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**Study and Examination Regulations (Statutes)
of the Faculty of Mechanical Engineering, Process Engineering and Maritime
Technologies and the Faculty of Energy and Biotechnology for the master's degree
programme "Wind Engineering" at Flensburg University of Applied Sciences (FUAS)
Version: 8 October 2014**

- (1) On the basis of § 52 para. 1 of the *Hochschulgesetz* (HSG, Higher Education Act) as of 28 February 2007 (GVOBl. Schl.-H. 2007, page 184), last updated by law as of 22 August 2013 (GVOBl. Schl.-H. page 365) and following the resolution made by the Faculty Board of the Faculty of Mechanical Engineering, Process Engineering and Maritime Technologies on 8 January 2014 and the resolution made by the Faculty Board of the Faculty of Energy and Biotechnology on 15 January 2014, the approval of the Senate of FUAS on 17 September 2014 and the permission granted by the President's Office of FUAS on 22 September 2014 the following statutes are issued.
- (2) 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.
- (3) This degree programme is a joint programme offered in cooperation with Kiel University of Applied Sciences.

**§ 1
Objective of studies**

The objectives of studies in the Wind 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.

**§ 2
Completion of studies**

- (1) On the basis of successfully completing the final examinations in the Wind 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.

§ 3

Admission requirements

- (1) The President's Office grants admission to the master's degree programme based on a recommendation made by an admission committee composed of two professors from the programme who shall be designated by the two faculties involved.
- (2) Applicants who have successfully completed a bachelor's degree or German *Diplom* programme in mechanical engineering, electrical energy systems engineering or renewable 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 according to the procedure described in the annex to these regulations. Proof of successful attendance of these additional modules is 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. An affirmation of eligibility 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 Cambridge First Certificate *or*
 3. By means of a grade of *BEFRIEDIGEND* [SATISFACTORY] or 7 points (German grading system) in English on a school leaving certificate issued by a secondary school granting admission to higher education [German *Fachhochschulzugangsberechtigung*] *or*
 4. By having spent a minimum of one year in an English-speaking country *or*
 5. By means of a TOEFL test with a score of at least 61 (*iBT*) or an IELTS result of 5.0 (*Overall Band Score*) *or*
 6. By means of a certificate stating that a sufficient number of classes were taught in English during pre-university education or if the applicant has already worked in a relevant professional environment in the past.

§ 4

Standard duration of studies, credits

- (1) The standard duration of studies for this degree programme is four semesters including the final examination.
- (2) A total of 30 Credit Points (CP) is to be acquired each semester.
- (3) Applicants receiving their admission to enrol after having completed one of the bachelor's or *Diplom* degree programmes mentioned under §3 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.
- (4) The individual modules of each semester are based on one another and are to be studied consecutively.

§ 5
Modules and assessment

- (1) The modules and assessment plan is illustrated in the following table.
- (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 following table defines in which way credit points are assigned to individual modules.

Modules and assessment plan for the Wind 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 (in class)
CP	Credit Points (ECTS)

Form of assessment

WE(s)	Written exam(s hours) in accordance with § 11 PVO
OE	Oral exam in accordance with § 12 PVO
OA	Other form of assessment in accordance with § 13 PVO
Other forms of assessment are	
Pres	Presentation
WR	Written report
WT(s)	Written test(s hours)
TD	Technical discussion: oral exam
HW	Homework

1 st semester of the programme (winter semester)						
Module	Class				Assessment	
		Type	hpw	CP	Type	Form (hours if applicable)
Advanced Engineering Mathematics	Advanced Engineering Mathematics	L/T	4	5	Ex	WE (2)
The Global Wind Industry and Environmental Conditions	The Global Wind Industry and Environmental Conditions	L/T/Lab	4	5	Ex	WE (2)
Wind Farm Project Management	Wind Farm Project Management	L/T	4	5	Ex	OA (WR)
Academic and Technical Writing	Academic and Technical Writing	L/P	4	5	Ex	OA (WR)

Elective Module Group A	Elective Module	see below	4	5	Ex	see below
Elective Module Group B	Elective Module	see below	4	5	Ex	see below
1st semester total			24	30	6 Ex	

The admission committee reserves the right to determine which of the Group A modules students may have to take.

Note: The elective modules offered during the winter semester are:							
Module	Class	Type	hpw	CP	Type	Assessment	
Group A:		Type	hpw	CP	Type	Form (hours if applicable)	
Mechanical Engineering for Electrical Engineers	Mechanical Engineering for Electrical Engineers	L/T	4	5	Ex	WE (2)	
Electrical Engineering for Mechanical Engineers	Electrical Engineering for Mechanical Engineers	L/T	4	5	Ex	WE (2)	
Group B:		Type	hpw	CP	Type	Form (hours if applicable)	
German as a Foreign Language	German as a Foreign Language	L/T	4	5	Ex	OE and WE (1.5)	
English for Engineers	English for Engineers	L/T	4	5	Ex	WE (2)	
Energy Economics	Energy Economics	L/T	4	5	Ex	OA (Pres and WR)	

