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I. I. Legal and Administrative Provisions

Faculties

Study and Examination Regulations for the International Continuing Education Master's Program in Sustainable Mobility Management (MBA) at TU-Campus EUREF of Technische Universität Berlin

of 23 October 2018

On 23 October 2018, the TU-Campus EUREF Joint Decision-Making Committee of Technische Universität Berlin adopted the following study and examination regulations for the continuing education master's program in Sustainable Mobility Management in accordance with Section 18 (1) no. 1 of the Constitution of Technische Universität Berlin and Section 71 (1) no.1 of the Berlin State Higher Education Act (Berliner Hochschulgesetz - BerlHG) in the version of 26 July 2011 (Berlin Gazette of Laws and Ordinances - GVBl., p. 378), last amended by Section 6 of the BerlHG on 2 February 2018 (GVBl. p. 160)*.

Contents

I. General regulations

Section 1 – Scope of application

These study and examination regulations set out the aims, structure, and requirements and arrangements of examinations in the continuing education master's program in Sustainable Mobility Management. The program-specific provisions included herein supplement the Regulations Governing General Study and Examination Procedures of Technische Universität Berlin (*Ordnung zur Regelung des allgemeinen Studien- und Prüfungsverfahrens* - AllgStuPO).

Section 2 – Entry into force/expiration

(1) These regulations take effect on the day after their publication and apply to students enrolled from the 2019/2020 winter semester onwards.

(2) The study and examination regulations for the continuing education master's program in Sustainable Mobility Management of 31 October 2016 (TU official gazette 26/2014 pp. 287 and 291) will no longer apply once the present study and examination regulations take effect.

(3) In addition to the students mentioned in paragraph 1, these study and examination regulations apply to all students that are already enrolled in the MBA master's program in Sustainable Mobility Management.

II. Program objectives and structure

Section 3 – Learning outcomes, program content and professional fields

(1) Students who complete the MBA program in Sustainable Mobility Management will be able to plan and manage complex projects in the fields of transport and mobility. The students acquire the knowledge and skills needed for the development and implementation of innovative solutions for sustainable mobility. Designing, planning and managing intelligent mobility networks; evaluating mobility programs based on economic, social and technological contexts; finding solutions that take into account the interests of the participants.

The program favors an interdisciplinary and multidisciplinary approach to mobility studies, in particular with respect to transport systems and their potential to drive sustainability and development. These challenges call for new approaches: The program, therefore, integrates a number of disciplines and draws on a variety of theories and viewpoints.

This enables students to develop a critical and social science perspective on sustainability that takes into account the current developments in mobility studies, the transport debate, as well as urban planning and project development and management. They are able to develop and evaluate theoretical and practice-driven approaches. This provides students with a conceptual understanding along with the skills needed to solve both theoretical and practical problems.

Using a variety of tools and techniques, students apply the sustainable mobility transition to real case studies. Students also learn the basic principles, combining engineering, social science, and management skills within an international context. Scientific findings on the development of new forms of mobility and their ecosystems are incorporated into the program, and technical issues such as power, electric and mechanical vehicle architecture, equipment and control are also addressed. In addition, students evaluate national and global mobility markets from a technological and economic perspective in order to analyze the development and implementation of new business models.

Students are able to shape the transition towards sustainable mobility based on a variety of approaches and policy options - and create tools for managing this transition.

With the skills and knowledge, they acquire, graduates will be able to conduct large and complex projects in the mobility sector taking into account a variety of sustainability dimensions.

Various teaching methods are used and combined with self-study. These methods include lectures and seminars,

* Approved by the TU Berlin Executive Board on 10 February 2019

workshops, computer exercises, practical exercises, reading, reflection papers, student-led discussions, tutorials, and case studies.

Using these methods, the students learn to develop and implement solutions to the challenges associated with the transition towards sustainable mobility. They are familiar with the points of tension arising from the conflicting priorities of social, economic, environmental and technological sustainability. Graduates will be able to manage these points of tension as they surface during the implementation of sustainable mobility solutions.

(2) Companies operating in the mobility sector today must adapt to solutions that are based on sustainability criteria. The resulting significant increase in demand for expert personnel with wide-ranging training and specialist English skills is not currently being met by existing courses. The TU master's degree meets the demand in this field and prepares students for leadership positions in relevant companies and agencies in the transport and mobility industry.

Based on the knowledge acquired in this master's degree, graduates will be able to find employment in the transport sector, in consumer and environmental protection and in the related authorities and research institutes. This includes work in planning, decision-making, and implementation processes, as mobility and environmental protection managers, as members of central management departments and as project managers in the mobility sector.

Section 4 – Program start, standard period of study and required coursework, language of instruction and examination language

(1) The program starts in the winter semester.

(2) The standard period of study, including completion of the master's thesis, is three semesters. The program can be completed on a part-time basis in accordance with Section 23 of the Regulations Governing General Study and Examination Procedures AllgStuPO.

(3) The program is worth 90 credit points.

(4) The teaching curriculum and the entire examination procedure are structured and organized in such a way as to enable students to complete the program within the standard period of study.

(5) The program is organized in such a way that an optional study-related stay abroad can be completed within the standard period of study. For this purpose, it is possible to have a mobility window in full-time and part-time degrees in the second or (preferably) in the third semester.

(6) The teaching and examination language in all compulsory modules and compulsory elective modules is English.

Section 5 – Program structure

(1) Students have the right to individually determine the order of progression of their own course of study. They are, however, obliged to comply with the provisions laid out in these Study and Examination Regulations. The recommended sequence in which modules should be taken is shown in the proposed course schedule in Annex 2 of these regulations. This does not affect any possible constraints resulting from subject-specific admission requirements for modules.

(2) Students must earn a total of 90 credits; 72 for taught modules and 18 for the master's thesis.

Students take compulsory modules worth a total of 60 credits, and compulsory elective modules worth 12 credits. The compulsory elective modules can be found in the module catalog (Annex 1). (Annex 1).

(4) In accordance with Section 33 (4) of the Regulations Governing General Study and Examination Procedures (*AllgStuPO*), the skills and knowledge to be taught in specific modules, the requirements for module examinations, and the relevant admission requirements, if any, are updated annually in the form of course-specific module catalogs and are published in the Official Gazette of TU Berlin at the beginning of the winter semester in October and the beginning of the summer semester in April.

III. Examination requirements and conduct of examinations

Section 6 – Aim of the master's examination

The master's examination determines whether a candidate has achieved the learning outcomes in accordance with Section 3 of these regulations.

Section 7 – The master's degree

Students who have passed the master's examination are awarded the academic title Master of Business Administration (MBA) by Technische Universität Berlin through the Joint Decision-Making Committee (GKmE).

Section 8 – Scope of the master's examination; calculation of the overall grade

(1) The master's examination comprises the module examinations listed in the module catalog (Annex 1) and the master's thesis according to Section 9.
(2) According to the principles stipulated in Section 47 of the Regulations Governing General Study and Examination Procedures (*AllgStuPO*), the overall grade is to be determined by combining the grades achieved for those examinations arising from modules taken from the module catalog that are marked both as graded and for inclusion in the overall grade together with the grade achieved for the master's thesis.

Section 9 – The master's thesis

(1) The master's thesis is usually completed in the third-course semester. It amounts to 18 credits and is to be produced within 18 weeks. In the event that important grounds exist that prevent the completion of the thesis within this time frame, and these grounds lie outside of the student's control, the examination board shall grant an extension of the deadline for so long as the grounds in question continue to exist. The total maximum extension possible is 18 weeks. In the event that the combined extensions exceed the stipulated maximum period of extension, the student may withdraw from the examination.

(2) To apply for admission to the master's thesis, students must submit evidence of having successfully completed module examinations worth at least 60 credit points to the responsible office. The examination board may grant exceptions to students who make a justified request to this effect.

(3) The topic of the master's thesis may be rejected once, however only within the first four weeks of being issued by the responsible office.

(4) The procedures for applying for admission to and assessment of a final thesis are regulated in the current version of the Regulations Governing General Study and Examination Procedures (*AllgStuPO*).
(5) Persons with experience in professional practice and training can be appointed as examiners of final papers. It is generally more important that second examiners meet this criterion.
(6) The master's thesis must be written in English. It is approximately 50 pages in length.

Section 10 – Types of assessments and examination registration

The different types of assessments and the procedure for registering for module examinations are established in the AllgStuPO as amended. In addition, the following types of assessment are possible:

a. Term paper in accordance with Section 10a.

b. Presentation in accordance with Section 10b.

Section 10a – Term paper

(1) The term paper is a written assignment through which students are expected to demonstrate their ability to work scientifically on a specific topic from the thematic area covered by the module while placing it in the module's overall context. The written term paper can be combined with an oral component in the framework of the respective course.

(2) The examiner specifies the exact length of the term paper, the resources permitted rules for the paper's presentation as well as the assessment criteria and informs students accordingly at the start of the module. The term paper may exceed or be less than the number of pages set by the examiner with the consent of the examiner. The requirements for registering a term paper can be found in the Module Handbook.

(3) The examiner provides the students with a selection of topics for term papers. When assigning term paper topics, the examiner pays attention to the parity of the various topics and must ensure that students can work on and complete these topics independently, using scientific methods and within the limits of the workload foreseen in the module description.

