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Non-official final document without marked changes: Study and Examination Regulations issued by the Faculty of Energy and Life Science for the master's degree programme Wind Energy Engineering at Flensburg University of Applied Sciences; this version includes the 1st amended regulations dated 23 December 2022 (university bulletin MBWFK Schl.-H., page 7) and the 2nd amended regulations (university bulletin MBWFK Schl.-H., page 23).

Final document without changes: Study and Examination Regulations (Statutes)
issued by the Faculty for Energy and Life Science
for the master's degree programme Wind Energy Engineering
at Flensburg University of Applied Sciences (FUAS)
Version: 17 June 2021

On the basis of § 52 para. 1 sentence 1 of the Hochschulgesetz (HSG, Higher Education Act) in the version of the notice dated 5 February 2016 (GVOBl. Schl.-H. 2007, page 39), last updated by article 1 of that law as of 13 December 2020 (GVOBl. Schl.-H. 2021 page 2) and following the resolution made by the Faculty Board of the Faculty of Mechanical Engineering, Process Engineering and Maritime Technologies on 12 May 2021 and the resolution made by the Faculty Board of the Faculty of Energy and Biotechnology on 12 May 2021, the approval of the Senate of FUAS on 16 June 2021 and the permission granted by the President's Office of FUAS on 17 June 2021 the following statutes are issued.

§ 1

General information

These Study and Examination Regulations refer to the provisions made for all faculties of FUAS as defined in the *Prüfungsverfahrensordnung* (PVO, Principles of Assessment) of FUAS.

This degree programme is a joint programme offered in cooperation with Kiel University of Applied Sciences.

§ 2

Objective of studies

The objectives of studies in the Wind Energy Engineering master's degree programme are:

- (1) Enabling students to identify and analyse problems related to the subject of wind engineering, to develop individual solutions that are both academically and technically sound and to successfully turn these solutions into marketable products and services.
- (2) The acquisition of in-depth theoretical and active hands-on knowledge and the ability to apply these to solve complex research problems.
- (3) The development of general skills in methodology and teamwork.
- (4) The ability to apply academic research and writing techniques and work on innovative fields of research independently.

§ 3

Completion of studies

- (1) On the basis of successfully completing the final examinations in the Wind Energy Engineering master's degree programme, the following academic degree will be awarded: Master of Science (M.Sc.).
- (2) The master's degree is a postgraduate degree and formally entitles its bearer to embark on a doctorate.

§ 4

Admission requirements

- (1) The President's Office grants admission to the master's degree programme based on a recommendation made by the Coordinator of the degree programme.
- (2) Students who have successfully completed a bachelor's degree or German Diplom programme in mechanical engineering or energy engineering may be admitted to the master's degree programme.
- (3) Applicants with a degree in a related subject area may be admitted to the master's degree programme under the condition that they take specific modules. These specific modules are to be defined by the admission committee in accordance with the procedure described in the annex to these regulations. Proof of successful attendance of these additional modules is a prerequisite for the registration of the master's thesis.
- (4) Apart from the prerequisites defined in paragraphs 1 to 3, the following prerequisites need to be fulfilled to gain admission to the degree programme:
 1. a final grade of at least *GUT* [GOOD] awarded for the bachelor's degree or
 2. a minimum of two favourable letters of reference from professors of the university/universities previously attended or
 3. a confirmation of aptitude by the admission committee.
- (5) Applicants have to provide evidence of a satisfactory level of English language skills. The evidence can be provided as follows:
 1. English being the applicant's native language or
 2. by means of a grade of 10 points (German grading system) in English on a school leaving certificate (English must have been attended for at least 4 semesters/2 school years) issued by a secondary school granting admission to higher education [German *Fachhochschulzugangsberechtigung*] or
 3. if the applicant holds a degree from a degree programme taught entirely in English (certified by the university in question) or
 4. by means of a Cambridge First Certificate (minimum grade C) or
 5. by means of a telc-B2 certificate or a UNiCert II certificate or
 6. by means of a TOEFL test with a score of at least 72 (iBT) or an IELTS result of 5.5 (Overall Band Score) or a Pearson PTE Academic result of at least 59 or
 7. By having spent a minimum of five months in an English-speaking country or
 8. by completing English language or English-taught modules worth a minimum of 10 CP at university level.

