Study and examination regulations for the Bachelor's degree program Sustainable Industrial Operations and Business at the Landshut University of Applied Sciences dated August 8, 2023 in the consolidated - non-official version - of the First Amendment Statutes of Juli 30, 2024

On the basis of Art. 9 sentence 1 and sentence 2, Art. 80 para. 1, Art. 84 para. 2 and Art. 96 para. 1 sentence 1 of the Bavarian Higher Education Innovation Act (BayHIG) of August 5, 2022 (GVBl. p. 414, BayRS 2210-1-3-WK), which was last amended by § 3 of the Act of June 2, 2023 and by § 2 of the Act of July 24, 2023 (GVBl. p. 455), the Landshut University of Applied Sciences issues the following statutes:

Please note that the German version is binding

§ 1

Purpose of the study and examination regulations

These study and examination regulations serve to complete and supplement the General Examination Regulations of the Landshut University of Applied Sciences (APO) dated June 13, 2023, as amended and in its currently valid version.

§2

Study objective

(1) [1]Students of the Bachelor's degree program “Sustainable Industrial Operations and Business” acquire the ability to apply scientific methods and procedures from a broad range of technological, sustainability-oriented, business management and linguistic knowledge in the context of their future profession from the practical courses offered. [2]In addition, students should acquire the knowledge, skills and competencies to successfully complete an in-depth Master's degree program, regardless of existing admission requirements.

(2) [1]Through a comprehensive and balanced teaching of the basic subject-specific knowledge, skills and competencies, students should be enabled to grasp complex topics and problems and to find goal-oriented solutions. [2]In the practical semester, the knowledge, skills and competencies already acquired should be deepened through independent, professional action. [3]Inter-faculty and general scientific content is incorporated through elements of the General Studies (Studium Generale) in order to acquire interdisciplinary knowledge, skills and competencies. [4]The knowledge, skills and competencies acquired will enable students to analyze social processes, in particular at the interface between technology and business and also in internationally active companies and organizations, taking into account sustainability aspects and to help shape them in a reflected and responsible manner.

(3) [1]Graduates possess fundamental technical knowledge, skills and competencies in engineering, business administration, international business, sustainability and the technical integration of these four areas of education. [2]In particular, graduates of the degree program are able to solve complex and unforeseeable problems independently and as part of a team, which are characterized by the simultaneity of technical, business, international and sustainable requirements. [3]They have a critical understanding of the relevant theories, methods and principles. [4]They have the necessary skills to lead activities or interdisciplinary projects and take responsibility for decisions. [5]They are able to take responsibility for the professional development of themselves or others. [6]The employability skills acquired with the degree program relate to several operational fields of employment in internationally active companies and organizations, including sustainability, mobility production planning and

control, logistics, technical purchasing and sales, quality management, marketing, controlling, innovation and project management.

§3

Admission requirements

(1) [1]The admission requirement for the course is proof of a higher education entrance qualification in accordance with Art. 88 Para. 2, 5, 6 and 10 BayHIG in conjunction with the ordinance on the Qualification for Studies at the Universities of the Free State of Bavaria (QualV) of November 2, 2007, as amended in its currently valid version. [2]Further details are regulated by the statutes on the procedure for admission, enrolment, re-registration, leave of absence and de-registration at the Landshut University of Applied Sciences dated May 4, 2023, as amended.

(2) [1]Furthermore, admission to the degree program requires English language skills at level B2 of the Common European Framework of Reference for Languages (CEFR). [2]Proof of English language skills must be provided by means of recognized, suitable language certificates. [3]This can be provided by taking a TOEFL test or other tests (Cambridge Certificate, IELTS, LCCI, TELC, TOEIC), which must not be more than three years old. [4]Applicants whose native language in their home country is English or who have attended an English-language school for six years do not have to additionally prove the English language level.[5] Decisions on the fulfillment of the admission requirements and on applications are made on a case-by-case basis by the responsible examination board.

§4

Structure of the degree program, standard period of study

(1) [1]The degree program is offered as a full-time course in English with a standard period of study of seven semesters. [2]A total of 210 ECTS points, i.e. credit points according to the European Credit Transfer and Accumulation System (ECTS points), are awarded for successful completion of the course. [3]Generally, the course begins in a winter semester. [4]If the course is also scheduled to start in a summer semester, this will be announced publicly before the start of the application procedure.

