Nichtamtliche Lesefassung

Die Studienordnung für den Master-Studiengang Renewable Energy and E-Mobility wurde in dieser Form nicht zusammenhängend veröffentlicht. Diese Veröffentlichung soll als Service für die Studierenden und sonstigen Mitglieder der Hochschule Stralsund die Studienordnung und ihre Änderungssatzungen zusammengefasst darstellen. **Rechtlich verbindlich ist der auf der Homepage der Hochschule Stralsund veröffentlichte Text der Studienordnung und der jeweiligen Änderungssatzungen**.

Studienordnung für den Master-Studiengang Renewable Energy and E-Mobility an der Hochschule Stralsund vom 14. November 2017

in der Fassung der dritten Satzung zur Änderung der Studienordnung für den Master-Studiengang Renewable Energy and E-Mobility der Hochschule Stralsund vom 29. Oktober 2020

Änderungen:

- 1. Änderungssatzung vom 19. November 2018
- 2. Änderungssatzung vom 01. November 2019
- 3. Änderungssatzung vom 29. Oktober 2020

Aufgrund von § 2 Absatz 1 in Verbindung mit § 39 Absatz 1 des Landeshochschulgesetzes (Landeshochschulgesetz – LHG M-V) in der Fassung der Bekanntmachung vom 25. Januar 2011 (GVOBl. M-V S. 18), geändert durch Artikel 6 des Gesetzes vom 22. Juni 2012 (GVOBl. M-V S. 208, 211), erlässt die Hochschule Stralsund folgende Studienordnung für den Master-Studiengang Renewable Energy and E-Mobility als Satzung:

Inhaltsverzeichnis

§ 1
Geltungsbereich

Die vorliegende Studienordnung gilt für den englischsprachigen Master-Studiengang Renewable Energy and E-Mobility der Fakultät Elektrotechnik und Informatik an der Hochschule Stralsund, welcher drei Abschlussmöglichkeiten vorsieht:

- Master mit einer Regelstudienzeit von drei Fachsemestern
- Master mit einer Regelstudienzeit von vier Fachsemestern mit integriertem praktischen Studiensemester.
- Master mit einer Regelstudienzeit von vier Fachsemestern ohne integriertes praktisches Studiensemester

Sie legt auf der Grundlage der Fachprüfungsordnung des Master-Studiengangs Renewable Energy and E-Mobility Ziele und Inhalte sowie den Aufbau des Studiums fest.

§ 2
Studienziel

(1) Das Ziel des Studiums im Master-Studiengang Renewable Energy and E-Mobility ist der Studienabschluss mit dem zweiten akademischen Grad „Master of Engineering“, abgekürzt „M.Eng.“.

(2) Lehre und Studium sollen die Studierenden auf ihre berufliche Tätigkeit im Bereich der Erneuerbaren Energien oder der Elektromobilität unter Berücksichtigung der Veränderungen in der Berufswelt und im gesellschaftlichen Umfeld vorbereiten. Das Master-Studium soll aufbauend auf einem ersten berufsqualifizierenden Abschluss tiefer gehendes Fachwissen vermitteln, um wissenschaftliche Methoden und Erkenntnisse auch bei schwierigen und komplexen Problemstellungen sowohl in der Praxis als auch in der Forschung einsetzen zu können.

(3) Ein generelles Ziel des Masterstudienganges Renewable Energy and E-Mobility ist es, die Studierenden zu einer wissenschaftlich ausgerichteten, eigenverantwortlichen Berufstätigkeit auf den prägnanten Gebieten der Energietechnik und der Elektromobilität zu befähigen. Dies macht den Ausbau der fachlichen und fachübergreifenden Fähigkeiten, die im Bachelor-Studium erworben wurden, erforderlich. Dazu wird einerseits die mathematisch-naturwissenschaftliche Basis im Rahmen von Pflichtmodulen verbreitert sowie andererseits das anwendungsbezogene Wissen durch Wahlpflichtmodule vertieft. Die Studierenden werden durch Einbeziehung in laufende Forschungsprojekte zur eigenständigen Anwendung wissenschaftlicher Erkenntnisse und Methoden bei komplexen Fragenstellungen befähigt. Die Fähigkeit zur Erschließung neuer Gebiete und zur selbstständigen Weiterbildung wird gestärkt. Dementsprechend ist die Ausbildung auch auf die Förderung der Persönlichkeitsbildung, die Vermittlung sozialer Kompetenz sowie ökonomischer Grundkompetenz ausgerichtet.

(4) Ein weiteres Ziel besteht darin, die Studierenden in die Lage zu versetzen, an der wissenschaftlichen Fortentwicklung ihres Faches mitzuwirken und anspruchsvolle Entwicklungs- und Forschungsarbeiten in der Industrie oder in Forschungseinrichtungen durchzuführen. Dazu wird die selbstständige wissenschaftliche Arbeitsweise gezielt entwickelt und die Befähigung, Führungsaufgaben zu übernehmen, soweit wie möglich gefördert.

§ 3
Dauer des Studiums und Zugang

(1) Die Zeit, in der in der Regel das Studium mit dem zweiten berufsqualifizierenden Abschluss beendet werden kann (Regelstudienzeit), ist in diesem Studiengang zweifach geregelt. Der Studiengang bietet drei Studienwege mit unterschiedlichen Regelstudienzeiten:

- Im dreisemestrigen Master beträgt die Regelstudienzeit drei Fachsemester.
- Im viersemestrigen Master mit Praxissemester beträgt die Regelstudienzeit vier Fachsemester mit integriertem praktischen Studiensemester.
- Im viersemestrigen Master ohne Praxissemester beträgt die Regelstudienzeit vier Fachsemester ohne praktisches Studiensemester

Das Master-Studium schließt mit der Master-Prüfung ab.

§ 4
Arten der Lehrveranstaltungen

(1) Lehrveranstaltungen werden in Form von Vorlesungen, Übungen, Laborpraktika, Seminaren und Projekten angeboten.

(2) Vorlesungen vermitteln für einen größeren Teilnehmerkreis in systematischer Form Kenntnisse und Zusammenhänge sowie Fähigkeiten und Methoden des jeweiligen Fachgebietes, wobei der Vortragscharakter überwiegt. Innerhalb eines kleineren Teilnehmerkreises kann eine Vorlesung auch als seminaristischer Unterricht gestaltet werden.

(3) Übungen sind ergänzende Bestandteile von Vorlesungen. Sie dienen der Festigung und Anwendung des vermittelten Wissens, möglichst in kleineren Gruppen durch beispielhafte Darstellungen und Übungsaufgaben. Übungen können mit Vorlesungen zur integrierten Lehrveranstaltung verbunden werden.

(4) Laborpraktika dienen der Anwendung und Vertiefung praktischer Fähigkeiten und sollen das selbständige Bearbeiten wissenschaftlicher Aufgaben fördern. Sie werden begleitend zu Vorlesungen oder auch eigenständig als Blockveranstaltung angeboten. Die Ergebnisse werden von den Studierenden durch ein Protokoll, einen

Praktikumsbericht, eine Hausarbeit oder eine Belegarbeit dokumentiert, wobei auch Gruppenarbeiten möglich sind.

(5) Seminare sind Lehrveranstaltungen mit einem kleineren Teilnehmerkreis, in denen exemplarisch vertieft bestimmte Problemstellungen des jeweiligen Fachgebietes behandelt werden. Seminare zeichnen sich gegenüber Vorlesungen durch einen Anspruch auf größere Selbständigkeit des wissenschaftlichen Arbeitens und durch interaktive Lehr- und Lernformen aus. Durch Hausarbeiten und/oder Referate sowie im Dialog mit den Lehrpersonen und Diskussionen untereinander sollen die Studierenden in das selbständige wissenschaftliche Arbeiten eingeführt werden. Seminare können mit Vorlesungen zur integrierten Lehrveranstaltung verbunden werden.

(6) Projektarbeiten sind an Problemzusammenhängen orientierte wissenschaftliche Vorhaben, die aus mehreren Arbeitsvorhaben bestehen. Sie sollen die Orientierung an Bedingungen und Anforderungen der künftigen beruflichen Praxis ermöglichen sowie die Kompetenz für interaktive Gruppenprozesse des wissenschaftlichen Arbeitens fördern. Durch die Projekte sollen fachspezifische Arbeitsvorhaben mit unterschiedlichen methodischen Ansätzen integriert und eine interdisziplinäre Kooperation angestrebt werden. Sie sollen von Professorinnen oder Professoren betreut werden. Das Ergebnis eines Projektes wird in der Regel durch die Studierenden in Form einer Hausarbeit und einer Präsentation dargestellt.

§ 5
Studienablauf

(1) Inhalt, Struktur und Durchführung des Lehrangebotes ergeben sich aus der tabellarischen Modulübersicht und dem Modulhandbuch gemäß § 8.

(2) Die Fakultät für Elektrotechnik und Informatik gibt auf der Grundlage dieser Studienordnung unter Berücksichtigung der Rahmenprüfungsordnung der Hochschule Stralsund sowie der Fachprüfungsordnung für den Master-Studiengang Renewable Energy and E-Mobility an der Hochschule Stralsund einen Studienplan als Empfehlung an die Studierenden für einen sachgerechten Aufbau des Studiums aus. Der Studienplan erläutert den empfohlenen Studienverlauf und beschreibt Art, Umfang und Reihenfolge von Lehrveranstaltungen und Studien- und Prüfungsleistungen (§8 Modulüberblick).

(3) Es wird den Studierenden empfohlen, bei der Festlegung ihres Semesterwochenplans den jeweiligen Studienplan zugrunde zu legen.

(4) Sämtliche Module werden in der Regel jährlich angeboten.

§ 6
Modulstatus

(1) Alle Lehrveranstaltungen, die im Studienplan § 8 verzeichnet sind, sind entweder Pflichtmodule (Compulsory modules) oder Wahlpflichtmodule (Elective modules).

(2) Pflichtmodule sind die Module, die innerhalb des Studiengangs bzw. innerhalb einer Vertiefungsrichtung für alle Studierenden verbindlich sind.

(3) Wahlpflichtmodule gehören zum Pflichtprogramm. Die Studierenden können aus einem angebotenen Pool von Lehrveranstaltungen aus dem Wahlpflichtangebot des gewählten Studienganges oder auf Antrag an den Prüfungsausschuss aus dem Fächerpool anderer Studiengänge der Fakultät bzw. dem Studienangebot der Hochschule auswählen. Es werden mindestens 8 Wahlpflichtmodule zur Auswahl angeboten. Die Durchführung der Wahlpflichtmodule setzt eine Mindestteilnehmerzahl von fünf Studierenden voraus, über Ausnahmen entscheidet der Prüfungsausschuss.

(4) Zusatzfächer sind die von den Studierenden freiwillig und zusätzlich zu den Pflicht- und Wahlpflichtmodulen belegten Module aus dem Katalog der Wahlpflicht-/ Wahlmodule für den Master-Studiengang Renewable Energy and E-Mobility bzw. aus weiteren Angeboten der Hochschule Stralsund, die für die Erreichung des Studienzieles nicht verbindlich vorgeschrieben sind. Diese fakultativen Lehrangebote dienen den Studierenden als Ergänzung, Vervollkommnung, weiteren Vertiefung oder Spezialisierung. Nähere Regelungen zu den Zusatzfächern ergeben sich aus dem § 28 der Rahmenprüfungsordnung der Hochschule Stralsund.

§ 7
Studienberatung

(1) Die allgemeine Studienberatung erfolgt zentral durch das Dezernat für Studien- und Prüfungsangelegenheiten und Internationales der Hochschule Stralsund und durch die Studiendekanin oder den Studiendekan der Fakultät für Elektrotechnik und Informatik.

(2) Die studiengangspezifische Studienberatung erfolgt an der Fakultät für Elektrotechnik und Informatik durch die für den Studiengang benannte Ansprechperson.

II.
Module

§ 8
Modulüberblick

(1) Aus folgenden Pflicht- und Wahlpflichtmodulen setzt sich der Studienplan für den 3-semestrigen Master-Studiengang Renewable Energy and E-Mobility zusammen. Der Studienplan ist für die Immatrikulation im Sommersemester gültig. Erfolgt eine Immatrikulation im Wintersemester sind das erste und zweite Semester zu tauschen.

This study plan is valid for matriculation in the summer semester. If the matriculation is in the winter semester, the first and second semesters must be exchanged.

Course	Type	1.	2.	3.	SWH	ECTS
Mathematical-scientific and technical bases					**8**	**12**
REEMM1100 - Selected Chapters of Mathematics	CM	4+0			4	6
REEMM1300 - System Theory	CM		4+0		4	6
Specialized technical bases of renewable energy					**8**	**12**
REEMM1400 - Renewable Energy Systems	CM	4+0			4	6
REEMM2200 - Methods of Power Engineering	CM		3+1		4	6
Application-oriented profiling, elective modules					**20**	**30**
REEMM2010 - Elective Module (AO) I	EM	4			4	6
REEMM2020 - Elective Module (AO) II	EM		4		4	6
REEMM2030 - Elective Module (AO) III	EM		4		4	6
REEMM2040 - Elective Module (AO) IV	EM		4		4	6
REEMM2060 - Elective Module (F) I	EM	4			4	6
Interdisciplinary qualifications (1 from 2)					**4**	**6**
REEMM3600 - Quality in Automotive Industry	EM *)	3+1			4	6
REEMM3800 - Energy and Environmental Management	EM *)		3+1		4	6
Master-Thesis with colloquium	P			6M	**6M**	**30**
Total		**20**	**20**	**6M**	**40 + 6M**	**90**

Open list of elective modules (AO) (according to § 6 of the regulations of study programme):
- Hydrogen Technology
- Solar Systems
- Wind Power Plants
- Advanced Power Electronics
- Vehicle Management Systems
- Control of electrical drives
- Project Seminar E-Mobility
- Current Topics of renewable energy use I and II
- Project Renewable Energy
- Sustainable non-fossil mobility
- Vehicle Simulation & Test Drive
- Fuel Cell Systems

Open list of elective modules (F) (according to §6 of the regulations of study programme):
- Selected Topics of Control Engineering
- Power Electronics
- International Accounting
- Electrical Energy Conversion and Transmission
- Modelling of Physical Systems
- Human Resources Management
- This list also contains all modules of the list AO.
- It is also possible to choose one of the modules "Quality in Automotive Industry" or "Energy and Environmental Management" if it was not chosen in the category interdisciplinary qualifications.