§ 5

Standard duration of studies, credits

- (1) The standard duration of studies for this degree programme is four semesters including the master's thesis.
- (2) A total of 30 Credit Points (CP) is to be acquired each semester with one CP equalling a workload of 30 hours.
- (3) A total of 120 Credit Points has to be acquired.
- (4) Applicants receiving their admission to enrol after having completed one of the bachelor's or Diplom degree programmes mentioned under §4 paragraphs 2 and 3 will immediately be registered for the

2nd semester of the programme. The standard duration of studies for these students is three semesters if their bachelor's or Diplom degree programme was comprised of 210 credit points. The master's degree programme will then be made up of 90 credit points.

§ 6

Modules and assessment

- (1) The module and assessment plan in form of a table is annex to these Statutes. This annex is an integral part of these Statutes.
- (2) Whether acquired grades may be transferred and whether they will be recognised is stipulated by §14, paragraph 6 of the Prüfungsverfahrensordnung (PVO, Principles of Assessment). The annexed table defines in which way credit points are assigned to individual modules.

§ 7

Examination language

- (1) Classes and examinations in the master's degree programme are to be held in English. If all students participating in a module agree, classes may be held in German.
- (2) Teaching materials, examination materials and examinations must be produced in English.
- (3) Group work (presentations, reports) is to be delivered in English. If all members of a group file an application accordingly, group work may be delivered in German.
- (4) If an application is filed accordingly, the master's thesis may be written in German. If the application is accepted, the colloquium may also be held in German.

§ 8

Thesis

- (1) The thesis is to be written during the 4th semester of the programme.
- (2) Students can register for the final thesis if they are lacking no more than 15 CP from other semesters than the fourth. Semester of the programme
- (3) The thesis is to be produced in a time period of five months.
- (4) The topic of the thesis may only be withdrawn within a period of four weeks after it has been allocated.
- (5) The time period in which the thesis has to be finished may only be extended by a maximum of four weeks. An application for extension has to be filed with the Examination Board not later than 14 days prior to the original deadline.

§ 9

Colloquium

- (1) A colloquium is a mandatory part of the Wind Energy Engineering master's degree programme.
- (2) The colloquium is scheduled to take 60 minutes per candidate.

§ 10

Composition of the final grade, certificate

The final grade is derived from the weighted individual grades resulting from the examinations and the grade awarded for the master's thesis (the grade for the written thesis counting 70% and the grade for the colloquium counting 30%). The percentage to which a module is weighted into the final grade is

determined on the basis of credit points: The credit points of a module are divided by the total credit points of all modules relevant to the final grade.

§ 11

Coming into effect, provisions for the transitional period

- (1) These Statutes will come into effect on the day after their publication.
- (2) These Study and Examination Regulations are effective for all students enrolling in the Wind Energy Engineering master's degree programme at FUAS starting from the winter semester 2020/21. The first statutes to amend the Study and Examination Regulations, dated 19 June 2020, (MBWK: No. 02/2020, page 45 on 14 July 2020) ceases to be in force.
- (3) The modules specified in these regulations will be introduced successively each semester after the coming into effect of these Regulations. Students are entitled to classes being taught and examinations being held only insofar as modules have been introduced already.
- (4) Until 31 August 2023, students who have enrolled in the master's degree programme Wind Engineering before 1 September 2020 are subject to the Study and Examination Regulations of 8 October 2014 as specified under (5) to (9) below. This does not apply to students who bindingly applied to resume their studies under the present Regulations.
- (5) The modules specified in the Study and Examination Regulations of 8 October 2014 will be discontinued successively as the present Regulations come into effect. They will no longer be offered after the summer semester 2021.
- (6) When a class has been discontinued the assessment and examinations linked to it will be offered in the examination periods as defined by the PVO as well as at the end of the following two semesters. This does not include assessment and examinations for comparable classes. The last time these assessment and exams will be offered is in the examination period winter semester 2022/23-II.
- (7) Students who enrolled in the master's degree programme Wind Engineering under the Study and Examination Regulations from 8 October 2014 can complete their master's thesis as defined in those Regulations until 31 August 2023.
- (8) Examinations can only be recognised in accordance with the Study and Examination Regulations of 8 October 2014 until the end of the exam period summer semester 2023.
- (9) The Study and Examination Regulations for the master's degree programme Wind Engineering from 8 October 2014 will cease to be in force on 31 August 2023.

