

Please note: Only the German study and examination regulations are binding.

The English translation is for informational purposes only



**DRAFT: Study and examination regulations
for the Bachelor's degree programme Sustainable Industrial Operations and Business
at the University of Applied Sciences Landshut
from 17.1.2023**

On the basis of Article 13, Paragraph 1, Sentence 2, Article 43, Paragraph 4, Article 58, Paragraph 1, Sentence 1, Article 61, Paragraph 2, Sentence 1, Paragraph 8, Sentence 2 and Article 66, Paragraph 1, Sentence 1 of the Bavarian Higher Education Act (BayHSchG) of 23 May 2006 (GVBl p. 245, BayRS 2210-1-1-K), as last amended by Section 2 of the Act of 23 December 2021, Landshut University of Applied Sciences issues the following Statutes:

- § 1 Purpose of the Study and Examination Regulations
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§ 1

Purpose of the study and examination regulations

These study and examination regulations serve to fill out and supplement the Framework Examination Regulations for Universities of Applied Sciences in Bavaria (RaPO) of 17 October 2001 (GVBl p. 686) and the General Examination Regulations of the Landshut University of Applied Sciences (APO) of 20 June 2017, as amended.

§ 2

Study objective

- (1) ¹Students of the Bachelor's degree programme "Sustainable Industrial Operations and Business" acquire the ability to independently apply scientific methods and procedures from broadly diversified technological, sustainability-oriented, business management and linguistic knowledge in the context of their future profession during the practice-oriented course offerings. ²In addition, students are to be taught the knowledge, skills and competences to be able to successfully complete an in-depth Master's degree programme - irrespective of existing admission requirements.
- (2) ¹Through comprehensive and balanced teaching of the basic subject knowledge, skills and competences, students should be enabled to grasp complex topics and problems and to find a goal-oriented solution. ²In the practical study semester, the knowledge, skills and competences already acquired are to be deepened through independent, professional action. ³Inter-faculty and general scientific contents are included through the elements of the "Studium Generale" in order to acquire interdisciplinary knowledge, skills and competences. ⁴The acquired knowledge, skills and competences enable students to understand and reflect on social processes, especially at the interface of technology and business and also in internationally active companies and organisations, as well as to help shape them responsibly.
- (3) ¹Graduates possess fundamental professional knowledge, skills and competences of engineering sciences, business administration, international business, sustainability and the professional integration of these four fields of education. ²In particular, graduates of the degree programme are able to solve complex and also unpredictable problems independently and in a team, which are characterised by the simultaneity of technical, business administration, international and sustainability requirements. ³In doing so, they have a critical understanding of the relevant theories, methods and principles. ⁴They have the necessary competences to lead activities or interdisciplinary projects and to assume decision-making responsibility for them. ⁵They are able to take responsibility for the professional development of themselves or others. ⁶The employability acquired with the degree programme concerns several operational fields of application in internationally active companies and organisations, including sustainability, mobility, production planning and control, logistics, technical purchasing and

sales, quality management, marketing, controlling, innovation as well as project management.

§ 3

Access requirements

- (1) ¹The prerequisite for admission to the degree programme is proof of university entrance qualification in accordance with Art. 43 Para. 2 and 7 or Art. 45 BayHSchG in conjunction with the Ordinance on Qualification for Studies at the Universities of the Free State of Bavaria (QualV) of 2 November 2007, as amended. ²Further details are regulated by the Statutes on the Procedure for Admission, Matriculation, Re-registration, Leave of Absence and Exmatriculation at Landshut University of Applied Sciences of 17 December 2020, as amended from time to time.
- (2) ¹Furthermore, access to the degree programme requires English language skills at level B2 of the Common European Framework of Reference (CEFR). ²Proof of English language skills must be provided in the form of recognised, suitable language certificates. ³This can be done by taking a TOEFL test or other tests (Cambridge Certificate, IELTS, LCCI, TELC, TOEIC), which must not be older than three years. ⁴Applicants 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. ⁵The responsible examination board decides on the existence of the admission requirements and on the applications of the applicants in individual cases.