Explanations:

CM = Compulsory module, Pflichtmodule

EM = Elective module, Wahlpflichtmodule

*) = One of these two modules must be selected; on request, additional modules from the area of "Interdisciplinary qualification" from other Master's degree courses in the Department of Electrical Engineering and Computer Science can also be selected.

6M = 6 months

x + y = Lecture-/ seminar-style tuition- / exercise hours + laboratory-/seminar hours

The subdivision of the semester week hours (SWH) during lecture-/ seminar-style tuition- / exercise hours + laboratory-/seminar hours is a proposal, which can be varied by the instructor in his / her own direction.

(2) Aus folgenden Pflicht- und Wahlpflichtmodulen setzt sich der Studienplan für den 4-semestrigen Master-Studiengang Renewable Energy and E-Mobility mit Praxissemester zusammen.

Course	Type	1.	2.	3.	4	SWH	ECTS
Mathematical-scientific an technical bases						**8**	**12**
REEMM1100 - Selected Chapters of Mathematics	CM	4+0				4	6
REEMM1300 - System Theory	CM		4+0			4	6
Specialized technical bases of renewable energy						**8**	**12**
REEMM1400 - Renewable Energy Systems	CM	4+0				4	6
REEMM2200 - Methods of Power Engineering	CM		3+1			4	6
Application-oriented profiling, elective modules						**20**	**30**
REEMM2010 - Elective Module (AO) I	EM	4				4	6
REEMM2020 - Elective Module (AO) II	EM		4			4	6
REEMM2030 - Elective Module (AO) III	EM		4			4	6
REEMM2040 - Elective Module (AO) IV	EM		4			4	6
REEMM2060 - Elective Module (F) I	EM	4				4	6
Interdisciplinary qualifications (1 from 2)						**4**	**6**
REEMM3600 - Quality in Automotive Industry	EM *)	3+1				4	6
REEMM3800 - Energy and Environmental Management	EM *)		3+1			4	6
Internship semester	P			21W		**21W**	**30**
Master-Thesis with colloquium	P				6M	**6M**	**30**
Total		**20**	**20**	**5M**	**6M**	**40+11M**	**120**

Open list of elective modules (AO) (according to § 6 of the regulations of study programme):

- Hydrogen Technology
- Solar Systems
- Wind Power Plants
- Advanced Power Electronics
- Vehicle Management Systems
- Control of electrical drives
- Project Seminar E-Mobility
- Current Topics of renewable energy use I and II
- Project Renewable Energy
- Sustainable non-fossil mobility
- Vehicle Simulation & Test Drive
- Fuel Cell Systems

Open list of elective modules (F) (according to §6 of the regulations of study programme):

- Selected Topics of Control Engineering
- Power Electronics
- International Accounting
- Electrical Energy Conversion and Transmission
- Modelling of Physical Systems
- Human Resources Management
- This list also contains all modules of the list AO.
- It is also possible to choose one of the modules "Quality in Automotive Industry" or "Energy and Environmental Management" if it was not chosen in the category interdisciplinary qualifications.

Explanations**:**

CM = Compulsory module, Pflichtmodul

EM	=	Elective module, Wahlpflichtmodul
*)	=	One of these two modules must be selected; on request, additional modules from the area of "Interdisciplinary qualification" from other Master's degree courses in the Department of Electrical Engineering and Computer Science can also be selected.
21W	=	21 weeks
6M	=	6 months
x + y	=	Lecture-/ seminar-style tuition- / exercise hours + laboratory-/seminar hours

The subdivision of the semester week hours (SWH) during lecture-/ seminar-style tuition- / exercise hours + laboratory-/seminar hours is a proposal, which can be varied by the instructor in his / her own direction.

(3) Aus folgenden Pflicht- und Wahlpflichtmodulen setzt sich der Studienplan für den 4-semestrigen Master-Studiengang Renewable Energy and E-Mobility ohne Praxissemester zusammen.

Course	Type	1.	2.	3.	4	SWH	ECTS
Mathematical-scientific an technical bases						**8**	**12**
REEMM1100 - Selected Chapters of Mathematics	CM	4+0				4	6
REEMM1300 - System Theory	CM		4+0			4	6
Specialized technical bases of renewable energy						**8**	**12**
REEMM1400 - Renewable Energy Systems	CM	4+0				4	6
REEMM2200 - Methods of Power Engineering	CM		3+1			4	6
Application-oriented profiling, elective modules						**32**	**48**
REEMM2010 - Elective Module (AO) I	EM	4				4	6
REEMM2020 - Elective Module (AO) II	EM		4			4	6
REEMM2030 - Elective Module (AO) III	EM		4			4	6
REEMM2040 - Elective Module (AO) IV	EM		4			4	6
REEMM2050 - Elective Module (AO) V	EM			4		4	6
REEMM2060- Elective Module (F) I	EM	4				4	6
REEMM2070 - Elective Module (F) II	EM			4		4	6
REEMM2080 - Elective Module (F) III	EM			4		4	6
Interdisciplinary qualifications (1 from 2)						**4**	**6**
REEMM3600 - Quality in Automotive Industry	EM *)	3+1				4	6
REEMM3800 - Energy and Environmental Management	EM *)		3+1			4	6
REEMM4100 Project work	P			360h		**360h**	**12**
Master-Thesis with colloquium	P				6M	**6M**	**30**
Total		**20**	**20**	**12 +360h**	**6M**	**52+6M +360h**	**120**

Open list of elective modules (AO) (according to § 6 of the regulations of study programme):

- Hydrogen Technology
- Solar Systems
- Wind Power Plants
- Advanced Power Electronics
- Vehicle Management Systems
- Control of electrical drives
- Project Seminar E-Mobility
- Current Topics of renewable energy use I and II
- Project Renewable Energy
- Sustainable non-fossil mobility
- Vehicle Simulation & Test Drive
- Fuel Cell Systems

Open list of elective modules (F) (according to §6 of the regulations of study programme):

- Selected Topics of Control Engineering
- Power Electronics
- International Accounting
- Electrical Energy Conversion and Transmission
- Modelling of Physical Systems
- Human Resources Management
- This list also contains all modules of the list AO.
- It is also possible to choose one of the modules "Quality in Automotive Industry" or "Energy and Environmental Management" if it was not chosen in the category interdisciplinary qualifications.

Explanations:

CM	=	Compulsory module, Pflichtmodul
EM	=	Elective module, Wahlpflichtmodul
*)	=	One of these two modules must be selected; on request, additional modules from the area of "Interdisciplinary qualification" from other Master's degree courses in the Department of Electrical Engineering and Computer Science can also be selected.
6M	=	6 months
360h	=	360 hours
x + y	=	Lecture-/ seminar-style tuition- / exercise hours + laboratory-/seminar hours

The subdivision of the semester week hours (SWH) during lecture-/ seminar-style tuition- / exercise hours + laboratory-/seminar hours is a proposal, which can be varied by the instructor in his / her own direction.

III. Schlussbestimmungen

§ 9
Inkrafttreten

(1) Diese Studienordnung gilt für alle Studierenden, auf die die Fachprüfungsordnung des Master-Studiengangs Renewable Energy and E-Mobility an der Hochschule Stralsund vom 14. November 2017 Anwendung findet.

(2) Die Vorschriften der Studienordnung des Master-Studiengangs Renewable Energy and E-Mobility an der Hochschule Stralsund gelten erstmals für die Studierenden, die im Sommersemester 2018 immatrikuliert werden.

(3) Die Studienordnung tritt am Tage nach ihrer Veröffentlichung auf der Homepage der Hochschule Stralsund in Kraft.

Ausgefertigt aufgrund des Beschlusses des Akademischen Senates der Hochschule Stralsund vom 17. Oktober 2017 sowie der Genehmigung des Rektors vom 14. November 2017.

Stralsund, den 14. November 2017

Der Rektor
der Hochschule Stralsund
University of Applied Sciences
Dr. Matthias Straetling

Anlagen

Anlage 1: Praktikumsrichtlinie

Praktisches Studiensemester

Inhalt:

1. Einführung

Im 4-semestrigen Master-Studiengang Renewable Energy and E-Mobility ist ein praktisches Studiensemester verbindlich. Ziel des praktischen Studiensemesters ist die Anwendung der im Erst-Studium erworbenen Kenntnisse auf betriebliche Problemstellungen und/oder der Erwerb fachspezifischer Fertigkeiten und Kenntnisse sowie das fachspezifische praktische Heranführen an Arbeiten und Aufgaben aus dem künftigen beruflichen Tätigkeitsfeld.
Für die Organisation des praktischen Studiensemesters sind die Studierenden selbst verantwortlich. Dabei werden die Studierenden von der Hochschule Stralsund unterstützt und bei ihrer Entscheidung hinsichtlich der Auswahl von Praktikantenstellen beraten. Eine Berufstätigkeit nach dem ersten berufsqualifizierenden Abschluss kann ganz oder teilweise unter bestimmten Voraussetzungen als praktisches Studiensemester anerkannt werden.

2. Umfang und studiengangspezifische Inhalte des praktischen Studiensemesters

2.1. Umfang

Das praktische Studiensemester umfasst eine zusammenhängende Praxiszeit von mindestens 21 Wochen. Ausgefallene Arbeitszeiten sind prinzipiell nachzuholen. Wird das Ausbildungsziel durch die Ausfallzeit nicht beeinträchtigt, kann von der Nachholung abgesehen werden, wenn die Ausfallzeit nachweislich von den Studierenden nicht zu vertreten ist (beispielsweise Krankheit, Betriebsruhe, Ableistung einer Wehrübung) und sie sich insgesamt nicht über mehr als 6 Tage erstreckt.

Die Studierenden sind von der betrieblichen Ausbildungsstelle (Praktikantenstelle) in die ihnen gestellten Aufgaben, deren Randgebiete und übergreifende Zusammenhänge einzuführen. Es ist wünschenswert, dass sie an Besprechungen hinsichtlich ihres Aufgabengebietes teilnehmen und ihnen ein Einblick in benachbarte Betriebsbereiche ermöglicht wird.
Die Aufgabenstellung soll für die Studierenden fachlich und terminlich überschaubar sein, ihrem Ausbildungsstand entsprechen und sich in die Zielstellung des praktischen Studiensemesters einordnen. Sowohl eine Themengliederung als auch eine Aktualisierung der Themenstellung nach Bearbeitungsfortschritt und aktuellen Randbedingungen werden empfohlen.

2.2. Studiengangspezifische Inhalte

Die inhaltliche Ausgestaltung des praktischen Studiensemesters beschreiben die nachfolgenden Aspekte:

- Die Studierenden sollen im Rahmen des praktischen Studiensemesters selbstständig Aufgaben allein oder in einem Team unter fachlicher Anleitung bearbeiten, die innerhalb der typischen Tätigkeitsbereiche der Absolventen des Studienganges Renewable Energy and E-Mobility liegen.
- Der Inhalt des praktischen Studiensemesters soll so konzipiert werden, dass studiengangspezifische Problemstellungen in sinnvoller Integration von Praxis und Theorie Berücksichtigung finden.

3. Anmeldung und Anerkennung des praktischen Studiensemesters

Die Studierenden melden ihr praktisches Studiensemester vor Antritt bei der/dem für ihren Studiengang zuständigen Beauftragten für das praktische Studiensemester an. Diese/dieser entscheidet über die Anerkennung der Praktikantenstelle.
Das praktische Studiensemester wird als „mit Erfolg durchgeführt“ anerkannt oder als „nicht mit Erfolg durchgeführt“ nicht anerkannt. Die Feststellung hierüber und die Anerkennung trifft die jeweils fachlich betreuende Fachvertretung im Einvernehmen mit der/dem Beauftragten für das praktische Studiensemester. Die Studierenden werden über das Ergebnis informiert. Die Anerkennung erfolgt:

- auf der Grundlage der von den Studierenden angefertigten Praxisberichte.

Der Praxisbericht ist von den Studierenden nach Möglichkeit innerhalb der Praxiszeit anzufertigen, von der Praktikantenstelle auf sachliche Richtigkeit zu überprüfen und gegenzuzeichnen und innerhalb von zwei Wochen nach Beendigung der Praxiszeit bei der/dem betreuenden Fachvertreter/in abzugeben. Der Bericht soll etwa 20 DIN-A4-Seiten umfassen. Der Praxisbericht soll insbesondere die übertragenen Aufgaben nennen und wesentliche Arbeitsergebnisse beschreiben. Aus ihm müssen der zeitliche Ablauf der Tätigkeiten sowie die jeweilige funktionale betriebliche Einordnung hervorgehen. Weitere Festlegungen zu Form und Inhalt des Praxisberichtes sind im Einvernehmen zwischen Praktikantenstelle und fachlich betreuendem/r Fachvertreter/in möglich.
Der Tätigkeitsnachweis (siehe Anlage) ist von der Praktikantenstelle auszustellen und gibt die Art und Dauer der Tätigkeit in den einzelnen Ausbildungsabschnitten wieder. Falls Ausfallzeiten während des praktischen Studiensemesters aufgetreten sind, stellt die/der fachlich betreuende Fachvertreter/in der Hochschule Stralsund im Benehmen mit der/dem Beauftragte/n der Praktikantenstelle fest, ob dies die Anerkennung des praktischen Studiensemesters beeinträchtigt.

