Friedrich-Alexander-Universität
Erlangen-Nürnberg

Degree Program and Examination Regulations for the Bachelor's and Master's Degree Program in Clean Energy Processes at the Faculty of Engineering at Friedrich-Alexander-Universität Erlangen-Nürnberg (FAU) – FPOCEP –

dated March 28, 2024

amended by statute of
March 20, 2025

Based on Section 9 (1) in conjunction with Section 80 (1)(1), section 84 (2)(1), Section 88 (9), Section 90 (1)(2) and Section 96 (3)(1) Bavarian Higher Education Innovation Act dated August 5, 2022 (**BayHIG**), Friedrich-Alexander-Universität Erlangen-Nürnberg enacts the following degree program and examination regulations:

Contents:

Part I: General Provisions

Section 39 Scope

[1]These degree program and examination regulations govern studies and examinations for the Bachelor's and consecutive Master's degree programs in Clean Energy Processes leading to a Bachelor of Science or Master of Science degree. [2]They complement the current version of the General Examination Regulations for the Bachelor's and Master's Degree Programs of the Faculty of Engineering at FAU (**ABMPO/TF**).

Section 40 Bachelor's Degree Program, Language Requirements, Teaching and Examination Language, Degree Programs in Equivalent Subjects

(1) In order to enroll in the Bachelor's degree program in Clean Energy Processes, applicants must provide proof of proficiency in English equivalent to level B1+ of the Common European Framework of Reference for Languages (CEFR) (B1+ for language proficiency, B2 for reading skills).

(2) [1]Notwithstanding Section 3 (6) **ABMPO/TF**, the teaching and examination language in the Bachelor's degree program is English. [2]Individual teaching units and examinations or modules classed as elective modules may be held in German; further details are stipulated in the module handbook.

(3) The provisions in Section 28 (1)(2)(2) **ABMPO/TF** do not apply to degree programs in equivalent subjects.

Section 41 Master's Degree Program, Part-time Study, Start of Degree Program, Teaching and Examination Language, Degree Programs in Equivalent Subjects

(1) [1]The Master's degree program in Clean Energy Processes can be completed as a full-time or as a part-time degree program. [2]The Master's degree program may be started in the summer semester or in the winter semester.

(2) Students must complete an internship lasting at least twelve weeks during the Master's degree program in Clean Energy Processes (M15 pursuant to **Appendix 2** or **3**).

(3) In deviation from Section 4 (5) **ABMPO/TF**, the teaching and examination language in the Master's degree program is English.

(4) The provisions in Section 34 (3)(2) **ABMPO/TF** do not apply to degree programs in equivalent subjects.

Section 42 Master's Degree Program, Specializations

(1) [1]Master's students shall choose one of the following specializations in order to establish a subject-specific profile.
1. Energy Technologies or
2. Energy Systems.

[2]The Degree Program Committee shall draw up a module catalog for each specialization which shall be announced according to local practice by the end of the second week of the lecture period. [3]The catalog shall include specialization modules with la-

boratory courses for each specialization worth 15 ECTS credits each and specialization modules without laboratory courses worth 20 ECTS credits each. [4]Students shall also complete compulsory elective modules worth 15 ECTS credits. [5]Further details are stipulated in the following paragraphs, **Appendix 2** (full-time) and **Appendix 3** (part-time), as well as Sections 49 and 50.

(2) [1]The overriding learning outcome of the specializations which can be chosen pursuant to paragraph 1 is to allow students to gain more advanced knowledge in the selected specialization. [2]This should allow them to acquire skills of relevance to research.

(3) [1]In the “Energy Technologies” specialization, students focus on acquiring skills relevant to the application of clean energy technologies. [2]Fundamental methods for developing and implementing new technologies for producing and transforming renewable energies are explored in greater depth.

(4) [1]The specialization “Energy Systems” focuses on students acquiring skills relevant to the application of energy systems. [2]Methods for developing process chains for generating, using and integrating renewable energies in chemical processes are explored in greater depth.