§ 4

Structure of the programme, standard period of study

- (1) ¹The programme is offered as a full-time programme in English with a standard period of study of seven semesters. ²A 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 programme. ³As a rule, the programme begins in a winter semester. ⁴If the programme is also scheduled to begin in a summer semester, this will be announced publicly before the application procedure begins. ⁵One ECTS point corresponds to a student workload of 30 hours of attendance and self-study.
- (2) The full-time study programme comprises six theoretical study semesters as well as one practical study semester, which, according to the Annex to these Study and Examination Regulations, is generally conducted as a fifth study plan semester.
- (3) ¹A Bachelor's thesis must be written as part of the degree programme. ²More detailed provisions on this are regulated in § 9.

- (4) ¹In the modules German I, German II and German III, students acquire competences at reference level A1 of the Common European Framework of Reference (CEFR) for languages. ²Students who prove these competences before participating in these modules within the framework of a placement test conducted at the Faculty of Interdisciplinary Studies at Landshut University of Applied Sciences can acquire the corresponding ECTS credits as a substitute in such modules in which competences at a higher CEFR reference level for languages are taught.
- (5) ¹Students who have acquired their study qualification at a German-speaking educational institution or whose native language is German or who demonstrate German language skills of at least reference level C1 or C2 of the CEFR for languages, choose a 2nd foreign language (Foreign Language I - III). ²In the case of a higher education entrance qualification acquired in a non-German-speaking foreign country which does not provide evidence of German language skills of at least reference level A1 or a higher reference level of the CEFR 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. ³There, the students acquire at least the reference level A1 of the CEFR for languages.

§ 5

Modularisation

- (1) ¹The degree programme has a modular structure. ²A module is a group of self-contained teaching units with ECTS credits that are rounded off in terms of time and subject matter. ³A module can consist of sub-modules.
- (2) All modules are compulsory or elective:
1. Compulsory modules are the modules of a degree programme that are compulsory for all students.
 2. ¹Elective modules are modules that are offered individually or in groups as alternatives. ²Each student must make a specific selection from among them in accordance with these study and examination regulations. ³The selected modules are treated as compulsory modules.
 3. ¹Elective modules are modules that are not prescribed for achieving the degree objective. ²They can be additionally selected by students from the entire range of courses offered by the university, they are not relevant for passing the examination and they are not included in the formation of the overall examination result.
- (3) ¹The compulsory, compulsory elective and elective modules, their semester hours per week and ECTS credits, the type of courses, the examinations and the course-related certificates of achievement are specified in the appendix to these study and examination regulations. ²In addition to the compulsory elective modules listed in the appendix, further compulsory

elective modules may be offered. ³Further details are regulated in the study and examination plan with module handbook.

§ 6

Study and examination plan with module handbook

- (1) ¹The Faculty of Electrical Engineering and Industrial Engineering shall draw up a study and examination plan with a module handbook to ensure the courses offered and to inform the students. This plan shall specify everything else about the compulsory and elective modules as well as the course of study in detail, insofar as this is not already conclusively regulated by these study and examination regulations. ²The study and examination plan with module handbook is not part of these study and examination regulations. ³It is decided by the Faculty Council for Electrical Engineering and Industrial Engineering and announced to the public. ⁴Changes must be announced at the latest at the beginning 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 on:
1. the distribution of the semester hours per week and the ECTS credits per module/sub-module and semester as well as the person responsible for the module;
 2. the catalogue of compulsory modules, the selectable compulsory elective modules with their semester hours per week and the ECTS credits to be acquired;
 3. the learning content and qualification objectives of the modules/submodules;
 4. the usability of the modules/submodules in connection with other modules/submodules of the degree programme or in other degree programmes;
 5. the course type, teaching and learning forms in the individual modules/submodules, 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 it has not been conclusively determined in the Annex;
 7. more detailed provisions on the prerequisites for participation in the modules/submodules as well as on the prerequisites for the award of ECTS credits (in particular the type, scope and duration of examinations, unless conclusively specified in the Annex) and on the grade weighting of the modules/submodules in the formation of final grades for the modules and the overall examination result;
 8. the frequency of offering of modules/sub-modules;
 9. the workload and duration of the modules/submodules;
 10. the objectives and contents of the practical study section and the courses accompanying the practical training.
- (3) ¹The Studium Generale comprises 6 ECTS points. ²The Studium Generale modules are offered in a separate catalogue throughout the university and can be taken in any semester.