(2) The full-time course of study includes six theoretical semesters and one practical semester, which is generally conducted as the fifth semester of the curriculum in accordance with the annex to these study and examination regulations.

(3) [1]A Bachelor's thesis must be completed as part of the course. [2]More detailed provisions on this are regulated in § 9.

(4) [1]In the modules German I, German II, German III, students acquire competencies at reference level A1 or higher of the Common European Framework of Reference for

Languages (GER). [2]Students who provide evidence of these competencies prior to participating in these modules as part of a placement test carried out at the Faculty Health, Communication, Human-Technology Interaction at Landshut University of Applied Sciences may alternatively acquire the corresponding ECTS credits in modules in which competencies at a higher reference level of the GER for languages are taught.

(5) [1]Students who have acquired their study qualification at a German-speaking educational institution or whose native language is German or who can prove German language skills of at least reference level C1 or C2 of the GER for languages choose a second foreign language (Foreign-Language I-III) [2]In the case of a higher education entrance qualification acquired in a non-German-speaking country that does not provide evidence of German language proficiency of at least reference level A1 or a higher reference level of the GER for languages, the modules German I - III must be taken; the modules to be attended are determined on the basis of the evidence to be submitted. [3]In this way, students acquire at least reference level A1 of the GER for languages.

§5

Modularization

(1) [1]The degree program has a modular structure. [2]A module is a combination of chronologically and thematically units that are self-contained and worth ECTS credits. [3]A module may consist of sub-modules.

(2) All modules are compulsory modules or compulsory elective modules:

1. Compulsory modules are the modules of a degree program that are compulsory for all students.
2. Compulsory elective modules are modules that are offered individually or in groups as an alternative. [2]Each student must make a specific selection from among them in accordance with these study and examination regulations. [3]The selected modules are treated as compulsory modules.
3. [1]Elective modules are modules that are not required to achieve the study objective. [2]They can be chosen by students from the entire range of courses offered by the university, are not pass-relevant and are not included in the overall examination result.

(3) [1]The compulsory modules, compulsory elective modules and elective modules, their semester hours per week and ECTS credits, the type of courses, the examinations and the semester-accompanying certificates of achievement are set out in the annex to these study and examination regulations. [2]In addition to the compulsory elective moduls listed in the appendix, further compulsory elective modules may be offered. [3]Further details are regulated in the study and examination plan with module handbook.

§6

Study and examination schedule with module handbook

(1) [1]The Faculty of Electrical and Industrial Engineering draws up a study and examination plan and to provide students with information and to secure the course offering, and its module handbook specifies everything else about the compulsory and compulsory elective modules and the process of the degree program in detail, insofar as this is not already conclusively regulated by these study and examination regulations. [2]The study and examination plan with module handbook is not part of these study and examination regulations.[3]It shall be adopted by the Faculty Board of Electrical and Industrial Engineering and announced to the university public. [4]Amendments must be announced no later than two weeks after the start of the lecture period of the semester to which they apply for the first time.

(2) The study and examination plan with module handbook contains in particular regulations and information about:

1. The allocation of weekly semester hours and ECTS credits per module/sub-module and semester as well as the person responsible for the module;
2. The catalog of compulsory modules, the selectable compulsory elective modules with their semester hours per week and the ECTS credits to be earned;
3. The learning content and qualification objectives of the modules/sub-modules;
4. The applicability of the modules/sub-modules in connection with other modules/sub-modules of the degree program or in other degree programs;
5. The type of course, forms of teaching and learning in the individual modules/sub-modules, insofar as they have not been conclusively defined in the annex;
6. The language of instruction and examination, insofar as this is not German or has not been conclusively specified in the annex;
7. More detailed provisions on the requirements for participation in the modules/sub-modules and on the requirements for the awarding of ECTS points (in particular the type, scope and duration of examinations, unless conclusively specified in the annex) and on the weighting of grades for the modules/sub-modules when calculating the final grades for the modules and the overall examination result;
8. The frequency with which modules/sub-modules are offered;
9. The workload and duration of the modules/sub-modules;
10. The objectives and content of the practical study section and the practical courses.

(3) The General Studies comprise 6 ECTS credits. [2]The General Studies modules are offered throughout the university in a separate catalog and can be taken in any semester.