Erkennt die Fakultät das praktische Studiensemester zunächst nicht an, so legt sie fest, unter welchen Voraussetzungen die Anerkennung ggf. erfolgen kann.

4. Anerkennung von berufspraktischen Zeiten außerhalb der Hochschule als praktisches Studiensemester

Eine Berufstätigkeit von mindestens 21 Wochen nach dem ersten berufsqualifizierenden Abschluss, die den inhaltlichen Vorgaben für das praktische Studiensemester dieser Richtlinie entspricht, kann ganz oder teilweise als praktisches Studiensemester anerkannt werden. Dazu ist ein Antrag bei dem für den Studiengang zuständigen Beauftragten für das praktische Studiensemester zu stellen, ein Praxisbericht anzufertigen und nach Möglichkeit Arbeitszeugnisse und weitere Nachweise, die die Art der Tätigkeiten sowie die Dauer der Berufstätigkeiten belegen, vorzulegen. Die Anerkennung erfolgt auf der Grundlage des von dem Studierenden angefertigten Praxisberichts und der von ihm eingereichten Unterlagen und Nachweise.

5. Wahl des Praktikumsplatzes

Das praktische Studiensemester ist außerhalb der Hochschule in einem Unternehmen, einer Behörde oder Institution oder an einem An- oder In-Institut der Hochschule abzuleisten (Praktikantenstelle).
Die Praktikantenstelle soll gewährleisten, dass studiengangspezifische Fragestellungen bearbeitet werden können. Die Aufgaben des berufspraktischen Studiensemesters müssen die Studieninhalte in sinnvoller Weise ergänzen bzw. in sinnvollem Bezug zu den Studieninhalten stehen.
Die Studierenden sind verpflichtet, sich selbst um einen Praktikumsplatz zu bemühen. Sie bewerben sich bei einer geeigneten Praktikantenstelle. Diese ist der/den Beauftragten des praktischen Studiensemesters in den Fakultäten der Hochschule Stralsund vor Beginn des praktischen Studiensemesters zu benennen und von ihnen genehmigen zu lassen.
Falls ein Studierender oder eine Studierende bei den von ihm/ihr angesprochenen Praktikantenstellen keinen Praktikumsplatz erhält, unterstützt die Hochschule Stralsund bei der Suche nach einem geeigneten Praktikumsplatz durch Nennung von Praktikantenstellen, die bislang bereit waren, Studierende aufzunehmen.

6. Rechtliche und soziale Stellung der Studierenden

6.1. Rechtsstatus

Während des praktischen Studiensemesters sind die Studierenden als ordentlich Studierende an der Hochschule mit allen Rechten und Pflichten eingeschrieben, soweit sich nichts anderes aus der Grundordnung der Hochschule ergibt.

6.2. Vergütung

Für Studierende im praktischen Studiensemester besteht kein Rechtsanspruch auf Vergütung.

6.3. Versicherung/Haftung

Studierende sind während des praktischen Studiensemesters über die für die Praktikantenstelle zuständige Berufsgenossenschaft gegen Arbeitsunfall versichert. Für

Studierende im praktischen Studiensemester gelten ferner die Bestimmungen über die studentische Krankenversicherung gemäß § 5 Abs. 1 Nr. 10 SGB V.

Sie unterliegen dagegen nach der Rechtsprechung des Bundessozialgerichts nicht der Versicherungspflicht für abhängig Beschäftigte in der Kranken-, Renten- und Arbeitslosenversicherung (Urteil des Bundessozialgerichts vom 17. Dez. 1980, Az.:12 RK 10/79).
Der Abschluss einer Haftpflichtversicherung durch die Studierenden wird empfohlen, sofern die Praktikantenstelle nicht ohnehin eine solche Versicherung verlangt oder das Haftpflichtrisiko nicht durch eine von der Praktikantenstelle abgeschlossene Versicherung abgedeckt ist.

6.4. Praktikantenvertrag

Während des praktischen Studiensemesters wird das Praktikantenverhältnis rechtsverbindlich durch einen zwischen den Studierenden und der Praktikantenstelle abgeschlossenen Vertrag festgelegt. Dieser Praktikantenvertrag ist vor Beginn des praktischen Studiensemesters von der/dem Beauftragten für das praktische Studiensemester zu unterzeichnen.
Der Vertrag sollte insbesondere folgendes regeln:

a) Verpflichtung der Praktikantenstelle,

- die Studierenden im jeweils festzusetzenden Zeitraum entsprechend dieser Richtlinie für das praktische Studiensemester auszubilden,
- sie in die geltenden Ordnungen, insbesondere Arbeitsordnungen und Unfallverhütungsvorschriften sowie Vorschriften über die Schweigepflicht und Geheimhaltung einzuweisen,
- der/dem fachlich betreuenden Fachvertreter/in der Hochschule Stralsund die Betreuung der Studierenden zu ermöglichen,
- ihnen einen schriftlichen Nachweis über die Art und Dauer der einzelnen Tätigkeiten auszuhändigen,
- den von den Studierenden zu erstellenden Praxisbericht zu prüfen und abzuzeichnen,
- den Studierenden zu ermöglichen, Fehlzeiten gemäß Ziffer 2 Absatz 2 nachzuholen,

b) Verpflichtung der Studierenden,

- die gebotenen Ausbildungsmöglichkeiten wahrzunehmen,
- die im Rahmen des Vertrages übertragenen Aufgaben sorgfältig auszuführen,
- den im Rahmen der Ausbildung erteilten Anordnungen der Praktikantenstelle und von ihr beauftragter Personen nachzukommen,
- die geltenden Ordnungen insbesondere Arbeitsordnungen und Unfallverhütungsvorschriften sowie Vorschriften über die Schweigepflicht und Geheimhaltung zu beachten,
- den Praxisbericht zu erstellen,
- bei Fernbleiben die Praktikantenstelle unverzüglich zu benachrichtigen und bei Arbeitsunfähigkeit infolge Krankheit spätestens am 3. Tag eine ärztliche Bescheinigung vorzulegen.

c) Fragen zum Versicherungsschutz der Studierenden

d) Die Möglichkeit der vorzeitigen Vertragsauflösung.

Besondere Vereinbarungen zwischen Praktikantenstelle und Studierenden sind möglich.

Im Praktikantenvertrag werden namentlich aufgeführt:
- die/der Ausbildungsbeauftragte der Praktikantenstelle,
- die/der jeweilige Beauftragte für das praktische Studiensemester der Hochschule Stralsund und
- die/der fachlich betreuende Fachvertreter/in.

Für den Abschluss des Praktikantenvertrages sollte der beigefügte Vertrag (siehe Anlage) verwendet werden. Abweichungen von dem Vertrag sind von der/dem Beauftragten für das praktische Studiensemester zu prüfen und im Falle des Einverständnisses gegenzuzeichnen.

7. Betreuung der Studierenden

Von der jeweiligen Praktikantenstelle wird ein/e Ausbildungsbeauftragte/r benannt, die/der mit den Studierenden den Ablauf des praktischen Studiensemester plant und sie während der praktischen Tätigkeit in der Praktikantenstelle betreut.
Von der Hochschule Stralsund werden die Studierenden zusätzlich durch die/den benannte/n Fachvertreter/in fachlich und organisatorisch betreut. Diese/r ist auch Ansprechpartner/in für die jeweilige Praktikantenstelle im Zusammenhang mit der Durchführung des praktischen Studiensemesters.

8. Durchführung des praktischen Studiensemesters im Ausland

Die Durchführung des praktischen Studiensemesters bei privaten und öffentlichen Unternehmen und Institutionen im Ausland ist wünschenswert, wenn diese geeignet sind, die dem Ziel des praktischen Studiensemesters entsprechenden Kenntnisse und Fähigkeiten zu vermitteln. Neben der eigenständigen Kontaktaufnahme durch die Studierenden kann eine Unterstützung durch entsprechende Gesellschaften über die/den Beauftragte/n für Auslandsangelegenheiten der Hochschule Stralsund beantragt werden.

Tätigkeitsnachweis

Herr/Frau

_____

geboren am _____ in _____

wohnhaft in _____

wurde vom _____ bis _____

zu ihrer/seiner praktischen Ausbildung als Hochschulpraktikant/in wie folgt beschäftigt:

von	bis	Wochen	Art der Beschäftigung

gesamte Wochenzahl:

Fehltage während der Beschäftigungsdauer _____, davon _____ Tage Krankheit, _____ Tage sonstige Abwesenheit.

Der Praxisbericht wurde von den Studierenden abgefasst und zur Vorlage an der Hochschule Stralsund freigegeben.

_____
(Firmenstempel und Unterschrift)

Praktikantenvertrag (Muster deutsche Version)

Vorbemerkung: Mit allen Funktionsbezeichnungen sind Frauen und Männer in gleicher Weise gemeint. Eine sprachliche Differenzierung im Wortlaut der einzelnen Regelung wird aus Gründen der besseren Lesbarkeit nicht getroffen.

Zwischen

_____
(nachfolgend Praktikantenstelle genannt)

_____
(Bezeichnung – Anschrift - Telefon etc.)

und

Herrn/Frau_____

Geboren am_____ in _____

Wohnhaft in _____

Studierende an der Hochschule Stralsund

im Studiengang _____

der Fakultät _____

nachfolgend Studierende genannt, wird folgender

VERTRAG

geschlossen:

§ 1 Allgemeines

Der Studierende führt im o.g. Studiengang der Hochschule Stralsund ein praktisches Studiensemester durch. Die Praktikumsrichtlinie als Anlage 1 der Studienordnung für den Master-Studiengang Renewable Energy and E-Mobility an der Hochschule Stralsund: Praktisches Studiensemester ist Bestandteil dieses Vertrages.

§ 2 Einsatz des Studierenden

Für den Einsatz des Studierenden sind folgende Tätigkeiten vorgesehen:

_____

_____

_____

_____.

§ 3 Pflichten der Vertragspartner

(1) Die Praktikantenstelle verpflichtet sich,

1. den Studierenden in der Zeit vom _____bis_____ (mind. 21 Wochen) für die praktische Studiensemester unter Beachtung der in § 1 genannten Vorschriften auszubilden und zusätzlich dazu ihm zu ermöglichen, etwaige Fehlzeiten nachzuholen,
2. ihn zu den Prüfungen an der Hochschule freizustellen,
3. den vom Studierenden zu erstellenden Praxisbericht zu prüfen und abzuzeichnen,
4. dem Studierenden auf Wunsch ein qualifiziertes Zeugnis auszustellen,
5. dem Studierenden einen schriftlichen Nachweis über Art und Dauer der einzelnen Tätigkeiten auszuhändigen,
6. dem fachlich betreuenden Fachvertreter der Hochschule die Betreuung des Studierenden zu ermöglichen,
7. den Studierenden in die geltenden Ordnungen, insbesondere Arbeitsordnungen und Unfallverhütungsvorschriften sowie Vorschriften über die Schweigepflicht und Geheimhaltung einzuweisen.

(2) Der Studierende verpflichtet sich, sich dem Ausbildungszweck entsprechend zu verhalten, insbesondere

1. die gebotenen Ausbildungsmöglichkeiten wahrzunehmen,
2. die im Rahmen der Richtlinien übertragenen Aufgaben sorgfältig auszuführen,
3. den im Rahmen der Ausbildung erteilten Anordnungen der Ausbildungsstelle und der von ihr beauftragten Person nachzukommen,
4. die geltenden Ordnungen, insbesondere Arbeitsordnungen und Unfallverhütungsvorschriften sowie Vorschriften über die Schweigepflicht und Geheimhaltung zu beachten,
5. den Bericht zum praktischen Studiensemester zu erstellen,
6. bei Fernbleiben die Ausbildungsstelle unverzüglich zu benachrichtigen und bei Arbeitsunfähigkeit infolge von Krankheit spätestens am dritten Tage eine ärztliche Bescheinigung vorzulegen.

§ 4 Kostenerstattungs- und Vergütungsansprüche

_____

_____

§ 5 Ausbildungsbeauftragter

Die Ausbildungsstelle benennt Herrn/Frau

_____

als fachlichen Fachvertreter für die Ausbildung des Studierenden. Dieser Beauftragte ist zugleich Gesprächspartner des Studierenden und des fachlich betreuenden Fachvertreters in allen Fragen, die dieses Vertragsverhältnis berühren.

§ 6 Versicherungsschutz/Haftung

(1) Der Studierende ist während des praktischen Studiensemesters kraft Gesetzes über die für die Praktikantenstelle zuständige Berufsgenossenschaft gegen Arbeitsunfall versichert. Im Versicherungsfall übermittelt die Praktikantenstelle der Hochschule Stralsund einen Abdruck der Unfallanzeige zur Kenntnisnahme.

(2) Auf Verlangen der Praktikantenstelle hat der Studierende eine der Dauer und dem Inhalt des Ausbildungsvertrages angepasste Haftpflichtversicherung nachzuweisen.

§ 7 Vorzeitige Beendigung des Vertrages

Der Vertrag kann aus einem wichtigen Grund ohne Einhaltung einer Frist vorzeitig aufgelöst oder gekündigt werden.

Die Kündigung geschieht durch einseitige schriftliche Erklärung gegenüber dem anderen Vertragspartner nach vorheriger Anhörung des betreuenden Fachvertreters.

§ 8 Vertragsausfertigungen

Dieser Vertrag wird in drei gleichlautenden Ausfertigungen unterzeichnet. Jeder Vertragspartner und die Hochschule Stralsund erhalten eine Ausfertigung.

