

Study and Examination Regulations for the International Postgraduate Master's Degree Program "Sustainable Mobility Management" on the TU-Campus EUREF of the Technical University of Berlin

Studien- und Prüfungsordnung für den weiterbildenden internationalen Masterstudiengang Sustainable Mobility Management am TU-Campus EUREF der Technischen Universität Berlin vom 31. Oktober 2016

- Unofficial translation -

On October 31th, 2016 by the authority given by §18 para. 1 No. 1 of the Constitution of the Technical University of Berlin as well as § 71 para. 1 No. 1 of Berlin's Higher Education Act dated 26. July 2011 the Joint Commission with Decision-Making Authority TU-Campus EUREF of the Technical University Berlin enacted the following Study and Examination Regulations for the international postgraduate master's program Sustainable Mobility Management.

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I. General Section

§ 1 - Scope of Application

These study and examination regulations govern the goals and structure of the degree program as well as the requirements and examination procedures in the postgraduate master's program "Sustainable Mobility Management". It supplements the regulations governing the general study and examination methods of the Technical University of Berlin by providing course-specific provisions.

§ 2 - Commencement and Expiration

- (1) These regulations come into effect one day after publication and apply to students, who matriculate from the winter semester 2017/2018.
- (2) The study and examination regulations for the postgraduate master's program "Energy-Efficient Urban Transportation Systems" („Energieeffiziente urbane Verkehrssysteme“) dated 22 October 2013

(Official Gazette no. TU 26/2014, S. 287 and 291) expires after the following study and examination regulations take effect.

II. Program Goals and Structures

§ 3 - Qualification Objectives, Content and Professional Fields

(1) Students completing the MBA-Program in Sustainable Mobility Management will be able to plan and to manage complex projects in the transport and mobility fields. The students will acquire knowledge and skills needed to design, implement, and develop innovative sustainable mobility solutions; conception, planning and management of smart mobility networks; assessment and valuation of mobility program according to their economic, social, and technical backgrounds; finding solutions to consider the varying stakeholders' interest.

The study program represents an inter- and multidisciplinary approach to mobility studies, in particular with regard to transport systems and their potential to promote sustainability and development. The latter challenges require new approaches: the course of study therefore integrates different disciplines and uses different theories and perspectives. The students will thus develop critical and social science-based views of the sustainability concept considering the current developments in the mobility sciences, the transport debate, as well as urban planning, project development and management. They will frame and assess the theoretical and practice-driven approach allows students to develop a conceptual understanding as well as the skills needed to solve both theoretical and practical problems. Integrated in the program are strategy development, analysis and application, complex decision-making processes, and project management.

The students will tackle the transition towards sustainable mobility via a variety of tools and techniques applied to real case studies. Students are also given basic knowledge in relevant disciplines, combining engineering, social sciences, and management skills in an international context. Scientific findings on the emergence of new forms of mobility and their ecosystems are embedded in the course of studies, including technical aspects such as powertrain, electrical and mechanical vehicle architecture, equipment and control. Furthermore, national, and global mobility markets are assessed from a technical and economic perspective in order to analyze the generation and implementation of new business models.

Student will be able to frame the transition to sustainable mobility according to different pathways and policy options, thus achieving tools for its management. With their skills and knowledge, graduates can carry out large and complex projects from the mobility sector, taking into account different sustainability dimensions.

Students will be expose to different teaching methods and linked with individual learning. The methods include lectures and seminars, workshops, computer exercises, practical exercises, reading, reflection papers, student-led discussions, tutorials, and case studies.

Through these methods, students learn how to develop solutions for the challenges that arise through the transition toward sustainable mobility and implement these solutions. They know the critical arguments within the fields of tension between social, economic, ecological, and technical sustainability. Graduates can deal with these conflicts, which is created when implementing sustainable mobility solutions.

(2) Responsible enterprises in the mobility sector must now adapt to sustainability-oriented solutions. The additional demand for highly trained specialists with specific knowledge of English is not yet covered by existing training courses. The TU master's degree completes the training gap in this area and prepares students for management positions in relevant companies and branch offices in the transport and mobility sector.

(3) The graduates of this Master's degree may be employed based on the knowledge acquired in the course of studies in the transport and logistics industry, in the consumer and environmental protection sector, as well as in relevant authorities and research facilities. This ranges from the planning, decision-making and implementation process through mobility and environmental protection management and membership in central management departments to activities as a project manager in the mobility sector.