(4) [1]There is no entitlement to all compulsory elective modules actually being offered. [2]Neither is there any entitlement to have courses offered as electives offered if there are not enough

participants. [3]In addition, there is no entitlement to participation if the maximum number of participants in a course is exceeded; if necessary, the decision will be made by lot. [4]Finally, there is no entitlement to ensure that there are no time overlaps between all the modules that can be selected.

§7

Academic advising and regulations on study progress

(1) [1]The faculty council appoints the student advisory service. [2]The primary task consists of supporting and informing students in all matters relating to the planning of the course of studies and the organization of studies. [3]The student advisory service should in particular be drawn on at the beginning of the degree course, in the case of failed examinations, planned semesters abroad or when changing degree courses.

(2) [1]The basic and orientation examination must be taken for the first time by the end of the second semester of the curriculum. [2]The basic and orientation examination consists of the modules “Principles of Electrical Engineering” and “Mathematics for Engineers I”. [3]If students exceed the deadline according to sentence one, the examinations not taken will be assessed as “failed” for the first time. [4]In individual cases, the deadlines may be extended appropriately upon application to the examination board if they cannot be met for reasons for which the student is not responsible.

(3) [1]Only students who have passed the examinations in at least three compulsory modules in the first and second semesters of the curriculum with a final grade of “sufficient” or better are entitled to enter the third semester. [2]At least two of these compulsory modules must be “Mathematics for Engineers I”, “Mathematics for Engineers II”, “Principles of Electrical Engineering” or ‘Electronics and Measurement Engineering’ must be passed.

(4) Entry to the practical semester requires that all modules without German I and II (or Foreign Language I and II) of the first and second semesters of the curriculum have been passed.

(5) Students are entitled to enter the sixth semester and register for the Bachelor's thesis if they have completed the practical period in the company and have earned at least 80 ECTS credits from the first four semesters of the curriculum.

§8

Practical semester

(1) [1]The practical semester is an integral part of the degree course. [2]Only those who fulfill the requirements in accordance with § 7 paragraph 4 are entitled to enter the practical semester.

(2) The practical semester includes a practical period in the company of at least 80 working days.

(3) [1]The practical semester includes the module “Internship Seminar” amounting to two semester hours per week. [2]The internship seminar can take place during the practical semester or in the semester following the practical semester.

(4) The practical semester has been successfully completed if

1. The practical time in the company is evidenced by a certificate from the training institution and
2. The coursework specified for the “Internship Seminar” module has been fully completed.

(5) [1]In justified cases, recognition of the practical time in the company and/or a (partial) remission or catching up on the internship seminar is possible. [2]This is particularly given if relevant practical experience can be demonstrated. [3]The recognition, remission or catching up requires a written application to the examination board, which must be supported by appropriate evidence.

§9

Bachelor's thesis

(1) With the Bachelor's thesis, students should demonstrate their ability to apply the knowledge, skills and competences acquired during their studies in an independently written thesis in accordance with scientific principles on problems from the subject areas of industrial production, supply chain, computer science, business and sustainability.

(2) [1]The Bachelor's thesis is usually registered with the examination board in the seventh semester of the curriculum. [2]Further provisions on this are regulated in § 7 (5). [3]The Bachelor's thesis must be submitted no later than five months after registration. [4]In individual cases, the deadline may be extended appropriately upon application to the Examination Board if it cannot be met for reasons for which the student is not responsible.

(3) [1]The examiner of the Bachelor's thesis is usually a full-time professor or lecturer for special tasks at Landshut University of Applied Sciences whose subject area covers the topic. [2]If the examiner of the thesis belongs to group of people specified in Art. 85 Para. 1 BayHIG, § 7 Hochschulprüferverordnung, § 2 para. 6 APO, the Bachelor's thesis must be assessed by two examiners, whereby the second examiner must be a full-time professor at Landshut University of Applied Sciences.

§ 10

Examination board

(1) [1]An examination board is formed with a chairperson and at least two other members appointed by the Faculty Council. [2]The Examination Board may be responsible for other degree programs of the Faculty.
(2) Upon application, the Examination Board shall decide on the recognition of credits.

