Studienordnung (Study Regulations) for the Master's Degree Course Simulation and System Design at Hochschule Stralsund, University of Applied Sciences

of 18th May 2017

Based on § 2(1) in conjunction with § 39(1) of the *Landeshochschulgesetz* (State Higher Education Law) of Mecklenburg-Vorpommern, in the version announced on 25th January 2011 (Law and Ordinance Gazette of Mecklenburg-Vorpommern (GVOBl. M-V) p. 18), last amended by Article 3 of the law of 11th July 2016 (GVOBl. M-V p. 550, 557), Hochschule Stralsund, University of Applied Sciences (hereinafter UAS Stralsund) hereby passes the following *Studienordnung* (hereinafter Study Regulations) for the master's degree course in Simulation and System Design as statute:

Table of Contents

I. General Information 3

§ 1 Scope of Application 3
§ 2 Study Goal 3
§ 3 Duration of Studies and Admissions 4
§ 4 Types of Instruction 4
§ 5 Course Structure 5
§ 6 Study Advice 5

II. Modules 6

§ 7 Module Status 6
§ 8 List of Modules and Module Handbook 7

III. Final Provisions 15

§ 9 Validity and Entry into Force 15

Appendices 16

Appendix 1: *Praktikumsrichtlinie* (hereinafter Internship Guidelines) 16
Internship Semester 16
Activity Report 21
Trainee Contract 22

Appendix 2 Module Handbook 25
Compulsory Modules 25
0B Selected Chapters of Mathematics 25
1B Applied Computer Science 27
2B Applied Computational Fluid Dynamics 28
3B Simulation in Mechanics & Processes 30
4B Vehicle Management Systems (incl. Simulation) 32
5B International Economics & Trade 34
6B International Accounting 35
7B Master's Dissertation and Colloquium 36
8B Internship Semester 37
Compulsory Elective Modules 38
9B Lightweight Materials and Materials Selection 38
10B Renewable Energy Technology 40
11B Project work 41
12B Automotive Lighting Engineering 42
13B Advanced Technical Mechanics 44
14B Thermodynamics of Multicomponent Systems 45
15B Human Resources Management 46
16B Quality in Automotive Industry 47
17B Production 48
18B Vehicle Simulation & Test Drive 49
19B Simulation in Logistics and Production 50

I. General Information

§ 1
Scope of Application

These Study Regulations apply to the master's degree course Simulation and System Design at UAS Stralsund's Faculty of Engineering, which offers two kinds of degree:

- Master's degree with a standard length of study of three subject semesters
- Master's degree with a standard length of study of four subject semesters with an integrated internship semester.

By using the *Fachprüfungsordnung* (hereinafter Subject-Specific Examination Regulations) for the master's degree course Simulation and System Design as a basis, it defines the goals and contents, as well as the structure of the degree course.

§ 2
Study Goal

(1) The study goal of the master's degree course Simulation and System Design is to qualify with the postgraduate degree 'Master of Engineering', abbreviated to 'M.Eng'.

(2) Teaching and studying should prepare students for their future professional careers, taking the changes to the professional world and social environment into consideration. The master's degree should build on an undergraduate degree, by furthering the students' subject knowledge to enable them to use scientific methods and results for their job, even in difficult and complex problems, and to carry out research independently and mainly application-based.

(3) Students studying the master's degree course Simulation and System Design should be in a position to successfully work on tasks from the fields of simulation and system design. By extending knowledge in selected fields of mathematics and fundamental engineering sciences and areas of knowledge that will be relevant for later application, scientific-analytical skills will be gained that stretch beyond the competencies learned in bachelor's degree courses. By taking part in current research projects, students will learn to independently apply scientific knowledge and methods to complex problems.

(4) Students will consolidate their ability to explore new fields and gain further knowledge independently. Accordingly, training is also directed towards the fostering of personalities and teaching of social competence and basic economical skills.

§ 3
Duration of Studies and Admissions

(1) This degree course offers two different options for the time in which studies can usually be completed (standard length of study) by gaining a postgraduate degree. The degree course offers two different degree paths with differing standard lengths of study:

- The standard length of study for the three-semester master's degree is three subject semesters.
- The standard length of study for the four-semester master's degree is four subject semesters with an integrated internship semester.

The master's degree is completed by passing the master's examination.

(2) Admission to the course is regulated pursuant to § 2 of the Subject-Specific Examination Regulations.

§ 4
Types of Instruction

(1) Instruction is given in the form of lectures, tutorials, laboratory practicals, seminars and projects.

(2) Lectures convey knowledge and relationships, as well as the skills and methods of the respective subject area in a systematic manner to large groups of participants, they are mainly taught in the form of presentations. If there is only a small group of participants, the lecture can also be arranged as a seminar.

(3) Tutorials are supplementary components of lectures. They consolidate and apply the knowledge that has been taught, if possible in smaller groups, through the use of representative examples and practical exercises. Tutorials can be combined with lectures to create integrated forms of instruction.

(4) Laboratory practicals apply and consolidate practical skills and should support the way academic tasks are dealt with independently. They accompany lectures or can be provided separately as a block course. The results are recorded by the students in the form of a report or practical report, group work is also possible.

(5) Seminars are forms of instruction for smaller groups of participants, in which certain problems of the respective subject area are looked at in depth. Seminars can be distinguished from lectures due to their higher demand of independent academic work and interactive teaching and learning formats. Students should be introduced to independent academic work through written assignments or presentations and exchange with teaching staff and fellow students. Seminars can be combined with lectures to create integrated forms of instruction.

(6) Projects are academic tasks that investigate wider problems that are made up of several research tasks. They should be oriented towards the conditions and requirements of the future professional practice and foster competence for interactive group processes common in academic work. The projects should integrate subject-specific research tasks with various methodical approaches and aim to achieve interdisciplinary collaboration. Projects should be supervised by

professors. The results of a project are usually presented by the students by way of a written assignment and a presentation.

§ 5
Course Structure

(1) The contents, structure and realisation of the teaching courses result from the list of modules and the module handbook pursuant to § 8.

(2) The Faculty provides students with a course schedule as a recommendation for the correct structure of the degree course, based on these Study Regulations, and subject to the *Rahmenprüfungsordnung* (hereinafter Framework Examination Regulations) and the Subject-Specific Examination Regulations for the master's degree course Simulation and System Design. The course schedule outlines the recommended course of study and describes the kind, scope and order of modules, as well as the coursework and examinations (§ 8).

(3) The students are recommended to use the respective course schedule as a guideline when planning their weekly timetable.

§ 6
Study Advice

(1) General study advice is provided by UAS Stralsund's Division for Studies, Examinations and International Affairs.

(2) Course-specific study advice is provided at the Faculty of Engineering by the contact person appointed to the degree course.

II. Modules

§ 7
Module Status

(1) All modules that are listed in the list of modules under § 8 are either compulsory, compulsory elective or elective modules.

(2) Compulsory modules are modules that are binding for all students of a degree course.

(3) Compulsory elective modules are the modules of a degree course that are offered as an alternative. Students must select courses that amount to the required scope from the catalogue of compulsory elective/elective modules for the master's degree course Simulation and System Design or other offers at UAS Stralsund.

(4) Elective modules (subsidiary modules) are modules that students can freely choose to attend in addition to the compulsory and compulsory elective modules, which can be selected from the catalogue of compulsory elective/elective modules for the master's degree Simulation and System Design or other offers at UAS Stralsund, and which are not compulsory prerequisites for attaining the study goal. These optional courses can be attended by the students for complementing, perfecting, consolidating or specialising their knowledge. More detailed regulations for the subsidiary subjects are defined in § 28 of the Framework Examination Regulations.