Part II: Special Provisions

1. Bachelor's examination

Section 43 Scope of the Grundlagen- und Orientierungsprüfung

(1) [1]The Grundlagen und Orientierungsprüfung, GOP, shall consist of the modules set forth in **Appendix 1**.

1. B1: Mathematics I
2. B2: Foundations of chemical reaction engineering
3. B3: Physics I
4. B4: Renewable energies
5. B6: Mathematics II
6. B7: Measurement systems
7. B8: Scientific computing in engineering.

[2]The ECTS credits allocated to each module and the type and scope of the examinations are stipulated in **Appendix 1**.

(2) The GOP shall have been passed if at least 30 ECTS credits (from a total of 40 ECTS credits) have been earned from the modules listed in paragraph (1).

Section 44 Scope and Structure of the Bachelor’s Examination

[1]The Bachelor’s examination shall consist of the modules set forth in **Appendix 1**. [2]The length and type of examination for each module are also specified in **Appendix 1**.

Section 45 Modules B5 and B29 (Elective Modules I and II)

[1]The primary learning outcome of the elective modules is to expand students’ technical knowledge and vocational qualifications through an emphasis on practical skills.

[2]Students ought to be given the opportunity to gather information in an area of their choosing or to hone skills they have already acquired and tailor their profile in view of their future career or in preparation for a consecutive Master's degree. [3]Students select their elective modules B5 and B29, worth 5 ECTS credits each, from the range of modules offered at FAU. [4]Students can choose either one module worth 5 ECTS credits or two modules each worth 2.5 ECTS credits. [5]The type and scope of the lectures and seminars, the examination and the specific learning outcomes and examination subjects depend on the skills for the chosen module according to the relevant **degree program and examination regulations** and the module handbook.

Section 46 Bachelor's Thesis

(1) [1]The aim of the Bachelor's thesis is to enable students to learn to solve problems in the field of clean energy processes independently. [2]Requirements for the thesis shall be such that it can completed with a workload of approximately 360 hours. [3]The results of the Bachelor's thesis shall be presented in a presentation lasting approximately 30 minutes within the context of an advanced seminar. [4]The date of the presentation shall be determined by the supervising lecturer either after the student has submitted their Bachelor's thesis or during the final stage of thesis work and the student shall be informed of the date in good time.

(2) [1]The topic of the Bachelor's thesis shall be issued by a part-time or full-time university lecturer pursuant to Section 19 (1) **BayHIG** from the CBI Department. [2]Deviations from this shall be subject to the approval of the chairperson of the Degree Program Committee.

(3) In deviation from Section 31 (6) **ABMPO/TF**, the Bachelor's thesis shall be written in English.

2. Master's Examination

Section 47 Qualification for a Master's Degree, Certificates, Admission Requirements

(1) [1]A subject-specific degree as defined in Section 33 (1)(1) **ABMPO/TF** is a Bachelor's degree in Clean Energy Processes pursuant to these degree program and examination regulations or an equivalent degree in Clean Energy Processes from a university in Germany or another country with a skills profile equivalent to that of this degree program. [2]Completed Bachelor's degrees in Chemical Engineering, Chemical and Biological Engineering, and Energy Technology shall generally be considered a subject-related degree.

(2) [1]As stipulated in paragraph (2)(6)(4) of the **Appendix ABMPO/TF**, applicants are required to provide

1. A CV in tabular form
2. A letter of application in English
3. Proof of English language skills equivalent to at least Level B2 of the Common European Framework of Reference (CEFR) on the basis of relevant school reports or certificates issued by a language school or university.

[2]The following are considered suitable proof of language skills pursuant to sentence 1 (3):

a) A school leaving certificate or another certificate issued by the school providing evidence that English courses have been taken at school up until a level equivalent to B2 CEFR
b) A certificate indicating that the applicant has successfully passed the Test of English as a Foreign Language (TOEFL), attaining at least 80 points in the iBT test, or
c) A certificate from the English Language Testing System (IELTS) with a grade of 5.5 or above; other possible alternatives for proving evidence of language proficiency are listed in the table of equivalence published by the FAU Language Centre.