(4) If several examiners are authorized and appointed to conduct examinations for a module in which a term paper is foreseen, students are entitled to choose from amongst all those examiners whose courses they have attended in the module. Module supervisors can appoint another examiner in agreement with the candidate if important reasons apply, in particular, if the chosen examiner has an excessive workload in conjunction with examinations.

(5) In some cases, a joint term paper can be produced by several students (group term paper). The module supervisor specifies the details.

(6) The term paper must include page numbers, a table of contents, and a list of sources and resources used. It must be submitted to the examiner in electronic form (pdf). When writing the term paper, students must apply accepted rules of referencing and of academic work, e.g. MLA, APA, Harvard, Turabian or similar guidelines. If a candidate is shown to have violated these rules, the module examination is deemed a fail.

(7) The final result of the examination is forwarded to the responsible office for information and filing. The same applies to the term paper.

(8) If the term paper is graded as "Insufficient", it can be repeated up to two times. The student must be informed via the notice board *at the latest* by the end of the semester in which the term paper was submitted as to whether the term paper was graded as at least "Sufficient" (4.0).

Section 10b - Presentation

(1) The presentation is an assessment through which students are expected to demonstrate their ability to hold an academic lecture for a specified duration in front of other students on a specific question from the thematic area covered by the module while placing the specific topic in the module's overall context.

(2) The presentation takes place on a date set by the examiner during a course's contact hours. As a rule, the actual presentation lasts 10 to 45 minutes. At the start of the course leading to the examination, the examiner informs students whether and which material is to be produced to accompany the presentation (e.g. handout, slides) and whether and in which form presenters must participate in a subsequent discussion or chair such a discussion. The total time for presentation and discussion may not exceed 90 minutes.

(3) At the start of the module, the examiner sets the presentation topics, examination dates for the module and exact scope of the presentations, permitted resources, rules for presenting the work, procedure for allocating presentation topics, and assessment criteria.

(4) When assigning presentation topics, the examiner pays attention to the parity of the various topics and must ensure that students can work on and complete these topics within the limits of the workload foreseen in the module description.

(5) Each presentation topic is bound to a specific date. Students must, therefore, hold their presentation on the date set by the examiner. The module manager decides on exceptions.

(6) A joint presentation can be produced by several students (group presentation). The module supervisor specifies the details.

IV. Annexes

Annex 1: Module list

Annex 2: Sample Curriculum

Annex 3: Module descriptions

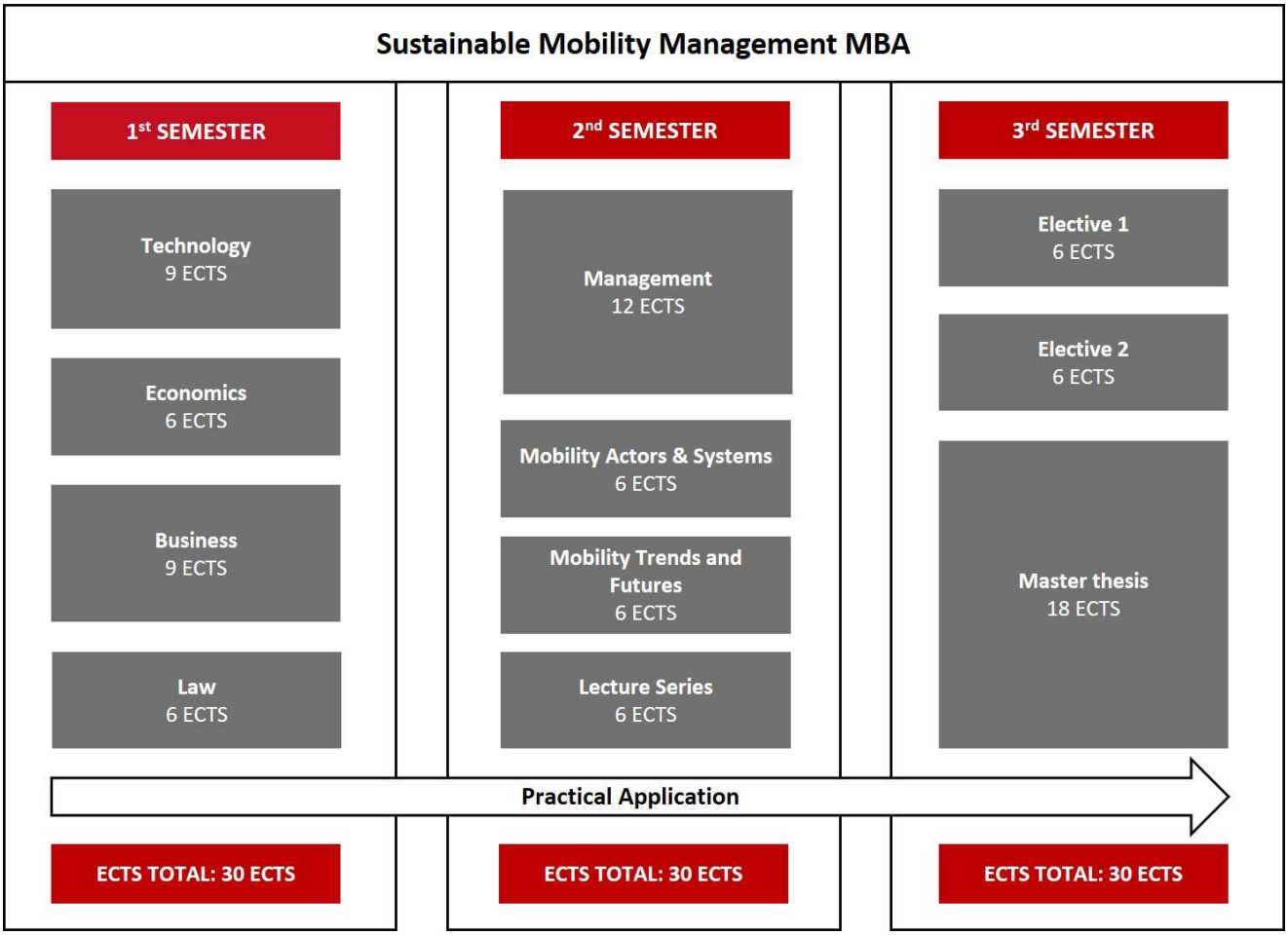
Annex 1: Module Catalog[1]

No.	Module	Credit Points (ECTS)	Type of Assessment	Graded	Weighting in overall grade[2]
	Compulsory modules				
1	Technology	9	Written (examination)	Yes	1
2	Economics	6	Written (examination)	Yes	1
3	Business	9	Portfolio	No	-
4	Law	6	Written (term paper)	Yes	1
5	Management	12	Portfolio	Yes	1
6	Mobility: Actors and Practices	6	Portfolio	Yes	1
7	Lecture series: Transition Toward Sustainable Mobility	6	without examination	No	-
8	Mobility Trends and Futures	6	Portfolio	Yes	1
	Compulsory elective modules				
E-SuMo 1	Business Models and Investments in Sustainable Mobility	6	Portfolio	No	-
E-SuMo 2	Data Analysis and ICT in Mobility	6	Portfolio	No	-
E-SuMo 3	Urban and Transport Planning in Emerging Economies: Concepts and Experiences	6	Portfolio	No	-
E-EM 1	Efficiency Management	6	Portfolio	No	-
E-EM 2	Rural Electrification	6	Portfolio	No	-
E-EM 3	Project Management Skills. Managing (Agile) Projects and Product Development	6	Portfolio	No	-
E-BuSu 1	User-Centered Business Model Innovation & Research	6	Portfolio	No	-
E-BuSu 2	Energy-Efficient Societies	6	Portfolio	No	-
E-BuSu 3	Integration of Renewable Energies	6	Portfolio	No	-
9	**Master's thesis** (individual topic)	18	Final dissertation	Yes	1
	Total	90			

[1] The module descriptions are published annually in the Official Gazette of TU Berlin at the beginning of the winter semester in October and at the beginning of the summer semester in April. The version published therein is then valid. (See Section 33 (6) of the Regulations Governing Study and Examination Procedures (AllgStuPO)).

[2] "1" means that the grade is weighted on the scale of CP (Section 47 (6) of the Regulations Governing General Study and Examination Procedures (AllgStuPO)); "-" means the grade is not weighted; all other figures are a multiplication factor for the scale in CP.

Annex 2: Sample Course Schedule



Annex 3: Module descriptions

Compulsory modules

Module title: Technology	**Credit Points (ECTS):** 9	**Short title:** Technology (SuMo)
Module supervisor: Prof. Dr. Dietmar Göhlich	**Office:** Alina Pfiefer	**Email:** alina.pfeifer@campus.tu-berlin.de

Module description

1. Module aims

In this module, students review and gain more in-depth general technical knowledge and knowledge of energy technologies and systems in the context of current developments and taking into account social responsibility and sustainable development. The module also covers the most important technological insights, and the technological foundations of the subsequent modules are explained.

Students will be able to define and evaluate various procedures and apply them to selected cases in the transport sector and present options for optimizing them.