§ 8
List of Modules and Module Handbook

(1) The course schedule for the 3-semester master's degree course Simulation and System Design is made up of the following compulsory and compulsory elective modules:

Modules, Courses (contact hours per week: Lecture / Tutorial / Seminar-Style Lecture/ Laboratory or Seminar)							
Module Code and Name	**Course**	**1st Sem.***	**2nd Sem.***	**3rd Sem.**	**Exam**	**SWS (contact hours per week)**	**ECTS Credits**
Compulsory Modules for Consolidating Basic Mathematical, Scientific and Engineering Knowledge						**8**	**12**
SSDM 1000 Selected Chapters of Mathematics	Selected Chapters of Mathematics	0/1/3/0			WE 120	4	6
SSDM 1200 Applied Computer Science	Applied Computer Science	0/0/2/2			WE 120	4	6
Compulsory Modules for Consolidating Engineering Application						**12**	**18**
SSDM 2300 Applied Computational Fluid Dynamics	Applied Computational Fluid Dynamics		0/1/2/1		WE 120	4	6
SSDM 2400 Simulation in Mechanics & Processes	Simulation in Mechanics & Processes	0/1/3/0			WE 120	4	6
SSDM 5400 Vehicle Management Systems (incl. Simulation)	Vehicle Management Systems (incl. Simulation)		0/1/2/1		WE 120	4	6
Compulsory Modules with Interdisciplinary Content						**8**	**12**
SSDM 3200 International Economics & Trade	International Economics & Trade		0/0/4/0		CS 116	4	6
SSDM 3500 International Accounting	International Accounting	2/2/0/0			WE120	4	6
Compulsory Elective/Elective Modules for Consolidating Knowledge, Specialisation						**12**	**18**
WMSSDM XXXX Compulsory Elective module		see below			see below	4	6
WMSSDM XXXX Compulsory Elective module			see below		see below	4	6
WMSSDM XXXX Compulsory Elective module			see below		see below	4	6
Compulsory Modules Degree Completion						**0**	**30**
SSDM 9000 Master's Dissertation and Colloquium	Master's Dissertation			x	see *FPO*		27
	Master's Dissertation Colloquium			x	see *FPO*		3
Total SWS (Contact Hours per Week)		**20**	**20**			**40**	
ECTS Credits		**30**	**30**	**30**			**90**

Modules, Courses (contact hours per week: Lecture / Tutorial / Seminar-Style Lecture/ Laboratory or Seminar)						
Compulsory Elective / Elective Modules		**1st Sem.***	**2nd Sem.***	**Exam**	**SWS (contact hours per week)**	**ECTS Credits**
Module Code and Name	**Course**				**12**	**18**
WMSSDM 2000 Lightweight Materials and Materials Selection	Lightweight Materials and Materials Selection		0/0/3/1	WE 120	4	6
WMSSDM 2100 Renewable Energy Technology	Renewable Energy Technology	0/0/4/0		Pr 30	4	6
WMSSDM 2200 Project work	Project work	0/0/0/4		Pr 30	4	6
WMSSDM 2500 Automotive Lighting Engineering	Automotive Lighting Engineering		0/0/2/2	WE 90	4	6
WMSSDM 2600 Advanced Technical Mechanics	Advanced Technical Mechanics		0/0/4/0	WE 120	4	6
WMSSDM 2700 Thermodynamics of Multicomponent Systems	Thermodynamics of Multicomponent Systems	0/0/4/0		WE 120	4	6
WMSSDM 3000 Human Resources Management	Human Resources Management	0/0/4/0		CS 116	4	6
WMSSDM 3600 Quality in Automotive Industry	Quality in Automotive Industry	0/0/3/1		WE 120	4	6
WMSSDM 5100 Production	Production		0/0/4/0	WE 120	4	6
WMSSDM 5500 Vehicle Simulation & Test Drive	Vehicle Simulation & Test Drive		0/0/2/2	WA 30	4	6
WMSSDM 5600 Simulation in Logistics and Production	Simulation in Logistics and Production		0/0/0/4	Pr 45	4	6

Legend:

WE 120	Written examination, 120 minutes
WA 30	Written assignment, 30 hours
Pr 45	Presentation, 45 minutes
CS 116	Case study 116 hours
FPO	*Fachprüfungsordnung* (Subject-Specific Examination Regulations)

* 1st Semester = summer semester SoSe
* 2nd Semester = winter semester WiSe

If you have been enrolled in the winter semester, the first subject semester will cover the modules and courses of the second regular semester and the second subject semester will cover the modules and courses of the first regular semester. The examinations and regular examination dates are stipulated in § 7(2) of the Subject-Specific Examination Regulations.

(2) The course schedule for the 4-semester master's degree course Simulation and System Design is made up of the following compulsory and compulsory elective modules:

a) If the internship semester is planned for the first subject semester:

Modules, Courses (contact hours per week: Lecture / Tutorial / Seminar-Style Lecture/ Laboratory or Seminar)								
Module Code and Name	**Course**	**1st Sem.**	**2nd Sem.**	**3rd Sem.**	**4th Sem.**	**Exam**	**SWS (contact hours per week)**	**ECTS Credits**
Compulsory Modules Internship							**2**	**30**
SSDM 8000 Internship Semester	Internship Semester	X				see Internship Guidelines	2	30
Compulsory Modules for Consolidating Basic Mathematical, Scientific and Engineering Knowledge							**8**	**12**
SSDM 1000 Selected Chapters of Mathematics	Selected Chapters of Mathematics		0/1/3/0			WE 120	4	6
SSDM 1200 Applied Computer Science	Applied Computer Science		0/0/2/2			WE 120	4	6
Compulsory Modules for Consolidating Engineering Application							**12**	**18**
SSDM 2300 Applied Computational Fluid Dynamics	Applied Computational Fluid Dynamics			0/1/2/1		WE 120	4	6
SSDM 2400 Simulation in Mechanics & Processes	Simulation in Mechanics & Processes		0/1/3/0			WE 120	4	6
SSDM 5400 Vehicle Management Systems (incl. Simulation)	Vehicle Management Systems (incl. Simulation)			0/1/2/1		WE 120	4	6
Compulsory Modules with Interdisciplinary Content							**8**	**12**
SSDM 3200 International Economics & Trade	International Economics & Trade			0/0/4/0		CS 116	4	6
SSDM 3500 International Accounting	International Accounting		2/2/0/0			WE120	4	6
Compulsory Elective/Elective Modules for Consolidating Knowledge, Specialisation							**12**	**18**
WMSSDM XXXX Compulsory Elective module			see below					
WMSSDM XXXX Compulsory Elective module				see below				
WMSSDM XXXX Compulsory Elective module				see below				
Compulsory Modules Degree Completion							**0**	**30**
SSDM 9000 Master's Dissertation and Colloquium	Master's Dissertation				x	see *FPO*		27
	Master's Dissertation Colloquium				x	see *FPO*		3
Total SWS (Contact Hours per Week)		**2**	**20**	**20**			**42**	
ECTS Credits		**30**	**30**	**30**	**30**			**120**

Modules, Courses (contact hours per week: Lecture / Tutorial / Seminar-Style Lecture/ Laboratory or Seminar)						
Compulsory Elective / Elective Modules		**1st Sem.***	**2nd Sem.***	**Exam**	**SWS (contact hours per week)**	**ECTS Credits**
Module Code and Name	**Course**				**12**	**18**
WMSSDM 2000 Lightweight Materials and Materials Selection	Lightweight Materials and Materials Selection		0/0/3/1	WE 120	4	6
WMSSDM 2100 Renewable Energy Technology	Renewable Energy Technology	0/0/4/0		Pr 30	4	6
WMSSDM 2200 Project work	Project work	0/0/0/4		Pr 30	4	6
WMSSDM 2500 Automotive Lighting Engineering	Automotive Lighting Engineering		0/0/2/2	WE 90	4	6
WMSSDM 2600 Advanced Technical Mechanics	Advanced Technical Mechanics		0/0/4/0	WE 120	4	6
WMSSDM 2700 Thermodynamics of Multicomponent Systems	Thermodynamics of Multicomponent Systems	0/0/4/0		WE 120	4	6
WMSSDM 3000 Human Resources Management	Human Resources Management	0/0/4/0		CS 116	4	6
WMSSDM 3600 Quality in Automotive Industry	Quality in Automotive Industry	0/0/3/1		WE 120	4	6
WMSSDM 5100 Production	Production		0/0/4/0	WE 120	4	6
WMSSDM 5500 Vehicle Simulation & Test Drive	Vehicle Simulation & Test Drive		0/0/2/2	WA 30	4	6
WMSSDM 5600 Simulation in Logistics and Production	Simulation in Logistics and Production		0/0/0/4	Pr 45	4	6

If you have been enrolled in the winter semester for your first subject semester, the second subject semester will cover the modules and courses of the third regular semester and the third subject semester will cover the modules and courses of the second regular semester. The examinations and regular examination dates are stipulated in § 7(3) of the Subject-Specific Examination Regulations.

b) If the internship semester is taking place in the third subject semester:

Modules, Courses (contact hours per week: Lecture / Tutorial / Seminar-Style Lecture/ Laboratory or Seminar)								
Module Code and Name	**Course**	**1st Sem.**	**2nd Sem.**	**3rd Sem.**	**4th Sem.**	**Exam**	**SWS (contact hours per week)**	**ECTS Credits**
Compulsory Modules Internship							**2**	**30**
SSDM 8000 Internship Semester	Internship Semester			X		see Internship Guidelines	2	30
Compulsory Modules for Consolidating Basic Mathematical, Scientific and Engineering Knowledge							**8**	**12**
SSDM 1000 Selected Chapters of Mathematics	Selected Chapters of Mathematics	0/1/3/0				WE 120	4	6
SSDM 1200 Applied Computer Science	Applied Computer Science	0/0/2/2				WE 120	4	6
Compulsory Modules for Consolidating Engineering Application							**12**	**18**
SSDM 2300 Applied Computational Fluid Dynamics	Applied Computational Fluid Dynamics		0/1/2/1			WE 120	4	6
SSDM 2400 Simulation in Mechanics & Processes	Simulation in Mechanics & Processes	0/1/3/0				WE 120	4	6
SSDM 5400 Vehicle Management Systems (incl. Simulation)	Vehicle Management Systems (incl. Simulation)		0/1/2/1			WE 120	4	6
Compulsory Modules with Interdisciplinary Content							**8**	**12**
SSDM 3200 International Economics & Trade	International Economics & Trade		0/0/4/0			CS 116	4	6
SSDM 3500 International Accounting	International Accounting	2/2/0/0				WE120	4	6
Compulsory Elective/Elective Modules for Consolidating Knowledge, Specialisation							**12**	**18**
WMSSDM XXXX Compulsory Elective module		see below						
WMSSDM XXXX Compulsory Elective module			see below					
WMSSDM XXXX Compulsory Elective module			see below					
Compulsory Modules Degree Completion							**0**	**30**
SSDM 9000 Master's Dissertation and Colloquium	Master's Dissertation				x	see *FPO*		27
	Master's Dissertation Colloquium				x	see *FPO*		3
Total SWS (Contact Hours per Week)		**20**	**20**	**2**			**42**	
ECTS Credits		**30**	**30**	**30**	**30**			**120**

Modules, Courses (contact hours per week: Lecture / Tutorial / Seminar-Style Lecture/ Laboratory or Seminar)						
Compulsory Elective / Elective Modules		**1st Sem.***	**2nd Sem.***	**Exam**	**SWS (contact hours per week)**	**ECTS Credits**
Module Code and Name	**Course**				**12**	**18**
WMSSDM 2000 Lightweight Materials and Materials Selection	Lightweight Materials and Materials Selection		0/0/3/1	WE 120	4	6
WMSSDM 2100 Renewable Energy Technology	Renewable Energy Technology	0/0/4/0		Pr 30	4	6
WMSSDM 2200 Project work	Project work	0/0/0/4		Pr 30	4	6
WMSSDM 2500 Automotive Lighting Engineering	Automotive Lighting Engineering		0/0/2/2	WE 90	4	6
WMSSDM 2600 Advanced Technical Mechanics	Advanced Technical Mechanics		0/0/4/0	WE 120	4	6
WMSSDM 2700 Thermodynamics of Multicomponent Systems	Thermodynamics of Multicomponent Systems	0/0/4/0		WE 120	4	6
WMSSDM 3000 Human Resources Management	Human Resources Management	0/0/4/0		CS 116	4	6
WMSSDM 3600 Quality in Automotive Industry	Quality in Automotive Industry	0/0/3/1		WE 120	4	6
WMSSDM 5100 Production	Production		0/0/4/0	WE 120	4	6
WMSSDM 5500 Vehicle Simulation & Test Drive	Vehicle Simulation & Test Drive		0/0/2/2	WA 30	4	6
WMSSDM 5600 Simulation in Logistics and Production	Simulation in Logistics and Production		0/0/0/4	Pr 45	4	6

Legend:

WE 120	Written examination, 120 minutes
WA 30	Written assignment, 30 hours
Pr 45	Presentation, 45 minutes
CS 116	Case study 116 hours
FPO	*Fachprüfungsordnung* (Subject-Specific Examination Regulations)

If you have been enrolled in the winter semester, the first subject semester will cover the modules and courses of the second regular semester and the second subject semester will cover the modules and courses of the first regular semester. The examinations and regular examination dates are stipulated in § 7(3) of the Subject-Specific Examination Regulations.

(3) Students may choose the three required compulsory elective modules freely from the list of compulsory elective modules for the master's degree course Simulation and System Design. On submission of a written request to the examination board of the Faculty of Engineering, students may select one compulsory elective module taught in English as part of another master's degree course at UAS Stralsund to obtain the required 18 ECTS credits. Please refer to the stipulations pertaining to § 3(5) of the Subject-Specific Examination Regulations.

(4) For the types of examination, please refer to § 7(2-3) of the Subject-Specific Examination Regulations, according to which alternative types of examination to those listed above are possible.

(5) The detailed module descriptions with information about the person responsible for the module, study goals, contents and coursework/examinations are listed in the module handbook (Appendix 2).

Example with Explanations

Degree Course	Master's Degree Simulation and System Design
Name of module	
Code (module code)	SSDMXXXX or WMSSDMXXXX
Subtitle (if applicable)	
Classes (if applicable)	
Study semester	Planned for which semester according to course schedule?
Duration of module	
Frequency of module	
Person responsible for the module	Name of specific person
Lecturer	
Language	
Part of the curriculum	For all degree courses that the module is taught in: Degree course, field of study, compulsory/compulsory elective/elective module, semester
Type of course / SWS (contact hours per week)	Number of SWS and size of group, separated according to type of tuition, lecture, tutorial, practical, project work, seminar etc.
Workload	Workload, split into hours of tuition and hours of independent study, including preparation for examinations, listed in respective total hours
Credit points	The number of credit points that can be obtained according to ECTS
Requirements in accordance with the examination regulations	Which modules or types of preliminary assessed work for examinations, such as labs, must have been completed successfully prior to examination?
Recommended prerequisites	e.g. previous knowledge
Module goals / envisaged learning outcomes	Key question: Which learning outcomes should students obtain in this module? e.g. with regard to: • Knowledge: Knowledge of information, theory or facts • Skills: cognitive and practical skills that require the implementation of knowledge • Competencies: Integration of knowledge, skills, and social and methodological skills in working or learning situations e.g.: 'The students are aware/ know/ are able to...'
Contents:	The contents and level of the course should be made clear from the description.
Coursework/marked coursework/types of examination	Regular type of marked coursework required for credit points to be awarded
Types of media	
Literature	

III. Final Provisions

§ 9
Validity and Entry into Force

(1) These Study Regulations apply to all students who are subject to the Subject-Specific Examination Regulations of UAS Stralsund's master's degree course Simulation and System Design of 18th May 2017 .

(2) The provisions of the Study Regulations of the master's degree course Simulation and System Design at UAS Stralsund will apply for the first time to students who enrolled for winter semester 2017/2018.

(3) The Study Regulations enter into force on the day after they have been published on UAS Stralsund's website.

Issued on the basis of the resolution made by the Academic Senate of UAS Stralsund on 25th April 2017 and after approval by the Rector from 18th May 2017.

Stralsund, 18th May 2017

The Rector
of Hochschule Stralsund,
University of Applied Sciences,
Dr. Matthias Straetling

Publication note:
This statute was published on UAS Stralsund's website on 13th July 2017 .

Appendices

Appendix 1: *Praktikumsrichtlinie* (hereinafter Internship Guidelines)

Internship Semester

Contents:

1. Introduction
2. Scope and Degree-Course Specific Contents of the Internship Semester
2.1. Scope
2.2. Degree-Course Specific Contents
3. Registration and Recognition of the Internship Semester
4. Selection of Internship Placement
5. Legal and Social Status of the Students
5.1. Legal Status
5.2. Payment
5.3. Insurance/Liability
5.4. Intern Contract
6. Supervision of Students
7. Completing Internship Semesters Abroad

1. Introduction

An internship semester must be completed as part of the 4-semester master's degree course Simulation and System Design. The goal of the internship semester is to apply the knowledge gained during undergraduate studies to day-to-day work situations and/or to gain subject-specific skills and knowledge, as well as being introduced to subject-specific work practice and common tasks of the future field of professional work.
The students are responsible for organising the internship semester themselves. UAS Stralsund supports the students with the organisation of their internship and advises them with regard to their choice of internship company.

2. Scope and Degree-Course Specific Contents of the Internship Semester

2.1. Scope

The internship semester covers a continuous internship period of at least 21 weeks. Periods of absence must generally be made up for. If the goal of the internship is not affected by the absence, it is not necessary for the absence to be made up for if it can be proven that the student is not responsible for his/her absence (e.g. illness, company closure, military manoeuvres) and the absence did not exceed a total of 6 working days.
The internship company must give the student an introduction to the tasks expected of him/her, its bordering areas and broader contexts. It would be desirable for them to take part in team meetings regarding their field of work and to give them an insight into related fields of work at the company.

The tasks expected of the student should be compatible with the student's subject knowledge and length of internship, correspond with the level of training and agree with the aims of the internship semester. It is recommended that the tasks should be structured and that the tasks expected are updated according to their progression and the current marginal conditions.

2.2. Degree-Course Specific Contents

The following aspects describe the expected content of the internship semester:
During their internship semester, students should work independently or in a team under expert leadership on tasks that belong to typical fields for graduates of the degree course Simulation and System Design.
The contents of the internship semester should be planned in such a way that degree-course specific problems can be considered using an appropriate amount of practice and theory.