§ 9 Sonstige Vereinbarungen

_____

_____

_____	_____
(Ort und Datum)	(Ort und Datum)
Praktikantenstelle:	Studierende:
_____	_____
(Unterschrift)	(Unterschrift)

Die Hochschule Stralsund verpflichtet sich, in allen die Ausbildungsdurchführung betreffenden Fragen mit der Praktikantenstelle zusammenzuarbeiten. Als Gesprächspartner für den betrieblichen Beauftragten gemäß § 5 dieses Vertrages benennt die Hochschule Stralsund für die organisatorischen Fragen Herrn/Frau

_____
(Beauftragter für das praktische Studiensemester)

Als fachlich betreuenden Fachvertreter der Hochschule Stralsund benennt die Fakultät für Elektrotechnik und Informatik Herrn/Frau

_____

Die Hochschule Stralsund wird die Praktikantenstelle über alle Fragen, die die Durchführung der Ausbildung betreffen, informieren und Änderungen der Ausbildungsrichtlinien während der Dauer des Ausbildungsverhältnisses nur nach Abstimmung mit der Praktikantenstelle vornehmen.

_____	_____
(Ort und Datum)	(Beauftragter für das praktische Studiensemester)

Trainee contract (sample, English version)

between_____
(firm- authority - institution)

_____
(name - address - telephone)

subsequently called training enterprise, and

Mr/Mrs/Ms _____

born on _____ in _____

resident in _____

student of _____

in the Department of _____

at the Hochschule Stralsund,

subsequently called student, the following

CONTRACT

has been concluded:

§ 1
General

An internship semester in enterprises is compulsory for all students of Hochschule Stralsund. All regulations of the practical semester are part of this contract.

§ 2
Student Employment

The following work is provided for the employment of the student:
_____

_____

_____

_____

§ 3
Duties of Contract Partners

(1) The training enterprise undertakes,

1. to employ the student for the period of _____ to _____ (minimum duration 21 weeks),

2. to allow him to attend examinations at the Hochschule Stralsund,
3. to check and sign the student internship report,
4. to write a graded certificate for the student, if he so wishes,
5. to give the student a written certificate stating duration and kind of occupation,
6. to allow his tutor of the Hochschule Stralsund to check on his progress,
7. to inform the student about all valid regulations, particularly work regulations, safety provisions and secrecy.

(2) The student undertakes,

1. to use the training opportunities offered,
2. to work conscientiously,
3. to perform the tasks entrusted to him,
4. to observe the work regulations and safety provisions as well as regulations regarding professional secrecy,
5. to write an internship report,
6. to inform the place of training immediately in case of absence and to present a medical certificate within 3 days in case of illness.

§ 4
Entitlement to Remuneration and Reimbursement

_____

_____

§ 5
Training Representative of the Enterprise

The representative of the training enterprise is Mr/Mrs/Ms _____ as the student's special supervisor. He/She is also the discussion partner for the student and the student's tutor at Hochschule Stralsund for all questions regarding the present contract.

§ 6
Insurance

(1) The student is responsible for his/her insurance cover during the period of the contract. By law the student is insured with the relevant professional or trade association against accidents at work. In case of a claim against the insurance company the place of training will send the Hochschule Stralsund copy of the accident report.

(2) If the place of training so wishes the student is obliged to take out personal liability insurance for the period of his training.

§ 7
Cancellation of Contract

This contract may be cancelled at any time without notice for an urgent reason. Cancellation can be effected by unilateral written declaration of one of the contract parties and should be addressed to the other party after the student's tutor has been consulted.

§ 8
Copies of the Contract

Three identical copies of this contract have to be signed. Each partner and Hochschule Stralsund receives a copy.

§ 9
Further Agreements

_____

_____

_____

_____	_____
(Place and Date)	(Place and Date)
Training enterprise:	Student:
_____	_____
(Signature)	(Signature)

Hochschule Stralsund will cooperate with the training enterprise in all questions regarding the training period. The representative of Hochschule Stralsund according to § 5 of this contract who may be contacted by the supervisor of the training enterprise is

Mr/Mrs/Ms _____.
(Representative of the Department)

The student's tutor at Hochschule Stralsund is

Mr/Mrs/Ms _____.

Hochschule Stralsund will keep the training enterprise informed about all questions concerning the training. Changes regarding the training regulations will only be made after consulting the training enterprise.

_____	_____
(Place and Date)	(Representative of the Department)

Anlage 2: Modulhandbuch

Module Manual
of the Master Program Renewable Energy and E-Mobility (REEMM)
of the University of Applied Science Stralsund

Contents

Compulsory Modules

The following table entries in the line "Regular Semester" refer to the Master with a standard period of study of three semesters In the case of the Master with a standard study period of four semesters, the term "Regular Semester" in the Master's thesis increases by one semester.

Course	**REEMM1000 - Selected Chapters of Mathematics**			Quality/Degree: Master Sc.
	Course, symbol, title	**REEMM1100 - Selected Chapters of Mathematics**		
	Language	English		
Assignment to the curriculum	Programme	Renewable Energy and E-Mobility		
	Semester	1st semester	Regular semester	2nd semester
	Duration	1 semester	frequency	Annual
			compulsory / elective	Compulsory
Educational methods/SWH	Methods	Lecture and follow-up course work, exercise, seminar		
	Number SWH	0 lectures + 3 seminar-style tuition + 1 exercise+ 0 laboratory + 0 seminar		
Work load	Presence study	64 h contact time		
	Self-study	116 h preparative and follow-up course work, individual studies, examination preparation		Σ 180 h
ECTS-points		6		
prerequisite according study regulations				
Additional recommended requirements				
Examination procedure		Written exam, 2 h (Klausur, 2 h)		
Learning outcomes		The students know the concept and applications of systems of differential equations. They can apply numerical methods to solve initial value problems and boundary value problems. The students know and can apply the theory for solving systems of linear differential equations. They understand the fundamentals of the theory of partial differential equations.		
Content		Systems of differential equations: Existence, uniqueness and stability of solutions; Numerical methods for approximating solutions using MATLAB. Boundary value problems: Numerical methods. Introduction to partial differential equations with examples the 2-dimensional heat equation, wave equation and Laplace equation		
Literature /references		Richard L. Burden, J. Douglas Faires: Numerical Analysis, 9th ed., Brooks/Cole, Cengage Learning 2011 Ward Cheney, David Kincaid: Numerical Mathematics and Computing, 6th ed., Thomson Brooks/Cole 2008 William Trench: Elementary Differential Equations with Boundary Value Problems, Brooks/Cole 2001		

	William Trench: Elementary Differential Equations, 2013, http://digitalcommons.trinity.edu/mon/8

Course	**REEMM1300 - System Theory**			Quality/Degree: Master Sc.
	Course, symbol, title	**REEMM1300 - System Theory**		
	Language	English, optional German possible		
Assignment to the curriculum	Programme	Renewable Energy and E-Mobility		
	Semester	2nd semester	Regular semester	2nd semester
	Duration	1 semester	frequency	Annual
			compulsory / elective	Compulsory
Educational methods/SWH	Methods	Lecture and follow-up course work, exercise		
	Number SWH	0 lectures + 2 seminar-style tuition + 2 exercise + 0 laboratory + 0 seminar		
Work load	Presence study	64 h contact time		Σ 180 h
	Self-study	116 h preparative and follow-up course work, individual studies, examination preparation		
ECTS-points		6		
prerequisite according study regulations				
Additional recommended requirements		Basic knowledge in control engineering and physics, Laplace transformation, differential and integral calculus		
Examination procedure		Written exam, 2 h (Klausur, 2 h)		
Learning outcomes		Students should acquire well founded system theoretical knowledge, i.e. describe and analyze dynamic systems as well as apply the methods to SISO and MIMO-systems and to be able to apply their system theory knowledge to problems of communications engineering and control technology		
Content		Description of linear time-invariant systems in the time and frequency domain; Analysis of analogue and time-discrete SISO and MIMO systems in the state space (controllability, observability and stability), state controller and observer design, method for system analysis		
Literature /references		Franklin, G.F.; Powell, J. D.; Emami-Naeini, A.: Feedback Control of Dynamic Systems, Pearson; 7 edition, 2017. Goodwin, G. C.; Graebe F. S.; Salgado, M. E.: Control System Design, , Pearson, 2001. Steffenhagen, B. :Kleine Formelsammlung Regelungstechnik, Carl Hanser Verlag 2010. Further literature will be announced during the course.		

Course	**REEMM1400 - Renewable Energy Systems**			Quality/Degree: Master Sc.
	Course, symbol, title	**REEMM1400 - Renewable Energy Systems**		
	Language	English, optional German possible		
Assignment to the curriculum	Programme	Renewable Energy and E-Mobility		
	Semester	1st semester	Regular semester	2nd semester
	Duration	1 semester	frequency	Annual
			compulsory / elective	compulsory
Educational methods/SWH	Methods	Lecture, exercise and follow-up course work, seminar		
	Number SWH	0 lectures + 2 seminar-style tuition + 2 exercise + 0 laboratory + 0 seminar		
Work load	Presence study	64 h contact time		
	Self-study	116 h preparative and follow-up course work, individual studies, examination preparation		Σ 180 h
ECTS-points		6		
prerequisite according study regulations				
Additional recommended requirements				
Examination procedure		Written exam, 2 h and certificate of laboratory work (Klausur, 2 h und Übungsschein)		
Learning outcomes		The students have acquired knowledge about the theoretical description, technical possibilities and practical implementation problems in the transition from conventional to regenerative decentralized energy supply systems by intensifying their methodological knowledge. They are able to systematically apply the acquired abilities and knowledge in the profession.		
Content		Installation and planning of regenerative energy generators - offshore and onshore technology - energy storage - power grid integration - island grid configuration- intelligent grid protection - grid control and monitoring – frequency stability in distribution networks –- optimization process for decentralized energy management		
Literature /references		Quaschning, V.: Understanding Renewable Energy Systems; Earthscan/Routledge London, 2nd edition 2016. Quaschning, V.: Renewable Energy and Climate Change; John Wiley & Sons, Ltd Chichester, 1st edition 2010. Lund, H.: Renewable Energy Systems, Elsevier, 2nd Edition 2014. Kaltschmitt, M.; Streicher, W.; Wiese, A.: Renewable Energy Technology, Economics and Environment, Springer Verlag, 2007. Further literature will be announced during the course.		

Course	**REEMM2010...2050 - Elective Modules (AO) I to V**			Quality/Degree: Master Sc.
	Course, symbol, title	**REEMM2010, REEMM2020, REEMM2030, REEMM2040, REEMM2050** **Elective Modules I to V**		
	Language	English, optional German possible		
Assignment to the curriculum	Programme	Renewable Energy and E-Mobility		
	Semester	1st or 2nd or 3rd semester	Regular semester	2nd semester (3S, 4SwP) 3rd semester (4SwoP)
	Duration	1 semester	frequency	Annual
			compulsory / elective	compulsory
Educational methods/SWH	Methods	Lecture and follow-up course work, exercise, seminar, laboratory		
	Number SWH	4		
Work load	Presence study	64 h contact time		
	Self-study	116 h preparative and follow-up course work, individual studies, examination preparation		Σ 180 h
ECTS-points		6		
prerequisite according study regulations				
Additional recommended requirements				
Examination procedure		In accordance with the examination procedure defined for the chosen module in the FPO		
Learning outcomes		The students acquire complementary skills as well as profound knowledge in the selected fields: • current topics of renewable energies • wind power plants • hydrogen technology • solar systems • control of electrical drives • electro mobility • advanced power electronics • sustainable non-fossil mobility • vehicle simulation • vehicle management systems depending on the current range of elective modules and the interests of the students		
Content		Courses are offered according to §6 of the regulations of study programme or from the above-mentioned topic pool (list of modules (AO) in the appendix). The theme pool is open, which means that the offer can vary from semester to semester.		
Literature /references		Depending on the offered course		

Course	**REEMM2060...2080 - Elective Modules (F) I to III**			Quality/Degree: Master Sc.
	Course, symbol, title	**REEMM2060, REEMM2070, REEMM2080 Elective Modules (F) I to III**		
	Language	English, optional German possible		
Assignment to the curriculum	Programme	Renewable Energy and E-Mobility		
	Semester	1st or 3rd semester	Regular semester	2nd semester (3S, 4SwP) 3rd semester (4SwoP)
	Duration	1 semester	frequency	Annual
			compulsory / elective	compulsory
Educational methods/SWH	Methods	Lecture and follow-up course work, exercise, seminar, laboratory		
	Number SWH	4		
Work load	Presence study	64 h contact time		
	Self-study	116 h preparative and follow-up course work, individual studies, examination preparation		Σ 180 h
ECTS-points		6		
prerequisite according study regulations				
Additional recommended requirements				
Examination procedure		In accordance with the examination procedure defined for the chosen module in the FPO.		
Learning outcomes		The students expand their practice-oriented interdisciplinary knowledge in relation to related engineering or economics, deepen their knowledge in the field of electrical engineering or computer science based on their bachelor's degree or deepen their language skills, depending on the current range of elective modules and the interests of the students.		
Content		Courses are offered according to §6 of the regulations of study programme or from the above-mentioned topic pool (list of modules (F) or (AO) in the appendix). The theme pool is open, which means that the offer can vary from semester to semester.		
Literature /references		Depending on the offered course		

Course	**REEMM2200 - Methods of Power Engineering**			Quality/Degree: Master Sc.
	Course, symbol, title	**REEMM2200 - Methods of Power Engineering**		
	Language	English		
Assignment to the curriculum	Programme	Renewable Energy and E-Mobility		
	Semester	2nd semester	Regular semester	2nd semester
	Duration	1 semester	frequency	Annual
			compulsory / elective	compulsory EE elective AE
Educational methods/SWH	Methods	Lecture and follow-up course work, exercise, laboratory		
	Number SWH	0 lectures + 2 seminar-style tuition + 1 exercise+ 1 laboratory + 0 seminar		
Work load	Presence study	64 h contact time		
	Self-study	116 h preparative and follow-up course work, individual studies, examination preparation		Σ 180 h
ECTS-points		6		
prerequisite according study regulations				
Additional recommended requirements				
Examination procedure		Written exam, 2 h and certificate of laboratory work (Klausur, 2 h und Übungsschein)		
Learning outcomes		The students are able to explain and to implement practically oriented procedures to stabilize, secure and optimize electrical supply and consumer installations.		
Content		Flexible AC Transmission Systems – passive and active power filters – space vector model of electrical three phase systems – control of active power filters - high voltage DC transmission – lightning protection methods – switching operation and travelling waves – supply reliability in public mains supply		
Literature /references		Leonhard, W.: Control of Electrical Drives, Springer. Akagi, A., Watanabe, E.H., Aredes, M.: Instantaneous Power Theory and Applications to Power Conditioning. Trzynadlowski, A.M.: Modern Power Electronics. Constantinescu-Simon, L.: Handbuch Elektrische Energietechnik, Vieweg Verlag, Braunschweig, 1997. Phillipow, E.: Theoretische Elektrotechnik, Verlag Technik, Berlin, 1986. Further literature will be announced during the course.		

