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**Special Part (B) of the Examination
Regulations for the Consecutive Master's
Program in Industrial Informatics
at the University of Applied
Sciences Emden/Leer in the
Department of Technology**

Due to § 1 paragraph 2 of the General Part for all Master's degree programs at Emden/Leer University of Applied Sciences (Part A MPO) in the version of 28.06.2022 (Proclamation Gazette of Emden/Leer University of Applied Sciences No. 113, published on 01.07.2022), the Faculty Council of Technology adopted the following applicable examination regulations on 17.09.2024, approved by the Executive Board on 02.10.2024, published on 09.10.2024 by Proclamation Sheet No. 145.

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§ 1 Scope of Application

The "Special Part of the Examination Regulations" (Part B) applies in conjunction with the General Part (Part A) to the Master's degree program in Industrial Informatics of the Faculty of Engineering at Emden/Leer University of Applied Sciences.

§ 2 Program Profile and Admission Requirements

- (1) The Master's degree program in Industrial Informatics is an international degree program with English-language courses to prepare graduates for an engineering career in an international environment.
- (2) The Master's degree programme in Industrial Informatics is a consecutive Master's degree programme for graduates of a Bachelor's degree programme in Electrical Engineering as well as for graduates of a Bachelor's degree programme in Computer Science and other closely related subjects. This applies in particular to the Bachelor's degree programmes in Electrical Engineering, Electrical Engineering in the Practical Network and Computer Science, Computer Science in the Practical Network at the Emden/Leer University of Applied Sciences.
- (3) The master's program in Industrial Informatics is more application-oriented.

§ 3 University degree

- (1) After successful completion of the course, the university awards the academic degree "Master of Engineering", abbreviated "M.Eng."
- (2) In addition, the university issues a certificate, a certificate and a diploma supplement (Annex 2a). The student can receive a translation of the certificate and the certificate in English or the Diploma Supplement in German (Annex 2b) on request.

§ 4 Standard period of study and structure of the degree programme

- (1) The standard period of study, including the Master's thesis with colloquium, is 3 semesters.
- (2) The consecutive Master's degree programme has a modular structure. It includes modules of the compulsory area, modules from the compulsory elective area and modules of the students' free choice (elective area). The scope of the modules from the compulsory area is 50 credit points (ECTS). The scope of the modules from the compulsory elective area is 10 credit points (ECTS). In addition, there is the Master's thesis with colloquium worth 30 credit points.
- (3) Compulsory modules and elective modules are offered in English.
- (4) Students who have earned less than 210 credit points in their previous studies must acquire missing credit points depending on the first professional degree they have previously obtained by completing other modules of the Faculty of Engineering in accordance with the Admission and Admission Regulations (see § 2 para. 1 ZZ0) (supplementary studies). These modules must be closely related to the course of study in terms of content.

§ 5 Examinations

- (1) Examinations can be taken in German or English at the student's choice, and the Master's thesis can also be written in German or English.
- (2) The type of examination, the form of the examination and the scope of the module achievements to be completed are compiled in the module catalogue in Appendix 1. If several types of examinations are listed for a course, the first examiner decides on the appropriate type of examination or the combination of examination types used.
- (3) The content of the examinations in the module catalogue listed in Appendix 1 is defined in the module handbook, which is adopted by the examination board and published throughout the university.
- (4) The examination board can admit further elective modules upon application. A corresponding entry in the module handbook must be made and published. At the beginning of each semester, the compulsory elective modules offered will be announced.
- (5) There is no entitlement to all planned compulsory elective modules actually being offered. Likewise, there is no entitlement to such courses being held with an insufficient number of participants.
- (6) Upon application to the examination board and in consultation with the respective department, achievements in the compulsory elective area can also be completed through up to any two modules of other degree programmes at Emden/Leer University of Applied Sciences or a foreign partner university.
- (7) In principle, the examinations for all examinations of the compulsory modules must be offered twice a year in each academic year within examination periods provided for by the examination board, even if the course itself is not offered in the respective semester.
- (8) Coursework (SL) is generally graded as "passed" or "failed".
- (9) If a module contains several examinations and nothing to the contrary has been defined in the module catalogue, the examinations are weighted equally in the calculation of grades.
- (10) Achievements from modules according to § 4 para. 4 (supplementary studies) are not included in the evaluation of the final grade, but are shown separately by a certificate in accordance with Annex 3.