[3]Proof of language proficiency pursuant to sentence 1 (3) does not need to be submitted if the applicant acquired their university entrance qualification or relevant undergraduate degree in English.

(3) [1]Paragraph (5)(2)(1) **Appendix to ABMPO/TF** shall not apply. [2]Notwithstanding paragraph (5)(2)(2) **Appendix to ABMPO/TF**, applicants shall be deemed as qualified for the Master's degree program in Clean Energy Processes according to paragraph 5 (2)(2) of the **Appendix to ABMPO/TF** if they have passed at least four of the modules B17, B19 to B20, and B23 to B27 in the Bachelor's degree program with an average grade of 3.0 or better. [3]Sentence 1 shall apply accordingly for applicants with a degree in Clean Energy Processes that is equivalent to the Bachelor's degree in Clean Energy Processes pursuant to these degree program and examination regulations if they have passed modules from their university equivalent to the modules stipulated in sentence 1 with an average grade of 3.0 or better. [4]Pursuant to paragraph (5)(4) of the **Appendix to ABMPO/TF**, applicants with other subject-related degrees pursuant to paragraph (1)(2) can only be accepted on to the degree program if they successfully complete all stages of the qualification assessment process described below.

(4) [1]The first stage of the qualification assessment process involves an electronic admissions examination for applicants who have a relevant undergraduate degree pursuant to paragraph 1 sentences 1 or 2 with a grade of 2.5 or better but who do not qualify for direct admission to the degree program pursuant to paragraph (3). [2]Applicants are responsible for registering independently for the electronic admissions examination. [3]Applicants must register at the latest 7 days before the relevant date of the examination via the website for the Master's degree program; the dates for the admissions examination are announced on the degree program's website during the application period for the degree program pursuant to paragraph 2 (1) of the **Appendix ABMPO/TF**. [4]Furthermore, paragraph (7) of the **Appendix ABMPO/TF** shall apply subject to the proviso that if applicants pass the electronic admissions examination with the grade "good" or better, they shall be invited to attend the second stage of the qualification assessment process pursuant to paragraph (5).

(5) [1]The second stage of the admissions examination involves an oral admissions examination pursuant to paragraph (6) of the **Appendix ABMPO/TF** for those appli-

cants who pass the electronic admissions examination with a grade of “good” or better pursuant to Section 22 (1)(1) **ABMPO/TF**. [2]The applicants are assessed on the basis of the following criteria:

1. Ability to analyze complex issues from the area of clean energy processes whilst taking relevant process and measuring techniques into consideration, to work out solutions and to critically discuss results (40 percent)
2. Standard of fundamental knowledge acquired during the Bachelor’s degree program corresponding to a subject specialization in line with the modules available in the Master’s degree program (30 percent)
3. Ability to give an informed opinion on issues relating to current research using the correct technical terms (30 percent).

[3]The admission examination does not affect the student’s choice of specialization in the Master’s degree program.

Section 48 Scope and Structure of the Master’s Examination

[1]The Master’s examination consists of the modules pursuant to **Appendix 2** (full-time) or **Appendix 3** (part-time). [2]The length and type of examination for each module are also specified in **Appendix 2** or **3**.

Section 49 Learning Outcome of Specialization Modules – M1 to M6

(1) [1]The learning outcome of the specialization modules M1 to M6 is for students to expand their subject-related skills and gain more advanced knowledge in the areas of energy technologies or energy systems by using scientific methods in theory and in laboratory practice. [2]This should allow them to acquire skills of relevance to research. [3]The learning outcome for the specialization modules M1 to M6 is to give students the opportunity to choose their individual focus and tailor their profile in view of their future career and/or personal development. [4]The laboratory courses allow students to put the theory they have covered into practice. [5]The specific learning outcomes and examination subjects for the individual modules depend on the chosen module and are stated in the relevant module description.