Annex 1 to §6, para. 1

Modules and assessment plan for the Wind Energy Engineering master's degree programme

The following abbreviations are used in the table below:

Teaching method

L Lecture
Sem Seminar
T Tutorial
Lab Laboratory
P Project

Type of assessment

CW Coursework
Ex Examination

Contact hours and credits

hpw hours per week
CP Credit Points

Form of assessment

WE (n) Written exam (n hours)
OE Oral exam
OA Other form of assessment

Other forms of assessment are

Pres Presentation
WR Written report
HW Homework

Where a comma is used in defining the form of assessment, the comma (,) shall be read as an "or".

1st semester of the programme (winter semester)					
Module				Assessment	
Module name	Teaching method	hpw	CP	Type of assessment	Form (hours if applicable)
Advanced engineering mathematics	L/T	4	5	Ex	WE(2), OE
Global wind industry and turbine technology	L/T/Lab	4	5	Ex	WE(2), OE
Wind farm project management and GIS	L/T	4	5	Ex	OA (WR)
Scientific and technical writing	L/P	4	5	Ex	OA (WR)
Elective course Group a	see below	4	5	Ex	see below
Elective course Group b	see below	4	5	Ex	see below
All modules of the 1st semester of the programme		24	30	6 EX	
Please note: The Coordinator of the degree programme reserves the right to determine which of the Group A modules students may have to take: As a general rule, students with a degree in the field of Mechanical Engineering or Civil Engineering must complete the module "Electrical engineering basics". Students with a degree in Electrical Engineering must complete the module "Mechanical engineering basics". Students with a degree from all other fields can complete modules from Group a as a module from Group b.					

The elective courses offered for the 1st semester of the programme (winter semester) are:					
Module				Assessment	
Group a:	Type of assessment	hpw	CP	Type of assessment	Form (hours if applicable)
Mechanical engineering basics	L/T	4	5	Ex	WE(2), OE
Electrical engineering basics	L/T	4	5	Ex	WE(2), OE
Group b:	Type of assessment	hpw	CP	Type of assessment	Form (hours if applicable)

German for foreign students	L/T	4	5	Ex	OE, WE(1.5)
English for engineers	L/T	4	5	Ex	WE(2), OE
Energy economics	L/T	4	5	Ex	OA (Pres and WR)
Wind energy challenge project	P	4	5	Ex	OA (WR)
Green entrepreneurship	L/T	4	5	Ex	OA (WR)

2nd semester of the programme (summer semester)					
Module				Assessment	
Module name	Teaching method	hpw	CP	Type of assessment	Form (hours if applicable)
Wind turbine aerodynamics	L	4	5	Ex	WE(2), OE
Certification, load assumptions and simulations	L/T	4	5	Ex	WE(2), OE
Control and automation of wind power plants	L/T/P	4	5	Ex	WE(2), OE
Tower and rotor structures	L/T	4	5	Ex	WE(2), OE
Mechanical drive train	L/T	4	5	Ex	(WE(1.5), OE) and OA (HW and Pres)
Electrical engineering for wind turbines	L/T	4	5	Ex	WE(2), OE
All modules of the 2nd semester of the programme		24	30	6 EX	

3rd semester of the programme (winter semester)					
Module				Assessment	
Module name	Teaching method	hpw	CP	Type of assessment	Form (hours if applicable)
Project: development of a wind turbine	L/P	71)	10	Ex	OA (Pres and WR) ²⁾
Elective course	see below	4	5	see below	see below
Elective course	see below	4	5	see below	see below