2. Content

Principles of physics (basic units of physics, mechanics, thermodynamics, electromagnetism, optics), principles of energy technology, principles of chemistry (fuels, combustion, batteries, fuel cells), principles of electrical engineering (electrical energy technology), principles of mechanical engineering (combustion engines, turbines, pumps and compressors), principles of process engineering, biomass, fossil fuels, renewable energy sources, geothermal energy, hydropower, wind power, solar thermal energy, photovoltaics, power grids, switchover processes, Carnot cycle & method, storage and transport technology, building technology, and specific content from the field of building management.

3. Module components

Course title	Course type	Course hours per week	ECTS credits	Compulsory (C) / Elective (E) Compulsory elective (CE)	Semester (WS/SS)
Technology I	IV	1.1	9	C	Winter semester
Technology II	IV	2.1			
Technology Tutorial	Tutorial	1.6			
Case studies & accompanying program	IV	1.6			

4. Description of course types

Integrated courses (IV) in the form of seminar-style lectures, e-learning course, tutorial and excursions

5. Participation requirements

Enrolled in the continuing education master's in Sustainable Mobility Management (MBA) at TU Berlin (1st-course semester)

6. Module can be taken in following programs

Continuing education master's in Sustainable Mobility Management (MBA) at TU Berlin

7. Workload and credits		
Seminar-style lectures (in person)		48 h
Tutorials (in person)		24 h
Case studies & accompanying program		24 h
Preparation and follow-up incl. e-learning		128 h
Examination and exam preparation		46 h
This amounts to a workload of **270 hours** per semester, which is equivalent to **9 credits**.		
8. Module completion		
Graded Type of assessment: written exam - There will be one assessed test (written; duration 120 mins) at the end of the module. - Students who fail the exam may repeat it at the beginning of the following semester.		
9. Module duration		
The module can be completed in **one** semester.		
10. Number of participants		
Technology I: Maximum number of participants: 90 Technology II: Maximum number of participants: 30		
11. Registration formalities		
Students can register for the e-learning course, the tutorial and the examination via TUBS.		
12. Reading list and lecture notes		
Lecture notes available in hard copy: No Lecture notes available in electronic format: Yes On the Moodle platform for the program: https://www.isis.tu-berlin.de/2.0/ Reading list: The reading list is provided in the e-learning course on Moodle.		

Module title: Economics	**Credit Points (ECTS):** 6	**Short title:** Economics (SuMo)
Module supervisor: Prof. Dr. Hans-Liudger Dienel	**Office:** Alina Pfeifer	**Email:** alina.pfeifer@campus.tu-berlin.de

Module description

1. Module aims

This module is an introduction to economics. It covers the most important principles of economics taking into account social responsibility and sustainable development. The module engages with the latest research and encourages a critical and reflective approach in providing a foundation in economics for subsequent modules.

Students are able to identify specialized knowledge and aspects of economics and to compare general and selected cases from the transport sector.

2. Content

Concepts in microeconomics (microeconomic analysis and market interaction of businesses, households and governmental organizations), aggregated demand, factors in production decisions, supply and demand, markets (competitive market, monopoly market, functioning markets, market failure, market regulation, price regulation, energy and commodity markets, and the transport sector), taxation, principles of investment decisions, societal welfare, merit order effect, sustainability, commodities sector, energy industry and public utilities.

Principles of macroeconomics, capitalism as an economic system (private property, companies, markets), technological change & economic growth, competitive markets, banks, fiscal and monetary policy, unemployment, inflation, and the global economic crisis.

Application of economic theories and methods with links to the transport sector.

3. Module components

Course title	Course type	Course hours per week	ECTS credits	Compulsory (C) / Elective (E) Compulsory elective (CE)	Semester (WS/SS)
Economics I	IV	1.6	6	C	Winter semester
Economics II	IV	1.1			
Economics Tutorial	Tutorial	2.1			
Case studies & accompanying program	IV	0.5			

4. Description of course types

Integrated courses (IV) with lectures, exercises, tutorials, e-learning course and accompanying program.

5. Participation requirements

Enrolled in the master's in Sustainable Mobility Management (MBA) at TU Berlin (1st-course semester)

6. Module can be taken in following programs

Continuing education master's in Sustainable Mobility Management (MBA) at TU Berlin

7. Workload and credits		
Seminar-style lectures (in person)		40h
Tutorials (in person)		32 h
Case studies & accompanying program		8 h
Preparation and follow-up incl. e-learning		82 h
Examination and exam preparation (1 test)		18 h
This amounts to a workload of **180 hours** per semester, which is equivalent to **6 credits**.		
8. Module completion		
Graded Type of assessment: written exam There will be one assessed test (written; duration 90 mins) at the end of the module. Students who fail the exam may repeat it at the beginning of the following semester.		
9. Module duration		
The module can be completed in **one** semester.		
10. Number of participants		
Economics I: Maximum number of participants: 90 Economics II: Maximum number of participants: 30		
11. Registration formalities		
Students can register for the e-learning course, the tutorial and the examination via TUBS.		
12. Reading list and lecture notes		
Lecture notes available in hard copy: No Lecture notes available in electronic format: Yes If yes, provide link: On the Moodle platform for the program: https://www.isis.tu-berlin.de/2.0/ The reading list is provided in the e-learning course on Moodle.		

Module title: Business	**Credit Points (ECTS):** 9	**Short title:** Business (SuMo)
Module supervisor: Prof. Dr. Hans-Liudger Dienel	**Office:** Alina Pfeifer	**Email:** alina.pfeifer@campus.tu-berlin.de

Module description

1. Module aims

This module is an introduction to business studies. It covers the most important principles of business studies taking into account social responsibility and sustainable development. The module engages with the latest research and encourages a critical and reflective approach in providing a grounding in business studies for subsequent modules.

Students will be able to define the main features of business studies, apply problem-solving skills to case studies using different fields of knowledge and to present them for the transport sector.

2. Content

Evaluation of companies, corporate accounting (balance sheets, financial reporting, financial control), taxes, depreciation, basic principles of strategy development, production management, business ethics, investment & financing (corporate finance), liquidity, marketing & sales (consumer behavior, SWOT, Ansoff matrix, BCG matrix, demand analysis, advertising, etc.), organizational behavior (HR management, leadership), sustainability and links to the transport sector.

3. Module components

Course title	Course type	Course hours per week	ECTS credits	Compulsory (C) / Elective (E) Compulsory elective (CE)	Semester (WS/SS)
Business I	IV	1.6	9	C	Winter semester
Business II	IV	1.6			
Business Tutorial	Tutorial	1.6			
Case studies & accompanying program	IV	1.1			

Integrated courses (IV) in the form of seminar-style lectures, e-learning course, tutorial, exercise and accompanying program

5. Participation requirements

Enrolled in the continuing education master's in Sustainable Mobility Management (MBA) at TU Berlin (1st-course semester)

6. Module can be taken in following programs

Continuing education master's in Sustainable Mobility Management (MBA) at TU Berlin (1st semester)

7. Workload and credits

Seminar-style lectures (in person)		48 h
Tutorials (in person)		24 h
Case studies & accompanying program		16 h
Preparation and follow-up incl. e-learning		152 h
Examination and exam preparation		30 h

This amounts to a workload of **270 hours** per semester, which is equivalent to 9 credits.

8. Module examination and grading

Graded: no

Type of assessment: Portfolio

Students who fail the exam may repeat it at the beginning of the following semester.

Task	Points
(Evaluation of output) Written test (duration: 60 minutes)	20
(Evaluation of output) Business simulation - Presentation	40
(Evaluation of output) Business simulation - Term paper	40

9. Module duration

The module can be completed in **one** semester.

10. Number of participants

Business I: Maximum number of participants: 90

Business II: Maximum number of participants: 30

11. Registration formalities

Students can register for the e-learning course, the tutorial and the examination via TUBS.

12. Reading list and lecture notes

Lecture notes available in hard copy: No
Lecture notes available in electronic format: Yes
If yes, provide link: On the Moodle platform for the program:
https://www.isis.tu-berlin.de/2.0/
The reading list is provided in the e-learning course on Moodle.

Module title: Law	**Credit Points (ECTS):** 6	**Short title:** Law (SuMo)
Module supervisor: Prof. Dr. Dr. Dres. h.c. Franz Jürgen Säcker	**Office:** Alina Pfeifer	**Email:** alina.pfeifer@campus.tu-berlin.de

Module description

1. Module aims

This module is an introduction to legal principles and the legal framework for the transport sector at the international, European and national level.

Students will be able to use their own initiative to combine legal knowledge and skills in solving complex problems, evaluate cases independently and analyze and summarize legal situations.

2. Content

Principles of civil, private and commercial law. Principles of public law, regulatory law and governance in the transport sector. Principles of the regulatory framework for transport systems at the i) global, ii) European and iii) German level.