§ 6 Admission to the Master's Thesis

- (1) Students submit the application for admission to the Master's thesis to the examination board.
- (2) The modules of the supplementary studies according to § 4 para. 4 must be passed in order to be admitted to the Master's thesis.
- (3) Admission to the Master's thesis can also be approved upon application by the examination board if a maximum of two required examinations or coursework have not yet been passed. The examinations for the modules that have not been completed must be able to be completed within one semester without affecting the Master's thesis.

§ 7 Master's thesis with colloquium

The processing time of the Master's thesis is 20 weeks. The processing time can be extended once by a maximum of 4 weeks upon application by the examination board, provided that there are reasons for which the student is not responsible.

§ 8 Entry into force and transitional regulation

- (1) These regulations come into force after approval by the Executive Board on the day after their announcement in the Bulletin of Emden/Leer University of Applied Sciences and apply to students who have commenced their studies from the winter semester 2024/2025 onwards.
- (2) Students who started their studies before the winter semester 2024/2025 will be examined by 31.08.2028 in accordance with the previously applicable regulations. After that, these regulations apply to these students. Upon application and with the approval of the examination board, they can be examined beforehand in accordance with these examination regulations.

Special Part (B) of the Examination Regulations for the Consecutive Master's Degree Program Industrial Informatics at the University of Applied Sciences Emden/Leer in the Department of Technology

Appendix 1 Module Catalog

PL = graded examination (module examination)

SL = ungraded coursework

Appendix 1a Pflichtmodule Industrial Informatics

Module	Se- mester	Examination Type § 10 MPO A	Type of examination § 11 MPO-A	SWS	Credit Points
Digitalization Engineering (<i>Digitalization Engineering</i>) DENG-J24		PL	Exam 1.5h or oral exam or Creation and documentation of computer programs		5
Digitalization of ICPS	1			2	
Digital Signal Processing	1			2	
Intermediate consumption	none				
Group Project (<i>Group Project</i>) GRPJ-J24		PL	Project report		10
Group Project	1			2	
Intermediate consumption	none				
Industrial Cyber-Physical Systems (<i>Industrial Cyber- Physical Systems</i>) ICPS-J24		PL	Written exam 1.5 h or oral exam		5
ICPS and Industry 4.0	1			2	
ICPS Life Cycle Engineering	1			2	
Intermediate consumption	none				
Industrial Internet of Things (<i>Industrial Internet of Things</i>) IIOT-J24		PL	Student thesis		5
IIoT and Data Transport	1			2	
IoT Data Processing	1			2	
Intermediate consumption	none				
Data Science and Analytics (<i>Data Science and Analytics</i>) DSAN-J24		PL	Coursework in the form of a term paper		5
Data Science	2			2	
Analytics	2			2	
Intermediate consumption	none				
Mathematical Modelling of ICPS (<i>Mathematical Modelling of ICPS</i>) MMOI-J24		PL	Written exam 1.5h or oral exam		5
Model-based Formal Methods and Tools	2			2	
Algebraic Formal Methods and Tools	2			2	
Intermediate consumption	none				

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Peer Project (Peer Project) PRPJ-J24		PL	Student thesis		10
Peer Project	2				
Intermediate consumption	Group Project				
Robotic Systems (Robotic Systems) ROSY-J24		PL	Written exam 1.5 h or oral exam		5
Introduction Robotic Systems Industrial	2			2	
Robotic Systems	2			2	
Intermediate consumption	none				
Master's Thesis with Colloquium MTHS-J24		PL	Master's Thesis with colloquium		30
Master's Thesis	3				
Intermediate consumption	See 6 'Admission to the Master's Thesis' Master's Examination Regulations (MPO) Part B.				