Course	**REEMM3600 - Quality in Automotive Industry**			Quality/Degree: Master Sc.
	Course, symbol, title	**REEMM3600 - Quality in Automotive Industry**		
	Language	English, optional German possible		
Assignment to the curriculum	Programme	Renewable Energy and E-Mobility		
	Semester	2nd semester	Regular semester	2nd semester
	Duration	1 semester	frequency	Annual
			compulsory / elective	Compulsory
Educational methods/SWH	Methods	Seminar and post-seminar work, laboratory		
	Number SWH	0 lectures + 3 seminar-style tuition + 0 exercise+ 1 laboratory + 0 seminar		
Work load	Presence study	64 h seminars, laboratory, consultation		
	Self-study	116 h preparative and post-seminar work, individual studies, examination preparation		Σ 180 h
ECTS-points		6		
prerequisite according study regulations				
Additional recommended requirements				
Examination procedure		Written exam, 2 h (Klausur, 2 h)		
Learning outcomes		The students are well versed in organisational and statistical methods to implement and maintain quality management systems in organisations with reference to automotive industry. Methods and concepts of quality management in automotive industry can be applied. Especially the zero defects objective will be focused. The students have the ability, to implement the requirements of the applicable quality standard in its current issue.		
Content		Quality management systems and standards, used in automotive industry. ISO 9001, ISO/TS 16949, International Automotive Task Force IATF. Process approach: quality management system; management responsibility; resource management, product realization; measurement analysis and improvement. Customers focus, corrective and preventive actions, Total Quality Management, Six Sigma, statistical methods, capability, statistical process control, measuring systems analysis, production part approval process, production process release procedure		
Literature /references		ISO/TS 16949 current revision current state QM-literature, stated in the lecture		

Course	**REEMM3800 - Energy and Environmental Management**			Quality/Degree: Master Sc.
	Course, symbol, title	**REEMM3800 - Energy and Environmental Management**		
	Language	English		
Assignment to the curriculum	Programme	Renewable Energy and E-Mobility		
	Semester	2nd semester	Regular semester	2nd semester
	Duration	1 semester	frequency	Annual
			compulsory / elective	Compulsory
Educational methods/SWH	Methods	Lecture and follow-up course work, seminar		
	Number SWH	0 lectures + 3 seminar-style tuition + 0 exercise+ 0 laboratory + 1 seminar		
Work load	Presence study	64 h contact time		
	Self-study	116 h preparative and follow-up course work, individual studies, examination preparation		Σ 180 h
ECTS-points		6		
prerequisite according study regulations				
Additional recommended requirements				
Examination procedure		Oral examination 30 min (Mündliche Prüfung, 30 min)		
Learning outcomes		The students have established understanding for the necessity of sustainable development from global to microeconomic level. They appreciate the relationships between the greenhouse effect, climate change and resulting international conventions and agreements. They are well-informed about the state and problems of the German energy transition process, emissions trade, environmental management systems and ways to increase the efficiency of energy conversions, energy saving and integration of all types of renewable energy.		
Content		Sustainability, UN Conferences for Environment and Development, implementation in the EU and Germany; global environmental problems (stratospheric ozone depletion, greenhouse effect); United Nations Framework Convention on Climate Change, Conferences of the Parties, EU climate policy, emission trade, JI and CDM; IPCC Assessment Reports, increase in efficiency during energy conversion, assessment of nuclear energy, energy management (ISO 50000), electricity stock exchange, contracting, CCS; environmental management systems, licensing procedures and Environmental Impact Assessment procedures (e.g. wind power plants)		
Literature /references		Current free publications and documents, e.g. the last IPCC Assessment Report, the EMAS III regulation or the Federal Environmental Agency Guideline for the Implementation of Energy Management Systems, are available on the ILIAS		

	Database (e-learning system). In-depth publications will be referred to during the lectures.

Course	**REEMM5000 - Master thesis with colloquium**			Quality/Degree: Master Sc.
	Course, symbol, title	**REEMM5000 - Master thesis with colloquium**		
	Language	English		
Assignment to the curriculum	Programme	Renewable Energy and E-Mobility		
	Semester	3rd semester	Regular semester	3rd semester
	Duration	1 semester	frequency	Annual
			compulsory / elective	Compulsory
Educational methods/SWH	Methods			
	Number SWH			
Work load	Presence study	at least 16 h		
	Self-study	884 h		Σ 900 h
ECTS-points		30 (Master-thesis: 27 CP, Master-colloquium: 3 CP)		
prerequisite according study regulations		see §§ 5 and 7 of the relevant examination regulations		
Additional recommended requirements				
Examination procedure		- Master's thesis (6 months, maximum of about 100 pages plus structure and appendix, §§ 24 - 26 General examination regulation) - Master-colloquium (see § 27 General examination regulation)		
Learning outcomes		Proof of the ability to meet the requirements of the master's degree stipulated in § 2 of the study regulations. In particular, the candidates demonstrate with this work that they have deepened theoretical knowledge beyond the professional knowledge acquired during the initial professional studies. By means of the special area treated in the Master thesis, they demonstrate that they are able to solve complex tasks. They can formulate new interdisciplinary solution approaches that go beyond the current knowledge. The Master's thesis shows that the students have broad analytical skills and can implement their knowledge in problem solving independently. Students apply their skills to recognize trends in the engineering sciences as well as future problems and requirements and can include them target-oriented in their activities.		
Content		Depend on the topic		
Literature /references		Depend on the topic		

In addition to the compulsory modules listed above, the curriculum for the 4-semester Master's Program Renewable Energy and E-Mobility with internship semester includes the internship semester.

Course	**REEMM4000 - Internship Semester**			Quality/Degree: Master Sc.
	Course, symbol, title	**REEMM4000 - Internship Semester**		
	Language	English or German		
Assignment to the curriculum	Programme	Renewable Energy and E-Mobility		
	Semester	3rd semester	Regular semester	3rd semester
	Duration	1 semester	frequency	Annual
			compulsory / elective	Compulsory for 4SwP
Educational methods/SWH	Methods	Seminar: 2 SWH for follow-up colloquium		
	Number SWH			
Work load	Presence study	32 h		Σ 900 h
	Self-study	868 h		
ECTS-points		30		
prerequisite according study regulations		see study regulation, appendix 1		
Additional recommended requirements				
Examination procedure		internship report, ca. 20 pages (Praxisbericht, ca. 20 Seiten) presentation, ca. 30 minutes (Präsentation, ca. 30 min) activity report (see study regulation, appendix 1)		
Learning outcomes		The students apply the knowledge acquired in their first degree of studies or in the modules taken so far in their present course of studies to solve practical problems in a company. They acquire professional skills and knowledge and get acquainted with subject-specific problems and tasks from their future fields of activity.		
Content		In accordance with the activities stipulated in the internship contract and approved by the university during the internship		
Literature /references		Depend on the topic		

In addition to the compulsory modules listed above, the curriculum for the 4-semester Master's Program Renewable Energy and E-Mobility without internship semester still includes the project work.

Course	**REEMM4100 - Project work**			Quality/Degree: Master Sc.
	Course, symbol, title	**REEMM4100 - Project work**		
	Language	English		
Assignment to the curriculum	Programme	Renewable Energy and E-Mobility		
	Semester	3rd semester	Regular semester	3rd semester
	Duration	1 semester	frequency	Annual
			compulsory / elective	compulsory for 4SwoP
Educational methods/SWH	Methods	independent scientific work		
	Number SWH	0 lectures + 0 seminar-style tuition + 0 exercise+ 1 laboratory + 1 seminar		
Work load	Presence study	32 h		Σ 360 h
	Self-study	328 h		
ECTS-points		12		
prerequisite according study regulations				
Additional recommended requirements				
Examination procedure		performance record (written documentation of the project work) (Leistungsnachweis, schriftliche Dokumentation der Projektarbeit)		
Learning outcomes		As part of a project work, in addition to technical competence, methodological and personnel skills are acquired. The students acquire the ability to independently work on a larger project, to organize themselves and their projects, and to deal appropriately with criticism and conflicts in a team.		
Content		Topics are issued by the instructors		
Literature /references		Depends on the topic.		

Elective Modules

Course	**Solar Systems**			Quality/Degree: Master Sc.
	Course, symbol, title	**REEMM1700 - Solar Systems**		
	Language	English, optional German possible		
Assignment to the curriculum	Programme	Renewable Energy and E-Mobility		
	Semester	1st sem. in German 2nd sem. in English	Regular semester	2nd semester (3S, 4SwP) 3rd semester (4SwoP)
	Duration	1 semester	frequency	Annual
			compulsory / elective	elective
Educational methods/SWH	Methods	Exercise, seminar and follow-up course work, practice-oriented laboratory work		
	Number SWH	0 lectures + 2 seminar-style tuition + 1 exercise+ 1 laboratory + 0 seminar		
Work load	Presence study	64 h contact time		Σ 180 h
	Self-study	116 h preparative and follow-up course work, individual studies, examination preparation		
ECTS-points		6		
prerequisite according study regulations				
Additional recommended requirements				
Examination procedure		Oral exam, 30 min and certificate of laboratory work (Mündliche Prüfung, 30 min und Übungsschein)		
Learning outcomes		The students have knowledge in the natural sciences and engineering of energy generation from solar radiation as well as the associated installation and its application. They have the ability to evaluate the individual possibilities of using the solar energy with regard to their suitability for use, taking into account the local conditions.		
Content		Solar radiation: Theoretical background, interaction between radiation and matter, greenhouse effect computations. Photovoltaics: Semiconductors, components of a PV system in island and grid-connected applications, planning and application of PV systems. Solar thermal systems: configurations, solar collectors, hot water storage, planning and applications, solar cooling, passive solar thermal systems.		
Literature /references		Larry D. Partain: Solar Cells and Their Applications, John Wiley & Sons, New York, 1995. Markvart, Tomas: Solar Electricity, John Wiley & Sons, New York, 1996. Goswami, D.Y. et. al.: Principles of Solar Engineering, Taylor & Francis 2000. Felix Peuser et. al.: Solar Thermal Systems, James & James,		

	2002. Soteris A. Kalogirou: Solar Energy Engineering, Elsevier 2009. Further literature will be announced during the course.

Course	**Selected Topics of Control Engineering**			Quality/Degree: Master Sc.	
	Course, symbol, title	**REEMM2110 - Selected Topics of Control Engineering**			
	Language	English			
Assignment to the curriculum	Programme	Renewable Energy and E-Mobility			
	Semester	1st or 3rd semester	Regular semester	2nd semester (3S, 4SwP) 3rd semester (4SwoP)	
	Duration	1 semester	frequency	Annual	
			compulsory / elective	elective	
Educational methods/SWH	Methods	Lecture and post-lecture work, exercise, laboratory work			
	Number SWH	0 lectures + 1 seminar-style tuition + 2 exercise+ 1 laboratory + 0 seminar			
Work load	Presence study	64 h contact time			
	Self-study	116 h preparative and post-lecture work, individual studies, examination preparation			Σ 180 h
ECTS-points		6			
prerequisite according study regulations					
Additional recommended requirements					
Examination procedure		Written exam, 2 h and certificate of laboratory work (Klausur 2 h und Übungsschein)			
Learning outcomes		The students can actively apply the control technology for the analysis and synthesis of systems, single-loop and meshed control loops. The students have advanced knowledge of system analysis and identification as well as controller design. You can analyze and process more complex control tasks. On the basis of laboratory experiments, the engineering approach to the solution of practical tasks in the field of control engineering is promoted. The students can plan their own experiments, carry out their work, document their results and work in a team.			
Content		Concepts and presentation forms of controlled systems; Description of linear time-invariant systems in the time and frequency domain, advanced methods for process analysis and characteristic determination on lines, modeling for technical processes. PID control: Principles, modifications, controllers with two degrees of freedom, practical aspects in use (integrator windup, bumpless H / A switching, limited D component), sampling control and digital implementation, Controler design			

	in the time and frequency domain, tuning methods, further control concepts, smith predictor, introduction to nonlinear control, method of harmonic balance, laboratory experiments on the mentioned lecture contents
Literature /references	Franklin, G.F.; Powell, J. D.; Emami-Naeini, A.: Feedback Control of Dynamic Systems, Pearson; 7 edition, 2017. Goodwin, G. C.; Graebe F. S.; Salgado, M. E.: Control System Design, , Pearson, 2001. Steffenhagen, B. :Kleine Formelsammlung Regelungstechnik, Carl Hanser Verlag 2010. Further literature will be announced during the course.