3. Module components

Course title	Course type	Course hours per week	ECTS credits	Compulsory (C) / Elective (E) Compulsory elective (CE)	Semester (WS/SS)
Law I	IV	0.5	6	C	Winter semester
Law II	IV	1.6			
Law Tutorial	Tutorial	0.8			
Case studies & accompanying program	IV	0.5			

4. Description of course types

Integrated courses (IV) in the form of seminar-style lectures, e-learning course, and tutorial

5. Participation requirements

Enrolled in master's in Sustainable Mobility Management (MBA) at TU Berlin (1st-course semester)

6. Module can be taken in following programs

Continuing education master's in Sustainable Mobility Management (MBA) at TU Berlin

7. Workload and credits		
Integrated courses (in person)		32 h
Tutorials (in person)		12 h
Case studies & accompanying program		8 h
Preparation and follow-up incl. e-learning		48 h
Examination and exam preparation		80 h
This amounts to a workload of **180 hours** per semester, which is equivalent to **6 credits**.		
8. Module completion		
Graded Type of assessment: written exam - One term paper (written, 10 pages, 10 days) will be set at the end of the module. - Students who fail the exam may repeat it at the beginning of the following semester.		
9. Module duration		
The module can be completed in **one** semester.		
10. Number of participants		
Law I: Maximum number of participants: 90 Law II: Maximum number of participants: 30		
11. Registration formalities		
Students can register for the e-learning course, the tutorial and the examination via TUBS.		
12. Reading list and lecture notes		
Lecture notes available in hard copy: No Lecture notes available in electronic format: Yes If yes, provide link: On the Moodle platform for the program: https://www.isis.tu-berlin.de/2.0/ The reading list is provided in the e-learning course on Moodle.		

Module title: Management	**Credit Points (ECTS):** 12	**Short title:** Management (SuMo)
Module supervisor: Prof. Dr. Søren Salomo	**Office:** Alina Pfeifer	**Email:** alina.pfeifer@campus.tu-berlin.de

Module description

1. Module aims

Students are able to independently identify, analyze and design strategic approaches taking into account the consequences of environmental changes for planning, management and controlling. They do this by incorporating interdependent technological, economic, business and legal processes in companies and organizations and taking into account social responsibility and sustainable development.

Students will be able to define the main features of management in the transport sector, apply problem-solving skills to case studies using different fields of knowledge and to present options for optimizing the transport sector.

2. Content

Business models & plans, small group communication, leadership, environmental communication, corporate social responsibility (CSR), conflict management, change management, risk management; operational excellence, system services, and energy services, Germany's energy transformation, management of reactive power and links to the transport sector.

3. Module components

Course title	Course type	Course hours per week	ECTS credits	Compulsory (C) / Elective (E) Compulsory elective (CE)	Semester WS/SS)
Management I	IV	2.2	12	C	Summer semester
Management II	IV	2.2			
Business Communication	IV and Tutorial	2.1			
Case studies & accompanying program	IV	2			

4. Description of course types

Integrated courses (IV) in the form of seminar-style lectures, e-learning course, and tutorial

5. Participation requirements

Enrolled in the continuing education master's in Sustainable Mobility Management (MBA) at TU Berlin (2nd-course semester)

6. Module can be taken in following programs

Continuing education master's in Sustainable Mobility Management (MBA) at TU Berlin

7. Workload and credits

Integrated courses (in person)		64 h
Tutorials (in person)		32 h
Case studies & accompanying program		30 h
Preparation and follow-up incl. e-learning		164 h
Examination and exam preparation		70 h

This amounts to a workload of **360 hours** per semester, which is equivalent to **12 credits**.

8. Module completion

Graded

Type of assessment: Portfolio

Students who do not pass may repeat at the beginning of the following semester by taking a graded written exam (duration: 120 minutes).

Task	Points
(Evaluation of output) Project (term paper)	40
(Evaluation of learning process) oral presentation	20
(Evaluation of output) Written test	40

9. Module duration

The module can be completed in **one** semester.

10. Number of participants

Maximum number of participants in Management I: 90

Maximum number of participants in Management II: 30

11. Registration formalities

Students can register for the e-learning course, the tutorial and the examination via TUBS.

12. Reading list and lecture notes

Lecture notes available in hard copy: No
Lecture notes available in electronic format: Yes
If yes, provide link: On the Moodle platform for the program:
https://www.isis.tu-berlin.de/2.0/
The reading list is provided in the e-learning course on Moodle.

Module title: Mobility: Actors and Practices	**Credit Points (ECTS):** 6	**Short title:** Actors (SuMo)
Module supervisor: Prof. Dr. Sphia Becker	**Office:** Alina Pfeifer	**Email:** lina.pfeifer@campus.tu-berlin.de

Module description

1. Module aims

After taking this module, students will:

- have acquired a knowledge base in transport systems, and sustainable mobility theories, concepts, and approaches with the focus on mobility as a social and technological system;
- be able to identify and address social, economic and technological conflicts and points of tension in the implementation of the transition towards sustainable mobility.

2. Content

- Climate change, transition in mobility, sustainability;
- Modes of transport and actors; Actor theorie, social innovation;
- The concept of motility and sessility; mobility turn; long-tem visions in mobility;
- Social and individual behavior: social networks, time rhythms, and spatial distribution;
- Travel networks, community, and identity;
- Policy and inequalities; diversity of users;
- Urban, metropolitan and rural mobility.

3. Module components

Course title	Course type	Course hours per week	ECTS credits	Compulsory (C) / Elective (E) Compulsory elective (CE)	Semester (WS/SS)
Actors and Systems I	IV	0.7	6	C	Summer semester
Actors and Systems II	IV	0.7			
Actors and Systems III	IV	0.7			
Actors and Systems IV	IV	1			
Case studies I	Tutorial	0.45			
Case studies II	Tutorial	0.45			

4. Description of course types

Integrated courses (IV) often in the form of seminar-style lectures

5. Participation requirements

Enrolled in the master's in Sustainable Mobility Management at TU Berlin (2nd-course semester)

6. Module can be taken in following programs

Continuing education master's in Sustainable Mobility Management at TU-Campus EUREF (TU Berlin)

7. Workload and credits

Seminar-style lectures (in person)		48 h
Tutorial/case studies (in person)		15 h
Preparation and follow-up incl. e-learning		80 h
Examination and exam preparation		37 h

This amounts to a workload of **180 hours** per semester, which is equivalent to **6 credits**.

8. Module completion

Graded

Type of assessment: Portfolio

If a student fails, the examination will be repeated at the beginning of the following semester in the form of a graded examination (120 minutes).

Task	Points
(Evaluation of output) Project (term paper)	60
(Evaluation of learning process) oral presentation	40

9. Module duration

The module can be completed in **one** semester.

10. Number of participants

Maximum number of participants: 30

11. Registration formalities

Students can register for the examination via TUBS.

12. Reading list and lecture notes

Lecture notes available in hard copy: No
Lecture notes available in electronic format: Yes
If yes, provide link: On the Moodle platform for the program: https://www.isis.tu-berlin.de/2.0/
The reading list is provided in the e-learning course on Moodle.

Module title: Lecture series: Transition Toward Sustainable Mobility	**Credit Points (ECTS):** 6	**Short title:** Lecture series (SuMo)
Module supervisor: Prof. Dr. Hans-Liudger Dienel	**Office:** Alina Pfeifer	**Email:** alina.pfeifer@campus.tu-berlin.de

Module description

1. Module aims

The main aim is to explore current perspectives in the discourse on sustainable mobility by involving practitioners and researchers in this field.

2. Content

At the end of this module, students will have a broad picture of the current discourse on sustainable mobility and related trends.

A number of national and international experts from industry, academia and research centers present different perspectives on the transformation of mobility using case studies from practice.

In this way - alongside the knowledge gained in the other modules - the students will learn how to develop a complex understanding of the problems and potentials of mobility transformation.

3. Module components

Course title	Course type	Course hours per week	ECTS credits	Compulsory (C) / Elective (E) Compulsory elective (CE)	Semester (WS/SS)
Lecture Series I	IV	4	6	C	Summer semester

4. Description of course types

Integrated courses (IV) with some seminar-style lectures.

5. Participation requirements

Enrolled in the master's in Sustainable Mobility Management (MBA) at TU Berlin (2nd-course semester)

6. Module can be taken in following programs

Continuing education master's in Sustainable Mobility Management (MBA) at TU Berlin

7. Workload and credits		
Seminar-style lectures (in person)		60 h
Preparation and follow-up incl. e-learning		120 h
This amounts to a workload of **180 hours** per semester, which is equivalent to **6 credits**.		
8. Module completion		
Students complete the module through active participation Graded: no		
9. Module duration		
The module can be completed in **one** semester.		
10. Number of participants		
Maximum number of participants: 30		
11. Registration formalities		
Students can register for the e-learning course via TUBS.		
12. Reading list and lecture notes		
Lecture notes available in hard copy: No Lecture notes available in electronic format: Yes If yes, provide link: On the Moodle platform for the program: https://www.isis.tu-berlin.de/2.0/ The reading list is provided in the e-learning course on Moodle.		

Module title: Mobility Trends and Futures	**Credit Points (ECTS):** 6	**Short title:** Trends (SuMo)
Module supervisor: Prof. Dr. Hans-Liudger Dienel	**Office:** Alina Pfeifer	**Email:** lina.pfeifer@campus.tu-berlin.de

Module description

1. Module aims

After taking this module, students will:

- understand mobility trends in order to be able to address the complexity of the open and network-based transport systems of the future;
- be able to evaluate social and technological transformation and change;
- have a firm grounding in the development of forecasts;
- be able to use this knowledge to construct scenarios and plan long-term developments in mobility transformation.