- (4) ¹There is no entitlement to the fact that all scheduled compulsory elective modules are actually offered. ²Likewise, there is no entitlement to courses offered as electives being carried out if there are not enough participants. ³Furthermore, there is no entitlement to participation if the maximum number of participants in a course is exceeded; if necessary, the decision is made by lot. ⁴Finally, there is no entitlement to the fact that there is no overlapping of all modules that can be selected.

§ 7

Subject guidance and regulations on study progress

- (1) ¹The Student Advisory Service is appointed by the Faculty Council. ²The primary task is to support and inform students in all questions concerning the planning of the course of studies and the organisation of studies. ³The subject advisory service should be called upon in particular at the beginning of the degree programme, in the case of failed examinations, planned semesters abroad or when changing the degree programme.
- (2) ¹The foundation and orientation examination must be taken for the first time by the end of the second semester of the curriculum. ²The basic and orientation examination consists of the modules "Principles of Electrical Engineering" and "Mathematics for Engineers I". ³If students exceed the deadline according to sentence 1, the examinations not taken will be considered as "failed" for the first time. ⁴The deadlines can be reasonably extended in individual cases upon application to the examination board if they cannot be met for reasons for which the student is not responsible.
- (3) ¹Only students who have passed the examinations in at least three compulsory modules of the first and second semester of the curriculum with a final grade of "sufficient" or better are entitled to enter the third semester of the curriculum. ²At 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".
- (4) Entry into the practical study semester requires that all modules excluding German I and II (or Foreign Language I and II) of the first and second curriculum semesters have been passed.
- (5) Students who have completed the practical period in the company and have earned at least 80 ECTS credits from the first four semesters of the curriculum are entitled to enter the sixth semester and to register for the Bachelor thesis.

§ 8

Practical semester

- (1) ¹The practical study semester is an integral part of the degree programme. ²Only those who fulfil the requirements according to § 7 paragraph 4 are entitled to enter the practical study semester.

- (2) The practical study semester includes a practical period in the company of at least 80 working days.
- (3) ¹The practical study semester includes the module "Internship Seminar" in the amount of two semester hours per week. ²The internship seminar can be taken during the practical semester or in the semesters following the practical semester.
- (4) The practical semester has been successfully completed if
1. the practical time in the company is proven by a certificate from the training place and
 2. the credits specified for the module "Internship Seminar" have been completed in full.
- (5) ¹In justified cases, recognition of the practical time in the company and/or a (partial) waiver or a make-up of the Internship Seminar is possible. ²This is particularly the case if relevant practical experience can be proven. ³The recognition, waiver or making up for the internship seminar requires a written application to the examination board, which must be supported by appropriate evidence.

§ 9

Bachelor thesis

- (1) With the Bachelor's thesis, students should be able to demonstrate their ability to apply the knowledge, skills and competences acquired during their studies in an independently prepared thesis according to scientific principles to problems from the subject areas of industrial production, supply chain, information technology, business and sustainability.
- (2) ¹As a rule, the Bachelor thesis is registered with the examination board in the seventh semester of the curriculum. ²More detailed provisions on this are regulated in § 7 (5). ³The Bachelor thesis must be submitted no later than five months after registration. ⁴The deadline may be extended in individual cases upon application to the examination board if it cannot be met for reasons for which the student is not responsible.
- (3) ¹The examiner of the Bachelor's thesis is usually a full-time professor or lecturer for special tasks at Landshut University whose subject area covers the topic. ²If the examiner of the thesis belongs to the group of persons named in § 3 Paragraph 6 Sentence 1 RaPO, the Bachelor thesis is to 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) ¹An examination board shall be formed with a chairing member and at least two other members appointed by the Faculty Council. ²The examination board may be responsible for other degree programmes of the faculty.
- (2) Upon application, the examination board shall decide on the crediting of achievements.