Appendix 1b Elective Modules Industrial Informatics

Module	Se- mester	Examination Type	Type of examination	SWS	Credit Points
Human Factors and Augmented Reality (Human Factors and Augmented Reality) HFAR-J24		PL	Oral examination		5
Human Factors and Assistance Systems				2	
Augmented Reality				2	
Intermediate consumption	none				
Innovation Engineering (Innovation Engineering) IENG-J24		PL	Exam 1.5h or Oral examination or study paper		5
Digital Economy				2	
Innovation Management				2	
Intermediate consumption	none				

Appendix 2 Diploma Supplement

Appendix 2a Diploma Supplement (English)

**Hochschule Emden/Leer
University of Applied Sciences
Diploma Supplement**

This Diploma Supplement model was developed by the European Commission, Council of Europe and UNESCO/CEPES. The purpose of the supplement is to provide sufficient independent data to improve the international 'transparency' and fair academic and professional recognition of qualifications (diplomas, degrees, certificates etc.). It is designed to provide a description of the nature, level, context, content and status of the studies that were pursued and successfully completed by the individual named on the original qualification to which this supplement is appended. It should be free from any value judgements, equivalence statements or suggestions about recognition. Information in all eight sections should be provided. Where information is not provided, an explanation should give the reason why.

1. INFORMATION IDENTIFYING THE HOLDER OF THE QUALIFICATION

1.1 Family name(s) / 1.2 First name(s)

.....

1.3 Date of birth

.....

1.4 Student identification number or code

.....

2. INFORMATION IDENTIFYING THE QUALIFICATION

2.1 Name of qualification and title conferred

Industrial Informatics

Master of Engineering, M.Eng.

2.2 Main field(s) of study for the qualification

Industrial Informatics

2.3 Name and status of awarding institution (in original language)

Emden University of

Applied Sciences/Leer

Faculty of Engineering

University of Applied Sciences / state institution

2.4 Name and status of institution (if different from 2.3) administering studies (in original language)

see 2.3

2.5 Language(s) of instruction/examination

English and German

3. INFORMATION ON THE LEVEL AND DURATION OF THE QUALIFICATION

3.1 Level of the qualification

Post-graduate master's degree / second degree

Special Part (B) of the Examination Regulations for the Consecutive Master's Degree Program Industrial Informatics at the University of Applied Sciences Emden/Leer in the Department of Technology

3.2 Official duration of programme in credits and/or years

1,5 years

3.3 Access requirement(s)

Bachelor of Engineering (B.Eng.) or Bachelor of Science (B.Sc.). See "Zugangs- und Zulassungsordnung" for further details.

4. INFORMATION ON THE PROGRAMME COMPLETED AND THE RESULTS OBTAINED

4.1 Mode of study

Full-time

4.2 Programme learning outcomes

The Masters Study Programme enables students to either assume a position in a practice-oriented profession or to begin post-graduate studies in the area of manufacturing and automation. The study programme is meant to enable the following: analyse processes and problems in a scientific manner, develop practical solutions, recognize and take account of interdisciplinary relationships and dependencies. For these purposes both theory and practice are studied. The course of study is divided into two phases. The first phase consists of the modules of the first two semesters, a total of 60 ECTS. The second phase consists of the Master's thesis and counts 30 ECTS.

First phase modules are organized into blocks that differ from each other in theme emphasis and type of class. Block 1 contains modules whose goal is the teaching of extended knowledge concerning formal problem solutions and information processing specifically in the realm of Industrial Cyber-Physical Systems (ICPS). Block 2 contains elective modules in the areas of ICPS-related soft skills themes / human-machine interaction / automation / robotics and industrial information processing. A proper selection of elective modules brings a thematic consolidation. Block 3 consists of projects serving to deepen scientific knowledge and practical experience obtained in Blocks 1 and 2.

4.3 Programme details, , individual credits gained and grades/marks obtained

See Final Examination Certificate ("Certificate of Master's Examination") and appendix 1 ("Module Catalogue").

4.4 Grading system and, if available, grade distribution table

The University of Applied Sciences Emden/Leer offers the following grades: very good, good, satisfactory, pass, fail.

