

**Course of Study and Examination Rules and Regulations for the  
Master Programme**

**in "Electrical Engineering and Information Technology"**

**at the University of Applied Sciences Deggendorf.**

**4 August 2011**

Auf Grund von Art. 13 Abs. 1 Satz 2, Art. 58 Abs. 1 Satz 1, Art. 61 Abs. 2 Satz 1 und Art. 66 Abs. 1 Satz 3 des Bayerischen Hochschulgesetzes (BayHSchG) vom 23. Mai 2006 (GVBl S. 245, BayRS 2210-1-1-WFK), zuletzt geändert durch § 1 des Gesetzes vom 23. Februar 2011 (GVBl S.102), erlässt die Hochschule Deggendorf folgende Satzung:

Based on the above-named paragraph from Bavarian University Law (BayHSchG):

**§1**

**Goal of Course of Study**

The Master Programme in Electrical Engineering and Information Technology enables graduates with a Diploma or a Bachelor degree to strengthen and advance their previous knowledge with theory and applied-oriented information that meets the demands of modern developmental needs in the area of High-Tech. The academic programme is based on coursework from previous degree programmes with advanced specialised information in areas of electro-technology. Graduates will become further qualified to do creative work in applied research and development.

**§2**

**Structure and Length of Course of Study**

- (1) Normal programme length is three semesters. Successful completion requires a total of 90 ECTS-point, i.e. credit points awarded according to the European Credit Transfer and Accumulation System (ECTS). A Master Thesis completes the course requirements.
- (2) Two Advanced Areas are offered which allow students to prepare themselves individually for their future areas of work. Students choose from the two following areas at the beginning of the programme:
  - Electronic and Telecommunication Systems (ENS) and
  - Automation and Power Engineering (AET).

### **§ 3**

#### **Qualifications and Entry Requirements and Admission**

- (1) Requirement for admission is a university degree from a German institution of higher education in a program of electro or communication technology or in a related field with, normally, 210 ECTS-points and a final examination result of "good" or better or an equivalent foreign degree. In cases where according to Paragraph 1 the final mark is not "good" or better, applicants can be accepted after successfully completing the suitability entrance requirement according to Paragraph 4.
- (2) Suitability of candidates for this course of study is decided in the Suitability Process according to §4.
- (3) If German is not the candidate's native language, the candidate must have proof of having successfully completed a university German language course with at least 4 ECTS-points or the Goethe Certificate A2 or have a comparable certificate. The Examination Commission makes the final decision.
- (4) If English is not the candidate's native language, sufficient knowledge of English must be shown by having passed university English courses with at least 4 ECTS-points or by the Test of English as a Foreign Language (TOEFL) with a total score of at least 70% of maximum points or comparable proof of qualification. The Examination Committee makes the final decision.
- (5) If a candidate has a university degree or an equivalent degree with less than 210 ECTS-points (at least, however, 180 ECTS-points), the missing ECTS-points must be achieved by taking relevant courses in the basic programme offered at the University of Applied Sciences Deggendorf. The Examination Committee determines which courses and examinations are accepted and which need to be taken.

### **§ 4**

#### **Suitability Process**

- (1) Suitability is determined by examination, the form and length of which is determined by the Examination Committee. Examination content includes complex problems in advanced mathematics for engineering as well as in the principles of electro and communication technology and their applications. The examination is graded by two university instructors, at least, one of whom must teach in this field at the University of Applied Sciences Deggendorf. The examination is passed if a grade of „successful completion“ is achieved. The Faculty of Electro and Media Technology chooses the university instructors.
- (2) The Chair of the Examination Committee can waive the suitability examination when candidates are able to show that they have already completed a degree program in Electro Technology and/or Information Technology or a comparable programme at a German institution of higher learning with

„good“ or if they have above-average knowledge in Mathematics and the Principles of Electro-Technology from a university degree programme.

- (3) If a candidate is not accepted, they can re-apply one more time. A third application process is not allowed.
- (4) Without a sufficient number of applicants to the programme, the Master programme does not have to be offered.