Course	**Electrical Energy Conversion and Transmission**			Quality/Degree: Master Sc.
	Course, symbol, title	**REEMM2120 –Electrical Energy Conversion and Transmission**		
	Language	English		
Assignment to the curriculum	Programme	Renewable Energy and E-Mobility		
	Semester	1st or 3rd semester	Regular semester	2nd semester (3S, 4SwP) 3rd semester (4SwoP)
	Duration	1 semester	frequency	Annual
			compulsory / elective	elective
Educational methods/SWH	Methods	seminar, laboratory work		
	Number SWH	0 lectures + 2 seminar-style tuition + 2 exercise+ 0 laboratory + 0 seminar		
Work load	Presence study	64 h contact time		Σ 180 h
	Self-study	116 h Preparation and wrap-up, independent study, documentation of the experimental work		
ECTS-points		6		
prerequisite according study regulations				
Additional recommended requirements				
Examination procedure		Written exam, 2 h and certificate of laboratory work (Klausur 2 h und Übungsschein)		
Learning outcomes		The students are aware of fundamental methods to analytically describe electrical three phase systems for power transmission and electrical drive issues. They are able to practically apply the means of complex calculus to solve problems of balanced three phase systems. Basic electrical machine types are known and corresponding power balances can be calculated.		
Content		Complex calculus (single phase system), extension of the complex calculus to balanced three phase systems (per phase		

	equivalent circuit, delta to wye transformation), transformer, induction machine (squirrel cage), synchronous machine (non salient rotor, without reluctance effect)
Literature /references	Nagsarkar, T. K., Sukhija, M. S.: "Basic Electrical Engineering", Oxford University Press, ISBN – 10: 0195673921 or ISBN – 19: 978 - 0195673920 Bobrow, L. S.: "Fundamentals of Electrical Engineering", Oxford University Press, ISBN – 10: 0195105095 ISBN – 19: 978 - 0195105094 Rizzoni, G.: "Fundamentals of Electrical Engineering", (4th chapter), online PDF https://www.ece.rice.edu/~dhj/courses/elec241/col10040.pdf

Course	**Power Electronics**			Quality/Degree: Master Sc.
	Course, symbol, title	**REEMM2130 - Power Electronics**		
	Language	English		
Assignment to the curriculum	Programme	Renewable Energy and E-Mobility		
	Semester	1st or 3rd semester	Regular semester	2nd semester (3S, 4SwP) 3rd semester (4SwoP)
	Duration	1 semester	frequency	Annual
			compulsory / elective	elective
Educational methods/SWH	Methods	Lecture and post-lecture work, exercise, laboratory work		
	Number SWH	0 lectures + 2 seminar-style tuition + 1 exercise+ 1 laboratory + 0 seminar		
Work load	Presence study	64 h contact time		
	Self-study	116 h preparative and post-lecture work, individual studies, examination preparation		Σ 180 h
ECTS-points		6		
prerequisite according study regulations				
Additional recommended requirements				
Examination procedure		Written exam, 2 h and certificate of laboratory work (Klausur 2 h und Übungsschein)		
Learning outcomes		The students can apply the fundamental Fourier analysis and corresponding complex calculus to determine the power flow of periodic signals. They are able to analyse the power flow of simple DC/DC converter topologies. The students can distinguish different power semiconductor devices. Furthermore, principles of current commutation are known. Basic PWM methods of for three phase converter topologies can be applied.		
Content		Mean values and Root mean square values of generally periodic signals, Fourier transformation with focus on fundamental extraction, power flow analysis, different power		

	semiconductors (Diode, MOSFET, IGBT, Thyristor), current commutation process, grid commutated converters, basic DC/DC converter topologies, basic self commutated three phase converter topologies, Pulse Width Modulation for three phase converters
Literature /references	Trzynadlowski, A. M.: Introduction to Modern Power Electronics, John Wiley & Sons, 2016. Mohan, N., Undeland, T.M., Robbins, W. P.: Power Electronics: Converters, Applications, and Design, John Wiley & Sons, 2002.

Course	**Modelling of Physical Systems**			Quality/Degree: Master Sc.
	Course, symbol, title	**REEMM2140 - Modelling of Physical Systems**		
	Language	English		
Assignment to the curriculum	Programme	Renewable Energy and E-Mobility		
	Semester	1st or 3rd semester	Regular semester	2nd semester (3S, 4SwP) 3rd semester (4SwoP)
	Duration	1 semester	frequency	Annual
			compulsory / elective	elective
Educational methods/SWH	Methods	Lecture and post-lecture work, exercise, laboratory work		
	Number SWH	0 lectures + 2 seminar-style tuition + 0 exercise + 2 laboratory + 0 seminar		
Work load	Presence study	64 h contact time		
	Self-study	116 h preparative and post-lecture work, individual studies, examination preparation		Σ 180 h
ECTS-points		6		
prerequisite according study regulations				
Additional recommended requirements				
Examination procedure		Written exam, 2 h and certificate of laboratory work (Klausur 2 h und Übungsschein)		
Learning outcomes		The students have deepened their technical knowledge, developed analytical and creative skills for problem solving, and acquired a broad knowledge of methods for system analysis. They master the creative modeling process and are able to abstract from technical problems and to form the appropriate mathematical models. They master the programming system MATLAB / Simulink and can implement the various mathematical description forms of technical systems in simulation models, also verify them and check them for plausibility.		
Content		Application of mathematical methods and numerical methods		

	for modeling and simulation of real systems using the MATLAB / Simulink software system: introduction to Matlab / Simulink, description of LTI systems, application of Laplace transformation, consideration of technical systems in the frequency domain, analytical modeling and simulation using different example systems
Literature /references	Franklin, G.F.; Powell, J. D.; Emami-Naeini, A.: Feedback Control of Dynamic Systems, Pearson; 7 edition, 2017. Goodwin, G. C.; Graebe F. S.; Salgado, M. E.: Control System Design, , Pearson, 2001. Steffenhagen, B. :Kleine Formelsammlung Regelungstechnik, Carl Hanser Verlag 2010. Further literature will be announced during the course.

Course	**Wind Power Plants**			Quality/Degree: Master Sc.
	Course, symbol, title	**REEMM3000 – Wind Power Plants**		
	Language	English		
Assignment to the curriculum	Programme	Renewable Energy and E-Mobility		
	Semester	2nd semester	Regular semester	2nd semester (3S, 4SwP) 3rd semester (4SwoP)
	Duration	1 semester	frequency	Annual
			compulsory / elective	elective
Educational methods/SWH	Methods	Seminar, exercise, laboratory work and follow-up course work		
	Number SWH	0 lectures + 4 seminar-style tuition + 0 exercise+ 0 laboratory + 0 seminar		
Work load	Presence study	64 h contact time		Σ 180 h
	Self-study	116 h preparative and follow-up course work, individual studies, examination preparation		
ECTS-points		6		
prerequisite according study regulations				
Additional recommended requirements				
Examination procedure		Written exam, 2 h and certificate of laboratory work (Klausur, 2 h und Übungsschein)		
Learning outcomes		The students are aware of the theory and practical application of wind power plants. The focus of this lecture is set on grid tied wind power plants. Hence, the students are able to understand the principle of Maximum Power Point Tracking. The understand the numerical procedure of rotor blade design and are able to determine key parameters ofthe major components of the drive train like the gear box ratio or rated power of the generator.		

Content	Dedicated fluid mechanics and air foil theory, different types of wind power plants (horizontal, vertical axis), numerical rotor blade design according to Schmitz, application of electrical drives to wind power conversion, design and speed control of the drive train
Literature /references	Gasch, Twele: Wind Power Plants, Springer, 2. edition. Heier, S.: Grid Integration of wind energy conversion systems, John Wiley & Sons. Molly, J.-P. : Windenergie, Hüthig Jehle Rehm. Further literature will be announced during the course.

Course	**Hydrogen Technology**			Quality/Degree: Master Sc.
	Course, symbol, title	**REEMM3100 – Hydrogen Technology**		
	Language	English		
Assignment to the curriculum	Programme	Renewable Energy and E-Mobility		
	Semester	2nd semester	Regular semester	2nd semester (3S, 4SwP) 3rd semester (4SwoP)
	Duration	1 semester	frequency	Annual
			compulsory / elective	elective
Educational methods/SWH	Methods	Seminar, exercise, laboratory work and follow-up course work		
	Number SWH	0 lectures + 2 seminar-style tuition + 0 exercise+ 1 laboratory + 2 seminar		
Work load	Presence study	80 h contact time		Σ 180 h
	Self-study	100 h preparative and follow-up course work, individual studies, examination preparation		
ECTS-points		6		
prerequisite according study regulations				
Additional recommended requirements				
Examination procedure		Oral exam, 30 min and certificate of laboratory work (Mündliche Prüfung 30 min und Übungsschein)		
Learning outcomes		The students have comprehensive theoretical knowledge about problems and technical solutions for the generation, storage and use of hydrogen as well as in the field of fuel cell technology. They are familiar with the most important processes and systems in terms of thermodynamic, energy-related and electrochemical description / modeling and with regard to the integration into power supply solutions and island grid systems. They are able to use these components and systems in application tasks. Participants are able to adapt and develop regenerative energy systems to market requirements by incorporating hydrogen-based processes.		

Content	Phys./chem. properties of hydrogen, hydrogen production by electrolysis and chem./biol. processes (incl. circle processes), storage and transport for stationary and mobile applications / hydrogen infrastructure; thermodynamics, theory and automation of fuel cells, hydrogen operation of gas turbines and combustion engines, safety aspects, 4 laboratory experiments corresponding to the main study subject
Literature /references	Winter, C.-J.; Nitsch, J.: Hydrogen as an Energy Carrier / Wasserstoff als Energieträger, Springer, Berlin 1988 / 2011. James Larminie, Andrew Dicks: Fuel Cell Systems Explained, Second Edition, John Wiley 2003. Töpler, J.; Lehmann, J.: Hydrogen and Fuel Cell Technologies and Market Perspectives, Springer 2016. Sterner, M.; Stadler, I.: Handbook of Energy Storage - Demand, Technologies, Integration, Springer 2018. Additional literature is given during the lectures.

Course	**Fuel Cell Systems**			Quality/Degree: Master Sc.
	Course, symbol, title	**REEMM3200 – Fuel Cell Systems**		
	Language	English		
Assignment to the curriculum	Programme	Renewable Energy and E-Mobility		
	Semester	2nd semester	Regular semester	2nd semester
	Duration	1 semester	frequency	Annual
			compulsory / elective	elective
Educational methods/SWH	Methods	Seminar style tuition, exercise, laboratory work and follow-up course work		
	Number SWH	0 lectures + 2 seminar-style tuition + 1 exercise+ 1 laboratory		
Work load	Presence study	64 h contact time		
	Self-study	116 h preparative and follow-up course work, individual studies, examination preparation		Σ 180 h
ECTS-points		6		
prerequisite according study regulations				
Additional recommended requirements		REEMM3100 or Knowledge in the field of hydrogen technology		
Examination procedure		Oral exam, 30 min and certificate of laboratory work (Mündliche Prüfung 30 min und Übungsschein)		
Learning outcomes		The students have a comprehensive knowledge to problem definitions and technical solutions with the conception and realization of fuel cell systems. They know the most important fuel cell types and their areas of application. They master the theoretical description, simulation and automation of PEM fuel cell systems as well as their integration into electrical island and supply networks and can use them in application tasks.		
Content		Theory and modelling of fuel cells, fuel cell types, design and		

	automation of PEM fuel cell systems, FC integration in drives and energy supply solutions, laboratory tests according to focus
Literature /references	O´Hayre, R. P.; Colella, W. G. u.a.: Fuel Cell Fundamentals, Wiley New York, 2009. Winter, C.-J.; Nitsch, J.: Hydrogen as an Energy Carrier Springer, Berlin 1988 / 2011. James Larminie, Andrew Dicks: Fuel Cell Systems Explained, Second Edition, John Wiley 2003. Töpler, J.; Lehmann, J.: Hydrogen and Fuel Cell Technologies and Market Perspectives, Springer 2016. Sterner, M.; Stadler, I.: Handbook of Energy Storage - Demand, Technologies, Integration, Springer 2018. Kurzweil, P.: Brennstoffzellentechnik, Springer Vieweg 2013 Additional literature is given during the lectures.

Course	**Sustainable non-fossil mobility**			Quality/Degree: Master Sc.	
	Course, symbol, title	**REEMM3300 – Sustainable non-fossil mobility**			
	Language	English			
Assignment to the curriculum	Programme	Renewable Energy and E-Mobility			
	Semester	1st semester	Regular semester	2nd semester (3S, 4SwP) 3rd semester (4SwoP)	
	Duration	1 semester	frequency	Annual	
			compulsory / elective	elective	
Educational methods/SWH	Methods	Seminar, exercise, laboratory work and follow-up course work			
	Number SWH	0 lectures + 2 seminar-style tuition + 2 exercise+ 0 laboratory + 0 seminar			
Work load	Presence study	64 h contact time			
	Self-study	116 h preparative and follow-up course work, individual studies, examination preparation			Σ 180 h
ECTS-points		6			
prerequisite according study regulations					
Additional recommended requirements					
Examination procedure		Written exam, 2 h and certificate of laboratory work (Klausur 2 h und Übungsschein)			
Learning outcomes		The students are able to identify, simulate and complete drive chains for mobile applications based on sustainable non-fossil mobility concepts.			
Content		Mobility, society and the environment; sustainable fuel cycles – PtF and biofuel technologies; e-mobility with its main architectures; hydrogen based mobility – drive chains, vehicles and hydrogen production; cleaner mobility with			

	internal combustion engines and turbines; actual examples.
Literature /references	Larminie, J.; Lowry J.: Electric Vehicle Technology Explained, 2nd Edition, John Wiley 2012, ISBN: 978-1-119-94273-3. Larminie, J.; Dicks, A.: Fuel Cell Systems Explained, 2nd Edition, John Wiley 2003, ISBN 0-471-49026-1 Töpler, J.; Lehmann, J.; Hydrogen and Fuel Cell Technologies and Market Perspectives, Springer 2016. Additional literature is given during the lectures.