Additionally to the overall grade in the certificate, an "ECTS grading table" according to the ECTS User's Guide will be shown on the Diploma Supplement. Therefore, in each Master course the grade of the previous two study years will be recorded, and their absolute and relative distribution will be shown in the ECTS grading table. Should less than 100 students have graduated within the previous two study years, the distribution of the department or faculty will be shown instead.

4.5 Overall classification of the qualification (in original language)

Gesamtnote: „sehr gut“, „gut“, „befriedigend“, „ausreichend“ based on weighted average of grades in examination fields.

5. INFORMATION OF FUNCTION OF THE QUALIFICATION

5.1 Access to further study

Qualifies to apply for admission to PhD programs.

5.2 Access to a regulated profession (if applicable)

The master's degree entitles its holder to the academic degree "Master of Engineering (M.Eng.)". It qualifies the graduate for skilled work in companies and public authorities.

This master's degree qualifies the graduate for higher civil service.

Special Part (B) of the Examination Regulations for the Consecutive Master's Degree Program Industrial Informatics at the University of Applied Sciences Emden/Leer in the Department of Technology

6. ADDITIONAL INFORMATION

6.1 Additional Information

General part of the examination regulations for all master courses at the Hochschule Emden/Leer, University of Applied Sciences (part A MPO) of xx.xx.xxxx (announcement No. xx/xxxx of xx.xx.xxxx).

Specific part (B) of the examination regulations for the master course Industrial Informatics.

6.2 Further information sources

- On the institution and program(s): www.hs-emden-leer.de
- For national information sources, see Sec. 8.

7. CERTIFICATION

This Diploma Supplement refers to the following original documents:

- Master certificate (Masterurkunde), date of issue
- Final examination certificate, date of issue
- Transcript, date of issue

Certification Date:

.....

(Chairwoman/Chairman

(Official Stamp/Seal)

Examination Committee)

8. NATIONAL HIGHER EDUCATION SYSTEM

The information on the national higher education system on the following pages provides a context for the qualification and the type of higher education that awarded it.

Appendix 2b Diploma Supplement (German)

Hochschule Emden/Leer Diploma Supplement

Diese Diploma Supplement-Vorlage wurde von der Europäischen Kommission, dem Europarat und UNESCO/CEPES entwickelt. Das Diploma Supplement soll hinreichende Daten zur Verfügung stellen, die die internationale Transparenz und angemessene akademische und berufliche Anerkennung von Qualifikationen (Urkunden, Zeugnisse, Abschlüsse, Zertifikate, etc.) verbessern. Das Diploma Supplement beschreibt Eigenschaften, Stufe, Zusammenhang, Inhalte sowie Art des Abschlusses des Studiums, das von der in der Originalurkunde bezeichneten Person erfolgreich abgeschlossen wurde. Die Originalurkunde muss diesem Diploma Supplement beigefügt werden. Das Diploma Supplement sollte frei sein von jeglichen Werturteilen, Äquivalenzaussagen oder Empfehlungen zur Anerkennung. Es sollte Angaben in allen acht Abschnitten enthalten. Wenn keine Angaben gemacht werden, sollte dies durch eine Begründung erläutert werden.

1. ANGABEN ZUM INHABER/ZUR INHABERIN DER QUALIFIKATION

1.1 Familienname(n) / 1.2 Vorname(n)

.....

1.3 Geburtsdatum (TT/MM/JJJJ)

.....

1.4 Matrikelnummer oder Code zur Identifizierung des/der Studierenden

.....

2. ANGABEN ZUR QUALIFIKATION

2.1 Bezeichnung der Qualifikation und (wenn vorhanden) verliehener Grad (in der Originalsprache)

Industrial Informatics

Master of Engineering (M.Eng.)