§ 4 - Course Commencement, Period of Study and Degree Requirements

- (1) The program begins in the winter semester.
- (2) The standard period of study including the master's thesis comprises three semesters.
- (3) The scope of the master's program is 90 credit points.
- (4) The curriculum as well as the entire examination process is designed and organized so that the program can be completed within the standard period of study.

§ 5 - Degree Program Structure

- (1) Students have the right to design their course of studies individually. However, they are obliged to comply with the provisions of these Study and Examination Regulations. The sequence of modules is recommended by the example study plan, found in appendix 2. This does not affect limitations based on pre-requisite requirements of specific modules.
- (2) A total of 90 credit points must be completed; including 72 credits for modules and 18 credits for the master thesis.
- (3) Core module requirements account for 60 credits. These modules can be found in the module list in appendix 1.
- (4) Elective module requirements account for 12 credits. These modules can be found in the module list in appendix 1.

III. Examination Processes and Requirements

§ 6 - Purpose of the Master's Examination

The master's examination will determine whether a candidate has achieved the qualification objectives in accordance with § 3 of these regulations.

§ 7 - Academic Degree

Upon passing the master's examination, the Technical University of Berlin empowered by the Joint Commission with Decision-Making Authority will bestow the degree "Master of Business Administration" (MBA).

§ 8 - Scope of the Master's Examination and Calculation of the Final Grade

- (1) The master examination consists of the examinations of the modules listed in the module list in appendix 1 as well as the master's thesis according to § 9.
- (2) The final grade is calculated according to the principles in § 47 of the General Study and Examination Regulations (*AllgStuPO*). This includes the examination grade of all graded modules marked for inclusion in the final grade plus the grade of the master's thesis.

§ 9 - Master's Thesis

- (1) The master thesis is generally to be prepared in the 3rd semester. It accounts for 18 credits and has a workload of 18 weeks. In case of illness, the Chairman of the Examination Board may extend the deadline by up to three months. In other cases, not attributable to the student, the Chairperson of the Examination Board may extend the deadline by up to one month.
- (2) To apply for admission to master's thesis, proof of successful completion of module examinations totalling at least 60 credits must be submitted.

- (3) The thesis topic may be changed once, however only within the first four weeks after topic approval.
- (4) The procedure of applying, admission to, and the assessment of the thesis are regulated in the applicable version of the General Study and Examination Regulations (*AllgStuPO*).
- (5) Persons with both the professional and educational experience may be appointed as examiners for the thesis. This applies primarily to the appointment of the second examiner.

§ 10 - Types of Examination and Examination Registration

Examination types as well as the registration procedure for module examinations is regulated in the current version of the General Study and Examination Regulations (*AllgStuPO*).

IV. Appendix

- Appendix 1: Module List
- Appendix 2: Example Program Schedule
- Appendix 3: Module Descriptions

Appendix 1: Module List

Module	CP	Examination Type	Graded	Weighting in the Final Grade
Core requirements				
Project Management (in Mobility)	9	Portfolio	yes	1
Mobility Actors and Practices	6	Oral Exam	yes	1
Technological Foundations in Transport	9	Portfolio	yes	1
Macro-Economics and Business Models of Sustainable Mobility	6	Written Exam	yes	1
Mobility Trends and Future Applications	9	Portfolio	yes	0
Managing Transition: Governance and Skills	9	Portfolio	yes	1
Lecture Series (transition toward sustainable mobility)	6	-	no	0
Managing Smart and Green Mobility	6	Portfolio	yes	1
Elective module requirements				
Innovation and Technology Management	12	Portfolio	yes	1
Managing ICT and Mobility	6	Portfolio	yes	1
Mobility and Development	6	Written Exam	yes	1
Master Thesis				
Master Thesis (Individual Topic)	18	Thesis	yes	1
Σ	90			

Anlage 2: Example Program Schedule

1. Semester (Winter)	2. Semester (Summer)	3. Semester (Winter)
Project Management (in Mobility) 9 CR	Mobility Trends and Future Applications 9 CR	Managing Smart and Green Mobility 6 CR
Mobility Actors and Practices 6 CR	Managing Transition: Governance and Skills 9 CR	Thesis 18 LP
Technological Foundations in transport 9 CR	Lecture Series 6 CR	
Macro-Economics and Business Models of Sustainable Mobility 6 CR	Compulsory electives	
	Innovation and Technology Management 12 CR	
	OR	
	Managing ICT and Mobility 6 CR	Mobility and Development 6 CR
30 CR	30 CR	30 CR