3. Registration and Recognition of the Internship Semester

Prior to commencement, the students must register their internship semester with the member of staff responsible for internship semesters for their degree course. This person will decide on the recognition of the internship placement.
The internship shall be recognised with "successfully completed" or not recognised with "not successfully completed". This decision and the recognition will be granted by the respective subject representative in agreement with the Internship Officer. The students will be informed of the result. The recognition is based on the internship reports that are submitted by the students.

If at all possible, the internship report shall be completed by the students during their internships, the correctness of the report shall be checked and signed by the internship company, and it must be submitted to the respective subject representative within two weeks following the end of the internship. The report should be approximately 20 A4 pages long. In particular, the report should name the tasks that were given to the students and describe important work results. The report must provide details of the timeframe of the tasks and the respective functional meaning for the company. Further details on the kind and contents of the internship report can be made on agreement between the internship company and the supervising subject representative.
The activity report (see appendix) must be completed by the internship company and describes the kind and duration of tasks in the individual training sections. If periods of absence have occurred during the internship semester, the supervising subject representative at UAS Stralsund will decide in consultation with the member of staff responsible at the internship company, whether the absence will affect the recognition of the internship semester.
If the faculty first refuses to recognise the internship semester, it stipulates under which circumstances recognition could be granted.

4. Selection of Internship Placement

The internship semester must be completed outside of the university, at a company, an authority or institution (internship company).
The internship company shall make sure that the internship shall approach questions relevant to the degree course. The tasks of the professional internship semester have to complement the study contents in a useful manner or be appropriately related to the study contents.
The students are required to search for a suitable internship position. They apply for a suitable position as an intern. This must be named to and approved by the Faculty's Internship Officer at UAS Stralsund prior to the commencement of the internship semester.
If a student does not receive a position as an intern at the internship companies that s/he has applied to, UAS Stralsund will support the student in his/her search for an internship, by naming internship companies that have previously been willing to take on students.

5. Legal and Social Status of the Students

5.1. Legal Status

Unless otherwise stated in the University's *Grundordnung* (Basic Regulations), during the internship semester, students are enrolled as regular university students with all corresponding rights and obligations.

5.2. Payment

Students doing an internship semester have no legal entitlement to payment.

5.3. Insurance/Liability

During the internship semester, students are covered for work accidents by the trade association responsible for the internship company. The provisions of student health insurance in accordance with § 5(1)(10) SGB V also apply for students doing an internship semester.
However, in accordance with court rulings from the Federal Social Court, students are not required to pay into mandatory health, pension and unemployment insurances for employees (court ruling from the Federal Social Court of 17th December 1980, Ref.: 12 RK 10/79).
It is recommended that students take out liability insurance, if not already required by the internship company or the liability risk is not covered by the internship company's insurance.

5.4. Intern Contract

A contract signed by the student and the internship company shall form the legally binding basis for the internship relationship for the duration of the internship semester. This internship contract must be signed by the corresponding Internship Officer prior to the start of the internship semester.

The contract should make provisions for the following points:

a) Obligations of the internship company,

- to train the students in accordance with these guidelines for the internship semester for the duration of time that must be stipulated individually,
- to instruct the student with regard to valid regulations, in particular work regulations and health and safety regulations, as well as the provisions pertaining to confidentiality and secrecy,
- to allow the member of staff from UAS Stralsund overlooking the subject-specific aspects, to supervise the students,
- to provide the students with written proof of the kind and duration of the individual tasks,
- to check and sign the internship report that must be written by the students,
- to allow students to make up for periods of absence in accordance with 2.1,

b) Obligations of the students,

- to take advantage of the training opportunities on offer,
- to carry out the tasks transferred as part of the contract with due care,
- to obey orders from the internship company and persons commissioned by the internship company
- to observe the valid regulations, in particular work regulations and health and safety regulations, as well as the provisions pertaining to confidentiality and secrecy,
- to write an internship report,
- to inform the internship company immediately of any absence and, if the absence is due to illness, to submit a doctor's certificate by the 3rd day of illness.

c) Issues regarding the students' insurance cover

d) The possibility of termination prior to the agreed length of contract

It is possible for special provisions to be made between the internship company and the students.

The following persons will be named in the internship contract:
- the internship supervisor at the internship company,
- the respective Internship Officer at UAS Stralsund, and
- the subject representative supervising the subject aspects.

The enclosed contract (see appendix) should be used for completing the contract. Deviations from the contract must be checked by the Internship Officer and countersigned on approval.

6. Supervision of Students

An internship supervisor shall be named by the respective internship company, who shall plan the course of the internship semester with the students and supervise them during their internship at the company.

Students will also be supervised by the named subject representative at UAS Stralsund with regard to subject and organisational aspects. This person is also the contact for the internship company for any issues with regard to the realisation of the internship semester.

7. Completing Internship Semesters Abroad

The realisation of the internship semester at private and public companies and institutions abroad is desirable, if they are able to teach the knowledge and skills that correspond with the goal of the internship semester. Apart from students contacting companies independently, support can also be provided by corresponding companies after a request has been submitted to the International Affairs Officer at UAS Stralsund.

Activity Report

Mr.Ms./_____

born on _____ in _____

residential address: _____

was employed from _____ to _____

as a university intern to support professional training, as follows:

from	to	Weeks	Type of Employment

total number of weeks:

Days of absence during employment _____, of which _____ days were due to illness, _____ days due to other absence.

The internship report was written by the student and has been approved for submittal to UAS Stralsund.

_____
(Company stamp and signature)

Trainee Contract (sample, English version)

The following

CONTRACT

has been concluded:

between_____
(Company – Authority - Institution)

_____
(Name - Address – Telephone no.)

hereinafter internship company, and

Mr/Mrs/Ms _____

born on _____ in _____

resident in _____

student of _____

in the Department of _____

at UAS Stralsund,

hereinafter student.

§ 1
General

An internship semester at a company is compulsory for all students at UAS Stralsund. All regulations of the internship 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 internship company commits

1. to employ the student for the period of _____ to _____
(minimum duration 21 weeks),
2. to allow him to attend examinations at UAS 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 the student's tutor at UAS 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 commits,

1. to make use of the training opportunities on offer,
2. to work conscientiously,
3. to perform the tasks entrusted to him/her,
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
Internship Supervisor at the Company

The internship supervisor at the internship company is Mr/Mrs/Ms _____. S/he is also the point of contact for the student and the student's tutor at UAS 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 by the relevant professional or trade association against accidents at work. In case of a claim against the insurance company, the internship company will send UAS Stralsund a copy of the accident report.

(2) If demanded by the internship company, the student must take out personal liability insurance for the period of his internship.

§ 7
Termination of Contract

If there is an urgent reason, this contract may be terminated at any time without notice. It can be terminated by a unilateral written declaration, put forward by one of the contract parties and should be addressed to the other party after consultation of the student's tutor.

§ 8
Copies of the Contract

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

§ 9
Further Agreements

_____

_____

_____

_____ _____
(Place and Date) (Place and Date)

Internship Company: Student:

_____ _____
(Signature) (Signature)

UAS Stralsund will cooperate with the internship company in all questions regarding the internship period. UAS Stralsund's representative in accordance with § 5 of this contract, who
may be contacted by the company's internship supervisor, is

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

The student's tutor at UAS Stralsund is

Mr/Mrs/Ms _____.

UAS Stralsund will keep the internship company informed about all questions concerning the internship. Changes regarding the internship regulations will only be made after consulting the internship company.

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

Appendix 2 Module Handbook

Compulsory Modules

In the following table, the details provided with regard to the "semester(s) in which the module is taught" refer to the master's degree with a standard length of study of three subject semesters. For the master's degree with a standard length of study of four subject semesters, if the internship semester is in the first subject semester, the number specified under "semester(s) in which the module is taught" is increased by one semester.

Degree Course	Master's Degree Simulation and System Design
Module name	**Selected Chapters of Mathematics**
Code	SSDM 1000
Courses, if applicable	
Semester(s) in which module is taught	1st
Duration of module	1 semester
Frequency of module	Once a year
Person responsible for the module	Prof. Dr. rer. nat. Gunther Jäger
Lecturer	Prof. Dr. rer. nat. Gunther Jäger
Language	English
Relation to curriculum	Obligatory
Type of course / SWS (contact hours per week)	Tutorial: 1 SWS Seminar-style tuition: 3 SWS
Workload	180 hours (64 h contact time + 116 h self-study)
ECTS credit points	6
Requirements stipulated by the examination regulations	none
Recommended prerequisites	Knowledge of higher mathematics
Module objectives / intended 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.