§ 11

Portfolio examination, assessment of examination achievments, bonus achievments and calculation of the overall examination result

(1) [1]In the portfolio examination, examination components are collected over the course of the semester, whereby these individual partial performances are not relevant for passing. [2]At the end of the semester, an overall grade is calculated from all partial performances of the portfolio examination. [3]The composition of the respective portfolio examination can be found in the appendix to these study and examination regulations. [4]If parts of the portfolio examinations are not taken or partial performance is missing without reasons that are not the student's responsibility, these parts will be awarded zero points or graded as unsatisfactory when calculating the final grade. [5]Is the participation in parts of the portfolio examination not possible for reasons for which the student is not responsible, then the partial achievements already completed remain unaffected and the portfolio examination must be completed at the next possible date on which the missing parts are offered, otherwise the final grade will be calculated in accordance with sentence four. [6]Upon application to the Examination Board, even in the case of missing parts for which there are reasons for which the student is not responsible, a final reason for which the student is not responsible, a final grade may be awarded in accordance with sentence four.
(2) [1]For a differentiated assessment of the examinations on which final grades are based, and the Bachelor's thesis, the grades may be reduced or increased by 0.3; the grades 0.7; 4.3; 4.7 and 5.3 are excluded. [2]If several examinations are to be combined into one final grade, the grade is calculated from the arithmetic mean of the weighted grades rounded down to one decimal place in accordance with the annex to the study and examination regulations.
(3) [1]In accordance with § 17 APO, the module coordinators can award bonus credits in all modules in the annex to of these study and examination regulations. As bonus achievements one or more scientific papers, or one more presentations on a given topic, the implementation and evaluation of one or more practical experiments, the development of technical solutions in self-study and the solving of one or more tasks or one or more tests in electronic form can be submitted as bonus achievements. [3]A combination of the individual of the above-mentioned individual achievements can be required. [4]The module-specific achievements offered for the

module-specific achievements for the acquisition of a bonus can be found in the current study and examination plan. [5]A deterioration of the module grade due to a bonus achievement is excluded. [6]If the module (partial) examination is not passed, the acquired bonus is forfeited. [7]The bonus can only be acquired within one semester and cannot be transferred to a subsequent semester. [8]In the event of illness evidenced by a medical certificate or reasons of the Maternity Protection Act, a subsequent examination date is only possible if it can take place before the corresponding module (partial) examination. [9]The stipulations on examination duration, content and scope of the possible bonus performance must be announced no later than two weeks at the latest two weeks after the start of the semester.

(4) Examinations that do not result in a final grade are assessed with the grades “with success” or “unsuccessful”.

(5) The overall examination result is calculated from the weighted arithmetic mean of the final grade-forming examinations rounded down to one decimal place in accordance with the appendix to these study and examination regulations.

§ 12

Certificate and academic degree

(1) 1 A certificate shall be issued for the Bachelor's examination passed. [2]This shall show the grades and the final grades of all relevant modules. [3]A Diploma Supplement explaining the degree program will be issued in English as an appendix to the certificate.

(2) [1]On successful completion of the Bachelor's examination, the academic degree “Bachelor of Engineering”, short form: ”B.Eng.” is awarded. [2]A certificate will be issued for the award of the academic degree.

§ 13

Entry into force*)

These statutes enter into force on October 1, 2023.

*) This provision refers to the entry into force of the statutes in the original version dated August 8, 2023.The date of entry into force of the amendments is set out in the amended statutes published in the official gazette of Landshut University of Applied Sciences.

First amendment statutes

[1]These statutes come into force on October 1, 2024. [2]They apply to students who begin their studies in the winter semester 2024/2025 or commence their studies later.

Appendix:

1. **first study section (1st and 2nd semester)** (find the translation of the table later on in the appendix)

