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

These Syllabus and Examination Regulations fulfil the requirements of the State Examination Regulations for Universities of Applied Sciences (Rahmenprüfungsvorschrift 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.

§ 2
Program Outcome

The 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). Key aspects of study content are the strengthening of methodological skills and proficiency as well as the acquisition of practical in-depth knowledge. In addition, interdisciplinary thinking and the students' ability to work independently shall be encouraged. Besides 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) An 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. Completed 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. Admission is granted following a successfully completed selection interview if a final grade between 2.3. and 2.6 has been achieved in previous studies. In exceptional circumstances, applicants who do not fulfil the above-mentioned criteria may be admitted by the examination board.

(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). ⁴Students 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. ³With 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) Grades 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) The 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) A final degree grade is computed. The 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) The 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. The examination board has a quorum when at least three of its members are present. Board members and chairperson are appointed by the respective faculty council of the faculties of Electrical Engineering, Computer Science and Business.

(2) The examination board shall be responsible for carrying out the procedures in accordance with section 3 and section 4. They appoint a selection committee for this purpose.

§ 8

Study Plan

(1) The 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. The detailed structure of the degree program is set out in the study plan.

(2) The study plan has to be published within the university. The 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. Unless 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) ¹The 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. ²The 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) ²Furthermore, 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

These 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:

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
<th>Symbol</th>
<th>Full Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECTS</td>
<td>European Credit Transfer System</td>
<td></td>
<td>European Credit Transfer System</td>
</tr>
<tr>
<td>Gew</td>
<td>Gewichtung</td>
<td>S</td>
<td>Seminar</td>
</tr>
<tr>
<td>Koll</td>
<td>Kolloquium</td>
<td>SA</td>
<td>Seminararbeit</td>
</tr>
<tr>
<td>MA</td>
<td>Masterarbeit</td>
<td>schrP</td>
<td>Schriftliche Prüfungen</td>
</tr>
<tr>
<td>mE/oE</td>
<td>mit Erfolg / ohne Erfolg</td>
<td>SU</td>
<td>Seminaristischer Unterricht</td>
</tr>
<tr>
<td>PA</td>
<td>Projektarbeit</td>
<td>SWS</td>
<td>Semesterwochenstunde</td>
</tr>
<tr>
<td>PrA</td>
<td>Praktikumsausarbeitung</td>
<td>Ü</td>
<td>Übung</td>
</tr>
</tbody>
</table>

*Präسي*  
Presentation

*Präsentation*  
S
Seminar

*Seminar*  
SA
Seminararbeit

*Written assignment*  
schrP
Schriftliche Prüfungen

*Written examinations*  
SU
Seminaristischer Unterricht

*Tuition in seminars*  
SWS
Semesterwochenstunde

*Credit hour*  
Ü
Übung

*Exercise course*  
Ü
Übung
### Annex 1: Overview of Modules/Subjects and Course Assessments of the Master program Industrial Safety and Security at the Augsburg University of Applied Sciences