## **§ 5**

### **Modules and Course Assessment**

- (1) The programme is based on modules. Each module consists of a set of interconnecting, consecutively taught courses that form a unit of study ending with an examination covering the content of the entire module. The modules are determined according to subject and methodology. A module can consist of partial modules. The modules and partial modules are given ECTS-points.
- (2) The obligatory and selective obligatory modules, their number of weekly semester hours and ECTS-points, the type of examination and accompanying course assessment requirements can be found in the Appendix to these Rules and Regulations. Refer to the Plan of Study for details.
- (3) All modules are either obligatory or are modules that students can select for themselves which are then also obligatory:
  1. Obligatory modules are modules in the degree programme that all students must take;
  2. Compulsory elective modules are modules that are offered individually or alternatively, in groups. Each student must choose his or her own courses according to the Rules and Regulations. The modules that are chosen are dealt with in the same way as obligatory modules.
- (4) Classes and examinations can be held in English if agreed upon by Faculty Committee.

## **§ 6**

### **Course of Study**

- (1) The Electro and Media Technology Faculty designs a Plan of Study for students as a source of information and to ensure course offerings so that the plan of study can be determined. The study plan is decided by the Faculty Committee and is made public within the university. New regulations must

be made public at the latest at the beginning of the new semester in which the regulations become applicable.

- (2) The Plan of Study contains, in particular, regulations and details about:
  1. The division and number of semester hours each week, and ECTS-points for each Module/Partial Module and
  2. the catalogue of obligatory modules and specialised compulsory elective modules
  3. the qualification targets and course content of the modules/ partial modules
  4. the form and organisation of class instruction in the individual modules /partial modules
  5. more details about examinations, other types of course assessment and proof of participation
  6. the teaching and examination language in cases when not held in German.
- (3) No claim can be made that all areas of specialisation, obligatory selective modules and selective modules will actually be offered. Furthermore, no claim can be made that these courses must be offered without a sufficient number of participants.

## **§ 7**

### **Examination Assessment, Final Grade, Total Number of Examination Points, Examination Commission**

- (1) Individual examinations are given marks from 1 to 5; marks can be raised or lowered by 0,3. The marks 0,7; 4,3; 4,7 und 5,3 are not given. The final mark is given according to the assessment. If more than one examination is used to calculate the final grade, this mark is calculated arithmetically to the decimal point. Grades are measured according to the number of their ECTS-points.
- (2) The Master examination is passed if all modules, including the Master Thesis, have achieved the grade of at least, „sufficient“ or „successfully completed“, thereby giving a total of 90 ECTS-points .
- (3) Total examination result arises from calculating the final grades and the grade of the Master Thesis to the decimal point. Grades are measured according to their ECTS-points.
- (4) The total result is based on the total examination results according to RaPO.
- (5) Additionally, a relative grade is calculated according to the following ECTS-scale:

A                      the best 10 %

B	the next 25 %
C	the next 30 %
D	the next 25 %
E	the next 10 %

As a basis for this calculation at least the two previous graduating classes are used. .

- (6) An Examination Committee is determined with a Chair and two further members chosen by the Electro and Media Technology Faculty.

### **§ 8 Master Thesis**

- (1) In the Master Thesis students have a deadline in which they independently show their knowledge they have gained about practical engineering issues in the field of Electro and Media Technology during the course of study as well as their ability to work scientifically.
- (2) The period of time between getting a topic and the deadline to hand in the Master Thesis should be appropriate to the topic and not take longer than six months. The deadline can be extended for good reasons by requesting this from the Examination Committee.
- (3) If the Faculty Committee so agrees, the Master Thesis can be written in a foreign language. The thesis is to be presented as a lecture at the university; the presentation grade is part of the grade for the Master Thesis.

### **§ 9 Master Diploma, Academic Title and Diploma Supplement**

- (1) For successful completion of all degree requirements, a transcript and a Master Diploma (Certificate) are handed out according to the General Examination Regulations of the University of Applied Sciences.
- (2) The University of Applied Sciences Deggendorf grants the academic title „Master of Science“, abbreviated, „M.Sc.“.
- (3) A Diploma Supplement is included with the transcript that describes the content of the programme and the qualifications.