2. Content

- Long-term visions for mobility;
- Principles of forecasting and methods;
- Concept of wild cards and weak signals;
- Megatrends; Current trends and possible scenarios in mobility;
- Similarities and differences between emerging and developed economies;
- New consumption patterns, new lifestyles;
- Critical evaluation of technological innovations and their effects;

3. Module components

Course title	Course type	Course hours per week	ECTS credits	Compulsory (C) / Elective (E) Compulsory elective (CE)	Semester (WS/SS)
Mobility Trends and Futures	IV	3	6	C	Summer semester
Scenario Development	Tutorial	1			

4. Description of course types

Integrated courses (IV) with seminar-style lectures.

5. Participation requirements

Enrolled in the continuing education master's in Sustainable Mobility Management (MBA) at TU Berlin (2nd-course semester)

6. Module can be taken in following programs

Continuing education master's in Sustainable Mobility Management at TU-Campus EUREF (TU Berlin)

7. Workload and credits

Seminar-style lectures (in person)		45 h
Tutorial (in person)		15 h
Preparation and follow-up incl. e-learning		90 h
Examination and exam preparation		30 h

This amounts to a workload of **180 hours** per semester, which is equivalent to **6 credits**.

8. Completion of the module

Graded

Type of assessment: Portfolio

If a student fails, the examination will be repeated at the beginning of the following semester in the form of a graded examination (120 minutes).

Task	Points
(Evaluation of output) Presentation of a developed scenario	40
(Evaluation of output) Written report on scenario development	20
(Evaluation of output) Oral examination	40

9. Module duration

This module is available in the second semester.

10. Number of participants

Maximum number of participants: 30

11. Registration formalities

Students can register for the e-learning course, the tutorial and the examination via TUBS.

12. Reading list and lecture notes

Lecture notes available in hard copy: No
Lecture notes available in electronic format: Yes
If yes, provide link: On the Moodle platform for the program: https://www.isis.tu-berlin.de/2.0/
The reading list is provided in the e-learning course on Moodle.

Compulsory elective modules

Module title: Business Models and Investments in Sustainable Mobility	**Credit Points (ECTS):** 6	**Short title:** Business Models (SuMo) E-SuMo 1
Module supervisor: Prof. Dr. Hans-Liudger Dienel	**Office:** Alina Pfeifer	**Email:** Alina.pfeifer@campus.tu-berlin.de

Module description

1. Module aims

After taking this module, students will:
- understand the basic principles of financial instruments;
- be able to apply these in order to implement sustainable mobility;
- be able to evaluate traditional and innovative business models in sustainable mobility.
- be able to develop innovative economic and financial models.

2. Content

Transport investment
- Sources and limits of financial resources for sustainable mobility;
- Investment calculation;
- Critically linking project financing, decision-making, and investment analysis.
- Concept of the infrastructure cycle and long-term investment;

Business models
- Traditional and innovative business models;
- Sharing economy and crowdfunding;
- Designing a business model (select product/service; determine benefits, analyze and identify market, revenue model, value chain).

3. Module components

Course title	Course type	Course hours per week	ECTS credits	Compulsory (C) / Elective (E) Compulsory elective (CE)	Semester (WS/SS)
Business Models in Transport	IV	2.9	6	CE	Winter semester
Case studies & accompanying program	IV	1,1			

4. Description of course types

Lectures and exercises on individual topics will be grouped in blocks so that there will be plenty of opportunities for in-depth study.

Overall, the first phase will serve to build up a theoretical foundation before it is applied to practice.

5. Participation requirements

Enrolled in one of the following continuing education master's: Energy Management (MBA), Building Efficiency (MBA) or Sustainable Mobility Management (MBA) at TU Berlin (2nd semester) If there is a high demand for places, students in the continuing education master's program in Sustainable Mobility Management (MBA) will have priority.

6. Module can be taken in following programs

Continuing education master's in Sustainable Mobility Management at TU-Campus EUREF (TU Berlin).

7. Workload and credits

Seminar-style lectures (in person)		44 h
Case studies & accompanying program (in person)		16 h
Preparation and follow-up incl. e-learning		90 h
Examination and exam preparation		30 h

This amounts to a workload of **180 hours** per semester, which is equivalent to **6 credits**.

8. Module completion

Graded: no

Type of assessment: Portfolio

If a student fails, the examination will be repeated at the beginning of the following semester in the form of a graded examination (120 minutes).

Task	Points
(Learning process evaluation) Project - Contribution to the discussion	25
(Output evaluation) Oral presentation	50
(Output evaluation) Presentation materials / written composition (term paper)	25

9. Module duration

This module takes place during the third semester.

10. Number of participants

Maximum number of participants: 25

11. Registration formalities

Students can register for the e-learning course and the examination via TUBS.

12. Reading list and lecture notes

Lecture notes available in hard copy: No
Lecture notes available in electronic format: Yes
If yes, provide link: On the Moodle platform for the program: https://www.isis.tu-berlin.de/2.0/
The reading list is provided in the e-learning course on Moodle.

Module title: Data Analysis and ICT in Mobility	**Credit Points (ECTS):** 6	**Short title:** ICT (SuMo) E-SuMo 2
Module supervisor: Prof. Dr. Hans-Liudger Dienel	**Office:** Alina Pfeifer	**Email:** alina.pfeifer@campus.tu-berlin.de

Module description

1. Module aims

After taking this module, students will:

- evaluate current and future practices in the digitalization of the transport industry and transport services;
- be familiar with the principles of i) data collection ii) data analysis and iii) modeling to support decision-making processes; iv) data mining;
- be able to understand the use of data in mobility systems.

2. Content

- The role and growth of ICT;
- The complex relationship between ICT and mobility;
- Quantitative and qualitative data; Data collection; Designing and analyzing surveys;
- Data collection, modelling, analysis;
- Data mining;
- Interpretation of ICT and qualitative data;
- Project work.

3. Module components

Course title	Course type	Course hours per week	ECTS credits	Compulsory (C) / Elective (E) Compulsory elective (CE)	Semester (WS/SS)
ICT and Mobility	IV	2,9	6	CE	Winter semester
Case studies & accompanying program	IV	1.1			

4. Description of course types

Lectures and exercises on individual topics will be grouped in blocks so that there will be plenty of opportunities for in-depth study.

Overall, the first phase will serve to build up the theoretical basis before it is applied to practice.

5. Participation requirements

Enrolled in one of the following continuing education master's: Energy Management (MBA), Building Efficiency (MBA) or Sustainable Mobility Management (MBA) at TU Berlin (2nd semester) If there is a high demand for places, students in the continuing education master's program in Sustainable Mobility Management (MBA) will have priority.

6. Module can be taken in following programs

Continuing education master's in Sustainable Mobility Management at TU-Campus EUREF (TU Berlin)

7. Workload and credits

Seminar-style lectures (in person)		44 h
Case studies & accompanying program (in person)		16 h
Preparation and follow-up incl. e-learning		90 h
Examination and exam preparation (1 test)		30 h

This amounts to a workload of **180 hours** per semester, which is equivalent to **6 credits**.

8. Completion of the module

Graded: no

Type of assessment: Portfolio

If a student fails, the examination will be repeated at the beginning of the following semester in the form of a graded examination (120 minutes).

Task	Points
(Learning process evaluation) Project - Contribution to the discussion	25
(Output evaluation) Oral presentation	50
(Output evaluation) Presentation materials / written composition (term paper)	25

9. Module duration

This module takes place during the third semester.

10. Number of participants

Maximum number of participants: 25

11. Registration formalities

Students can register for the e-learning course and the examination via TUBS.

12. Reading list and lecture notes

Lecture notes available in hard copy: No
Lecture notes available in electronic format: Yes
If yes, provide link: On the Moodle platform for the program: https://www.isis.tu-berlin.de/2.0/
The reading list is provided in the e-learning course on Moodle.

Module title: Urban and Transport Planning in Emerging Economies: Concepts and Experiences	**Credit Points (ECTS):** 6	**Short title:** Urban planning (SuMo) E-SuMo 3
Module supervisor: Prof. Dr. Hans-Liudger Dienel	**Office:** Alina Pfeifer	**Email:** alina.pfeifer@campus.tu-berlin.de

Module description

1. Module aims

After taking this module, students will:

- be familiar with the urban and transport planning experiences in Emerging Economies;
- have knowledge of smart city concepts, theories, and criticisms
- Use this knowledge to apply analytical methods in various institutional and economic contexts;
- develop effective instruments based on these.

2. Content

- Designing Sustainable Urban Mobility Plans;
- Stakeholder strategies-tools and methods, social, gender and cultural aspects;
- Regulatory frameworks, financing and institutional challenges;
- The role of transport options for sustainable economy: indicators for monitoring and assessing;
- Knowledge and technology exchange - transfer and barriers;
- Mobility challenges in the developing world on rural and urban scale;
- Megacities, Smart city concepts, theories, and criticism.

3. Module components

Course title	Course type	Course hours per week	ECTS credits	Compulsory (C) / Elective (E) Compulsory elective (CE)	Semester (WS/SS)
Urban and Transport Planning	IV	2,9	6	CE	Winter semester
Case studies & accompanying program	IV	1.1			

4. Description of course types

Lectures and exercises on individual topics will be grouped in blocks so that there will be plenty of opportunities for in-depth study.

Overall, the first phase will serve to build up the theoretical basis before it is applied to practice.