Course	**Project Seminar E-Mobility**			Quality/Degree: Master Sc.
	Course, symbol, title	**REEMM3400 – Project Seminar E-Mobility**		
	Language	English		
Assignment to the curriculum	Programme	Renewable Energy and E-Mobility		
	Semester	2nd semester	Regular semester	2nd semester (3S, 4SwP) 3rd semester (4SwoP)
	Duration	1 semester	frequency	Annual
			compulsory / elective	elective
Educational methods/SWH	Methods	seminar, laboratory work		
	Number SWH	0 lectures + 0 seminar-style tuition + 0 exercise+ 2 laboratory + 2 seminar		
Work load	Presence study	64 h contact time		Σ 180 h
	Self-study	116 h Preparation and follow-up course work, independent study, documentation of the experimental work		
ECTS-points		6		
prerequisite according study regulations				
Additional recommended requirements		Fundamentals of power electronics and content of the module "Control of Electrical Drives"		
Examination procedure		Experimental work, 90 h (Experimentelle Arbeit 90 h)		
Learning outcomes		The students are aware of fundamental concepts of E-Mobility and possess basic knowledge in the fields of electrical drives, electrical storage technologies and fuel cell technique. They are able to practically apply this knowledge to real vehicles.		
Content		Fundamentals of drive and carrier mechanics, fundamentals of electrical drives, fundamentals of hydrogen and storage technologies (battery and ultra capacitors), practical work on vehicle including sizing and test of single components		
Literature /references		Will be announced during lecture.		

Course	**Current subjects of renewable energy use I**			Quality/Degree: Master Sc.
	Course, symbol, title	**REEMM3410 – Current subjects of renewable energy use I**		
	Language	English		
Assignment to the curriculum	Programme	Renewable Energy and E-Mobility		
	Semester	2nd semester	Regular semester	2nd semester (3S, 4SwP) 3rd semester (4SwoP)
	Duration	1 semester	frequency	Annual
			compulsory / elective	elective
Educational methods/SWH	Methods	Seminar and self-study, exercises and laboratory		
	Number SWH	0 lectures + 0 seminar-style tuition + 1 exercise+ 1 laboratory + 2 seminar		
Work load	Presence study	64 h contact time		Σ 180 h
	Self-study	116 h Preparation and follow-up course work, independent study, documentation of the experimental work		
ECTS-points		6		
prerequisite according study regulations				
Additional recommended requirements				
Examination procedure		Oral exam, 30 min (Mündliche Prüfung, 30 min)		
Learning outcomes		The aim of the module is that the students know and can classify new developments in the field of renewable energy. They are able to integrate the different types of renewable energy into the solution of practical tasks and are thus optimally prepared for the practice.		
Content		In the field of renewable energy a fast development can be observed. This applies to process development, realization of new system and automation concepts and the construction of new plants in practice. The aim of the module is to make the students familiar with new developments and to prepare them optimally for their practice. For this purpose, lecturers from the industry as well as from research institutions and from abroad are in cooperation with the university and will give lectures and support laboratory work.		
Literature /references		Will be announced during lecture.		

Course	**Current subjects of renewable energy use II**			Quality/Degree: Master Sc.
	Course, symbol, title	**REEMM3420 – Current subjects of renewable energy use II**		
	Language	English		
Assignment to the curriculum	Programme	Renewable Energy and E-Mobility		
	Semester	2nd semester	Regular semester	2nd semester (3S, 4SwP) 3rd semester (4SwoP)
	Duration	1 semester	frequency	Annual
			compulsory / elective	elective
Educational methods/SWH	Methods	Lectures and self-study, exercises and laboratory		
	Number SWH	0 lectures + 0 seminar-style tuition + 1 exercise+ 1 laboratory + 2 seminar		
Work load	Presence study	64 h contact time		
	Self-study	116 h Preparation and follow-up course work, independent study, documentation of the experimental work		Σ 180 h
ECTS-points		6		
prerequisite according study regulations				
Additional recommended requirements				
Examination procedure		Oral exam, 30 min (Mündliche Prüfung, 30 min)		
Learning outcomes		The aim of the module is that the students know and can classify new developments in the field of renewable energy. They are able to integrate the different types of renewable energy into the solution of practical tasks and are thus optimally prepared for the practice		
Content		In the field of renewable energy a fast development can be observed. This applies to process development, realization of new system and automation concepts and the construction of new plants in practice. The aim of the module is to make the students familiar with new developments and to prepare them optimally for their practice. For this purpose, lecturers from the industry as well as from research institutions and from abroad are in cooperation with the university and will give lectures and support laboratory work.		
Literature /references		Will be announced during lecture.		

Course	**Advanced Power Electronics**			Quality/Degree: Master Sc.
	Course, symbol, title	**REEMM3500 - Advanced Power Electronics**		
	Language	English		
Assignment to the curriculum	Programme	Renewable Energy and E-Mobility		
	Semester	2nd semester	Regular semester	2nd semester (3S, 4SwP) 3rd semester (4SwoP)
	Duration	1 semester	frequency	Annual
			compulsory / elective	elective
Educational methods/SWH	Methods	Seminar, exercise, laboratory and work follow-up course work		
	Number SWH	0 lectures + 2 seminar-style tuition + 1 exercise+ 1 laboratory + 0 seminar		
Work load	Presence study	64 h contact time		
	Self-study	116 h preparative and post-lecture work, individual studies, examination preparation		Σ 180 h
ECTS-points		6		
prerequisite according study regulations				
Additional recommended requirements		Fundamentals of power electronics		
Examination procedure		Written exam, 2 h and certificate of laboratory work (Klausur 2 h und Übungsschein)		
Learning outcomes		The students can distinguish between different DC/DC power converter topologies as part of switched mode power supplies. They can describe in principle basic three phase converter topologies including multiphase variations. The students understand the fundamentals of pulse width modulation and can apply corresponding control algorithms to the most common three phase converter topologies.		
Content		Power converter topologies of DC/DC converters for different switched mode power supplies are presented including zero current or voltage switching control schemes. In a succeeding chapter three phase power converters are developed and corresponding multilevel topologies are introduced. As basic pulse width modulation methods for three phase applications space vector and subharmonic modulation methods are explained and finally compared with each other.		
Literature /references		Trzynadlowski, A. M.: Introduction to Modern Power Electronics, John Wiley & Sons, 2016. Mohan, N., Undeland, T.M., Robbins, W. P.: Power Electronics: Converters, Applications, and Design, John Wiley & Sons, 2002.		

Course	**Project Renewable Energy**			Quality/Degree: Master Sc.
	Course, symbol, title	**REEMM3610 – Project Renewable Energy**		
	Language	English, optional German possible		
Assignment to the curriculum	Programme	Renewable Energy and E-Mobility		
	Semester	1st or 2nd semester	Regular semester	2nd semester (3S, 4SwP) 3rd semester (4SwoP)
	Duration	1 semester	frequency	Annual
			compulsory / elective	elective
Educational methods/SWH	Methods	Seminaristic working form		
	Number SWH	0 lectures + 0 seminar-style tuition + 0 exercise+ 3 laboratory + 1 seminar		
Work load	Presence study	64 h contact time		Σ 180 h
	Self-study	116 h Preparation and follow-up course work, independent study, documentation of the experimental work		
ECTS-points		6		
prerequisite according study regulations				
Additional recommended requirements				
Examination procedure		Experimental work, 90 h (Experimentelle Arbeit, 90 h)		
Learning outcomes		In the context of a project work, professional competence as well as competencies in methods and personnel are acquired. Students are given the opportunity to independently work on a larger project in the field of renewable energies, to organize themselves and their projects, and to deal appropriately with the team with criticism and conflicts.		
Content		Topics are given by the lecturers		
Literature /references		Literature will be announced during lecture		

Course	**Control of Electrical Drives**			Quality/Degree: Master Sc.
	Course, symbol, title	**REEMM3700 - Control of Electrical Drives**		
	Language	English		
Assignment to the curriculum	Programme	Renewable Energy and E-Mobility		
	Semester	1st or 3rd semester	Regular semester	2nd semester (3S, 4SwP) 3rd semester (4SwoP)
	Duration	1 semester	frequency	Annual
			compulsory / elective	elective
Educational methods/SWH	Methods	Lecture and post-lecture work, exercise, laboratory work		
	Number SWH	0 lectures + 0 seminar-style tuition + 1 exercise+ 1 laboratory + 2 seminar		
Work load	Presence study	64 h contact time		
	Self-study	116 h preparative and post-lecture work, individual studies, examination preparation		Σ 180 h
ECTS-points		6		
prerequisite according study regulations				
Additional recommended requirements		Fundamental of electrical machines and control engineering		
Examination procedure		Written exam, 2 h and certificate of laboratory work (Klausur 2 h und Übungsschein)		
Learning outcomes		The students can apply basic speed control methods to electrical drives comprising field oriented stator current control techniques. They are able to implement such control methods to different machine types such as induction and synchronous (reluctance) machines.		
Content		Space vector model of various electrical three phase machines. Efficiency optimized field oriented speed control of induction machines as well as synchronous (reluctance) machines, general (sensorless) speed control methods for three phase machines		
Literature /references		Advanced Electrical Drives: Analysis, Modeling, Control (Power Systems), Springer, 2010, De Doncker, R. Control of Electrical Drives, Springer, 2001, Leonhard, W.		

Course	**Vehicle Management Systems**			Quality/Degree: Master Sc.
	Course, symbol, title	**REEMM 5400 - Vehicle Management Systems**		
	Language	English, optional German possible		
Assignment to the curriculum	Programme	Renewable Energy and E-Mobility		
	Semester	2nd semester	Regular semester	2nd semester (3S, 4SwP) 3rd semester (4SwoP)
	Duration	1 semester	frequency	Annual
			compulsory / elective	elective
Educational methods/SWH	Methods	Exercise, laboratory, seminar		
	Number SWH	0 lectures + 2 seminar-style tuition + 1 exercise+ 1 laboratory + 0 seminar		
Work load	Presence study	64 h contact time		
	Self-study	116 h Preparation and wrap-up, independent study, documentation of the experimental work		Σ 180 h
ECTS-points		6		
prerequisite according study regulations				
Additional recommended requirements		Basics in Control Theory, Basics in MATLAB/SIMULINK		
Examination procedure		Written exam, 2 h and certificate of laboratory work (Klausur, 2 h und Übungsschein)		
Learning outcomes		After completion of the module, the students are able to describe the vehicle management systems function as well as to implement software algorithms using advanced control technology (optimal and non-linear controls as well as control in the state space) and their embedded implementation by means of the software engineering tool MATLAB / SIMULINK. The concept of the "vehicle" is extended to include cars, aircrafts and maritime systems of civilian and military or defense use. The students are to be enabled to abstract, conceptual, as well as signal related and system theoretical thinking in relations and gain access to transfer skills and problem solving skills.		
Content		Energy management, optimized accessories, Engine control units, On-Board-Diagnose System design using optimal, nonlinear and state space controllers for automotive dynamic control systems for: Automotive systems (Speed control, distance control, …) Integrated navigational systems for vessels (Navy-, cargo-, passenger vessels) and submarines and their weapon guidance systems as well as flight control systems for combat aircrafts, guided missiles and ballistic missiles		
Literature /references		ALKIN, Oktay. Signals and Systems. Hoboken: CRC Press, 2014, Description based upon print version of record. ISBN:		

	9781466598539. M. ETTER, Delores. Introduction to MATLAB®. Anju Mishra. 3. edition, global edition ed. Hoboken, NJ [u.a.]: Pearson, 2015. Always learning. F. FRANKLIN, Gene, DAVID POWELL, J. y ABBAS EMAMI-NAEINI, . Feedback control of dynamic systems. H. S. Sanjay. 7. ed., Global ed. ed. Boston, Mass. [u.a.]: Pearson, 2015. Always learning. Authorized adaptation from the United States edition. L. PHILLIPS, Charles. Digital control system analysis & design. H. Troy Nagle and Aranya Chakrabortty. Fourth edition, global edition ed. Boston: Pearson, 2015. Always learning. G. WEBSTER, John. Measurement, Instrumentation, and Sensors Handbook, Second Edition. Halit Eren. 2nd ed ed. Hoboken: Taylor and Francis, 2014, Description based upon print version of record. ISBN: 9781439848913. Measurement, instrumentation, and sensors handbook. John G. Webster and Halit Eren. 2. ed. ed. Boca Raton, Fla. [u.a.]: CRC Press, 2014. Includes bibliographical references and index. ISBN: Spatial, mechanical, thermal, and radiation measurement. GRAHAM C. GOODWIN, STEFAN F. GRAEBE, MARIO E. SALGADO: Control System Design. Prentice Hall. ISBN: 0-13-958653-9. KATSUHIKO OGATA: Modern Control Engineering. Prentice Hall. ISBN: 0-13-060907-2. RICHARD C. DORF, ROBERT H. BISHOP: Modern Control Systems. Prentice Hall. ISBN: 0-13-127765-0

Course	**Vehicle Simulation & Test Drive**		Quality/Degree: Master Sc.
	Course, symbol, title	**REEMM5500 - Vehicle Simulation & Test Drive**	
	Language	English, optional German possible	
Assignment to the curriculum	Programme	Renewable Energy and E-Mobility	
	Semester	1st or 2nd semester	Regular semester: 2nd semester (3S, 4SwP) 3rd semester (4SwoP)
	Duration	1 semester	frequency: Annual
			compulsory / elective: elective
Educational methods/SWH	Methods	Laboratory, seminar	
	Number SWH	0 lectures + 2 seminar-style tuition + 0 exercise+ 2 laboratory + 0 seminar	
Work load	Presence study	64 h contact time	Σ 180 h
	Self-study	116 h Preparation and wrap-up, independent study, documentation of the experimental work	
ECTS-points		6	
prerequisite according study regulations			