### **§ 10**

## **Legal Validity and Temporary Arrangement**

- (1) These Rules and Regulations take effect on 15 März 2012. They are valid for students who begin the degree programme in Summer Semester 2012 or later.
- (2) The Rules and Regulations from 15 November 2007 are valid for students who began the degree programme before Summer Semester 2012.

Ausgefertigt aufgrund des Beschlusses des Senats der Hochschule für angewandte Wissenschaften- Fachhochschule Deggendorf vom 20. Juli 2011 und der rechtsaufsichtlichen Genehmigung des Präsidenten der Hochschule für angewandte Wissenschaften - Fachhochschule Deggendorf vom 04. August 2011.

Prof. Dr. Reinhard Höpfl  
Präsident

Die Satzung wurde am 04. August 2011 in der Hochschule für angewandte Wissenschaften - Fachhochschule Deggendorf niedergelegt. Die Niederlegung wurde am 04. August 2011 durch Aushang bekannt gegeben. Tag der Bekanntmachung ist daher der 04. August 2011.

## Appendix

### zur Studien- und Prüfungsordnung für den Masterstudiengang Elektro- und Informationstechnik an der Hochschule Deggendorf

#### Module Overview

#### Module of Entire Course of Study (both areas of specialisation)

##### Alternative 1:

Students with Bachelor area of specialisation „Communications Engineering“ or „Technical Electronics“ choosing area of specialisation „ENS“

Students with Bachelor area of specialisation „Automation Engineering“ or „Power- and Systems Engineering“ choosing area of specialisation „AET“

Nr.	Module	SWS	Art der Lehrveranstaltung	ECTS Kreditpunkte	Art der Prüfungen Dauer in min <sup>1)</sup>
1	Advanced Programming Techniques	4	SU/Ü/PR	5	schrPr 90 – 150 o. PStA
2	Numerical Methods	4	SU/Ü/PR	5	schrPr 90 – 150 o. PStA
3	Special mathematical methods	4	SU/Ü/PR	5	schrPr 90 – 150 o. PStA
4	Compulsory Elective	4	SU/Ü/PR	5	schrPr 90 – 150 o. PStA
5	Compulsory Elective	4	SU/Ü/PR	5	schrPr 90 – 150 o. PStA
6	Compulsory Elective	4	SU/Ü/PR	5	schrPr 90 – 150 o. PStA
7	Selected Topics in Business Administration and Human Resource Management	4	SU/Ü/PR	5	schrPr 90 – 150 o. PStA
8	Foreign Language Master *	4	SU/Ü	4	schrPr 90 – 150 o. PStA o. mdl. Prüfung
9	Master Thesis	-		24	Schriftliche Ausarbeitung
	Master Seminar	2		2	mdl. Prüfung
	<b>Gesamt</b>	<b>34</b>		<b>65</b>	

**Alternative 2:**

**Students without Bachelor area of specialisation „Communications Engineering“ or „Technical Electronics“ choosing area of specialisation „ENS“**

<b>Nr.</b>	<b>Module</b>	<b>SWS</b>	<b>Art der Lehrveranstaltung</b>	<b>ECTS Kreditpunkte</b>	<b>Art der Prüfungen Dauer in min<sup>1)</sup></b>
1	Advanced Programming Techniques	4	SU/Ü/PR	5	schrPr 90 – 150 o. PStA
2	Numerical Methods	4	SU/Ü/PR	5	schrPr 90 – 150 o. PStA
3	Special mathematical methods	4	SU/Ü/PR	5	schrPr 90 – 150 o. PStA
<b>4</b>	<b>Harmonisation Course ENS</b>	<b>8</b>	<b>SU/Ü/PR</b>	<b>10</b>	
	RF-Electronics				schrPr 90 – 150 o. PStA
	Communication Engineering 2				schrPr 90 – 150 o. PStA
5	Compulsory Elective	4	SU/Ü/PR	5	schrPr 90 – 150 o. PStA
6	Selected Topics in Business Administration and Human Resource Management	4	SU/Ü/PR	5	schrPr 90 – 150 o. PStA
7	Foreign Language Master *	4	SU/Ü	4	schrPr 90 – 150 o. PStA o. mdl. Prüfung
8	Master Thesis	-		24	Schriftliche Ausarbeitung
	Master Seminar	2		2	mdl. Prüfung
	<b>Gesamt</b>	<b>34</b>		<b>65</b>	