5. Participation requirements

Enrolled in one of the following continuing education master's: Energy Management (MBA), Building Efficiency (MBA) or Sustainable Mobility Management (MBA) at TU Berlin (2nd semester) If there is a high demand for places, students in the continuing education master's program in Sustainable Mobility Management (MBA) will have priority.

6. Module can be taken in following programs

Continuing education master's in Sustainable Mobility Management at TU-Campus EUREF (TU Berlin)

7. Workload and credits

Seminar-style lectures (in person)		44 h
Case studies & accompanying program (in person)		16 h
Preparation and follow-up incl. e-learning		90 h
Examination and exam preparation		30 h

This amounts to a workload of **180 hours** per semester, which is equivalent to **6 credits**.

8. Completion of the module

Graded: no

Type of assessment: Portfolio

If a student fails, the examination will be repeated at the beginning of the following semester in the form of a graded examination (120 minutes).

Task	Points
(Learning process evaluation) Project - Contribution to the discussion	25
(Output evaluation) Oral presentation	50
(Output evaluation) Presentation materials / written composition (term paper)	25

9. Module duration

This module takes place during the third semester.

10. Number of participants

Maximum number of participants: 25

11. Registration formalities

Students can register for the e-learning course and the examination via TUBS.

12. Reading list and lecture notes

Lecture notes available in hard copy: No
Lecture notes available in electronic format: Yes
If yes, provide link: On the Moodle platform for the program: https://www.isis.tu-berlin.de/2.0/
The reading list is provided in the e-learning course on Moodle.

Module title: Efficiency Management	**Credit Points (ECTS):** 6	**Short title:** Efficiency (EM) E-EM 1
Module supervisor: Prof. Dr.-Ing. Joachim Müller-Kirchenbauer	**Office:** Sandra Lubahn	**Email:** Sandra.lubahn@campus.tu-berlin.de

Module description

1. Module aims

The students will be able to define, evaluate and analyze technical projects and structures such as buildings, factories, and urban districts. They do this by integrating the technological, economic, business and legal operations in companies and organizations and by taking social responsibility and sustainable development into account.

2. Content

Buildings and energy efficiency; greenhouse gas emissions, demand-side management, combined heat and power generation, process chain management, energy efficiency technologies, amortization processes, local heating, and cooling networks, project management, ISO standards and, depending on the focus of studies, links to the energy, building or transport sector.

3. Module components

Course title	Course type	Course hours per week	ECTS credits	Compulsory (C) / Elective (E) Compulsory elective (CE)	Semester (WS/SS)
Efficiency management	IV	2.9	6	CE	Winter semester
Case studies & accompanying program	IV	1.1			

4. Description of course types

Integrated courses (IV) in the form of seminar-style lectures, e-learning course, and tutorial

5. Participation requirements

Enrolled in one of the following continuing education master's: Energy Management (MBA), Building Efficiency (MBA) or Sustainable Mobility Management (MBA) at TU Berlin (2nd semester) If there is a high demand for places, students in the continuing education master's program in Energy Management (MBA) will have priority.

6. Module can be taken in following programs

Continuing education master's in Energy Management (MBA) at TU Berlin.

7. Workload and credits

Seminar-style lectures (in person)		44 h
Case Studies (in person)		16 h
Preparation and follow-up incl. e-learning		90 h
Examination and exam preparation		30 h

This amounts to a workload of **180 hours** per semester, which is equivalent to **6 credits**.

8. Completion of the module

Graded: no

Type of assessment: Portfolio

If a student fails, the examination will be repeated at the beginning of the following semester in the form of a graded examination (120 minutes).

Task	Points
(Learning process evaluation) Project - Contribution to the discussion	25
(Output evaluation) Oral presentation	50
(Output evaluation) Presentation materials / written composition (term paper)	25

9. Module duration

This module takes place during the third semester.

10. Number of participants

Maximum number of participants: 25

11. Registration formalities

Students can register for the e-learning course and the examination via TUBS.

12. Reading list and lecture notes

Lecture notes available in hard copy: No
Lecture notes available in electronic format: Yes
If yes, provide link: On the Moodle platform for the program: https://www.isis.tu-berlin.de/2.0/
The reading list is provided in the e-learning course on Moodle.

Module title: Rural Electrification	**Credit Points (ECTS):** 6	**Short title:** Rural Electrification (EM) E-EM 2
Module supervisor: Dawud Ansari, M.Sc.	**Office:** Sandra Lubahn	**Email:** Sandra.lubahn@campus.tu-berlin.de

Module description

1. Module aims

Students can describe, analyze, and evaluate the role of developing and emerging countries in global energy systems as well as their local and regional challenges, peculiarities, and opportunities. You can explain and apply energy-related macroscopic concepts such as economic development and path dependency. Students understand macroscopic concepts as well as political programs and efforts related to energy in developing and emerging countries and can contextually classify and evaluate measures and developments, especially against the background of the term energy poverty and its characteristics. Students are familiar with various off-grid technologies and can choose between them, including the use of suitable methods of integrative planning. Finally, students can act better in group projects, understand the process of development cooperation and can understand and design central elements in it, and are aware of their responsibility for global as well as local sustainable development.

2. Content

Global energy (long-term scenarios, determinants of the world energy system, energy in developing and emerging economies); Sustainable development (SDGs, growth and development theory, Hartwick rule, resource dependency, and diversification, case studies); Energy poverty and access (definition, empirical data, generation and consumption patterns of low-income households, subsidies for fossil fuels and reforms, the role of energy efficiency, case studies); Rural electrification and off-grid technologies (off-grid technologies, computer-assisted planning of off-grids including the basics of mixed-integer optimization, economics, and management in off-grids, the practice of development cooperation); Project phase (e.g. off-grid design, development cooperation, business case).

3. Module components

Course title	Course type	Course hours per week	ECTS credits	Compulsory (C) / Elective (E) Compulsory elective (CE)	Semester (WS/SS)
Efficiency management	IV	2.9	6	CE	Winter semester
Case studies & accompanying program	IV	1.1			

4. Description of course types

Integrated courses (IV) in the form of seminar-style lectures, e-learning course, and tutorial

5. Participation requirements

Enrolled in one of the following continuing education master's: Energy Management (MBA), Building Efficiency (MBA) or Sustainable Mobility Management (MBA) at TU Berlin (2nd semester) If there is a high demand for places, students in the continuing education master's program in Energy Management (MBA) will have priority.

6. Module can be taken in following programs

Continuing education master's in Energy Management (MBA) at TU Berlin

7. Workload and credits

Seminar-style lectures (in person)		44 h
Case Studies (in person)		16 h
Preparation and follow-up incl. e-learning		90 h
Examination and exam preparation		30 h

This amounts to a workload of **180 hours** per semester, which is equivalent to **6 credits**.

8. Completion of the module

Graded: no

Type of assessment: Portfolio

If a student fails, the examination will be repeated at the beginning of the following semester in the form of a graded examination (120 minutes).

Task	Points
(Learning process evaluation) Project - Contribution to the discussion	25
(Output evaluation) Oral presentation	50
(Output evaluation) Presentation materials / written composition (term paper)	25

9. Module duration

This module takes place during the third semester.

10. Number of participants

Maximum number of participants: 25

11. Registration formalities

Students can register for the e-learning course and the examination via TUBS.

12. Reading list and lecture notes

Lecture notes available in hard copy: No
Lecture notes available in electronic format: Yes
If yes, provide link: On the Moodle platform for the program: https://www.isis.tu-berlin.de/2.0/
The reading list is provided in the e-learning course on Moodle.

Module title: Project Management Skills. Managing (Agile) Projects and Product Development (EM)	**Credit Points (ECTS):** 6	**Short title:** Project Management Skills (EM) E-EM 3
Module supervisor: Christian Busch, M.Sc., MBA	**Office:** Sandra Lubahn	**Email:** Sandra.lubahn@campus.tu-berlin.de

Module description

1. Module aims

The overall qualification goal of the module is to enable the students to plan, implement, and successfully complete projects economically, efficiently, and according to modern agile and classic management methods. They understand the project or product life cycle and, based on the mediating classic and agile project and product management methodology, they can create, analyze, interpret and evaluate individual essential building blocks of project management and apply them future-oriented. They will learn about challenges in ensuring quality (quality management), opportunities, and threats in development and implementation (risk management), and the principles of identifying user needs (requirements management). Furthermore, the students learn the roles, tasks, and processes in modern project management, as well as the special features and challenges in stakeholder management, and can implement this in the future in a communication and information management strategy. Also, the students are aware of the similarities and differences between individual and multi-project / project portfolio management.
At the end of the course, the students can act in the mediated roles in agile and classic projects, understand the essential project management processes, can generate central management documents themselves, and can apply and further deepen the methodology in future projects.

2. Content

Mediation of the project and product management modules: project organization (e.g. project management manual), goal planning (vision, strategy, concept, business case, project plan), process, schedule and cost planning, resource planning, information and reporting, stakeholder management, requirements management, risk management, quality management, getting to know different development strategies (e.g. general (waterfall), incremental, iterative), presentation of classic project management methods (PRINCE2, IPMA) and agile methods (e.g. SCRUM) as well as application in mini-scenarios, mediation of roles, committees and most important Stakeholders (needs, measures of stakeholder management) in project management (including assignments and case studies), getting to know risk management methods, agile according to SCRUM and classic according to AXELOS Management of Risk (M_o_R), getting to know requirements management methods, agile according to SCRUM and classic according to IREB (International Requirements Engineering Board), project phase (e.g. Use of business cases from previous modules to create project plans, requirement sketches or risk management measures).