(2) [1]The type and scope of the examination are dependent on the skills for the relevant module according to paragraph (1) and the module handbook. [2]Examinations in the modules shall take one of the following forms: Written examination (60, 90, 120 min), oral examination (20-30 min), seminar achievement or practical achievement pursuant to Section 7(3) **ABMPO/TF**. [3]Section 7 (2)(3) **ABMPO/TF** stipulates that in justified exceptional circumstances, combinations of the individual achievements stated in sentence 2 may also be possible. [4]Pursuant to sentence 3, in modules M1 and M2 students shall complete an (ungraded) practical achievement and a further examination achievement pursuant to sentence 2 depending on the specific manner in which the module is taught. [5]Further details are stipulated in the module handbook. [6]The module handbook is published before the beginning of the semester in accordance with local practice.

(3) [1]The specialization modules with laboratory course are worth 7.5 ECTS credits and usually consist of a lecture (2 SWS), a tutorial (3 SWS) and a laboratory course (3 SWS). [2]The specialization modules without a laboratory course are worth 5 ECTS credits and usually consist of a lecture (2 SWS) and a tutorial (3 SWS). [3]Any exceptions are detailed in the module handbook.

Section 50 Learning Outcome of Compulsory Elective Modules – M7 to M9

(1) [1]The main learning outcome of the compulsory elective modules M7 to M9 is for students to expand their subject-related skills and gain more advanced knowledge in the area of clean energy processes. [2]The choice of compulsory elective modules, in particular in combination with the choice of specialization modules M1 to M6, gives students the opportunity to tailor their profile in view of their future careers. [3]The specific learning outcomes and examination subjects for the individual modules depend on the chosen module and are stated in the relevant module description.

(2) [1]The type and scope of examinations are dependent on the skills for the relevant module according to paragraph (1) and the module handbook. [2]Examinations in the modules shall take one of the following forms: Written examination (60, 90, 120 min), oral examination (20-30 min), seminar achievement or practical achievement pursuant to Section 7(3) **ABMPO/TF**. [3]Section 7 (2)(3) **ABMPO/TF** stipulates that in justified exceptional circumstances, combinations of the individual achievements stated in sentence 2 may also be possible. [4]Further details are stipulated in the module handbook. [5]The module handbook is published before the beginning of the semester in accordance with local practice.

(3) [1]The compulsory elective modules are generally worth 5 ECTS credits and consist of a lecture (2 SWS) and a tutorial (3 SWS). [2]Any exceptions are detailed in the module handbook.

Section 51 Learning Outcome of Elective Modules from the Other Specialization – M10 and M11

(1) [1]The learning outcome of the elective modules from the other specialization (M10 and M11) is for students to obtain additional information relevant to their subject from the other specialization, providing them with an all-round education in the area of clean energy processes. [2]By taking elective modules from the other specialization, students can steer their own career prospects by choosing modules from the other specialization which are relevant to them. [3]Students can choose from modules included in the module catalog for specialization modules M3 to M6. [4]The specific learning outcomes and examination subjects depend on the chosen module and are stated in the relevant module description.

(2) [1]The type and scope of examinations are dependent on the skills for the relevant module according to paragraph (1) and the module handbook. [2]Examinations in the modules shall take one of the following forms: Written examination (60, 90, 120 min), oral examination (20-30 min), seminar achievement or practical achievement pursuant to Section 7(3) **ABMPO/TF**. [3]Section 7 (2)(3) **ABMPO/TF** stipulates that in justified exceptional circumstances, combinations of the individual achievements stated in sentence 2 may also be possible. [4]Further details are stipulated in the module handbook. [5]The module handbook is published before the beginning of the semester in accordance with local practice.

(3) [1]The elective modules from the other specialization are generally worth 5 ECTS credits and usually consist of a lecture (2 SWS) and a tutorial (3 SWS). [2]Any exceptions are detailed in the module handbook.