### Alternative 3:

Students with Bachelor area of specialisation „Automation Engineering“ or „Power- and Systems Engineering“ choosing area of specialisation „AET“

Nr.	Module	SWS	Art der Lehrveranstaltung	ECTS Kreditpunkte	Art der Prüfungen Dauer in min <sup>1)</sup>
1	Advanced Programming Techniques	4	SU/Ü/PR	5	schrPr 90 – 150 o. PStA
2	Numerical Methods	4	SU/Ü/PR	5	schrPr 90 – 150 o. PStA
3	Special mathematical methods	4	SU/Ü/PR	5	schrPr 90 – 150 o. PStA
4	<b>Harmonisation Course AET</b>	<b>8</b>	<b>SU/Ü/PR</b>	<b>10</b>	
	Power Electronics				schrPr 90 – 150 o. PStA
	Control Engineering 2				schrPr 90 – 150 o. PStA
5	Compulsory Elective	4	SU/Ü/PR	5	schrPr 90 – 150 o. PStA
6	Selected Topics in Business Administration and Human Resource Management	4	SU/Ü/PR	5	schrPr 90 – 150 o. PStA
7	Foreign Language Master *	4	SU/Ü	4	schrPr 90 – 150 o. PStA o. mdl. Prüfung
8	Master Thesis	-		24	Schriftliche Ausarbeitung
	Master Seminar	2		2	mdl. Prüfung
	<b>Gesamt</b>	<b>34</b>		<b>65</b>	

\*: German (for students who do not speak German as their native language). German-speakers can choose any language from the Language Center.

## Modules of Electronic and Telecommunication Systems (ENS)

Nr.	Module	SWS	Art der Lehrveranstaltung	ECTS Kreditpunkte	Art der Prüfungen Dauer in min <sup>1)</sup>
1	Selected Topics in Micro and Nanoelectronics	4	SU/Ü/PR	5	schrPr 90 – 150 o. PStA
2	Selected Topics in Optoelectronics and Laser Technology	4	SU/Ü/PR	5	schrPr 90 – 150 o. PStA
3	Modern RF and Radio Systems	4	SU/Ü/PR	5	schrPr 90 – 150 o. PStA
4	Special Devices and Circuits	4	SU/Ü/PR	5	schrPr 90 – 150 o. PStA
5	Signals and Systems in Communication Technology	4	SU/Ü/PR	5	schrPr 90 – 150 o. PStA
	<b>Total</b>	<b>20</b>		<b>25</b>	
	<b>Total Degree Programme</b>	<b>52</b>		<b>90</b>	

## Modules of Automation and Power Engineering (AET)

Nr.	Module	SWS	Art der Lehrveranstaltung	ECTS Kreditpunkte	Art der Prüfungen Dauer in min <sup>1)</sup>
1	Advanced Modelling and Simulation	4	SU/Ü/PR	5	schrPr 90 – 150 o. PStA
2	Selected Topics in Control Technology	4	SU/Ü/PR	5	schrPr 90 – 150 o. PStA
3	Theory of Digital Image Processing	4	SU/Ü/PR	5	schrPr 90 – 150 o. PStA
4	Automotive and industrial Drive Systems	4	SU/Ü/PR	5	schrPr 90 – 150 o. PStA
5	Renewable Energies	4	SU/Ü/PR	5	schrPr 90 – 150 o. PStA
	<b>Total</b>	<b>20</b>		<b>25</b>	
	<b>Total Degree Programme</b>	<b>52</b>		<b>90</b>	

<sup>1)</sup> Details are specified in the course of study

## **Abbreviations:**

KI	=	Written Examination
LN	=	Proof of Course Attendance
mdl	=	Oral Examination
mE	=	Successfully Completed
Pr	=	Examination
Ref	=	Semester/Term Paper/Written Work
PStA	=	Examination Paper
S	=	Seminar
schr	=	Written
StA	=	Semester/Term Paper
SU	=	Seminar Instruction
SWS	=	Number of Weekly Hours per Semester
TN	=	Proof of Participation
Ü	=	Practice
ZV	=	Admission Requirement