

Syllabus and Examination Regulations
for the Master program Industrial Safety and Security
of Augsburg University of Applied Sciences
Version: January 31, 2017

Please note:

Only the official document in German is the version
that is legally binding.

Consolidated version of the first amendment as per October 30, 2018

The Bavarian Higher Education Act (section 13(1)(2), section 43(6)(2), section 61(2)(1); Bayerisches Hochschulgesetzes, BayHSchG; version May 23, 2006; BayRS 2210-1-1-WFK) forms the framework for the following Syllabus and Examination Regulations decreed by Augsburg University of Applied Sciences:

§ 1

**Purpose and Scope of the Syllabus and
Examination Regulations**

¹These Syllabus and Examination Regulations fulfil the requirements of the State Examination Regulations for Universities of Applied Sciences (Rahmenprüfungsordnung für die Fachhochschulen RaPO) of October 17, 2001 (BayRS 2210-4141-WFK) and the General Examination Regulations of Augsburg University of Applied Sciences (Allgemeine Prüfungsordnung der Hochschule Augsburg) of August 1, 2007 in the version applicable. ²These Syllabus and Examination Regulations also form the legal framework for potential cooperation with domestic or foreign partner universities.

§ 2

Program Outcome

¹The consecutive Master program, for graduates of Bachelor programs in the fields of technology and computer science, as well as graduates of business-related degree programs with a focus on technology, aims to qualify students for high-level positions in the field of industrial security (safety and security). ²Key aspects of study content are the strengthening of methodological skills and proficiency as well as the acquisition of practical in-depth knowledge. ³In addition, interdisciplinary thinking and the students' ability to work independently shall be encouraged. ⁴Besides technological and scientific training, the increasing importance of interdisciplinary cooperation, language skills and employee management shall be taken into account.

§ 3

Admission Requirements, Additional Qualifications

- (1) ¹An above-average Bachelor degree (final grade 2.3 or above) from a German University of Applied Sciences or University with at least 210 ECTS credit points (CPs) in the fields of technology and computer science or a business-related degree program with a focus on technology is a requirement for enrolment in the Master program in Industrial Safety and Security. ²Completed first university degrees with a different grading system or without credit points (CPs) will be considered equivalent to a Bachelor degree program consisting of 210 CPs if their full-time duration comprises at least 7 semesters, as it can be assumed that 30 CPs per semester can be achieved. ³Admission is granted following a successfully completed selection interview if a final grade between 2.3. and 2.6 has been achieved in previous studies.¹ ⁴In exceptional circumstances, applicants who do not fulfil the above-mentioned criteria may be admitted by the examination board. ⁵The rule of reversing the burden of proof as per section 63 of the Bavarian Higher Education Act (BayHSchG) has to be observed. ⁶Graduates with degrees that have been recognized as being equivalent will also be admitted as per sentence 1 and sentence 3 respectively.
- (2) According to their best judgment, the responsible examination board decides whether the admission

¹ see Annex 1: Selection Interview

requirements, as per paragraph 1, have been met.

- (3) ¹Language skills in German and English, both spoken and written, are prerequisites. ²A minimum level of B2 for German and English (in accordance with the Common European Framework of Reference for Languages) is an admission requirement.
- (4) ¹Applicants with a degree, as per section 1, of at least 180 credit points (CPs), but less than 210 CPs, may be admitted in accordance with section 1. ²Applicants with a completed first university degree, comprising of six semesters and with a different grading system or without credit points (CPs), will be put on an equal footing with applicants holding a degree with 180 CPs. ³Within the first year of enrolment, these applicants have to provide evidence of the skills that were lacking by acquiring additional qualifications to make up for the required credit points (CPs). ³Students are therefore placed on conditional enrolment.
- (5) ¹The examination board determines which modules from the catalog of modules for the undergraduate degree programs of the faculties of Electrical Engineering, Computer Science or Business have to be completed successfully for the additional qualification. The syllabus and examination regulations of the respective degree programs apply. ²With the additional qualification, competencies that were not part of the first-degree studies have to be acquired. ³The additional qualification for lacking practical competencies has to be in the form of a relevant professional activity of 20 weeks, corresponding, in nature and scope, to an internship semester of the respective degree program. ⁴The examination board decides on admission qualifications on an individual basis, taking the lacking qualifications into consideration.