Contents:	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
Study Regulations / Examination Regulations / Types of Examination	Written examination 120 minutes; for alternative types of assessment see Subject-Specific Examination Regulations
Types of media	Black board, slides. Lecture notes to support self-study will be made available on ILIAS.
Reading list	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

Degree Course	Master's Degree Simulation and System Design
Module name	**Applied Computer Science**
Code	SSDM 1200
Courses, if applicable	
Semester(s) in which module is taught	1st
Duration of module	1 semester
Frequency of module	Once a year
Person responsible for the module	Prof. Dr.-Ing. Christine Wahmkow
Lecturer	TBA
Language	English
Relation to curriculum	Obligatory
Type of course / SWS (contact hours per week)	Seminar-style tuition: 2 SWS Laboratory: 2 SWS
Workload	180 hours (64 h contact time + 116 h self-study)
ECTS credit points	6
Requirements stipulated by the examination regulations	none
Recommended prerequisites	Fundamental experiences in application of a programming language
Module objectives / intended learning outcomes	Students learn to describe extensive computer engineering systems for solving engineering problems. They will be able to recognise computer engineering problems and estimate the possibilities of solving and/or doing it by themselves.
Contents:	Knowledge about cyber-physical systems, communication between objects in an industrial environment, using different microcontrollers to develop and build examples and control different processes Basics of Artificial Intelligence; Fuzzy logic and Neural Networks; application in examples and actual projects Automatic computer-aided design using Solidworks-API
Study Regulations / Examination Regulations / Types of Examination	Written examination 120 minutes; for alternative types of assessment see Subject-Specific Examination Regulations
Types of media	notes on the board, transparencies, software, microcontrollers, worksheets as PDF files to support self-study
Reading list	Massimo Banzi; Getting Started with Arduino; O'Reilly;2008 James A. Anderson ;An Introduction to Neural Networks 1995 Jeff Heaton; Introduction to Neural Networks for C#; Heaton Research, 2009 API fundamentals; Training; SolidLine AG 2016 Recommendation in lessons are always the actual versions

Degree Course	Master's Degree Simulation and System Design
Module name	**Applied Computational Fluid Dynamics**
Code	SSDM 2300
Courses, if applicable	
Semester(s) in which module is taught	2nd
Duration of module	1 semester
Frequency of module	Once a year
Person responsible for the module	Prof. Dr.-Ing. Heiko Meironke
Lecturer	Prof. Dr.-Ing. Heiko Meironke
Language	English
Relation to curriculum	Obligatory
Type of course / SWS (contact hours per week)	Tutorial: 1 SWS Seminar-style tuition: 2 SWS Laboratory: 1 SWS
Workload	180 hours (64 h contact time + 116 h self-study)
ECTS credit points	6
Requirements stipulated by the examination regulations	none
Recommended prerequisites	Basic knowledge in thermo-fluid dynamics
Module objectives / intended learning outcomes	By the end of this course, the students are able to: • apply their fluid mechanics knowledge to complex flow problems • analyse a flow case and suggest a solution strategy in relation to the governing equation, simplifications and selected numerical method • setup and run numerical simulation of flow cases with CFD • scrutinise the credibility of results from numerical flow simulations (validation with theoretical or experimental data)
Contents:	• Basic concepts of numerical flow simulation • Physical / mathematical description of flows, • Basics of discretisation techniques and solution methods • Properties of numerical methods • Methods for steady and unsteady flows • In the exercises, the procedure and the flow simulations are given to practical examples using commercial software FLUENT (ANSYS). • In experiments in the laboratory, the flow is measured by special objects and compared with the simulated data

Study Regulations / Examination Regulations / Types of Examination	Written examination 120 minutes; for alternative types of assessment see Subject-Specific Examination Regulations
Types of media	notes on the board, overheads, presentations, PDF scripts are available for download and to support self-study
Reading list	Jiyuan Tu, Guan Heng Yeoh, and Chaoqun Liu, Computational Fluid Dynamics: A Practical Approach (2nd Edition), 2012, Butterworth-Heinemann, ISBN 978-0-0809-8243-4 Versteeg H.K. and Malalasekera W., An introduction to Computational Fluid Dynamics: The Finite Volume Method (2nd Edition), 2007, Prentice Hall, ISBN 978- 0131274983 Ferziger J. H. and Peric M., Computational Methods for Fluid Dynamics, Second, Springer, 2002, ISBN 978-3-642-56026-2

Degree Course	Master's Degree Simulation and System Design
Module name	**Simulation in Mechanics & Processes**
Code	SSDM 2400
Courses, if applicable	
Semester(s) in which module is taught	1st
Duration of module	1 semester
Frequency of module	Once a year
Person responsible for the module	Prof. Dr. Ing. Steven Dühring
Lecturer	Prof. Dr. Ing. Steven Dühring
Language	English
Relation to curriculum	Obligatory
Type of course / SWS (contact hours per week)	Tutorial: 1 SWS Seminar-style tuition: 3 SWS
Workload	180 hours (64 h contact time + 116 h self-study)
ECTS credit points	6
Requirements stipulated by the examination regulations	Passed coursework
Recommended prerequisites	material science; application of linear differential equations
Module objectives / intended learning outcomes	• Knowledge: Application of nonlinear equation systems, which are computer-assisted and symbolically solved for the simulation of mechanical and thermal problems by numerical methods • Skills: Analysis and assessment of the reliability of simulation results • Competences: Intellectual cross-interlocking and interaction of theoretical modelling, numerical exploration and simulation-specific application
Contents:	Lecture: • Modelling: Linear and nonlinear continuum mechanics, phenomenological material theory, thermo-mechanical couplings, structural mechanics, homogenisation methods • Algorithms: Numerical discretisation and solving methods of mechanics, finite element method, optimisation methods, programme development • Exercise: Practical work with the simulation software ANSYS® Multiphysics in ANSYS® Workbench (processing of various problems from mechanics, thermodynamics and production engineering)

Study Regulations / Examination Regulations / Types of Examination	Written examination 120 minutes; for alternative types of assessment see Subject-Specific Examination Regulations
Types of media	Lecture with slide/PPT presentation, work on black board and overhead projector; computer-assisted instruction in practical approach of the simulation software ANSYS® Multiphysics for modelling and simulation of technical/ process-related problems
Reading list	• Lecture notes • Rust, W.: Nichtlineare Finite-Elemente-Berechnungen. Springer Vieweg, 2016, ISBN 978-3-658-13377-1 • Westermann, T.: Modellbildung und Simulation. Springer, 2010, ISBN 978-3-642-05460-0 • Aschendorf, B.: FEM bei elektrischen Antrieben 1. Springer Vieweg, 2014, ISBN 978-3-8348-0574-4, Kapitel 4&5 • ANSYS, Inc.: ANSYS Mechanical APDL Introductory Tutorials; ANSYS, 2012 (will be provided during lecture) • Chung, Christopher A.: Simulation modeling handbook. CRC Press LLC USA, 2004, ISBN 0-8493-1241-8 • Nasdala, L.: FEM-Formelsammlung Statik und Dynamik. Springer Vieweg, 2015, ISBN 978-3-658-06629-1 • Krenk, S.: Non-linear Modeling and Analysis of Solids and Structures. Cambridge University Press, 2009, ISBN 978-0-521-83054-6 • if applicable in addition: will be announced during lectures

Degree Course	Master's Degree Simulation and System Design
Module name	**Vehicle Management Systems (incl. Simulation)**
Code	SSDM 5400
Courses, if applicable	
Semester(s) in which module is taught	2nd
Duration of module	1 semester
Frequency of module	Once a year
Person responsible for the module	Prof. Dr.-Ing. Jens. Ladisch
Lecturer	Prof. Dr.-Ing. Jens. Ladisch
Language	English
Relation to curriculum	Obligatory
Type of course / SWS (contact hours per week)	Tutorial: 1 SWS Seminar-style tuition: 2 SWS Laboratory: 1 SWS, max. group size 15
Workload	180 hours (64 h contact time + 116 h self-study)
ECTS credit points	6
Requirements stipulated by the examination regulations	Laboratory as preliminary assessed work for examinations
Recommended prerequisites	Basics in Control Theory, Basics in MATLAB/SIMULINK
Module objectives / intended 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 defence use. The students are to be enabled to abstract conceptual, as well as signal-related and system theoretical thinking in proportion and learn how to to transfer skills and problem solving skills.
Contents:	Energy management, optimised accessories, engine control units, on-board diagnostics 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

Study Regulations / Examination Regulations / Types of Examination	Written examination 120 minutes; for alternative types of assessment see Subject-Specific Examination Regulations
Types of media	Notes on the board, overheads, simulation software, educational software
Reading list	O. Föllinger: Regelungstechnik, 12. Auflage (2016), VDE Verlag W. Skolaut (Hrsg.): Maschinenbau, (2014), Springer (Kap. 38-41) H. Walter: Grundkurs Regelungstechnik, 3. Auflage (2013), Springer Vieweg G.F. Franklin, J.D. Powell, A. Emami-Naemi: Feedback Control of Dynamic Systems, 7th edition (2015), Pearson Education H. Lutz, W. Wendt: Taschenbuch der Regelungstechnik, 10. Auflage (2014), Verlag Harri Deutsch Lunze, J.: Regelungstechnik 1, Springer, 9. Aufl., 2013 Lunze, J.: Regelungstechnik 2, Springer, 7. Aufl., 2013 Robert Bosch GmbH: Ottomotor-Management, Vieweg+Teubner, 4. Aufl., 2013 Robert Bosch GmbH: Dieselmotor-Management, Vieweg+Teubner, 5. Aufl., 2012