Focus	see below	8	10	see below	see below
All modules of the 3rd semester of the programme		23	30	5 EX	
<p>1) 4 hpw lecture (joint project discussion), 3 hpw project</p> <p>2) Students work on a set task in teams of three to five. They document their work in a standardised manner.</p>					

Focus ³⁾	Module				Assessment	
	Module name	Teaching method	hpw	CP	Type of assessment	Form (hours if applicable)
Mechanical engineering	Machinery components	L/Sem	4	5	Ex	WE(2), OE
	Finite elements (FE) & fatigue analysis	L/T	4	5	Ex	OA (WR and HW) or written assessment
Electrical Engineering	Electrical machines, power electronics, control	L/T	4	5	Ex	WE(2), OE
	Grid integration	L	4	5	Ex	WE(2), OE
Structural engineering	Structures – rotorblades and civil engineering	L/T	4	5	Ex	WE(2), OE
	Finite elements (FE) & fatigue analysis	L/T	4	5	Ex	OA (WR and HW)
<p>³⁾ Students are required to choose one of the three majors mentioned above (focus) in their 3rd semester.</p>						

The elective courses offered for the 3rd semester of the programme (winter semester) are:						
Module				Assessment		
Module name	Teaching method	hpw	CP	Type of assessment	Form (hours if applicable)	
Advanced wind farm planning	L/Lab	4	5	Ex	OA (WR)	
Turbine measurements	L/T	4	5	Ex	WE(2), OE	
Offshore wind energy: operation and maintenance	L/T	4	5	Ex	OE	
Experimental and computational fluid dynamics	L/Lab/T	4	5	Ex	OE	

Modelling & simulation of wind turbines	L/Lab	4	5	Ex	WE(2), OE
Controller design for wind turbines and wind farms	L/T	4	5	Ex	OE
Wind energy challenge project	P	4	5	Ex	OA (WR)
Green entrepreneurship	L/T	4	5	Ex	OA (WR)
Please note: The list of modules offered will be updated each semester and will be posted on the notice board of the Dean's Office before the end of each teaching period for the following teaching period.					

4th semester of the programme					
Module			Assessment		
Description	Teaching method	CP	Type of assessment	Form (hours if applicable)	Pre-requisite
Master's thesis	Thesis and colloquium	30	Ex	Final thesis (5 months) & colloquium (60 minutes)	see §7, para. 2
All modules of the 4th semester of the programme		30	1 EX		

ANNEX (not a part of these Statutes)

Specifications of entry and admission requirements

A.1:

Similar degree programmes as mentioned in §3, paragraph 3 are engineering programmes such as

- Electrical Engineering
- Marine Engineering
- Civil Engineering
- Aerospace Engineering, and
- Offshore Technology

A.2:

Similar degree programmes as mentioned in §3, paragraph 3 must include modules covering content and an amount of credit points as specified below:

Basics of mathematics and natural sciences

- Mathematics 10 CP
- Physics 5 CP

Basics of engineering sciences

- Fluid Mechanics 5 CP
- Mechanics/Statics 5CP
- Electrical Engineering 5 CP

If applicants lack parts of the basics named above in the specified amount of credits, the respective modules will become prerequisites in accordance with §3, para. 3. If an applicant needs to make up more than 20 Credit Points from these basics, they are not considered eligible for admission.

A.3

The modules assigned by the admission committee must be completed in accordance with the Study and Examination Regulations of the degree programme that they are part of. There is no guarantee of or entitlement to the assigned modules being offered each semester.

A.4

In case of a restricted admission, admission to a degree programme is regulated by the Satzung der Hochschule Flensburg über das hochschuleigene Auswahlverfahren in den zulassungsbeschränkten Bachelor- und Masterstudiengängen [Statutes of Flensburg University of Applied Sciences on the university's selection procedure for bachelor's and master's degree programmes with restricted admission] in its most recent and valid version respectively.