§ 4

Normal Duration of Studies, Structure and Organization of Studies

- (1) ¹The Master program is offered as a full-time study program. ²The normal duration of studies is 3 semesters.
- (2) ¹The assignment of modules and module parts to study semesters is defined in the study plan. The description of subject contents of individual modules is specified within the module handbook.
- (3) ¹The faculty can determine a minimum number of course participants for electives. ²If the number of participants is too low, there is no entitlement to certain course offerings.
- (4) ¹There is no guarantee that the Master degree program 'Industrial Safety and Security' will take place if there are not enough qualified applicants.

§ 5

Modules, Module Parts, Study Hours, Courses and Examinations

- (1) ¹The degree program is divided into modules.
- (2) ¹The study plan (section 8) contains the modules, the number of credit points (CPs) they contain, the form of courses as well as examinations and course-related assessments if they have not already been determined in Annex 1 of these Syllabus and Examination Regulations.
- (3) ¹IS1G1 to IS1G4, IS2S1, IS2S6 and IS3A1 are compulsory modules. ²The crossover modules IS1C1 to IS1C4 are required elective modules. ³Two of these modules, depending on the undergraduate studies, have to be completed successfully. ⁴IS2S2 to IS2S5 and modules IS3A2 and IS3A3 are required elective modules. ⁵In the second semester, the students select, depending on their liking, at least one module from IS2S2 to IS2S5 as well as another module from IS2S2 and IS2S5 or from the catalog of electives for the degree program 'Industrial Safety and Security', which is published at the beginning of the semester (module IS2S7). ⁶In the third semester, two modules from the catalog of electives for the degree program 'Industrial Safety and Security' have to be completed successfully.
- (4) ¹On application and in justified cases, one of the two crossover modules (IS1C1-4) can be replaced by an elective of the same value. ²The examination board shall adopt a decision on the application.

§ 6

Determination of Module Grades, Overall Degree Grades

- (1) ¹Grades for modules/module parts can be assigned in accordance with section 7(1) of the General Examination Regulations of Augsburg University of Applied Sciences (Allgemeine Prüfungsordnung der Hochschule Augsburg).
- (2) ¹The credit points (CPs) in column 4 of Annex 1 are weighting factors for the calculation of final module grades if not determined otherwise in column 9 of the annex.
- (3) ¹A final degree grade is computed. ²The grade is determined by calculating the cumulative credit points of the final module grades as per paragraph 2 and the grade awarded for the Master's thesis if not determined otherwise in column 9 of the annex.

§ 7

Examination Board

- (1) ¹The examination board consists of a chairperson and no more than two members from each of the involved faculties of Electrical Engineering, Computer Science and Business, each a full-time professor. ²The examination board has a quorum when at least three of its members are present. ³Board members and chairperson are appointed by the respective faculty council of the faculties of Electrical Engineering, Computer Science and Business.
- (2) ¹The examination board shall be responsible for carrying out the procedures in accordance with section 3 and section 4. ²They appoint a selection committee for this purpose.

§ 8

Study Plan

- (1) ¹The faculties of Electrical Engineering, Computer Science and Business develop a study plan that does not form part of the syllabus regulations to guarantee a broad range of course offerings. ²The detailed structure of the degree program is set out in the study plan.
- (2) ¹The study plan has to be published within the university. ²The new regulations have to be announced no later than the beginning of the lecture period of the semester in which the regulations shall be applied for the first time. ³Unless otherwise specified in the annex, the study plan contains regulations and information on:
 - a) the allocation of credit points (CPs) and credit hours (SWS) per module, for all semesters
 - b) electives including their credit points (CPs) and credit hours (SWS)
 - c) the teaching method of individual electives
 - d) examination duration and methods of electives
 - e) program outcomes and contents of individual modules
 - f) additional regulations with regard to course assessments and proof of attendance
 - g) the language of individual modules.

§ 9

Master's Thesis

- (1) ¹A thesis (Master's thesis) and a colloquium form part of the studies.
- (2) ¹The Master's thesis is normally written in the third semester. ²Students can register for the Master's thesis if a minimum of 30 credit points (CPs) has been achieved. ³Credit points (CPs) acquired through additional qualifications will not be considered in this context.
- (3) ¹With their Master's thesis, students shall demonstrate their ability to independently and scientifically investigate a topic from the field of industrial safety and security.
- (4) ¹ The topic of the Master's thesis is to be chosen in a way that lends itself to be completed within six months of consecutive work.
- (5) ¹The Master's thesis has to be presented and defended in person during a Master's colloquium at Augsburg University of Applied Sciences. ² The result of the presentation is taken into account for the assessment of the Master's thesis.
- (6) ¹A bound version of the Master's thesis has to be submitted to the secretary's office of the faculty running the degree program. ²Additionally, a digital version has to be made available to the first examiner.
- (7) ¹The Master's thesis can be written in a language other than English with the consent of the responsible examination board and upon approval by the examiners (supervisors) involved.
- (8) ¹Furthermore, the regulations on the thesis apply, as set out in the State Examination Regulations (Rahmenprüfung, RaPo) and the General Examination Regulations of Augsburg University of Applied Sciences (Allgemeine Prüfungsordnung, APO).