§ 11

Assessment of examination performances and formation of the overall examination result

- (1) The type of examination can be a written examination (duration between 60 and 120 minutes), a portfolio examination, an oral examination (duration between 15 and 60 minutes), an electronic examination, a course-related non-final grade performance record or a course-related final grade performance record.
- (2) ¹In the portfolio examination, partial examination performances are collected in the course of the semester, whereby these individual partial performances are not relevant for passing the examination. ²At the end of the semester, an overall grade is calculated from all partial performances of the portfolio examination. ³The composition of the respective portfolio examination can be found in the appendix to these study and examination regulations. ⁴If parts of the portfolio examinations are not taken or partial performances are missing for reasons for which the student is not responsible, these parts will be given zero points or graded as unsatisfactory when the final grade is calculated. ⁵If it is not possible to take part in parts of the portfolio examination for reasons for which the student is not responsible, the parts already taken remain unaffected and the portfolio examination must be completed at the next possible time when the missing parts are offered, otherwise the final grade is calculated according to sentence 4. ⁶ Upon application to the examination committee, a final grade can also be calculated according to sentence 4 for missing parts for which the student is not responsible.
- (3) ¹Course-related certificates can be written certificates (written examinations), oral certificates (e.g. colloquia, interviews, presentations), practical certificates (e.g. conducting experiments), seminar papers, portfolios, practical reports and project work or a combination of these. ²For compulsory modules, the details are regulated in the appendix to the study and examination regulations. ³If the type of performance record for a module or sub-module is not clearly defined in the annex to the study and examination regulations, this is to be specified by the faculty council via the study and examination plan.
- (4) ¹For a differentiated assessment of the examination performances on which final grades are based and the Bachelor thesis, the grades can be lowered or raised by 0.3; the grades 0.7; 4.3; 4.7 and 5.3 are excluded. ²If several examination performances are to be combined into one final grade, the grade shall be the arithmetic mean of the weighted grades rounded down to one decimal place in accordance with the Annex to the Study and Examination Regulations.
- (5) ¹Pursuant to § 10 APO, the module supervisors can determine bonus performances in all modules in the appendix to these study and examination regulations. ²One or more scientific papers on a given topic, one or more lectures on a given topic, the performance and evaluation of one or more practical experiments, the development of technical solutions in self-

study and the solution of one or more tasks or one or more tests in electronic form can be submitted as bonus achievements. ³A combination of the above-mentioned individual performances can also be submitted. ⁴The module-specific performances offered for the acquisition of a bonus can be found in the current study and examination plan. ⁵A deterioration of the module grade due to a bonus performance is excluded. ⁶If the student fails the (partial) module examination, the bonus acquired is forfeited. ⁷The bonus can only be acquired within a semester and cannot be transferred to a subsequent semester. ⁸In the event of illness evidenced by a medical certificate or for reasons of the Maternity Protection Act, a subsequent appointment is only possible if it can still take place before the associated module (sub)examination. ⁹The specifications regarding the duration of the examination, content and scope of the respective possible bonus performance must be announced no later than two weeks after the start of the semester.

- (6) Examination performances that do not form the final grade are assessed with the predicate "with success" or "without success".
- (7) The overall examination result is the weighted arithmetic mean of the final examination grades rounded down to one decimal place according to the appendix to these study and examination regulations.
- (8) An overall assessment is formed on the basis of the overall examination result in accordance with the provisions of the framework examination regulations.