Section 52 Elective Modules – M12 and M13

[1]The primary learning outcome of the elective modules is to expand students' technical knowledge and vocational qualifications through an emphasis on practical skills. [2]Students ought to be given the opportunity to gather information in an area of their choosing or to hone skills they have already acquired and tailor their profile in view of their future career. [3]Students select their elective modules M12 and M13, worth a total of 10 ECTS credits, from the range of modules offered at FAU. [4]Students can choose either one module worth 5 ECTS credits or two modules each worth 2.5 ECTS credits. [5]The type and scope of the lectures and seminars, the examination and the specific learning outcomes and examination subjects depend on the skills for the chosen module according to the relevant degree program and examination regulations and the module handbook.

Section 53 Admission Requirements for the Master's Thesis

[1]In order to qualify for admission to the Master's thesis (Module M17 in **Appendix 2** or **3**), students shall be required to successfully complete modules pursuant to **Appendix 2** or **Appendix 3** worth at least 90 ECTS credits. [2]The chairperson of the Degree Program Committee may grant exceptions upon the student's request.

Section 54 Master's Thesis

(1) [1]The topic of the Master's thesis shall be allocated by a part-time or full-time university lecturer pursuant to Section 19 (1) **BayHIG** from the Department of Chemical and Biological Engineering. [2]The topic of the Master's thesis may also be allocated by a full-time or part-time university lecturer pursuant to Section 19 (1) **BayHIG** from FAU who is responsible for one of the modules M1 to M6. [3]Deviations from this shall be subject to the approval of the chairperson of the Degree Program Committee.

(2) [1]The Master's thesis and its results shall be introduced in a presentation lasting approximately 30 minutes within the context of an advanced seminar. [2]The date of the presentation shall be determined by the supervising lecturer either after the student has submitted their Master's thesis or during the final stage of thesis work and the student shall be informed of the date in good time. [3]27 ECTS credits shall be awarded for the thesis and 3 ECTS credits shall be awarded for the presentation.

(3) Notwithstanding Section 36 (6)(1) **ABMPO/TF**, the Master's thesis shall be written in English.

Part III Transitory and Final Provisions

Section 55 Legal Validity and Transitory Provisions

(1) [1]These degree program and examination regulations shall come into effect on April 1, 2024. [2]They shall apply to all students starting a degree program from winter semester 2024/2025 onwards. [3]They shall also apply to all Master's students who are already studying in accordance with the degree program and examination regulations for the Bachelor's and Master's degree program in Clean Energy Processes at the

Faculty of Engineering at Friedrich-Alexander-Universität Erlangen-Nürnberg (FAU) – FPOCEP – dated March 4, 2021. [4]Sentence 3 shall apply accordingly to Bachelor's students who are also studying in accordance with the FPOCEP stated in sentence 2 with the exception of amendments made to the previous module "Interface engineering and particle technology (GOP)"; this module shall remain unchanged for all students who are already enrolled in the Bachelor's degree program, the provisions stipulated in the degree program and examination regulations for the Bachelor's and Master's degree programs in Clean Energy Processes at the Faculty of Engineering at Friedrich-Alexander-Universität Erlangen-Nürnberg – FPOCEP– dated March 4, 2021 shall continue to apply pursuant to (2).

(2) [1]At the same time, the degree program and examination regulations and the Bachelor's and Master's degree program in Clean Energy Processes at the Faculty of Engineering at Friedrich-Alexander-Universität Erlangen-Nürnberg (FAU) – FPOCEP – dated March 4, 2021 shall become invalid, with the exception of the provisions governing the module "Interface engineering and particle technology (GOP)". [2]The provisions governing the previous module "Interface engineering and particle technology (GOP)" shall cease to be valid as of September 30, 2024. [3]Examinations in the previous module "Interface engineering and particle technology (GOP)" shall be offered for the last time in summer semester 2024. [4]From the date stated in sentence 3, those students who are affected by the examination regulations becoming invalid shall take their examinations in accordance with the currently valid version of the module "Introduction to interface engineering (GOP)".