Appendix 3: Module Description

Core Modules

Module Name	Project Management (in Mobility)		
Credits	9		
Qualification Objectives and Skills	<p>After this module</p> <ul style="list-style-type: none"> - students can explain the fundamentals of strategic management and management methods regarding their challenges in the areas of transport and mobility, - students can conceptualize business solutions, - students can work on the transition to sustainable mobility and develop appropriate solutions. 		
Credits and Workload	Class time	48 x 2 h	96 h
	Preparation and follow-up (with eLearning, if applicable)		144 h
	Exam, including preparation		30 h
	This results in a total time commitment of 270 hours per semester. This corresponds to 9 credit points .		
Examination Type	<p>Portfolio exam: 100 points.</p> <p>60% written project report</p> <p>40% project presentation</p>		
Graded	Yes		
Module Examination: Prerequisites and Requirements	No pre-requisites		

Module Name	Mobility Actors and Practices		
Credits	6		
Qualification Objectives and Skills	<p>After this module</p> <ul style="list-style-type: none"> - students understand the basics of mobility concepts, transport systems, sustainable mobility theories, concepts, and approaches with a view to consolidating mobility as a social-technical system; - students can identify and manage social / economic / technological conflicts and critical aspects during the transition to sustainable mobility. 		
Credits and Workload	Class time	32 x 2 h	64 h
	Preparation and follow-up (with eLearning, if applicable)		96 h
	Exam, including preparation		20 h
	This results in a total time commitment of 180 hours per semester. This corresponds to 6 credit points .		
Examination Type	Oral exam (30 minutes)		
Graded	Yes		
Module Examination: Prerequisites and Requirements	No pre-requisites		

Module Name	Technological Foundations in Transport		
Credits	9		
Qualification Objectives and Skills	<p>After the module</p> <ul style="list-style-type: none"> - students can identify and analyse the different aspects relevant to transport technology and operation, including energy sources, propulsion, efficiency and (different) principles for transport systems; - students understand the road layout of access roads and main roads; - students can use their knowledge to identify and plan technical potentials and limitations, as well as assess relevance to sustainability. 		
Credits and Workload	Class time	48 x 2 h	96 h
	Preparation and follow-up (with eLearning, if applicable)		144 h
	Exam, including preparation		30 h
	This results in a total time commitment of 270 hours per semester. This corresponds to 9 credit points .		
Examination Type	<p>Portfolio exam: 100 points</p> <ul style="list-style-type: none"> - 25 % Project presentation “Fundamentals of Transport Systems” - 25 % Written test “Fundamentals of Transport Systems” - 25 % Project presentation “Planning and operation of road infrastructure” - 25 % Written test “Planning and operation of road infrastructure” 		
Graded	Yes		
Module Examination: Prerequisites and Requirements	No pre-requisites		

Module Name	Macro-economic and Business Models of Sustainable Mobility		
Credits	6		
Qualification Objectives and Skills	After this module students are able to, <ul style="list-style-type: none"> - understand the fundamentals of financial instruments and business practices; - apply these to implement sustainable mobility; - develop current, innovative economic and financial models for transport investments; and - evaluate traditional and innovative business models. 		
Credits and Workload	Class time	32 x 2 h	64 h
	Preparation and follow-up (with eLearning, if applicable)		96 h
	Exam, including preparation		20 h
	This results in a total time commitment of 180 hours per semester. This corresponds to 6 credit points .		
Examination Type	Written exam (120 minutes)		
Graded	Yes		
Module Examination: Prerequisites and Requirements	No pre-requisites		

Module Name	Mobility Trends and Future Applications		
Credits	9		
Qualification Objectives and Skills	After the module <ul style="list-style-type: none"> - students understand mobility trends in order to manage the complexity of the open and networked transport of the future; - students can assess social and technological shift and transition; - the students master the fundamentals for forecasting; - students can develop scenarios on this basis and plan long-term developments of a mobility change. 		
Credits and Workload	Class time	48 x 2 h	96 h
	Preparation and follow-up (with eLearning, if applicable)		144 h
	Exam, including preparation		30 h
	This results in a total time commitment of 270 hours per semester. This corresponds to 9 credit points .		
Examination Type	Portfolio exam 40 % Oral exam 40 % Presentation of scenario development 20 % Written report of scenario development		
Graded	Yes		
Module Examination: Prerequisites and Requirements	No pre-requisites		