Module Number	Module Name	Module Type	Language	Type of Course	SWH	ECTS Credits	Admission requirement for the examination	Type of exam	Exam Scope	RES	Grade weight
SIOB100	Mathematics for Engineers 1	CM	en	Lec., Ex.	8	10		WE or OE or PE (sem.)	60-120 min 20-45 min 2)	1	10/499
SIOB110	Principles of Electrical Engineering	CM	en	Lec., Ex.	4	5		WE or OE or PE (sem.)	60-120 min 20-45 min 2)	1	5/499
SIOB120	Fundamentals of Computer Science	CM	en	Lec., Ex.	4	5		WE or OE or PE (sem.)	60-120 min 20-45 min 2)	1	5/499
SIOB130	Principles of Business Administration and Economics	CM	en	Lec.	6	7		WE or OE or PE (sem.)	60-120 min 20-45 min 2)	1	7/499
SIOB140	Sustainable Development I: Principles	CM	en	Lec.	4	5		WE or OE or PE (sem.)	60-120 min 20-45 min 2)	1	5/499
SIOBF10	German I	CM	de	Lec.	4	4		3)		1-7	0
SIOB150	Mathematics for Engineers II	CM	en	Lec., Ex.	6	6		WE or OE or PE (sem.)	60-120 min 20-45 min 2)	2	6/499
SIOB160	Applied Physics	CM	en	Lec., Ex.	6	7		WE or OE or PE (sem.)	60-120 min 20-45 min 2)	2	7/499
SIOB170	Electronics and Measurement Engineering	CM	en	Lec., Ex.	4	5		WE or OE or PE (sem.)	60-120 min 20-45 min 2)	2	5/499
SIOB180	Software Development and Coding	CM	en	Lec., Ex.	4	5		WE or OE or PE (sem.)	60-120 min 20-45 min 2)	2	5/499
SIOBF20	German II	CM	de	Lec.	4	4		3)		1-7	
Total					54	63					55/499

2. **second study section** (3rd and 4th semester of the curriculum)

Module Number	Module Name	Module Type	Language	Type of Course	SWH	ECTS Credits	Admission requirement for the examination	Type of exam	Exam Scope	RES	Grade weight
SIOB190	Automatic Control Engineering	CM	en	Lec., Ex.	4	5		WE or OE or PE (sem.)	60-120 min 20-45 min 2)	3	20/499
SIOB200	Network Communication / IoT	CM	en	Lec., Ex.	6	6		WE or OE or PE (sem.)	60-120 min 20-45 min 2)	3	24/499
SIOB210	Procurement, Manufacturing and Logistics	CM	en	Lec.	4	6		WE or OE or PE (sem.)	60-120 min 20-45 min 2)	3	24/499
SIOB220	Marketing and Sales	CM	en	Lec.	4	5		WE or OE or PE (sem.)	60-120 min 20-45 min 2)	3	20/499
SIOB230	Accounting	CM	en	Lec.	4	5		WE or OE or PE (sem.)	60-120 min 20-45 min 2)	3	20/499
SIOBF30	German III	CM	de	Lec.	4	4		3)		1-7	0
SIOB240	Engineering and Design	CM	en	Lec., Ex.	4	5		WE or OE or PE (sem.)	60-120 min 20-45 min 2)	4	20/499
SIOB250	Introduction to Manufacturing Engineering	CM	en	Lec.	4	5		WE or OE or PE (sem.)	60-120 min 20-45 min 2)	4	20/499
SIOB260	Renewable Energy	CM	en	Lec.	4	5		WE or OE or PE (sem.)	60-120 min 20-45 min 2)	4	20/499
SIOB270	Sustainable Development II: Standards, Players, Interventions	CM	en	Lec., Ex.	4	5		WE or OE or PE (sem.)	60-120 min 20-45 min 2)	4	20/499
SIOB280	Project Management			Lec., Ex.	4	5		WA or WE	12-15 Pages 60-120 min	4	20/499
Total					**46**	**56**					**208/499**

3. **third study section** (5th semester of the curriculum)

Module Number	Module Name	Module Type	Language	Type of Course	SWH	ECTS Credits	Admission requirement for the examination	Type of exam	Exam Scope	RES	Grade weight
SIOB290	Internship	CM	de*		0	24	Employer certificate in German or English			5	0
SIOB300	Internship Seminar	CM	en	Lec.	2	2	Mandatory attendance [1)]	Pres. (DE) Pres. (EN) WA (P/F)	20–45 min 20–45 min 12–15 Pages	6	0
Total					**2**	**26**					**0**

4. **fourth study section** (6th and 7th semester of the curriculum)