(3) [1]The first amendment statute shall come into effect on April 1, 2025. [2]It shall apply to all students starting a degree program from summer semester 2025 onwards.
[3]The amendments pursuant to Section 52 shall also apply to all Master's students who are already enrolled. [4]Examinations in accordance with the previous version of the degree program and examination regulations will be offered for the last time in summer semester 2028 for the Bachelor's degree program and in winter semester 2027/2028 for the Master's degree program.

Appendix 1: Structure of the Bachelor's Degree Program in Clean Energy Processes

No.	Module name	Teaching unit	SWS (semester hours)				Total ECTS credits	Distribution of workload per semester in ECTS credits						Type and scope of the examination
			L	T	P	S		1. sem.	2. sem.	3. sem.	4. sem.	5. sem.	6. sem.	
B1	**Mathematics I (GOP)**		4	2			**7.5**	7.5						EA (WE, 90 min)
B2	**Foundations of chemical reaction engineering (GOP)**		2	2			**5**	5						EA (WE, 90 min)
B3	**Physics I (GOP)**		3	1			**5**	5						EA (WE, 90 min)
B4	**Renewable energies (GOP)**		2	2			**5**	5						EA (WE, 90 min)
B5	**Elective module I, see Section 45**		(2-3)	(1-2)			**5**			5				EA [1]
B6	**Mathematics II (GOP)**		4	2			**7.5**		7.5					EA (WE, 90 min)
B7	**Measurement systems(GOP)**		2	1		2	**5**		5					EA (WE, 90 min)
B8	**Scientific computing in engineering (GOP)**		2		4		**5**		5					EA (WE, 90 min)
B9	**Physics II**		3	1			**5**		5					EA (WE, 90 min)
B10	**Materials and structure**		1	1		2	**5**		5					EA (WE, 90 min)
B11	**Fundamentals of electrical engineering**		2	2			**5**		5					EA (WE, 90 min)
B12	**Mathematics III**		4	2			**7.5**			7.5				EA (WE, 90 min)
B13	**Thermodynamics and heat and mass transfer**		4	2			**7.5**			7.5				EA (WE, 90 min)
B14	**Microeconomics**		2	2			**5**	5						EA (WE, 90 min)
B15	**Introduction to interface engineering**		2	3			**5**			5				EA (WE, 90 min)

No.	Module name	Teaching unit	SWS (semester hours)				Total ECTS credits	Distribution of workload per semester in ECTS credits						Type and scope of the examination
			L	T	P	S		1. sem.	2. sem.	3. sem.	4. sem.	5. sem.	6. sem.	
B16	**Active project**	Active project Advanced seminar	1	1		3	**5**			5				EA (SA)
B17	**Chemical thermodynamics**		2	2			**5**				5			EA (WE, 90 min)
B18	**Data science for engineers**		2	2			**5**				5			EA (WE, 90 min)
B19	**Chemical reaction engineering**		2	2			**5**				5			EA (WE, 90 min)
B20	**Decentralized energy supply**		2	2			**5**				5			EA (WE, 90 min)
B21	**Electrochemistry**		2	3			**5**				5			EA (WE, 90 min)
B22	**Fundamentals of energy resources**		2	2			**5**				5			EA (WE, 90 min)
B23	**Electrocatalysis**		2	2			**5**					5		EA (WE, 90 min)
B24	**Fluid dynamics**		2	2			**5**					5		EA (WE, 90 min)
B25	**Process systems dynamics 1**		2	2			**5**					5		EA (WE, 90 min)
B26	**Energy economics**		2	2			**5**					5		EA (WE, 90 min)
B27	**Storage technologies**		2	2			**5**					5		EA (WE, 90 min)
B28	**Introduction to sustainability management**		2	2			**5**					5		EA (WE, 90 min)
B29	**Elective module II, see Section 45**		(2-3)	(1-2)			**5**						5	EA[1]
B30	**Laboratory course process engineering**				10		**10**						10	CA (LA)

No.	Module name	Teaching unit	SWS (semester hours)				Total ECTS credits	Distribution of workload per semester in ECTS credits						Type and scope of the examination
			L	T	P	S		1. sem.	2. sem.	3. sem.	4. sem.	5. sem.	6. sem.	
B31	Bachelor's thesis	Thesis					15						12	EA BT and seminar achievement (80 % + 20 %)
		Advanced seminar				2							3	
Total SWS and ECTS credits:			66 - 68	51 - 53	14	9	180	27.5	32.5	30	30	30	30	
			140–144											

[1] see Section 41. The type and scope of the examination depend on the specific manner in which the respective module is taught; see module handbook for details.