Degree Course	Master's Degree Simulation and System Design
Module name	**International Economics & Trade**
Code	SSDM 3200
Courses, if applicable	
Semester(s) in which module is taught	2nd
Duration of module	1 semester
Frequency of module	Once a year
Person responsible for the module	Prof. Dr. Petra Jordanov
Lecturer	Prof. Dr. Petra Jordanov
Language	English
Relation to curriculum	Obligatory
Type of course / SWS (contact hours per week)	Seminar-style tuition: 4 SWS
Workload	180 hours (64 h contact time + 116 h self-study)
ECTS credit points	6
Requirements stipulated by the examination regulations	none
Recommended prerequisites	Economics
Module objectives / intended learning outcomes	Scope of the development trends in international economics with a focus on trade and state of the art regarding most important disputes in international trade (globalisation, trade policy, relations to emerging and developing countries etc.).
Contents:	Gain knowledge: - to provide a comprehensive overview of the current state of the international trade and its statistical reflection, - to discuss the patterns of international trade on the scientific background (explanations and causes of international trade) and assessment of adequacy - to clarify the controversial discussion on foreign trade policy and its consequences - to explain and connect the material and monetary aspects of international trade. - Understand responsibilities and tasks of international organisations (IMF, World Bank)
Study Regulations / Examination Regulations / Types of Examination	Case study 116 hours including presentation; for alternative types of assessment see Subject-Specific Examination Regulations
Types of media	Black board, slides, presentation, excerpts of the literature named below, self-study.
Reading list	Balaam, D. N.; Veseth, M. (2005: Introduction to International Political Economy, 4th ed. (Upper Saddle River, NJ: Pearson Education International/Prentice Hall). Carpenter, M. A.; Dunung, S. P. (2012): Challenges and opportunities in international business. Krugman, P.; Obstfeld, M. (2009): International Economics. Theory and Policy. Parker, B. (2005): Introduction to Globalisation and Business. Relationships and Responsibilities. Suranovic, S. (2009): International Economics Theory and Policy.

Degree Course	Master's Degree Simulation and System Design
Module name	**International Accounting**
Code	SSDM 3500
Courses, if applicable	
Semester(s) in which module is taught	1st
Duration of module	1 semester
Frequency of module	Once a year
Person responsible for the module	Prof. Dr. rer. pol. Holger Türr
Lecturer	Prof. Dr. rer. pol. Holger Türr
Language	English
Relation to curriculum	Obligatory
Type of course / SWS (contact hours per week)	Lecture: 2 SWS Tutorial: 2 SWS
Workload	180 hours (64 h contact time + 116 h self-study)
ECTS credit points	6
Requirements stipulated by the examination regulations	none
Recommended prerequisites	Basic knowledge of accounting practices
Module objectives / intended learning outcomes	The students receive a comprehensive introduction to financial reporting according to 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.
Contents:	• 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
Study Regulations / Examination Regulations / Types of Examination	Written examination 120 minutes; for alternative types of assessment see Subject-Specific Examination Regulations
Types of media	
Reading list	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

Studiengang /course of studies	Master's Degree Simulation and System Design
Module name	**Master's Dissertation and Colloquium**
Code (module code)	SSDM 9000
Courses, if applicable	
Semester(s) in which module is taught	3rd for the 3-semester degree course 4th for the 4-semester degree course
Duration of module	1 semester
Frequency of module	Every semester
Person responsible for the module	Head of degree course
Lecturer	Respective supervising professor at the Faculty of Engineering
Language	English, alternatively see § 5(4) of the Subject-Specific Examination Regulations
Relation to curriculum	Obligatory
Type of course / SWS (contact hours per week)	none
Workload	900 hours (900 h self-study)
ECTS credit points	30 (master's dissertation: 27, master's colloquium: 3)
Requirements stipulated by the examination regulations	See §§ 5 and 7 of the Subject-Specific Examination Regulations
Recommended prerequisites	none
Module objectives / intended learning outcomes	Evidence that the students comply with the requirements for the Master's degree according to § 2 of the Study Regulations. In particular, the students • provide evidence of in-depth theoretical knowledge beyond the subject-specific knowledge of their first degree; • show that they are able to solve complex problems and can find interdisciplinary approaches for new questions; • provide evidence of broad analytical skills; • show that they can apply their acquired knowledge and independently solve problems; • show that they can identify trends in engineering and future problems and demands and include them in a goal-oriented fashion in their work.
Contents:	Topic-specific
Study Regulations / Examination Regulations / Types of Examination	Master's dissertation (20 weeks); covering max. 100 Pages excl. table of contents and appendices; see §§ 24 – 26 Framework Examination Regulations; Master's colloquium (see § 27 Framework Examination Regulations)
Types of media	
Reading list	

In addition to the compulsory modules named above, the course schedule for the 4-semester master's degree course Simulation and System Design consists of the following components:

Degree Course	Master's Degree Simulation and System Design
Module name	**Internship Semester**
Code	SSDM 8000
Courses, if applicable	
Semester(s) in which module is taught	1st or 3rd
Duration of module	1 semester
Frequency of module	Every semester
Person responsible for the module	Internship Officer at the Faculty of Engineering
Lecturer	Subject supervisor at the Faculty of Engineering together with the member of staff responsible for the internship at the internship company.
Language	English
Relation to curriculum	Obligatory
Type of course / SWS (contact hours per week)	Seminar: 2 SWS for follow-up colloquium
Workload	900 hours (32 h contact time + 868 h self-study)
ECTS credit points	30
Requirements stipulated by the examination regulations	See Study Regulation, Appendix Internship Guidelines
Recommended prerequisites	
Module objectives / intended learning outcomes	The students apply the knowledge acquired during their first degree or in the modules taken so far in their present degree course to solve practical problems at a company. They acquire professional skills and knowledge and become acquainted with subject-specific problems and tasks from their future fields of work.
Contents:	Tasks as stipulated in the internship contract and approved by UAS Stralsund
Study Regulations / Examination Regulations / Types of Examination	Internship report, approx. 20 pages Presentation of the internship report, approx. 30 minutes Activity Report (see Study Regulations, Appendix Internship Guidelines)
Types of media	
Reading list	

Compulsory Elective Modules

In the following table, the details provided with regard to the "semester(s) in which the module is taught" refer to the master's degree with a standard length of study of three subject semesters. For the master's degree with a standard length of study of four subject semesters, if the internship semester is in the first subject semester, the number specified under "semester(s) in which the module is taught" is increased by one semester.

Degree Course	Master's Degree Simulation and System Design
Module name	**Lightweight Materials and Materials Selection**
Code	WMSSDM 2000
Courses, if applicable	
Semester(s) in which module is taught	1st or 2nd
Duration of module	1 semester
Frequency of module	Once a year
Person responsible for the module	Prof. Dr.-Ing. Petra Maier
Lecturer	Prof. Dr.-Ing. Petra Maier
Language	English
Relation to curriculum	Elective
Type of course / SWS (contact hours per week)	Seminar-style tuition: 3 SWS Laboratory: 1 SWS
Workload	180 hours (64 h contact time + 116 h self-study)
ECTS credit points	6
Requirements stipulated by the examination regulations	Laboratory as preliminary assessed work for examinations
Recommended prerequisites	Basic knowledge of materials technology
Module objectives / intended learning outcomes	After completion of the course, students will have knowledge about modern lightweight materials for the development and manufacturing of lightweight structures and construction materials. They are capable of selecting materials, for example for vehicle components with regards to weight reduction, price, minimising process steps and performance optimisation.