3. Module components

Course title	Course type	Course hours per week	ECTS credits	Compulsory (C) / Elective (E) Compulsory elective (CE)	Semester (WS/SS)
Efficiency management	IV	2.9	6	CE	Winter semester
Case studies & accompanying program	IV	1.1			

4. Description of course types

Integrated courses (IV) in the form of seminar-style lectures, e-learning course, and tutorial

5. Participation requirements

Enrolled in one of the following continuing education master's: Energy Management (MBA), Building Efficiency (MBA) or Sustainable Mobility Management (MBA) at TU Berlin (2nd semester) If there is a high demand for places, students in the continuing education master's program in Energy Management (MBA) will have priority.

6. Module can be taken in following programs

Continuing education master's in Energy Management (MBA) at TU Berlin

7. Workload and credits

Seminar-style lectures (in person)		44 h
Case Studies (in person)		16 h
Preparation and follow-up incl. e-learning		90 h
Examination and exam preparation		30 h

This amounts to a workload of **180 hours** per semester, which is equivalent to **6 credits**.

8. Completion of the module

Graded: no

Type of assessment: Portfolio

If a student fails, the examination will be repeated at the beginning of the following semester in the form of a graded examination (120 minutes).

Task	Points
(Learning process evaluation) Project - Contribution to the discussion	25
(Output evaluation) Oral presentation	50
(Output evaluation) Presentation materials / written composition (term paper)	25

9. Module duration

This module takes place during the third semester.

10. Number of participants

Maximum number of participants: 25

11. Registration formalities

Students can register for the e-learning course and the examination via TUBS.

12. Reading list and lecture notes

Lecture notes available in hard copy: No
Lecture notes available in electronic format: Yes
If yes, provide link: On the Moodle platform for the program: https://www.isis.tu-berlin.de/2.0/
The reading list is provided in the e-learning course on Moodle.

Module title: User-Centered Business Model Innovation & Research	**Credit Points (ECTS):** 6	**Short title:** BMIR (BuSu) E-BuSu 1
Module supervisor: Prof. Dr.-Ing. Joachim Müller-Kirchenbauer	**Office:** Laura Lehmann	**Email:** laura.lehmann.1@campus.tu-berlin.de

Module description

1. Module aims

The User-Centered Business Model Innovation & Research module is an interdisciplinary project that awards 6 ECTS for one semester. The course offers theoretical input sessions on innovation management, project management, team building, user-centered business model development, and methods of business research. Using innovative design thinking and lean startup methods, the students apply this knowledge independently to the development of their business idea. With an entrepreneurial spirit, the teams work with various interest groups (industry, government, and startups).

2. Content

Innovation management basics, open & user innovation, team building, and team management, innovation assessment, agile and lean startup methods, data analysis software, business research methods, user-centered business modeling.

3. Module components

Course title	Course type	Course hours per week	ECTS credits	Compulsory (C) / Elective (E) Compulsory elective (CE)	Semester (WS/SS)
Efficiency management	IV	2.9	6	CE	Winter semester
Case studies & accompanying program	IV	1.1			

4. Description of course types

Integrated courses (IV) in the form of seminar-style lectures, e-learning course, and tutorial

5. Participation requirements

Enrolled in one of the following continuing education master's: Energy Management (MBA), Building Efficiency (MBA) or Sustainable Mobility Management (MBA) at TU Berlin (2nd semester) If there is a high demand for places, students in the continuing education master's program in Building Efficiency (MBA) will have priority.

6. Module can be taken in following programs

Continuing education master's in Building Efficiency (MBA) at TU Berlin.

7. Workload and credits

Seminar-style lectures (in person)		44 h
Case Studies (in person)		16 h
Preparation and follow-up incl. e-learning		90 h
Examination and exam preparation		30 h

This amounts to a workload of **180 hours** per semester, which is equivalent to **6 credits**.

8. Completion of the module

Graded: no

Type of assessment: Portfolio

If a student fails, the examination will be repeated at the beginning of the following semester in the form of a graded examination (120 minutes).

Task	Points
(Learning process evaluation) Project - Contribution to the discussion	25
(Output evaluation) Oral presentation	50
(Output evaluation) Presentation materials / written composition (term paper)	25

9. Module duration

This module takes place during the third semester.

10. Number of participants

Maximum number of participants: 25

11. Registration formalities

Students can register for the e-learning course and the examination via TUBS.

12. Reading list and lecture notes

Lecture notes available in hard copy: No
Lecture notes available in electronic format: Yes
If yes, provide link: On the Moodle platform for the program: https://www.isis.tu-berlin.de/2.0/
The reading list is provided in the e-learning course on Moodle.

Module title: Energy-Efficient Societies	**Credit Points (ECTS):** 6	**Short title:** EES (BuSu) E-BuSu 2
Module supervisor: Dr. Caroline Schröder	**Office:** Laura Lehmann	**Email:** laura.lehmann.1@campus.tu-berlin.de

Module description

1. Module aims

The aim of energy-efficient buildings is embedded in specific socio-economic discourses. The idea of energy efficiency can, therefore, be understood differently according to the social and cultural context.

This module examines different understandings of energy efficiency and its consequences for project managers (i.e. students of this master's program), other building and energy experts, users, and society.

Students also gain knowledge and skills for dealing with different target groups and reflecting on their own projects that have been developed in other courses or introduced in practice-based lecture series.

2. Content

Students taking this module will

- be introduced to different ways of understanding energy efficiency in a more global context
- learn about the social consequences of energy efficiency
- learn more about the different roles and professional profiles for students
- analyze good and bad project management practices, including in their own project work
- acquire skills to deal with complex and diverse target groups (i.e. peer experts, contractors, users in different project contexts)
- acquire conflict management skills (communication, participation, and cooperation)

3. Module components

Course title	Course type	Course hours per week	ECTS credits	Compulsory (C) / Elective (E) Compulsory elective (CE)	Semester (WS/SS)
Efficiency management	IV	2.9	6	CE	Winter semester
Case studies & accompanying program	IV	1.1			

4. Description of course types

Integrated courses (IV) in the form of seminar-style lectures, e-learning course, and tutorial

5. Participation requirements

Enrolled in one of the following continuing education master's: Energy Management (MBA), Building Efficiency (MBA) or Sustainable Mobility Management (MBA) at TU Berlin (2nd semester) If there is a high demand for places, students in the continuing education master's program in Building Efficiency (MBA) will have priority.

6. Module can be taken in following programs

Continuing education master's in Building Efficiency (MBA) at TU Berlin

7. Workload and credits

Seminar-style lectures (in person)		44 h
Case Studies (in person)		16 h
Preparation and follow-up incl. e-learning		90 h
Examination and exam preparation		30 h

This amounts to a workload of **180 hours** per semester, which is equivalent to **6 credits**.

8. Completion of the module

Graded: no

Type of assessment: Portfolio

If a student fails, the examination will be repeated at the beginning of the following semester in the form of a graded examination (120 minutes).

Task	Points
(Learning process evaluation) Project - Contribution to the discussion	25
(Output evaluation) Oral presentation	50
(Output evaluation) Presentation materials / written composition (term paper)	25

9. Module duration

This module takes place during the third semester.

10. Number of participants

Maximum number of participants: 25.

11. Registration formalities

Students can register for the e-learning course and the examination via TUBS.

12. Reading list and lecture notes

Lecture notes available in hard copy: No
Lecture notes available in electronic format: Yes
If yes, provide link: On the Moodle platform for the program: https://www.isis.tu-berlin.de/2.0/
The reading list is provided in the e-learning course on Moodle.

Module title: Integration of Renewable Energies	**Credit Points (ECTS):** 6	**Short title:** IRE (BuSu) E-BuSu 3
Module supervisor: Dipl.-Ing. Martin Schnauss	**Office:** Laura Lehmann	**Email:** laura.lehmann.1@campus.tu-berlin.de

Module description

1. Module aims

This module revisits and broadens students' knowledge of energy technologies and systems in the context of today's changing world, preparing the foundation for the coming modules. Students are taught to apply this knowledge independently to selected cases.

2. Content

Students will gain a basic understanding of the applications and limitations of renewable energy sources in a building environment. In this context, students will develop academic research skills in the field of the design of energy supply systems for buildings and neighborhoods based on renewable energy sources and their interaction with conventional/fossil resources.

3. Module components

Course title	Course type	Course hours per week	ECTS credits	Compulsory (C) / Elective (E) Compulsory elective (CE)	Semester (WS/SS)
Efficiency management	IV	2.9	6	CE	Winter semester
Case studies & accompanying program	IV	1.1			

4. Description of course types

Integrated courses (IV) in the form of seminar-style lectures, e-learning course, and tutorial

5. Participation requirements

Enrolled in one of the following continuing education master's: Energy Management (MBA), Building Efficiency (MBA) or Sustainable Mobility Management (MBA) at TU Berlin (2nd semester) If there is a high demand for places, students in the continuing education master's program in Building Efficiency (MBA) will have priority.