Additional recommended requirements	Automotive Engineering I/II or comparable previous knowledge
Examination procedure	Experimental work, 30 h (Experimentelle Arbeit, 30 h)
Learning outcomes	The student is able to model a vehicle and the surroundings (road and traffic), then perform a vehicle dynamic simulation on a computer and verify the results in experimental investigations.
Content	Presentation of different simulation programs for the interpretation of the driving behavior of motor vehicles, modeling of own developments, simulation calculation of existing test vehicles and experimental verification of the results.
Literature /references	Milliken, W., Milliken, D. L.: Race Car Vehicle Dynamics, SAE, Inc. ISBN 1-56091-526-9. Gillespie, Th.D.: Fundamentals of Vehicle Dynamics. Warrendale: SAE, Inc. 1992 Fenton, J. Handbook of vehicle design analysis,1996, ISBN 0 85298 963 6 Further literature will be announced during the course

Course	**Human Resources Management**			Quality/Degree: Master Sc.
	Course, symbol, title	**WMSSDM3000 - Human Resources Management**		
	Language	English		
Assignment to the curriculum	Programme	Simulation and System Design Renewable Energy and E-Mobility		
	Semester	1st or 3rd semester	Regular semester	2nd semester (3S, 4SwP) 3rd semester (4SwoP)
	Duration	1 semester	frequency	Annual
			compulsory / elective	elective
Educational methods/SWH	Methods	Seminar-style lecture (Seminaristischer Unterricht)		
	Number SWH	0 lectures + 4 seminar-style tuition + 0 exercise + 0 laboratory + 0 seminar		
Work load	Presence study	64 h contact time		Σ 180 h
	Self-study	116 h		
ECTS-points		6		
prerequisite according study regulations				
Additional recommended requirements				
Examination procedure		Case study incl. presentation 116 hours; for alternative forms of examination see examination regulation (Fallstudie 116 Stunden inklusive Präsentation; alternative Prüfungsleistungen siehe Fachprüfungsordnung SSD)		

Learning outcomes	- Theoretical and empirical understanding of organizational and cultural conditions for HRM in a globalized world and esp. challenges refer to demographic change. - Be able to provide and coordinate HRM activities to solve all tasks performed in an organization with respect to its goals and based on scientific methods and tools.
Content	- Landscape/ HRM concepts/ Distinction IHRM - Organizational, cultural and societal context - Diversity Management - Intercultural training - Strategic HRM
Literature /references	Bohlander, G.W.; Snell, S.A. (2012): Principles of Human Resource Management. 16th edition. South Western Learning. Bourdieu, P. (1986): Ökonomisches Kapital, kulturelles Kapital, soziales Kapital. In: Soziale Ungleichheiten (Soziale Welt, Sonderheft 2), edited by Reinhard Kreckel. Goettingen: Otto Schartz & Co.. 1983. pp. 183 -98. The article appears here for the first time in English. Translated by Richard Nice. Hofstede, G. (2001), Culture's Consequence, Thousand Oaks, CA: Sage Publications. Hofstede, G. (2002), "Images of Europe: Past, Present and Future", in: Warner M., Joynt P. (eds), Managing Across Cultures. Padstow: Thompson. Rothlauf, J. (2014): A global view on intercultural management. Oldenbourg

Course	**International Accounting**			Quality/Degree: Master Sc.
	Course, symbol, title	**SSDM3500 - International Accounting**		
	Language	English		
Assignment to the curriculum	Programme	Simulation and System Design Renewable Energy and E-Mobility		
	Semester	1st or 3rd semester	Regular semester	2nd semester (3S, 4SwP) 3rd semester (4SwoP)
	Duration	1 semester	frequency	Annual
			compulsory / elective	elective
Educational methods/SWH	Methods	independent scientific work		
	Number SWH	2 lectures + 0 seminar-style tuition + 2 exercise + 0 laboratory + 0 seminar		
Work load	Presence study	64 h contact time		Σ 180 h
	Self-study	116 h		
ECTS-points		6		

prerequisite according study regulations	
Additional recommended requirements	basic knowledge of accounting practices
Examination procedure	written exam 120 minutes (Klausur 120 Minuten)
Learning outcomes	The students get a comprehensive introduction to financial reporting according the International Financial Reporting Standards (IFRS). They learn how the standards are used in the preparation of financial statements. The students understand the underlying concepts of Accounting using IFRS. They are able to solve easy and moderately difficult accounting problems.
Content	• regulatory framework, • IASB conceptual framework, • financial reporting in practice, e.g. accounting of property, plant and equipment, intangible assets, inventories, long-term production orders, financial instruments, provisions, deferred items • additional instruments of international financial reporting, e.g. cash flow statement, segment reporting
Literature /references	Harrison, Walter T., Horngreen Charles T., Thomas, C. William, Themin Suwardy: Financial Accounting. International Financial Reporting Standards, Pearson, 9. ed., 2013 Kolitz, David: Financial Accounting. A Concepts-Based Introduction, Routledge, 2016 Melville, Alan: International Financial Reporting: A Practical Guide, Pearson, 5. ed., 2015 Weygandt, Jerry J., Kimmel, Paul D., Kieso, Donald E.: Financial Accounting. IFRS Edition, Wiley, 3 ed., 2015

Explanation:
3S = 3-semester variant (3-semestrige Variante)
4SwP = 4-semester variant with internship semester (4-semestrige Variante mit Praxissemester)
4SwoP = 4-semester variant without internship semester (4-semestrige Variante ohne Praxissemester)

Curricula

Curriculum for the 3-Semester-Model

This study plan is valid for matriculation in the summer semester. If the matriculation is in the winter semester, the first and second semesters must be exchanged.

Module	Type	1.	2.	3.	SWH	ECTS
Mathematical-scientific and technical bases					**8**	**12**
REEMM1100 - Selected Chapters of Mathematics	CM	4+0			4	6
REEMM1300 - System Theory	CM		4+0		4	6
Specialized technical bases of renewable energy					**8**	**12**
REEMM1400 - Renewable Energy Systems	CM	4+0			4	6
REEMM2200 - Methods of Power Engineering	CM		3+1		4	6
Application-oriented profiling, elective modules					**20**	**30**
REEMM2010 - Elective Module (AO) I	EM	4			4	6
REEMM2020 - Elective Module (AO) II	EM		4		4	6
REEMM2030 - Elective Module (AO) III	EM		4		4	6
REEMM2040 - Elective Module (AO) IV	EM		4		4	6
REEMM2060 - Elective Module (F) I	EM	4			4	6
Interdisciplinary qualifications (1 from 2)					**4**	**6**
REEMM3600 - Quality in Automotive Industry	EM *)	3+1			4	6
REEMM3800 - Energy and Environmental Management	EM *)		3+1		4	6
Master-Thesis with colloquium	P			6M	**6M**	**30**
Total		**20**	**20**	**6M**	**40 + 6M**	**90**

Curriculum for the 4-Semester-Model with Internship Semester

Module	Type	1.	2.	3.	4	SWH	ECTS
Mathematical-scientific an technical bases						**8**	**12**
REEMM1100 - Selected Chapters of Mathematics	CM	4+0				4	6
REEMM1300 - System Theory	CM		4+0			4	6
Specialized technical bases of renewable energy						**8**	**12**
REEMM1400 - Renewable Energy Systems	CM	4+0				4	6
REEMM2200 - Methods of Power Engineering	CM		3+1			4	6
Application-oriented profiling, elective modules						**20**	**30**
REEMM2010 - Elective Module (AO) I	EM	4				4	6
REEMM2020 - Elective Module (AO) II	EM		4			4	6
REEMM2030 - Elective Module (AO) III	EM		4			4	6
REEMM2040 - Elective Module (AO) IV	EM		4			4	6
REEMM2060 - Elective Module (F) I	EM	4				4	6
Interdisciplinary qualifications (1 from 2)						**4**	**6**
REEMM3600 - Quality in Automotive Industry	EM *)	3+1				4	6
REEMM3800 - Energy and Environmental Management	EM *)		3+1			4	6
Internship semester	P			21W		**21W**	**30**
Master-Thesis with colloquium	P				6M	**6M**	**30**
Total		**20**	**20**	**5M**	**6M**	**40+11M**	**120**

Curriculum for the 4-Semester-Model without Internship Semester

Module	Type	1.	2.	3.	4	SWH	ECTS
Mathematical-scientific an technical bases						**8**	**12**
REEMM1100 - Selected Chapters of Mathematics	CM	4+0				4	6
REEMM1300 - System Theory	CM		4+0			4	6
Specialized technical bases of renewable energy						**8**	**12**
REEMM1400 - Renewable Energy Systems	CM	4+0				4	6
REEMM2200 - Methods of Power Engineering	CM		3+1			4	6
Application-oriented profiling, elective modules						**32**	**48**
REEMM2010 - Elective Module (AO) I	EM	4				4	6
REEMM2020 - Elective Module (AO) II	EM		4			4	6
REEMM2030 - Elective Module (AO) III	EM		4			4	6
REEMM2040 - Elective Module (AO) IV	EM		4			4	6
REEMM2050 - Elective Module (AO) V	EM			4		4	6
REEMM2060- Elective Module (F) I	EM	4				4	6
REEMM2070 - Elective Module (F) II	EM			4		4	6
REEMM2080 - Elective Module (F) III	EM			4		4	6
Interdisciplinary qualifications (1 from 2)						**4**	**6**
REEMM3600 - Quality in Automotive Industry	EM *)	3+1				4	6
REEMM3800 - Energy and Environmental Management	EM *)		3+1			4	6
REEMM4100 Project work	P			360h		**360h**	**12**
Master-Thesis with colloquium	P				6M	**6M**	**30**
Total		**20**	**20**	**12 +360h**	**6M**	**52+6M +360h**	**120**

Explanations:

Open list of elective modules (AO) (according to §6 of the regulations of study programme):

- Hydrogen Technology
- Solar Systems
- Wind Power Plants
- Advanced Power Electronics
- Vehicle Management Systems
- Control of electrical drives
- Project Seminar E-Mobility
- Current subjects of renewable energy use I and II
- Project Renewable Energy
- Sustainable non-fossil mobility
- Vehicle Simulation & Test Drive

Open list of elective modules (F) (according to §6 of the regulations of study programme):

- Selected Topics of Control Engineering
- Power Electronics
- International Accounting
- Electrical Energy Conversion and Transmission
- Modelling of Physical Systems
- Human Resources Management
- This list also contains all modules of the list AO.
- It is also possible to choose one of the modules "Quality in Automotive Industry" or "Energy and Environmental Management" if it was not chosen in the category interdisciplinary qualifications.

CM = Compulsory module, Pflichtmodul

EM = Elective module, Wahlpflichtmodul

*) = One of these two modules must be selected; on request, additional modules from the area of "Interdisciplinary qualification" from other Master's degree courses in the Department of Electrical Engineering and Computer Science can also be selected

6M = 6 months

360h = 360 hours

x + y = Lecture-/seminar-style tuition- / exercise hours + laboratory-/seminar hours

The subdivision of the semester week hours (SWH) during lecture-/ seminar-style tuition- / exercise hours + laboratory-/seminar hours is a proposal, which can be varied by the instructor in his / her own direction.

Use of the modules in other programs

Module	Elective/ Compulsory in REEMM	Use in other Programs	Elective/ Compulsory in the other program	SWH	ECTS
REEMM1100 - Selected Chapters of Mathematics	CM	SSDM	CM	**4**	**6**
REEMM1300 - System Theory	CM	-		**4**	**6**
REEMM1400 - Renewable Energy Systems	CM	-		**4**	**6**
REEMM1700 - Solar Systems	EM	-		**4**	**6**
REEMM2110 - Selected Topics of control engineering	EM	-		**4**	**6**
REEMM2120 - Electrical Energy Transmission	EM	-		**4**	**6**
REEMM2130 - Power Electronics	EM	-		**4**	**6**
REEMM2140 - Modelling of Physical Systems	EM	-		**4**	**6**
REEMM2200 - Methods of Power Engineering	CM	ETM-EE ETM-AE	CM EM	**4**	**6**
REEMM3000 - Wind Power Plants	EM	ETM	EM	**4**	**6**
REEMM3100 - Hydrogen Technology	EM	ETM	EM	**4**	**6**
REEMM3200 - Fuel Cell Systems	EM	ETM	EM	**4**	**6**
REEMM3300 - Sustainable non-fossil mobility	EM	ETM	EM	**4**	**6**
REEMM3400 - Project Seminar E-Mobility	EM	ETM	EM	**4**	**6**
REEMM3410 - Current subjects of renewable energy use I	EM	ETM	EM	**4**	**6**
REEMM3420 - Current subjects of renewable energy use II	EM	ETM	EM	**4**	**6**
REEMM3500 - Advanced Power Electronics	EM	ETM	EM	**4**	**6**
REEMM3600 - Quality in Automotive Industry	EM	SSDM	EM	**4**	**6**
REEMM3700 - Control of Electrical Drives	EM	ETM	EM	**4**	**6**
REEMM3800 - Energy and Environmental Management	EM	ETM	EM	**4**	**6**
REEMM5400 - Vehicle Management Systems	EM	SSD ETM	CM EM	**4**	**6**
REEMM5500 - Vehicle Simulation and Test Drive	EM	SSDM, ETM	EM	**4**	**6**
SSDM3500 - International Accounting	EM	SSDM	CM	**4**	**6**
WMSSDM - Human Resources Management	EM	SSDM	EM	**4**	**6**

Explanations:

ETM: Master Program Electrical Engineering
SSDM: Master Program Simulation and System Design