Contents:	Lightweight materials: Car body materials (high strength steel, high deformation steel, light metal alloys Al, Mg and Ti, polymer and metal composites and sandwich structures, glasses, metal foams, corrosion and corrosion protection), engine materials (high temperature materials, light metal castings, ceramics), materials for selected car undercarriage parts (exhaust, axles, transmission, bearings), polymers Material Selection: General aspects and analytical methods of materials, Selection (cost vs. performance), requirements for materials in the automotive industry, influence of modern technologies, laboratory classes: Grantas CES EduPack software, material testing of mechanical properties of modern materials: compression test of Al foam and r- and n- values of metal sheets, corrosion resistance of selected materials, SEM and fractography, reverse engineering
Study Regulations / Examination Regulations / Types of Examination	Written examination 120 minutes; for alternative types of assessment see Subject-Specific Examination Regulations
Types of media	Documents are provided as PDF download
Reading list	Ashby: Materials Selection in Mechanical Design 3rd Edition, Elsevier Ashby: Materials - engineering science processing and design, Elsevier Rösler: Mechanical Behaviour of Engineering Materials, Springer Mitchell: An Introduction to Materials Engineering and Science for Chemical and Materials Engineers, Wiley Berns, Theisen: Ferrous materials - Steel and Cast Iron, Springer

Degree Course	Master's Degree Simulation and System Design
Module name	**Renewable Energy Technology**
Code	WMSSDM 2100
Courses, if applicable	
Semester(s) in which module is taught	1st or 2nd
Duration of module	1 semester
Frequency of module	Once a year
Person responsible for the module	Prof. Dr.-Ing. Matthias Ahlhaus
Lecturer	Prof. Dr.-Ing. Matthias Ahlhaus
Language	English
Relation to curriculum	Elective
Type of course / SWS (contact hours per week)	Seminar-style tuition: 4 SWS
Workload	180 hours (64 h contact time + 116 h self-study)
ECTS credit points	6
Requirements stipulated by the examination regulations	none
Recommended prerequisites	Basic knowledge of energy technology
Module objectives / intended learning outcomes	Students broaden their basic knowledge of energy technology by learning technical, economical and ecological facts and about the interaction of different renewable energy technologies. They understand opportunities, restraints and problems when they are used for heating, power generation and mobility and are able to consider competing solutions.
Contents:	The main presentations focus on technical, economical and ecological aspects and look at political and social impacts of the following renewable energy topics: Solar energy for heat and power, bioenergy, wind, water, geothermal energy, alternative mobility, energy storage and distribution, climate change.
Study Regulations / Examination Regulations / Types of Examination	Presentation 30 minutes followed by academic defence and discussion; for alternative types of assessment see Subject-Specific Examination Regulations
Types of media	Presentations, video, black board, overheads
Reading list	List of eligible topics and relevant literature will be provided at the introductory lecture.

Degree Course	Master's Degree Simulation and System Design
Module name	**Project work**
Code	WMSSDM 2200
Courses, if applicable	
Semester(s) in which module is taught	1st or 2nd
Duration of module	1 semester
Frequency of module	Once a year
Person responsible for the module	Prof. Dr.-Ing. Matthias Ahlhaus
Lecturer	Respective supervising professor at the Faculty of Engineering
Language	English
Relation to curriculum	Elective
Type of course / SWS (contact hours per week)	Seminar: 1 SWS Laboratory: 3 SWS
Workload	180 hours (180 h self study)
ECTS credit points	6
Requirements stipulated by the examination regulations	none
Recommended prerequisites	Basic knowledge of the topic to be approached in the project
Module objectives / intended learning outcomes	Students broaden their basic knowledge by choosing one of the topics on offer and carrying out individual project work.
Contents:	Topic and content of the individual project work is related to the degree course. The project work broadens basic background understanding and provides advanced knowledge. Topics of study focus on technical, economic and ecological aspects and look at political and social impacts.
Study Regulations / Examination Regulations / Types of Examination	Presentation 30 minutes followed by academic defence and discussion; for alternative types of assessment see Subject-Specific Examination Regulations
Types of media	Presentations, video, black board, overheads
Reading list	List of eligible topics and relevant literature will be provided at the introductory lecture

Degree Course	Master's Degree Simulation and System Design
Module name	**Automotive Lighting Engineering**
Code	WMSSDM 2500
Courses, if applicable	
Semester(s) in which module is taught	2nd (winter semester, darkness is needed)
Duration of module	1 semester
Frequency of module	Once a year
Person responsible for the module	Prof. Dr.-Ing. Mark Vehse
Lecturer	Prof. Dr.-Ing. Mark Vehse
Language	English
Relation to curriculum	Elective
Type of course / SWS (contact hours per week)	Seminar-style tuition: 2 SWS Laboratory: 2 SWS; max. group size 15 Headlights test in night situations; max. group size 15
Workload	180 hours (64 h contact time + 110 h self-study + 6 h night-time situation test)
ECTS credit points	6
Requirements stipulated by the examination regulations	Prerequisite for admission to examinations: 15-minute presentation of simulation results (laboratory)
Recommended prerequisites	Good CAD skills, basic knowledge of optical systems
Module objectives / intended learning outcomes	After completing the module, the students are able to understand, draft and simulate basic automotive lighting systems. They will be familiar with the requirements for optics, physiology of human eyes and relevant vehicle regulations. They gain competence in the use of CAD, raytracing and virtual analysis tools for designing automotive lighting products.

Contents:	• Principles of optics and lighting engineering, • Optical components and light sources (automotive), photometry, • Colorimetry, • Physiology of human eyes, • Raytracing and visualisation, • Virtual light shape analysis, • Vehicle regulations (ECE, SAE) pertaining to automotive lighting systems
Study Regulations / Examination Regulations / Types of Examination	Written examination 90 minutes; for alternative types of assessment see Subject-Specific Examination Regulations
Types of media	Black board, interactive presentations, CAD, simulation software
Reading list	• Hering, Martin, Stohrer: Physik für Ingenieure, Springer Vieweg, ISBN 978-3-662-49355-7 • Zinth & Zinth: Optik – Lichtstrahlen, Wellen, Photonen, Oldenbourg Verlag München, ISBN 978-3-486-70534-8 • Hentschel: Licht und Beleuchtung: Grundlagen und Anwendungen der Lichttechnik, Hüthig Verlag Heidelberg, ISBN 978-3-7785-2817-4 • Eckert: Lichttechnik und optische Wahrnehmungssicherheit im Straßenverkehr, Verl. Der Technik Berlin, ISBN 978-3341010723 • Kraftfahrttechnisches Taschenbuch, Robert-Bosch GmbH, Springer Vieweg, ISBN 978-3-658-03800-7 • Pischinger, Seiffert: Vieweg Handbuch Kraftfahrzeugtechnik, Springer Vieweg, ISBN 978-3-658-09528-4 • ECE Regulations R1-R8, R19/20, R31, R48, R56/57, R76/77, R87, R98, R99, R112, R113, R119, R123, R128 etc. • US-Regulations: FMVSS 108, SAE J222, SAE J585-J588, SAE J592e, J594, J2087

Degree Course	Master's Degree Simulation and System Design
Module name	**Advanced Technical Mechanics**
Code	WMSSDM 2600
Courses, if applicable	
Semester(s) in which module is taught	2nd
Duration of module	1 semester
Frequency of module	Once a year
Person responsible for the module	Prof. Dr.-Ing. Franka-Maria Mestemacher
Lecturer	Prof. Dr.-Ing. Franka-Maria Mestemacher
Language	English
Relation to curriculum	Elective
Type of course / SWS (contact hours per week)	Seminar-style tuition: 4 SWS
Workload	180 hours (64 h contact time + 116 h self-study)
ECTS credit points	6
Requirements stipulated by the examination regulations	
Recommended prerequisites	Fundamentals of technical mechanics
Module objectives / intended learning outcomes	The students have advanced theoretical knowledge of Technical Mechanics and are able to apply this in engineering problems. They are able to set up the governing equations of the boundary value problem of linear elasticity in curvilinear coordinates. They have further knowledge in analytical solutions to the linear boundary problem.
Contents:	- Tensor algebra and analysis in curvilinear coordinates - Basic concepts of continuum mechanics - Governing equations of the linear theory of elasticity - The Boundary Value Problem - Analytic solutions - Weak form of linear-elastic boundary value problem - The plane problem of the linear theory of elasticity - AIRY stress function - Special Problems
Study Regulations / Examination Regulations / Types of Examination	Written examination 120 minutes; for alternative types of assessment see Subject-Specific Examination Regulations
Types of media	Presentations, video, black board, overheads
Reading list	List of relevant literature will be provided at the introductory lecture.

Degree Course	Master's Degree Simulation and System Design
Module name	**Thermodynamics of Multicomponent Systems**
Code	WMSSDM 2700
Courses, if applicable	
Semester(s) in which module is taught	1st
Duration of module	1 semester
Frequency of module	Once a year
Person responsible for the module	Prof. Dr.-Ing. Franka-Maria Mestemacher
Lecturer	Prof. Dr.-Ing. Franka-Maria Mestemacher
Language	English
Relation to curriculum	Elective
Type of course / SWS (contact hours per week)	Seminar-style tuition: 4 SWS
Workload	180 hours (64 h contact time + 116 h self-study)
ECTS credit points	6
Requirements stipulated by the examination regulations	
Recommended prerequisites	Previous knowledge
Module objectives / intended learning outcomes	The students know the fundamentals of thermodynamics of multiphase systems. They are able to set up the equations phase equilibria. They know the concepts of gE-Modelling.
Contents:	Fundamentals of thermodynamics - 1st and 2nd Law of Thermodynamics - Fundamental equations - MAXWELL-Relations Thermodynamics of pure substances - Ideal and real gases - Fugacity - Virial equation - Phase equilibria of pure substances Thermodynamics of mixtures - Ideal/real mixtures - Vapor-Liquid-Equilibria - Liquid-Liquid-Equilibria - Modelling of gE
Study Regulations / Examination Regulations / Types of Examination	Written examination 120 minutes; for alternative types of assessment see Subject-Specific Examination Regulations
Types of media	Presentations, video, black board, overheads
Reading list	List of relevant literature will be provided at the introductory lecture.