Key:
GOP: Grundlagen- und Orientierungsprüfung
EA: Graded examination achievement, see Section 7 (3)(10) **ABMPO/TF**.
CA: Ungraded course achievement, see Section 7 (3) sentence 11 **ABMPO/TF**.
WE: Written examination
O: Oral examination
TA: Tutorial achievement, see Section 7 (3) sentences 4 and 6 **AMBPO/TF** and module handbook
LA: Laboratory achievement, see Section 7 (3) sentences 4 and 6 **AMBPO/TF** and module handbook
SA: Seminar achievement, see Section 7 (3) sentences 5 and 6 **ABMPO/TF** and module handbook
BT: Bachelor's thesis

Appendix 2: Structure of the Master's Degree Program in Clean Energy Processes Full-time

No.	Module name[1]	Teaching unit	SWS (semester hours)				Total ECTS credits	Distribution of workload per semester in ECTS credits				Type and scope of the examination
			L	T	P	S		1. sem.	2. sem.	3. sem.	4. sem.	
M1	**Specialization module with laboratory course 1**		2	3	3		**7.5**	5				see Section 49 (2)[2]
								2.5				
M2	**Specialization module with laboratory course 2**		2	3	3		**7.5**		5			see Section 49 (2)[2]
									2.5			
M3	**Specialization module 1**		2	3			**5**	5				see Section 49 (2) [2]
M4	**Specialization module 2**		2	3			**5**	5				see Section 49 (2)[2]
M5	**Specialization module 3**		2	3			**5**		5			see Section 49 (2)[2]
M6	**Specialization module 4**		2	3			**5**			5		see Section 49 (2)[2]
M7	**Compulsory elective module 1**		2	3			**5**	5				see Section 50 (2)[2]
M8	**Compulsory elective module 2**		2	3			**5**		5			see Section 50 (2)[2]
M9	**Compulsory elective module 3**		2	3			**5**			5		see Section 50 (2)[2]
M10	**Elective module from other specialization 1**		2	3			**5**		5			see Section 51 (2)[2]
M11	**Elective module from other specialization 2**		2	3			**5**			5		see Section 51 (2)[2]
M12	**Elective module 1**		2	2–3			**5**		5			EA [3]

No.	Module name[1]	Teaching unit	SWS (semester hours)				Total ECTS credits	Distribution of workload per semester in ECTS credits				Type and scope of the examination
			L	T	P	S		1. sem.	2. sem.	3. sem.	4. sem.	
M13	**Elective module 2**		2	2–3			**5**			5		EA [3]
M14	**Seminar sustainability and environmental ethics**					4	**5**	5				EA (SA)
M15	**Internship**						**10**			10		CA (LA)
M16	**Advanced seminar**					4	**5**		5			EA (SA)
M17	**Master's thesis**	Thesis					**30**				27	EA MT and presentation, 20–30 min with discussion (90 % + 10 %)
		Advanced seminar				2					3	
Total SWS and ECTS credits			**26**	**37 - 39**	**6**	**10**	**120**	**27.5**	**32.5**	**30**	**30**	
			79–81									

[1]Due to the specific subject knowledge that must be acquired as part of the qualification goals of the Master's degree program, as detailed in the module descriptions, modules that have been completed in a previous Bachelor's degree program may not generally be accredited for the Master's examination.

[2] see Section 49 et seq. The type and scope of the examination and any exceptions to the number of credits awarded or nature and distribution of teaching units depend on the specific manner in which the respective module is taught; see module handbook for details. The module handbook is published before the beginning of the semester in accordance with local practice.