Module Name	Managing Transition: Governance and Skills		
Credits	9		
Qualification Objectives and Skills	<p>After the module</p> <ul style="list-style-type: none"> - students can compile different paths and strategic options to form a sustainable mobility concept, including the needed management tools; - students can evaluate and implement ways of sustainable change; - students can apply and develop existing control instruments and integrate and evaluate non-political actors. 		
Credits and Workload	Class time	48 x 2 h	96 h
	Preparation and follow-up (with eLearning, if applicable)		144 h
	Exam, including preparation		30 h
	This results in a total time commitment of 270 hours per semester. This corresponds to 9 credit points .		
Examination Type	<p>Portfolio exam</p> <p>40 % Oral exam</p> <p>40 % Project presentation</p> <p>20 % Written project report</p>		
Graded	Yes		
Module Examination: Prerequisites and Requirements	No pre-requisites		

Module Name	Lecture series		
Credits	6		
Qualification Objectives and Skills	After this module students are able to, <ul style="list-style-type: none"> - define the core content of current debates and trends regarding modern, sustainable mobility; - to identify complex and diverse problems and potentials of mobility; - assess different points of view, case studies and perspectives. 		
Credits and Workload	Class time	32 x 2 h	64 h
	Preparation and follow-up (with eLearning, if applicable)		96 h
	Exam, including preparation		20 h
	This results in a total time commitment of 180 hours per semester. This corresponds to 6 credit points .		
Examination Type	--		
Graded	No		
Module Examination: Prerequisites and Requirements	N.A.		

Module Name	Managing Smart and Green Mobility		
Credits	6		
Qualification Objectives and Skills	After this module students are able to, <ul style="list-style-type: none"> - critically address the core ideas of emerging debates and literature on sustainability / sustainable mobility; - to assess conflicts and synergies between ecological, social and economic objectives; - to design and plan sustainable transport systems and to develop the transition to these new models. 		
Credits and Workload	Class time	32 x 2 h	64 h
	Preparation and follow-up (with eLearning, if applicable)		96 h
	Exam, including preparation		20 h
	This results in a total time commitment of 180 hours per semester. This corresponds to 6 credit points .		
Examination Type	Portfolio exam 50 % Project presentation 50 % Written project report		
Graded	No		
Module Examination: Prerequisites and Requirements	N.A.		

Elective module requirements

Module Name	Innovation and Technology Management		
Credits	12		
Qualification Objectives and Skills	<p>After this module,</p> <ul style="list-style-type: none"> - students understand central concepts and the basis of innovation and technology management, - students understand the interplay between innovation and technology management, - students are familiar with innovation management methods and innovation projects, - students can apply creativity and presentation techniques with a focus on the successful development and presentation of innovation projects, - students are able to carry out and organize interdisciplinary group project work, - students can systematically prepare the implementation of innovation projects in order to develop a first prototype. 		
Credits and Workload	Class time	64 x 2 h	128 h
	Preparation and follow-up (with eLearning, if applicable)		192 h
	Exam, including preparation		40 h
	This results in a total time commitment of 360 hours per semester. This corresponds to 12 credit points .		
Examination Type	<p>Portfolio exam</p> <p>60 % Oral presentation of the prototype or business plan</p> <p>40 % Written project report</p>		
Graded	Yes		
Module Examination: Prerequisites and Requirements	No pre-requisites		

Module Name	Managing ICT and Mobility		
Credits	6		
Qualification Objectives and Skills	After this module, <ul style="list-style-type: none"> - students can assess current and future practices in the digitization of the transport industry and transport services; - students are able to identify disturbing factors as the consequences of digitization in the mobility sector and to develop appropriate solutions and future scenarios. 		
Credits and Workload	Class time	32 x 2 h	64 h
	Preparation and follow-up (with eLearning, if applicable)		96 h
	Exam, including preparation		20 h
	This results in a total time commitment of 180 hours per semester. This corresponds to 6 credit points .		
Examination Type	Portfolio exam 50 % Written test 50 % oral exam		
Graded	Yes		
Module Examination: Prerequisites and Requirements	No pre-requisites		

Module Name	Mobility and Development		
Credits	6		
Qualification Objectives and Skills	After this module students are able to, <ul style="list-style-type: none"> - identify factors that distinguish the mobility sector and related challenges in developing and emerging countries from those in industrialized countries; - to use analytical methods in various institutional and economic contexts on this basis; and - to develop effective instruments based on this. 		
Credits and Workload	Class time	32 x 2 h	64 h
	Preparation and follow-up (with eLearning, if applicable)		96 h
	Exam, including preparation		20 h
	This results in a total time commitment of 180 hours per semester. This corresponds to 6 credit points .		
Examination Type	Written exam (120 minutes)		
Graded	Yes		
Module Examination: Prerequisites and Requirements	No pre-requisites		

The graded modules, together with the grade of the thesis, are included in the final grade without a separate weighting.