§ 12

Certificate and academic degree

- (1) ¹A certificate is issued for passing the Bachelor's examination. ²This shows the grades as well as the final grades of all relevant modules. ³A Diploma Supplement explaining the degree programme is issued in English as an appendix to the certificate.
- (2) ¹Upon successful completion of the Bachelor's examination, the academic degree of "Bachelor of Engineering", short form: "B.Eng." awarded. ²A certificate is issued on the award of the academic degree.

§ 13

Entry into force

These Articles of Association shall enter into force on 01.10.2023.

Attachment:**1. First stage of studies (1st and 2nd curriculum semester)**

Module number	Module name	Type of module	Language	Type of teaching	Hpw	ECTS-Points	Admission requirement for the examination	Type of examination	Audit scope	Rsoe	Note weight (W/Por/Ex.)
SIOB100	Mathematics for Engineers I	MM	en	St., Ex.	6	6		W. exam.	90 min	1	6/499
SIOB110	Principles of Electrical Engineering	MM	en	St., Ex.	4	5		W. exam.	90 min	1	5/499
SIOB120	Fundamentals of Computer Science	MM	en	St., Ex.	4	5		W. exam.	90 min	1	5/499
SIOB130	Principles of Business Administration and Economics	MM	en	St.	6	7		W. exam.	90 min	1	7/499
SIOB140	Sustainable Development I: Principles	MM	en	St.	4	5		W. exam.	90 min	1	5/499
SIOBF10	German I	MM	ger	LL	4	4		Exam Faculty IDS		1-7	0
SIOB150	Mathematics for Engineers II	MM	en	St., Ex.	8	10		W. exam.	90 min	2	10/499
SIOB160	Applied Physics	MM	en	St., Ex.	6	7		W. exam.	90 min	2	7/499
SIOB170	Electronics and Measurement Engineering	MM	en	St.	4	5		W. exam.	90 min	2	5/499
SIOB180	Software Development and Coding	MM	en	St.	4	5		W. exam.	90 min	2	5/499
SIOBF20	German II	MM	ger	LL	4	4		Exam Faculty IDS		1-7	0
Summe					54	63					55/499

2. Second stage of studies (3rd and 4th curriculum semester)

Module number	Module name	Type of module	Language	Type of teaching	Hpw	ECTS-Points	Admission requirement for the examination	Type of examination	Audit scope	Rsoe	Note weight (W/Por/Ex.)
SIOB190	Automatic Control Engineering	MM	en	St., Ex.	4	5		W. exam.	90 min	3	20/499
SIOB200	Network Communication / IoT	MM	en	St., Ex.	6	6		W. exam.	90 min	3	24/499
SIOB210	Procurement, Manufacturing and Logistics	MM	en	St.	4	6		W. exam.	90 min	3	24/499
SIOB220	Marketing and Sales	MM	en	St.	4	5		W. exam.	90 min	3	20/499
SIOB230	Accounting	MM	en	St.	4	5		W. exam.	90 min	3	20/499
SIOBF30	German III	MM	ger	LL	4	4		Exam Faculty IDS		1-7	0
SIOB240	Engineering and Design	MM	en	St., Ex.	4	5		W. exam.	90 min	4	20/499
SIOB250	Introduction to Manufacturing Engineering	MM	en	St.	4	5		W. exam.	90 min	4	20/499
SIOB260	Renewable Energy	MM	en	St.	4	5		W. exam.	90 min	4	20/499
SIOB270	Sustainable Development II: Standards, Players, Interventions	MM	en	St.	4	5		W. exam.	60 min	4	20/499
SIOB280	Project Management	MM	en	St., Ex.	4	5		Pw or W. exam.	90 min	4	20/499
Summe					46	56					208/499

3. Third stage of studies (5th curriculum semester)

Module number	Module name	Type of module	Language	Type of teaching	Hpw	ECTS-Points	Admission requirement for the examination	Type of examination	Audit scope	Rsoe	Note weight (W/Por/Ex.)
SIOB290	Internship	MM	ger*		0	24	Employer's certificate in German or English language			5	0
SIOB300	Internship Seminar	MM	en	St.	2	2	Compulsory participation ¹⁾	Pres E (w.s./wo.s.)	20-30 min 12-15 pages	6	0
Summe					2	26					0