2nd semester of the programme (summer semester)							
Module	Class	Type	hpw	CP	Type	Assessment	
		Type	hpw	CP	Type	Form (hours if applicable)	
Wind Turbine Aerodynamics	Introduction to Wind Turbine Aerodynamics	L	4	5	Ex	WE (2)	
Certification and Load Assumptions	Certification and Load Assumptions	L/T	4	5	Ex	WE (2)	
Control and Automation of Wind Power Plants	Control and Automation of Wind Power Plants	L/T /P	4	5	Ex	WE (2), OE	
Tower and Rotor Structures	Tower and Rotor Structures	L/T	4	5	Ex	WE (2)	
Mechanical Drive Train	Mechanical Drive Train	L/T	4	5	Ex	WE (1.5), OA (HW and Pres)	
Electrical Engineering for Wind Turbines	Electrical Engineering for Wind Turbines	L/T	4	5	Ex	WE (2)	
2nd semester total			24	30	6 Ex		

3 rd semester of the programme (winter semester)							
Module	Class					Assessment	
	Type	hpw	CP	Type	Form (hours if applicable)		
Project: Development of a Wind Turbine (focus according to the respective major)	Project: Development of a Wind Turbine (focus according to the respective major)	P	8	10	Ex	OA (Pres and WR)	
Elective Module	Elective Module	see below	4	5	Ex	see below	
Elective Module	Elective Module	see below	4	5	Ex	see below	
Major ¹⁾	Major ¹⁾	see below	8	10	see below	see below	
3rd semester total			24	30	5 Ex		

Major ¹⁾	Module	Class				Assessment	
		Type	hpw	CP	Type	Form (hours if applicable)	
Mechanical Engineering	Machinery Components	Machinery Components	L/ Sem	4	5	Ex	WE (2)
	Rotor Blades and Dynamics of Structures	Rotor Blades and Dynamics of Structures	L/ Sem	4	5	Ex	WE (2)
Electrical Engineering	Electrical Machines, Power Electronics Control	Electrical Machines, Power Electronics Control	L/T	4	5	Ex	WE (2)
	Grid Integration	Grid Integration	L	4	5	Ex	WE (2)
Civil Engineering	Tower Design and Dimensions	Tower Design and Dimensions	L/T	4	5	Ex	WE (2)
	Substructure Design and Dimensions	Substructure Design and Dimensions	L/T	4	5	Ex	WE (2)
1) Students are required to choose one of the three majors mentioned above in their 3 rd semester.							

Note: The elective modules offered during the winter semester are:

Module	Class				Assessment	
	Type	hpw	CP	Type	Form (hours if applicable)	
Advanced Wind Farm Planning	Advanced Wind Farm Planning	L/Lab	4	5	Ex	OA (WR)
Turbine Measurements	Turbine Measurements	L/T	4	5	Ex	WE (2)

Offshore Wind Energy	Offshore Wind Energy	L/T	4	5	Ex	OE
Operation & Maintenance	Operation & Maintenance	L/T	4	5	Ex	OE
Computational Fluid Dynamics	Computational Fluid Dynamics	L/Lab/T	4	5	Ex	OE
Load Simulation	Load Simulation	L/T	4	5	Ex	OE
Modelling & Simulation of Wind Turbines	Modelling & Simulation of Wind Turbines	L/Lab	4	5	Ex	WE (2)

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.

4 th semester of the programme					
Module			Assessment		
	Type	CP	Type	Form (time if applicable)	Prerequisites
Master's Thesis	Master's Thesis and Colloquium	30	Ex	Time to write thesis: 5 months Colloquium: 60 minutes	See §7 paragraph 2
4th semester total		30	1 Ex		

§ 6 Examination language

- (1) Classes and examinations in the master's degree programme are to be held in English (§ 6, para. 4, PVO). 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.

§ 7 Thesis

- (1) The thesis is to be written during the 4th semester of the programme.
- (2) For students who were registered to immediately start in the second semester of the programme and who are thus pursuing the programme as a three-semester course of study, a minimum of 45 credit points (CP) is the prerequisite for admission to the thesis. For students who started their studies with the first semester of the programme and who are thus pursuing the programme as a four-semester course of study, a minimum of 75 credit points (CP) is the prerequisite for admission to the thesis.
- (3) The thesis is to be produced in a time period of five months (§ 21, para. 6, PVO).
- (4) The topic of the thesis may only be withdrawn within a period of four weeks after it has been allocated (§ 21, para. 7, PVO).

- (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 (§ 21, para. 8, PVO).

§ 8 Colloquium

- (1) A colloquium is a mandatory part of the Wind Engineering master's degree programme (§ 24, para. 1, PVO).
- (2) The colloquium is scheduled to take 60 minutes per candidate (§ 24, para. 2, PVO).

§ 9 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 (§ 25, para. 3, PVO).

§ 10 Coming into effect

- (1) These Study and Examination Regulations will come into effect on the day after their publication.
- (2) They are effective for all students enrolling in the Wind Engineering master's degree programme at Flensburg University of Applied Sciences starting from the winter semester 2014/15.
- (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.

Issued:

Flensburg, 8 October 2014

FACHHOCHSCHULE FLENSBURG
FLENSBURG UNIVERSITY OF APPLIED SCIENCES

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- The Dean -

Faculty of Energy and
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ANNEX

Specifications of entry and admission requirements

A.1

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

- Electrical engineering,
- Energy and environmental management,
- 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 Credit Points (CP) |
| • Physics | 5 Credit Points (CP) |

Basics of engineering sciences

- | | |
|--------------------------|----------------------|
| • Fluid mechanics | 5 Credit Points (CP) |
| • Mechanics/statics | 5 Credit Points (CP) |
| • Electrical engineering | 5 Credit Points (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, paragraph 3. If an applicant needs to make up more than 20 Credit Points from these basics, s/he is 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 Fachhochschule 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.