individual certificate of achievement must be passed.
- ³⁾ Subject-specific compulsory elective modules (Elective Modules) should be completed by modules with 4 SWS or can be completed by modules with 2 SWS. If subject-specific compulsory elective modules with 2 SWS are taken, the number of credits to be taken increases accordingly.
 Subject-specific compulsory elective modules have a close subject-related connection to the degree programme and have the following goals in particular:
 - Scientific consolidation of knowledge already acquired in the degree programme
 - Teaching of specialist competences in special thematic or interdisciplinary areas that are not covered or only to a lesser extent by compulsory modules.
 The detailed qualification goals of the elective compulsory modules result from the respective module descriptions.
- ⁴⁾ The certificate of achievement is alternatively a written examination (90-120 minutes), an oral examination (15-45 minutes) or a presentation (15-30 minutes) with a written paper of 10-15 pages (to be completed during the semester). The details are determined by the Faculty Council in the curriculum.
- ⁵⁾ The certificate of achievement involves the completion of a module-specific number of practical tasks, short written texts or presentations. Of these, a defined proportion must be successfully completed in order to pass the certificate. The details are determined by the Faculty Council in the curriculum.
- ⁶⁾ Practical work or conducting experiments in the laboratory or performing programming tasks in the laboratory or PC pool. Further details are determined by the Faculty Council in the curriculum.

Type of course

Pr	Internship
Prj	Project
S	Seminar
SU	Seminaristic instruction
Ü	Exercise

Type of examination

schrP	Written examination	The written examination is a 90-minute written examination unless explicitly stated otherwise.
mdIP	Oral examination	The oral examination is a 15-minute interview per person unless explicitly stated otherwise.
prP	Practical examination	In the practical examination, the student has to prove that he/she has mastered the practical application of the imparted competences by using a "real" problem as an example. The duration is 15 minutes unless explicitly stated otherwise.
StA	Graded creative assignment	The student research project is a term paper without an oral presentation. According to the APO, the length of the term paper is 3000 to 6000 words and approx. 10 to 20 pages. The term paper is to be written using word processing software.
SA	Seminar paper	The seminar paper is a term paper with oral presentation. According to the APO, the length of the term paper is 3000 to 6000 words and approx. 10 to 20 pages. The term paper is to be written using word processing software. The oral presentation is 30 to 45 minutes long and can also take place during the semester.
Prj	Project work	The project work is a group work in which several students work on a common task in a team. Each student has to contribute individually to the joint task, submit a project report and, if necessary, present the results orally. According to the APO, the scope of the project report is 1500 words to 7500 words or approx. 5 to 25 pages, the scope of the oral presentation is 15 to 45 minutes according to the APO. The project report is to be written using word processing software.
PrB	Internship report	The internship report should inform about the activities carried out during the internship. The length is 8 to 25 pages (without cover sheets and indexes). Further details are specified in the curriculum. The report is to be written with a word processing programme.
Koll	Colloquium	The colloquium is an oral examination of 15 - 45 minutes in which the student defends the result of his/her work.
BA	Bachelor's thesis	Written thesis in the Bachelor's degree programme, 40-60 pages in length (excluding cover sheets, indexes and appendices).