§ 10

Passing the Master Examination

¹The Master examination is deemed as passed if a student has earned, for all compulsory modules as per Annex 1 and for the specialization module, sufficient module grades or assessments corresponding to the amount of credit points (CPs) stated. ²Section 3(4) remains unaffected thereby.

§ 11

Academic Degree, Degree Certificate

- (1) ¹Upon successful completion of the degree program, a student is awarded the academic degree 'Master of Science', abbreviated version: 'M.Sc.' by Augsburg University of Applied Sciences.
- (2) ¹In accordance with the model in the General Examination Regulations (APO) of August 1, 2007 in the version applicable, students receive a degree certificate as well as a diploma for the successful completion of their studies together with a diploma supplement.
- (3) ¹The topic of the Master thesis as well as the results and credit points (CPs) for all modules, in accordance with the General Examination Regulations (APO) of August 1, 2007 in the version applicable, are included in the final certificate.

§ 12

Enforcement of Examination Regulations

¹Unless otherwise provided in these regulations, the provisions of the State Examination Regulations of October 17, 2001 (RaPo, GVBI S. 686) as well as the General Examination Regulations of Augsburg University of Applied Sciences of August 1, 2007 (Allgemeine Prüfungsordnung der Hochschule Augsburg) apply in the version applicable.

§ 13

Coming into Effect

¹These syllabus and examination regulations apply to all students commencing their studies in this degree program from summer semester 2017 onwards.

Issued based on the decision of the senate of Augsburg University of Applied Sciences of January 31, 2017 and with the consent of the president of Augsburg University of Applied Sciences on February 7, 2017.

Augsburg, 07 February 2017

Prof. Dr. Gordon Thomas Rohrmair
President

These regulations were recorded and announced at Augsburg University of Applied Sciences on February 7, 2017. Date of public announcement is therefore February 7, 2017.

List of Abbreviations:

ECTS	European Credit Transfer System European Credit Transfer System	Präs	Präsentation Presentation
Gew	Gewichtung Weighting	S	Seminar Seminar
Koll	Kolloquium Colloquium	SA	Seminararbeit Written assignment
MA	Masterarbeit Master's thesis	schrP	Schriftliche Prüfungen Written examinations
mE/oE	mit Erfolg / ohne Erfolg with success / without success	SU	Seminaristischer Unterricht Tuition in seminars
PA	Projektarbeit Project output	SWS	Semesterwochenstunde Credit hour
PrA	Praktikumsausarbeitung Lab course report	Ü	Übung Exercise course

Annex 1: Overview of Modules/Subjects and Course Assessments of the Master program Industrial Safety and Security at the Augsburg University of Applied Sciences