Degree Course	Master's Degree Simulation and System Design
Module name	**Human Resources Management**
Code	WMSSDM 3000
Courses, if applicable	
Semester(s) in which module is taught	1st or 2nd
Duration of module	1 semester
Frequency of module	Once a year
Person responsible for the module	Prof. Dr. Petra Jordanov
Lecturer	Prof. Dr. Petra Jordanov
Language	English
Relation to curriculum	Elective
Type of course / SWS (contact hours per week)	Seminar-style tuition: 4 SWS
Workload	180 hours (64 h contact time + 116 h self-study)
ECTS credit points	6
Requirements stipulated by the examination regulations	none
Recommended prerequisites	Economics / personnel management / economic law
Module objectives / intended learning outcomes	- Theoretical and empirical understanding of organisational and cultural conditions for HRM in a globalised world and esp. challenges regarding demographic change. - Ability to provide and coordinate HRM activities to solve all tasks performed in an organisation with respect to its goals and based on scientific methods and tools.
Contents:	- Landscape/ HRM concepts/ distinction IHRM - Organisational, cultural and societal context - Diversity management - Intercultural training - Strategic HRM
Study Regulations / Examination Regulations / Types of Examination	Case study 116 hours including presentation; for alternative types of assessment see Subject-Specific Examination Regulations
Types of media	presentation, current articles, slides
Reading list	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.

Degree Course	Master's Degree Simulation and System Design
Module name	**Quality in Automotive Industry**
Code	WMSSDM 3600
Courses, if applicable	
Semester(s) in which module is taught	1st or 2nd
Duration of module	1 semester
Frequency of module	Once a year
Person responsible for the module	Prof. Dr.-Ing. Wolfgang Schikorr
Lecturer	Prof. Dr.-Ing. Wolfgang Schikorr
Language	English
Relation to curriculum	Elective
Type of course / SWS (contact hours per week)	Seminar-style tuition: 3 SWS Laboratory: 1 SWS
Workload	180 hours (64 h contact time + 116 h self-study)
ECTS credit points	6
Requirements stipulated by the examination regulations	none
Recommended prerequisites	Basics of quality management
Module objectives / intended learning outcomes	The students are well versed in organisational and statistical methods for implementing and maintaining quality management systems in organisations with reference to the automotive industry. Methods and concepts of quality management in the automotive industry can be applied. The course will focus especially on the zero defects objective. The students gain the ability to implement the requirements of the respective quality standards in their current state of issue.
Contents:	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 realisation; measurement analysis and improvement. Customer 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
Study Regulations / Examination Regulations / Types of Examination	Written examination 120 minutes; for alternative types of assessment see Subject-Specific Examination Regulations
Types of media	Black board / white board, PowerPoint, scripts (pdf-format)
Reading list	ISO/TS 16949 current revision current QM-literature, as mentioned in the lecture

Degree Course	Master's Degree Simulation and System Design
Module name	**Production**
Code	WMSSDM 5100
Courses, if applicable	
Semester(s) in which module is taught	1st or 2nd
Duration of module	1 semester
Frequency of module	Once a year
Person responsible for the module	Prof. Dr.-Ing. Hein-Peter Landvogt
Lecturer	Prof. Dr.-Ing. Hein-Peter Landvogt
Language	English
Relation to curriculum	Elective
Type of course / SWS (contact hours per week)	Seminar-style tuition: 4 SWS
Workload	180 hours (64 h contact time + 116 h self-study)
ECTS credit points	6
Requirements stipulated by the examination regulations	none
Recommended prerequisites	Knowledge of higher mathematics and statistics. It is recommended students also take the elective module WMSSDM 5600 Simulation in Logistics and Production
Module objectives / intended learning outcomes	The students • gain an overview of the most important aspects of industrial production • know the method of value-stream mapping for modelling value-added chains in production companies • have learned to apply the design guidelines for lean production • have learned how dynamic effects affect the behaviour of linked manufacturing facilities • have recognised how the lack of quality in production and logistics impacts the manufacturing costs of the products
Contents:	• Value-stream mapping and design • Stock management • Balancing of production systems • Basics of production planning and control • Design of queuing systems • Basics of predetermined motion time systems (MTM)
Study Regulations / Examination Regulations / Types of Examination	Written examination 120 minutes; for alternative types of assessment see Subject-Specific Examination Regulations
Types of media	Lectures and exercises. Lecture notes are provided as a PDF document. PowerPoint presentations, videos and sequences of group work
Reading list	The bibliography will be provided at the beginning of the course.

Degree Course	Master's Degree Simulation and System Design
Module name	**Vehicle Simulation & Test Drive**
Code	WMSSDM 5500
Courses, if applicable	
Semester(s) in which module is taught	1st or 2nd
Duration of module	1 semester
Frequency of module	Once a year
Person responsible for the module	Prof. Dr.-Ing. Peter Roßmanek
Lecturer	Prof. Dr.-Ing. Peter Roßmanek
Language	English
Relation to curriculum	Elective
Type of course / SWS (contact hours per week)	Seminar-style tuition: 2 SWS Laboratory: 2 SWS
Workload	180 hours (64 h contact time + 116 h self-study)
ECTS credit points	6
Requirements stipulated by the examination regulations	none
Recommended prerequisites	Automotive Engineering I/II or comparable previous knowledge
Module objectives / intended 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.
Contents:	Presentation of different simulation programs for the interpretation of the driving behaviour of motor vehicles, modelling of own developments, simulation calculation of existing test vehicles and experimental verification of the results.
Study Regulations / Examination Regulations / Types of Examination	Written assignment 30 hours: experimental investigation on the real vehicle or simulation using appropriate software; for alternative types of assessment see Subject-Specific Examination Regulations
Types of media	scripts are available
Reading list	Mitscke, M.: Dynamik der motor vehicle Volume C - Fahrverhalten, Springer, 2. Aufl., 1990 Roddeck, W.: Einführung in die Mechatronik, Vieweg+Teubner, 4. Aufl., 2012 Braess, H.-H., Seiffert, U.: Handbuch Kraftfahrzeugtechnik, Vieweg+Teubner, 6. Aufl., 2011 Laschet, A.: Systemanalyse in der Kfz-Antriebstechnik I - Modellierung, Simulation und Beurteilung von Fahrzeugantrieben, expert, 2001 Milliken, D., Milliken, W., Kasprzak, E., Metz, L.: Race Car Vehicle Dynamics, SAE, 2003

Degree Course	Master's Degree Simulation and System Design
Module name	**Simulation in Logistics and Production**
Code	WMSSDM 5600
Courses, if applicable	
Semester(s) in which module is taught	1st or 2nd
Duration of module	1 semester
Frequency of module	Once a year
Person responsible for the module	Prof. Dr.-Ing. Wilhelm Petersen
Lecturer	Prof. Dr.-Ing. Wilhelm Petersen
Language	English
Relation to curriculum	Elective
Type of course / SWS (contact hours per week)	Seminar: 2 SWS Laboratory: 2 SWS
Workload	180 hours (64 h contact time + 116 h self-study)
ECTS credit points	6
Requirements stipulated by the examination regulations	Regular active attendance at seminars and lab work, prerequisite programming of a simulation problem (self study)
Recommended prerequisites	Skills in object-oriented programming, basic knowledge of business studies and economics; combination with WMSSDM 5100 Production is recommended
Module objectives / intended learning outcomes	Knowledge of discrete event simulation for application in logistics in theory and practice; skills in modelling and applying theory of simulation for solving practical problems in logistics and production; competences in integrating knowledge and skills as well as the ability to apply and develop new solutions of discrete event simulation in logistics.
Contents:	The course focuses on the fundamental concepts, aims, methods and the importance of discrete event simulation for planning and optimisation of logistics and production in modern industries. Students look at the advanced principles and strategies of the evolutions of simulation technologies.
Study Regulations / Examination Regulations / Types of Examination	Presentation with colloquium 45 minutes; for alternative types of assessment see Subject-Specific Examination Regulations
Types of media	Seminar with black board and projector presentation, experiments with a simulation framework
Reading list	Bala, Bilash Kanti; Fatimah, Mohamend Arshad; Noh, Kusairi Mohd 2017: System Dynamics: Modelling and Simulation, Singapore: Springer Waldmann,Karl-Heinz; Helm, Werner E. 2016: Simulation Stochastischer Systeme, Heidelberg: Springer Gabler Bungartz, Hans-Joachim et. al. 2013: Modellbildung und Simulation, Berlin: Springer Spectrum more in the course