4. Third stage of studies (6th and 7th curriculum semester)

Module number	Module name	Type of module	Language	Type of teaching	Hpw	ECTS-Points	Admission requirement for the examination	Type of examination	Audit scope	Rsoe	Note weight (W/Por/Ex.)
SIOB310	Seminar Research Studies	MM	en	St.	2	3	Compulsory participation ¹⁾	Pres E	approx. 45 min 1-4 pages	6/7	12/499
SIOB320	Smart Manufacturing and Industry 4.0	MM	en	St.	4	5		W. exam.	90 min	6	20/499
SIOB330	Data Science and AI	MM	en	St.	4	5		W. exam.	90 min	6	20/499
SIOB340	Supply Chain Management	MM	en	St.	4	5		W. exam.	90 min	6	20/499
SIOB350	Enterprise Resource Planning	MM	en	St., Ex.	4	5		W. exam.	90 min	6	20/499
SIOB360	Sustainable Development III: Transformations, Scenarios	MM	en	St.	4	5		W. exam.	90 min	6	20/499
SIOB370	International Business and Cross-Cultural Communication	MM	en	St.	4	5		Pres Strp	15 min 15 pages	6	20/499
SIOB380	Mobility Innovations	MM	en	St.	4	5		W. exam.	90 min	7	20/499
SIOB390	Energy Infrastructure	MM	en	St.	4	5		W. exam.	90 min	7	20/499
SIOB400	Seminar on Sustainable Development	MM	en	St.	2	4		Pres E	approx. 45 min 1-4 pages	7	16/499
SIOB410	Bachelor's Thesis	MM	en			12				7	48/499
Summe					36	59					236/499

SIOBF10, SIOBF20 and SIOBF30: Students who have acquired their study qualification at a German-speaking educational institution or whose native language is German choose a 2nd foreign language (Foreign Language I - III).

Studium Generale

Module number	Module name	Type of module	Language	Type of teaching	Hpw	ECTS-Points	Admission requirement for the examination	Type of examination	Audit scope	Rsoe	Note weight (WLPorEx.)
E100	Studium Generale	Elec.	ger	depending on module choice		6	depending on module choice			6/7	0
Summe						6					0

¹The modules offered can be found in the regulations for the Studium Generale at Landshut University of Applied Sciences. ²The number of modules to be successfully completed is at least 6 ECTS points. ³Further details (number of HPW, type of course, type of examination, etc.) are regulated in the Regulations for General Studies.

Footnote

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 per cent of the course as proof of attendance. (iii) If students miss more than 25 per cent of the course for reasons for which they are not responsible, the ECTS credits may be awarded upon written application by the students subject to a condition that enables the achievement of the competence objectives in another way. (iv) The examination board decides 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 the absences.

List of abbreviations

Abr.	Paragraph
APO	General Examination Regulations
Art.	Article
BayHSchG	Bavarian Higher Education Act
E	Elaboration
ECTS	European Credit Transfer and Accumulation System
Elec.	Electives
en	english
Ex.	Exercise
GER	Common European Framework of Reference for Languages
ger	german
ger*	German* or the working language in the internship company
Wt.PortEx	In the case of a portfolio examination, the weighting proportions of the partial examinations are indicated in parentheses.
Hpw	Hours per week during semester
Int.	Internship
LL	Language lessons
MM	Mandatory Module
O. exam.	Oral examination
Pe	Performance evidence
Exam IDS	according to the chosen module from the language offer of the Faculty of Interdisciplinary Studies
Pw	Project work
QualV	Ordinance on the Qualification for Studies in Bavaria
RaPO	Framework Examination Regulations
Pres	Presentation
Rsoe	Recommended semester of the exam
S	Seminar
Strp	Student research project
St	Seminar teaching
W. exam.	Written examination
wo.s.	without success
w.s.	with success