2.2 Hauptstudienfach oder -fächer für die Qualifikation

Industrial Informatics

2.3 Name und Status (Typ/Trägerschaft) der Einrichtung, die die Qualifikation verliehen hat (in der Originalsprache)

Hochschule Emden/Leer

Fachbereich Technik

Hochschule / staatliche Hochschule

2.4 Name und Status (Typ/Trägerschaft) der Einrichtung (falls nicht mit 2.3 identisch), die den Studiengang durchgeführt hat (in der Originalsprache)

wie 2.3

2.5 Im Unterricht / in der Prüfung verwendete Sprache(n)

Englisch und Deutsch

3. ANGABEN ZU EBENE UND DAUER DER QUALIFIKATION

3.1 Ebene der Qualifikation

Aufbaustudiengang / zweiter berufsqualifizierender Abschluss: Master

3.2 Offizielle Dauer des Studiums (Regelstudienzeit) in Leistungspunkten und/oder Jahren

1,5 Jahre

3.3 Zugangsvoraussetzung(en)

Bachelor of Engineering (B.Eng.) oder Bachelor of Science (B.Sc.). Detaillierte Informationen enthält die Zugangs- und Zulassungsordnung.

4. ANGABEN ZUM INHALT UND ZU DEN ERZIELTEN ERGEBNISSEN

4.1 Studienform

Vollzeitstudium

4.2 Lernergebnisse des Studiengangs

Das Masterstudium vermittelt Kompetenzen, die den Studierenden befähigen eine anwendungsorientierte Berufstätigkeit oder Promotion im Umfeld der Fertigungsausgestaltung und Automation aufzunehmen. Das Studium soll dazu befähigen, Vorgänge und Probleme aus dem betreffenden Gebiet wissenschaftlich zu analysieren, praxismgerechte Lösungen zu erarbeiten und dabei auch interdisziplinäre bzw. außerfachliche Bezüge und Abhängigkeiten zu erkennen und umzusetzen. Hierzu sollen sowohl theoretische als auch anwendungsbezogene Inhalte vermittelt werden. Das Studium gliedert sich in zwei Phasen. Die erste Phase umfasst die Module der beiden ersten Semester, die in der Summe 60 ECTS ergeben. Die zweite Phase des Studiums besteht aus der Master-Thesis mit einem Umfang von 30 ECTS. Module der ersten Phase lassen sich Blöcken zuordnen, die sich hinsichtlich der thematischen Schwerpunktsetzung und Veranstaltungsform unterscheiden. Block 1 enthält Module deren Ziel die Vermittlung von weitergehenden Kenntnissen zum formalen Problemlösen und zur Informationsverarbeitung im Bereich der Cyber-Physical Systems (ICPS) ist. Block 2 enthält WPF-Module, die weitergehende Kenntnisse zu den ICPS-relevanten Themenbereichen Soft Skills, Mensch-Maschine-Interaktion, Automatisierung und Robotik sowie dem Bereich der Industriellen Informationsverarbeitung vermitteln. Durch eine entsprechende Wahl von WPF-Modulen kann eine Vertiefung realisiert werden. Block 3 beinhaltet Projekte, die der eigenständigen wissenschaftlichen Vertiefung bzw. der praktischen Anwendung von Inhalten der Module aus Block 1 und 2 dienen sollen.

4.3 Einzelheiten zum Studiengang, individuell erworbene Leistungspunkte und erzielte Noten

Siehe Modulkatalog (Anlage 1) und Zeugnis über die Masterprüfung des Studiengangs Industrial Informatics des Fachbereichs Technik / Abt. Elektrotechnik und Informatik der Hochschule Emden/Leer in Emden.

4.4 Notensystem und, wenn vorhanden, Notenspiegel

Die Hochschule Emden/Leer vergibt die Noten „sehr gut“, „gut“, „befriedigend“, „ausreichend“ und „nicht bestanden“.

Zusätzlich zur Gesamtnote auf dem Zeugnis wird in der Anlage zum Diploma Supplement eine „ECTS-Einstufungstabelle“ gemäß ECTS User's Guide dargestellt. Zu diesem Zweck werden die im jeweiligen Masterstudiengang vergebenen Gesamtnoten der Masterprüfung aus den vergangenen zwei Studienjahren erfasst und ihre zahlenmäßige sowie ihre prozentuale Verteilung auf die Notenstufen in einer ECTS-Einstufungstabelle dargestellt. Liegt innerhalb des Zweijahreszeitraums eine Gesamtzahl von weniger als 100 Absolventinnen oder Absolventen vor, wird die Notenverteilung der gesamten Abteilung zugrunde gelegt.