1	2	3	4	5	6	7	8	9
Module	Module part	SWS	Credit Points (ECTS-Points)	Teaching method	Examinations ²		Language	Additional Regulations
					Method	Duration in Minutes		
Module IS1G1: Introduction to Safety and Human Machine Interaction								
IS1G1	Introduction to Safety and Human Machine Interaction	4	5	SU, Ü	schrP	90-120	English	
Module IS1G2: Cryptography and Security								
IS1G2	Cryptography and Security	4	5	SU, Ü	schrP	90-120	English	
Module IS1G3: Management, Mitarbeiterführung und IT-Recht (Management, Employee Management and IT Law)								
IS1G3	Management, Mitarbeiterführung und IT-Recht (Management, Employee Management and IT Law)	4	5	SU, Ü	schrP	90-120	German	
Module IS1G4: Seminar								
IS1G4	Seminar	4	5	S, Präs	SA	8-10 pages	English	Gew. 70%
					Präs	20-30		Gew. 30%
Module IS1C1: Systemarchitektur und Netzwerktechnik (System Architecture and Network Technology)								
IS1C1	Systemarchitektur und Netzwerktechnik (System Architecture and Network Technology)	4	5	SU, Ü	SA	8-10 pages	German	Gew 20%
					schrP	90-120		Gew 80%
Module IS1C2: Industrieanlagen, Automatisierung und Steuerung (Industrial Plants, Automation and Control)								
IS1C2	Industrieanlagen, Automatisierung und Steuerung (Industrial Plants, Automation and Control)	4	5	SU, Pr	SA	8-10 pages	German	Gew 20%
					schrP	90-120		Gew 80%
Module IS1C3: Informationsmanagement und Geschäftsprozesse (Information Management and Business Processes)								
IS1C3	Informationsmanagement und Geschäftsprozesse (Information Management and Business Processes)	4	5	SU, Ü	SA	8-10 pages	German	Gew 20%
					schrP	90-120		Gew 80%
Module IS1C4: IT-Sicherheit (IT Security)								
IS1C4	IT-Sicherheit (IT Security)	4	5	SU, Ü	Präs	20-30	German	Gew 20%
					schrP	90-120		Gew 80%
Module IS2S1: Zertifizierungsmodul (Certification Module)								
IS2S1	Zertifizierungsmodul (Certification Module)	4	5	SU, Ü	schrP	90-120	German	
Module IS2S2: Sichere Geschäftsprozesse (Secure Business Processes)								
IS2S2	Sichere Geschäftsprozesse (Secure Business Processes)	4	5	SU, Ü	SA	8-10 pages	German	Gew 20%
					schrP	90-120		Gew 80%
Module IS2S3: Safety								
IS2S3	Safety	4	5	SU, Ü	schrP	90-120	German	
Module IS2S4: Embedded Security								
IS2S4	Embedded Security	4	5	SU, Ü	schrP	90-120	English	
Module IS2S5: Sichere Konzepte und Protokolle (Secure Concepts and Protocols)								
IS2S5	Sichere Konzepte und Protokolle (Secure Concepts and Protocols)	4	5	SU, Ü	schrP	90-120	German	
Module IS2S6: Wahlmodul (Elective Module)								
IS2S6	Wahlmodul ³ (Elective Module)	4	5	SU, Ü	schrP	90-120	German/English	
Module IS2S7: Major Project								
IS2S7_1	Major Project	8	12	PA	PA	20-40 pages	English	Gew 80%
					Präs	30	English	Gew 20%
IS2S7_2	Major Project Kick-off	2	3	S	Präs	10		mE/oE

² Further regulations as per list of course assessments and examiners.

³ Further regulations as per study plan.

Module IS3A1: Master Thesis ⁴ (Master Thesis)								
IS3A1_1	Master Thesis (Master Thesis)		15	MA	MA	40-80 pages	English	Gew 80%
IS3A1_2	Master Colloquium (Master Colloquium)		5	Koll	Präs	20	English	Gew 20%
Module IS3A2: FWP ^{5, 5}								
IS3A2	Elective	4	5	SU, Ü	schrP	90-120	German/ English ⁶	
Module IS3A3: FWP ^{4, 5}								
IS3A3	Elective	4	5	SU, Ü	schrP	90-120	German/ English	

4 For the degree certificate, the grades achieved in both module parts (thesis and colloquium) are subsumed to form the final, weighted grade.

5 Aims at strengthening in-depth knowledge through already existing or newly established modules at Master level to acquire technical, economic and linguistic skills.

6 Further regulations as per list of electives within the study plan.

Annex 2:

Selection Interview:

Applicants with a first degree in the fields of computer science and technology, as well as graduates of business-related degree programs with a focus on technology, corresponding to the criteria in section 3(1)(3) and a final grade ranging from 2.3 to 2.6, will be admitted upon successful completion of a selection interview. The selection interview is aimed at examining whether applicants are likely to complete their Master studies successfully, based on their previous knowledge, aptitude and skills. Admission is granted if at least 21 out of 30 points have been achieved. A selection committee, appointed by the examination board and consisting of a chairperson and at least one more examiner (observer), conducts the selection interview. Interview appointments are communicated at the latest two weeks in advance and are held at Augsburg University of Applied Sciences. The 20-minute interview is structured as follows:

		Duration	Max. Points
1.)	Short presentation by the applicant on an industrial security topic that will be communicated to the applicant in writing at least 2 weeks prior to the interview ⁷	10 min.	15
2.)	Expert discussion referring to the presentation	10 min.	15

The interview is recorded in writing by the observer. The chairperson of the selection committee and the observer prepare a recommendation that, together with the minutes, is submitted to the examination board for resolution.

7 During the subject-specific presentation and the subsequent discussion, the competencies below will be assessed:

- Specialist knowledge (0-3 points)
- Intellectual capability (0-3 points)
- Scientific approach (0-3 points)
- Research qualification (0-3 points)
- Cooperation and communication (0-3 points)