[3] see Section 52 The type and scope of the examination depend on the specific manner in which the respective module is taught; see module handbook for details. Notwithstanding Section 37 in conjunction with Section 32 (2)(3) **ABMPO/TF**, students may change modules even after failing three attempts at the previous module.

Key:
EA: Graded examination achievement, see Section 7 (3)(10) **ABMPO/TF**.
CA: Ungraded course achievement, see Section 7 (3) sentence 11 **ABMPO/TF**.
WE: Written examination
O = oral examination
LA: Laboratory achievement, see Section 7 (3) sentences 4 and 6 **AMBPO/TF** and module handbook
SA: Seminar achievement, see Section 7 (3) sentences 5 and 6 **ABMPO/TF** and module handbook
MT: Master's thesis

Appendix 3: Structure of the Master's Degree Program in Clean Energy Processes Part-time

No.	Module name[1]	Teaching unit	SWS (semester hours)				Total ECTS credits	Distribution of workload per semester in ECTS credits								Type and scope of the examination
			L	T	P	S		1.	2.	3.	4.	5.	6.	7.	8.	
M1	Specialization module with laboratory course 1		2	3	3		7.5	5								see Section 49 (2)[2]
								2.5								
M2	Specialization module with laboratory course 2		2	3	3		7.5		5							see Section 49 (2)[2]
									2.5							
M3	Specialization module 1		2	3			5			5						see Section 49 (2)[2]
M4	Specialization module 2		2	3			5				5					see Section 49 (2)[2]
M5	Specialization module 3		2	3			5					5				see Section 49 (2)[2]
M6	Specialization module 4		2	3			5					5				see Section 49 (2)[2]
M7	Compulsory elective module 1		2	3			5		5							see Section 50 (2)[2]
M8	Compulsory elective module 2		2	3			5			5						see Section 50 (2)[2]
M9	Compulsory elective module 3		2	3			5				5					see Section 50 (2)[2]
M10	Elective module from other specialization 1		2	3			5			5						see Section 51 (2)[2]
M11	Elective module from other specialization 2		2	3			5				5					see Section 51 (2)[2]
M12	Elective module 1		2	3			5									EA [3]
M13	Elective module 2		2	3			5		5			5				EA [3]
M14	Seminar sustainability and environmental ethics					4	5	5								EA (SA)
M15	Internship						10						10			CA (LA)
M16	Advanced seminar					4	5						5			EA (SA)
M17	Master's thesis	Thesis					30							15	12	EA MT and presentation, 20–30 min with discussion (90 % + 10 %)
		Advanced seminar				2									3	

Total SWS and ECTS credits	**26**	**39**	**6**	**10**	**120**	**12.5**	**17.5**	**15**	**15**	**15**	**15**	**15**	**15**
	81												

[1] Due to the specific subject knowledge that must be acquired as part of the qualification goals of the Master's degree program, as detailed in the module descriptions, modules that have been completed in a previous Bachelor's degree program may not generally be accredited for the Master's examination.

[2] see Section 49 et seq. The type and scope of the examination and any exceptions to the number of credits awarded or nature and distribution of teaching units depend on the specific manner in which the respective module is taught; see module handbook for details. The module handbook is published before the beginning of the semester in accordance with local practice.

[3] see Section 52. The type and scope of the examination depend on the specific manner in which the respective module is taught; see module handbook for details. Notwithstanding Section 37 in conjunction with Section 32 (2)(3) ABMPO/TF, students may change modules even after failing three attempts at the previous module.

Key:

EA: Graded examination achievement, see Section 7 (3)(10) **ABMPO/TF**.
CA: Ungraded course achievement, see Section 7 (3) sentence 11 **ABMPO/TF**.
WE: written examination
O = oral examination
LA: Laboratory achievement, see Section 7 (3) sentences 4 and 6 **AMBPO/TF** and module handbook
SA: Seminar achievement, see Section 7 (3) sentences 5 and 6 **ABMPO/TF** and module handbook
MT: Master's thesis