<table>
<thead>
<tr>
<th>Module</th>
<th>Module part</th>
<th>SWS</th>
<th>Credit Points (ECTS-Points)</th>
<th>Teaching method</th>
<th>Examinations' Method</th>
<th>Duration in Minutes</th>
<th>Language</th>
<th>Additional Regulations</th>
</tr>
</thead>
<tbody>
<tr>
<td>IS1G1</td>
<td>Introduction to Safety and Human Machine Interaction</td>
<td>4</td>
<td>SU, Ü</td>
<td>schrP</td>
<td>90-120</td>
<td>English</td>
<td></td>
<td></td>
</tr>
<tr>
<td>IS1G2</td>
<td>Cryptography and Security</td>
<td>4</td>
<td>SU, Ü</td>
<td>schrP</td>
<td>90-120</td>
<td>English</td>
<td></td>
<td></td>
</tr>
<tr>
<td>IS1G3</td>
<td>Management, Mitarbeiterführung und IT-Recht (Management, Employee Management and IT Law)</td>
<td>4</td>
<td>SU, Ü</td>
<td>schrP</td>
<td>90-120</td>
<td>German</td>
<td></td>
<td></td>
</tr>
<tr>
<td>IS1G4</td>
<td>Seminar</td>
<td>4</td>
<td>S, Präs</td>
<td>SA</td>
<td>9-10 pages</td>
<td>English</td>
<td>Gew. 70%</td>
<td>Gew. 30 %</td>
</tr>
<tr>
<td>Präs</td>
<td>20-30</td>
<td>English</td>
<td>Gew. 30 %</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>IS1C1</td>
<td>Systemarchitektur und Netzwerktechnik (System Architecture and Network Technology)</td>
<td>4</td>
<td>SU, Ü</td>
<td>schrP</td>
<td>90-120</td>
<td>German</td>
<td>Gew 20 %</td>
<td>Gew 80 %</td>
</tr>
<tr>
<td>IS1C2</td>
<td>Industrieanlagen, Automatisierung und Steuerung (Industrial Plants, Automation and Control)</td>
<td>4</td>
<td>SU, Pr</td>
<td>SA</td>
<td>9-10 pages</td>
<td>German</td>
<td>Gew 20 %</td>
<td>Gew 80 %</td>
</tr>
<tr>
<td>IS1C3</td>
<td>Informationsmanagement und Geschäftsprozesse (Information Management and Business Processes)</td>
<td>4</td>
<td>SU, U</td>
<td>schrP</td>
<td>90-120</td>
<td>German</td>
<td>Gew 20 %</td>
<td>Gew 80 %</td>
</tr>
<tr>
<td>IS1C4</td>
<td>IT-Sicherheit (IT Security)</td>
<td>4</td>
<td>SU, Ü</td>
<td>Präs</td>
<td>25-30</td>
<td>German</td>
<td>Gew 20 %</td>
<td>Gew 80 %</td>
</tr>
<tr>
<td>IS2S1</td>
<td>Zertifizierungsmodul (Certification Module)</td>
<td>4</td>
<td>SU, Ü</td>
<td>schrP</td>
<td>90-120</td>
<td>German</td>
<td></td>
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</tr>
<tr>
<td>IS2S2</td>
<td>Sichere Geschäftsprozesse (Secure Business Processes)</td>
<td>4</td>
<td>SU, Ü</td>
<td>schrP</td>
<td>90-120</td>
<td>German</td>
<td>Gew 20 %</td>
<td>Gew 80 %</td>
</tr>
<tr>
<td>IS2S3</td>
<td>Safety</td>
<td>4</td>
<td>SU, Ü</td>
<td>schrP</td>
<td>90-120</td>
<td>German</td>
<td></td>
<td></td>
</tr>
<tr>
<td>IS2S4</td>
<td>Embedded Security</td>
<td>4</td>
<td>SU, Ü</td>
<td>schrP</td>
<td>90-120</td>
<td>English</td>
<td></td>
<td></td>
</tr>
<tr>
<td>IS2S5</td>
<td>Sichere Konzepte und Protokolle (Secure Concepts and Protocols)</td>
<td>4</td>
<td>SU, Ü</td>
<td>schrP</td>
<td>90-120</td>
<td>German</td>
<td></td>
<td></td>
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<tr>
<td>IS2S6</td>
<td>Wahlmodul (Elective Module)</td>
<td>4</td>
<td>SU, Ü</td>
<td>schrP</td>
<td>90-120</td>
<td>German</td>
<td></td>
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<tr>
<td>IS2S7</td>
<td>Major Project</td>
<td>3</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>IS2S7_1</td>
<td>Major Project</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>English</td>
<td>Gew 80 %</td>
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<tr>
<td>IS2S7_2</td>
<td>Major Project Kick-off</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>English</td>
<td>Gew 20 %</td>
</tr>
</tbody>
</table>

Further regulations as per list of course assessments and examiners.
Further regulations as per study plan.
### Module IS3A1: Master Thesis

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Language</th>
<th>Credit Points</th>
<th>Type</th>
<th>Duration</th>
<th>Language</th>
<th>Weighting</th>
</tr>
</thead>
<tbody>
<tr>
<td>S3A1_1</td>
<td>Master Thesis (Master Thesis)</td>
<td>English</td>
<td>15</td>
<td>MA</td>
<td>40-80 pages</td>
<td>English</td>
<td>80%</td>
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<tr>
<td>S3A1_2</td>
<td>Master Colloquium (Master Colloquium)</td>
<td>English</td>
<td>5</td>
<td>Koll</td>
<td>Präs 20</td>
<td>English</td>
<td>20%</td>
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</tbody>
</table>

### Module IS3A2: FWP

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<th>Course Title</th>
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<th>Type</th>
<th>Duration</th>
<th>Language</th>
<th>Weighting</th>
</tr>
</thead>
<tbody>
<tr>
<td>S3A2</td>
<td>Elective</td>
<td>English</td>
<td>4</td>
<td>SU, Ü</td>
<td>ichrP 120</td>
<td>German/English</td>
<td>80%</td>
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</table>

### Module IS3A3: FWP

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<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Language</th>
<th>Credit Points</th>
<th>Type</th>
<th>Duration</th>
<th>Language</th>
<th>Weighting</th>
</tr>
</thead>
<tbody>
<tr>
<td>S3A3</td>
<td>Elective</td>
<td>English</td>
<td>4</td>
<td>SU, Ü</td>
<td>ichrP 120</td>
<td>German/English</td>
<td>80%</td>
</tr>
</tbody>
</table>

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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:

<table>
<thead>
<tr>
<th>Duration</th>
<th>Max. Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>10 min.</td>
<td>15</td>
</tr>
<tr>
<td>10 min.</td>
<td>15</td>
</tr>
</tbody>
</table>

| 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 |
| 2.) | Expert discussion referring to the presentation |

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)