Module Number	Module Name	Module Type	Language	Type of Course	SWH	ECTS Credits	Admission requirement for the examination	Type of exam	Exam Scope	RES	Grade weight
SIOB310	Seminar Research Studies	CM	En	Lec.	2	3	Mandatory attendance [1)]	Pres.sem. WA	20-45 min. 12-15 Pages	6/7	12/499
SIOB320	Smart Manufacturing and Industry 4.0	CM	en	Lec.	4	5		WE or OE or PE (sem.)	60-120 min 20-45 min 2)	6	20/499
SIOB330	Data Science and AI	CM	en	Lec.	4	5		WE or OE or PE (sem.)	60-120 min 20-45 min 2)	6	20/499
SIOB340	Supply Chain Management	CM	en	Lec.	4	5		WE or OE or PE (sem.)	60-120 min 20-45 min 2)	6	20/499
SIOB350	Enterprise Resource Planning	CM	en	Lec., Ex.	4	5		WE or OE or PE (sem.)	60-120 min 20-45 min 2)	6	20/499
SIOB360	Sustainable Development III: Transformations, Scenarios	CM	en	Lec.	4	5		WE or OE or PE (sem.)	60-120 min 20-45 min 2)	6	20/499
SIOB370	International Business and Cross-Cultural Communication	CM	en	Lec.	4	5		Pres. (sem.) or WA	20-45 min 12-15 Pages	6	20/499
SIOB380	Mobility Innovations	CM	de	Lec.	4	5		WE or OE or PE (sem.)	60-120 min 20-45 min 2)	7	20/499
SIOB390	Energy Infrastructure	CM	en	Lec.	4	5		WE or OE or PE (sem.)	60-120 min 20-45 min 2)	7	20/499
SIOB400	Seminar on Sustainable Development	CM	en	Lec.	2	4		Pres. (sem.) WA	20-45 min 12-15 Pages	7	16/499
SIOB410	Bachelor's Thesis	CM	en	Lec.		12				7	48/499
Total					**36**	**59**					**236/499**

SIOBF10, SIOBF20, SIOBF30: Students who obtained their higher education entrance qualification at a German-speaking educational institution, or whose native language is German, select a second foreign language (Foreign Language I - II).

General Studies (Studium Generale)

Module Number	Module Name	Module Type	Language	Type of Course	SWH	ECTS Credits	Admission requirement for the examination	Type of exam	Exam Scope	RES	Grade weight
E100	General Studies (Studium Generale)	ECM	de	depending on module choice		6	depending on module choice			6/7	0
Total						**6**					**0**

[1]The modules offered can be found in the Regulations for General Studies at Landshut University of Applied Sciences can be found here. [2]Modules must be successfully completed until a total of at least 6 ECTS points have been acquired. [3]The details (number of SWS weekly hours per semester), type of course, type of examination, etc.) are governed by the regulations for the General Studies.

Footnotes

1) (i)The verification of attendance is the responsibility of the lecturers and must be documented by them. (ii)Students may not miss more than 25 percent of the course in order to prove attendance. (iii)If students miss more than 25 percent of the course for reasons for which they are not responsible, the ECTS may be awarded upon written application by the student, subject to a condition that enables the achievement of the competence objectives in another way. (iv)The Examination Board shall decide on the application, type and content of the condition. (v)The reason for the absence must be substantiated by the student, in the case of illness by submitting a medical certificate. The lecturers are responsible for providing evidence of absences.
2) The scope and weighting of the examination elements are regulated by the study and examination plan or its appendix.
3) The scope and weighting of the examination elements are set out in the module handbook for courses offered by the Faculty of Languages IDS.

List of abbreviations

Art.	Article
BayHIG	Bavarian Higher Education Innovation Act
BayRS	Bavarian Law Collection (Bayerische Rechtssammlung)
GVBl.	Bavarian Law and Ordinance Gazette (Gesetz- und Verordnungsblatt)
CM	Compulsory Module
de	German
en	English
ECTS	European Credit Transfer and Accumulation System
ECM	Elective Compulsory Module
Ex.	Exercise
Lec.	Lecture
Sem.	Seminar
OE	Oral Examination (mündliche Prüfung)
WE	Written Examination (Klausur)
WA	Written Assignment (Ausarbeitung)
PE (sem.)	Practical Examination (during the semester)
Pres. (sem.)	Presentation (during the semester)
P/F	Pass / Fail
RES	Recommended Examination Semester
SWH	Semester Weekly Hours