4.5 Gesamtnote (in Originalsprache)

Special Part (B) of the Examination Regulations for the Consecutive Master's Degree Program Industrial Informatics at the University of Applied Sciences Emden/Leer in the Department of Technology

Gesamtnote: "sehr gut", "gut", "befriedigend", "ausreichend"

(Basiert auf den mit den jeweiligen Kreditpunkten gewichteten Noten der Module)

5. ANGABEN ZUR BERECHTIGUNG DER QUALIFIKATION

5.1 Zugang zu weiterführenden Studien

Der Masterabschluss berechtigt zur Promotion.

5.2 Zugang zu reglementierten Berufen (sofern zutreffend)

Der von der Hochschule Emden/Leer vergebene Masterabschluss berechtigt den Inhaber zum Führen des Akademischen Grades „Master of Engineering (M.Eng.)“. Er befähigt die Absolventin/den Absolventen zu qualifizierter Arbeit in Unternehmen und Behörden.

Dieser Masterabschluss befähigt die Absolventin/den Absolventen für den höheren Dienst.

6. WEITERE ANGABEN

6.1 Weitere Angaben

Allgemeiner Teil für alle Masterstudiengänge an der Hochschule Emden/Leer (Teil A MPO) in der Fassung vom xx.xx.xxxx (Verkündungsblatt der Hochschule Emden/Leer XX/XXXX vom xx.xx.xxxx).

Besonderer Teil (B) der Prüfungsordnung für den Masterstudiengang Industrial Informatics.

6.2 Weitere Informationsquellen

- Informationen über die Hochschule, den Fachbereich und den Studiengang:
www.hs-emden-leer.de
- Weitere Informationsquellen über das nationale Hochschulsystem, siehe Abschnitt 8.

7. ZERTIFIZIERUNG DES DIPLOMA SUPPLEMENTS

Dieses Diploma Supplement nimmt Bezug auf folgende Original-Dokumente:

- Masterurkunde vom [Datum]
- Masterzeugnis vom [Datum]
- Transkript vom [Datum]

Datum der Zertifizierung:
(Vorsitz der Prüfungskommission)

(Offizieller Stempel/Siegel)

8. ANGABEN ZUM NATIONALEN HOCHSCHULSYSTEM

Die Informationen über das nationale Hochschulsystem auf den folgenden Seiten geben Auskunft über den Grad der Qualifikation und den Typ der Institution, die sie vergeben hat.

Appendix 3 Achievements in supplementary studies

Appendix 3a Achievements in Supplementary Studies (English)

**University of Applied Sciences Emden/Leer
Faculty of Technology
Certificate of achievements in the supplementary studies
of the Master Programme Industrial Informatics**

Ms. / Mr. ¹.....
born in

has achieved² credits (ECTS) in the supplementary studies of the Master Programme **Industrial Informatics**.

The following assessments were achieved in the individual modules:

Module	Grade ³	Credits
.....
.....
.....
.....

Emden,
(Date)

.....
(Chairwoman/Chairman Examination Committee)

(Official Stamp/Seal)

¹ Please delete as appropriate

² Enter the number of credits earned

³ Grading levels: very good, good, satisfactory, sufficient

Appendix 3b Achievements in supplementary studies (German)

Hochschule Emden/Leer
Fachbereich Technik
Bescheinigung über Leistungen im Ergänzungsstudium des
Masterstudiengangs Industrial Informatics

Frau / Herr ¹.....
geboren am in

hat im Ergänzungsstudium des Masterstudiengangs
Industrial Informatics die Anzahl von² Kreditpunkten (ECTS) erworben.

In den einzelnen Modulen wurden folgende Beurteilungen erzielt:

Modul	Beurteilung ³	Kreditpunkte
.....
.....
.....
.....

Emden, den
(Datum)

.....
(Vorsitz der Prüfungskommission)

(Siegel der Hochschule)

¹ Nichtzutreffendes bitte streichen
² Anzahl der erworbenen Kreditpunkte eintragen
³ Notenstufen: sehr gut, gut, befriedigend, ausreichend