6. Module can be taken in following programs

Continuing education master's in Building Efficiency (MBA) at TU Berlin

7. Workload and credits

Seminar-style lectures (in person)		44 h
Case Studies (in person)		16 h
Preparation and follow-up incl. e-learning		90 h
Examination and exam preparation		30 h

This amounts to a workload of **180 hours** per semester, which is equivalent to **6 credits**.

8. Completion of the module

Graded: no

Type of assessment: Portfolio

If a student fails, the examination will be repeated at the beginning of the following semester in the form of a graded examination (120 minutes).

Task	Points
(Learning process evaluation) Project - Contribution to the discussion	25
(Output evaluation) Oral presentation	50
(Output evaluation) Presentation materials / written composition (term paper)	25

9. Module duration

This module takes place during the third semester.

10. Number of participants

Maximum number of participants: 25

11. Registration formalities

Students can register for the e-learning course and the examination via TUBS.

12. Reading list and lecture notes

Lecture notes available in hard copy: No
Lecture notes available in electronic format: Yes
If yes, provide link: On the Moodle platform for the program: https://www.isis.tu-berlin.de/2.0/
The reading list is provided in the e-learning course on Moodle.

Application and Admission Regulations for the International Continuing Education Master's Program in Sustainable Mobility Management (MBA) at TU-Campus EUREF of Technische Universität Berlin

of 23 October 2018

On 23 October 2018, the Joint Decision-Making Committee of TU-Campus EUREF of Technische Universität Berlin adopted the following Application and Admission Regulations for the continuing education master's program in Energy Management (MBA) in accordance with Section 43 (3) no. 3 of the Constitution of Technische Universität Berlin and Section 10 (5) of the Berlin State Higher Education Act (Berliner Hochschulgesetz – BerlHG) in the version of 26 July 2011 (Berlin Gazette of Laws and Ordinances [GVBl.], p. 378), last amended by Article 6 of the same Act of 2 February 2018 (Berlin Gazette of Laws and Ordinances, p. 160), in conjunction with Section 10 of the Act on the Admission to Higher Education Institutions in the State of Berlin to Degree Programs with Restricted Admission (Berliner Hochschulzulassungsgesetz – BerlHZG) in the version of 18 June 2005 (Berlin Gazette of Laws and Ordinances, p. 393), last amended by Article I of the same Act of 26 June 2013 (Berlin Gazette of Laws and Ordinances, p. 198.)*

Overview of Content

I. General regulations

Section 1 – Scope of application

These Application and Admission Regulations – in conjunction with the Regulations Governing General Study and Examination Procedures (*AllgStuPO*) and the Statutes of Technische Universität Berlin Governing University Selection Procedures (*AuswahlSa*), as amended from time to time – govern the application, admission and selection modalities for the consecutive master's program in Sustainable Mobility Management (MBA). The provisions of the AllgStuPO and AuswahlSa shall take precedence over the provisions of these Application and Admission Regulation, unless exceptions are expressly permitted therein.

Section 2 – Entry into force/expiration

(1) These application and admission regulations shall enter into force on the day after their publication official in the Official Gazette of Technische Universität Berlin. They shall be applied for the first time to the procedures of the 2019/2020 winter semester.

(2) The Application and Admission Regulations of October 31, 2016 (TU Official Gazette 6/2017, p.120) will no longer apply once the present regulations take effect.

II. Application

Section 3 – Application requirements

The entry requirements are

1. a bachelor's or equivalent university degree
and
2. suitable practical professional experience of generally no less than one year following the degree

Section 4 – Procedure

The fulfillment of the admission requirements must be proven during the enrollment procedure in accordance with Sections 16ff. of the Regulations Governing General Study and Examination Procedures (AllgStuPO), in cases outlined in Section 15 of the AllgStuPO as part of the application for admission. Supporting documents must be submitted in the original or in an officially certified form.

III. Admission

Section 5 – Restriction of the number of eligible candidates

The number of eligible candidates for the selection process can be restricted. It must be at least double the designated number of admissions. The selection criterion for participation in the selection process is the applicants' qualification level. The selection committee decides on any restriction, the number of eligible candidates, and their selection at the beginning of the selection process.

Section 6 – Ranking criteria

(1) A ranking of applicants shall be prepared according to the following selection criteria:

1. overall grade in the study program in accordance with Section 3 no.1
2. Test result of the Graduate Management Admission Test (GMAT) or Graduate Record Examination (GRE) or assessment according to Section 6 (3), sentence 7f
3. Subject-specific eligibility of the previous degree
4. For each practical professional experience (for which evidence has been provided) lasting at least six months and following on from a bachelor's or equivalent university degree
5. Level of English language proficiency for which evidence has been provided
6. Motivation and reasons for applying for the master's program and overall impression of the application documents submitted

* approved by the Executive Board of TU Berlin on February 10, 2019 and by the Senate Administration for Education, Youth and Science on April 4, 2019

(2) For the criterion according to Subsection 1, no. 1, up to 100 points shall be awarded according to the following table:

Grade	Points	Grade	Points
1.0	100	2.6	52
1.1	97	2.7	49
1.2	94	2.8	46
1.3	91	2.9	43
1.4	88	3.0	40
1.5	85	3.1	37
1.6	82	3.2	34
1.7	79	3.3	31
1.8	76	3.4	28
1.9	73	3.5	25
2.0	70	3.6	22
2.1	67	3.7	19
2.2	64	3.8	16
2.3	61	3.9	13
2.4	58	4.0	10
2.5	55		

If it is not possible to determine equivalent grades for foreign university qualifications even after consulting the decisions on grade equivalence of the Central Office for Foreign Education at the Standing Conference of the Ministers of Education and Cultural Affairs, points will be awarded according to the following table:

Grade	Points
1.0 to under 1.6	100
1.6 to under 2.6	70
2.6 to under 3.6	40
3.6 to under 4.0	10

(3) For the criterion outlined in Subsection 1, no. 2, up to 100 points will also be awarded in accordance with the regulation in section 6 (2).

The GMAT Total Score (GMATS) is converted into a grade according to the following formula:

Grade = (4-3*(GMATS-400)/400)

For the calculated grade (rounded to the nearest tenth) points are awarded according to the table in Subsection 2. If the GMAT Total Score is below 400, the sub-grade is 4.0.

If a GRE test result is given, it will be converted into a GMAT Total Score. The conversion is carried out using the official conversion tool, the GRE® Comparison Tool for Business Schools.

If no test result is submitted, the selection committee will award a grade based on the scope and quality of previous academic achievements in the methodological subjects for which evidence is provided (mathematics, statistics, econometrics, microeconomics). This is based on the ECTS-weighted average grade of the methodological subjects.

(4) For the criterion outlined in Subsection 1, no. 3, points shall be awarded in accordance with the following arrangement:

1. up to 200 points for degree programs in engineering and industrial engineering (specializations: traffic/transportation/mobility) as well as non-engineering subjects in transport and mobility studies,
2. up to 150 points for degree programs in economics or business studies, industrial engineering (specializations other than those mentioned under 1) and urban and spatial studies and sustainability studies,
3. up to 100 points for degree programs in other fields with at least 25% of the curriculum comprising modules related to economics, engineering, law or environmental studies,
4. up to 50 points for all other degree programs

(5) For the criterion outlined in Subsection 1, no. 4, points shall be awarded in accordance with the following arrangement:

1. for each qualified professional activity in the fields of mobility or project planning (technical, management, urban planning): 40 points (for every 6 months)
2. for each qualified professional activity in the fields of mobility or project management: 40 points (for every 6 months)
3. for each qualified professional activity in the mobility sector: 30 points (for every 6 months)
4. for each qualified professional activity in the fields of sustainability and environmental management: 30 points (for every 6 months)
5. 0 points for all other professional experience.

(6) For the criterion outlined in Subsection 1, no. 5, points shall be awarded in accordance with the following arrangement:

Level according to the Common European Framework of Reference for Languages	Points
C2 and higher	80
C1	60
B2	40
B1	10
A2 or lower	0

(7) For the criterion outlined in Subsection 1, no. 6, up to 100 points shall be awarded. The following aspects will be taken into account when awarding these points:

1. Motivation or reasons for the application to the program in the form of a max. two-page letter of motivation. Up to 50 points can be awarded for this.
2. Information on the focus of previous studies, the professional experience already gained and the academic and/or professional plans for the future. Up to 30 points can be awarded for this.
3. Overall impression of the application documents submitted, in particular with regard to the information provided in the curriculum vitae and other documents (letters of recommendation, etc.). Up to 20 points can be awarded for this.

Section 7 – Procedure

(1) Proof of fulfillment of the selection criteria must be provided when submitting the application for admission. To this purpose, applicants must include the following documents:

1. The documents requested in the application form.
2. Evidence that the admission requirements in accordance with Section 3 are met.
3. Evidence of the areas of focus of the course of studies (where these are not stated in the certificate), generally in the form of a diploma supplement, transcript or module description.

4. Relevant evidence of the selection criteria outlined in Section 6 (in particular the letter of motivation, CV, level of English).

(2) For each selection criterion, the selection committee shall award points in accordance with Section 6 (2) to (7).

(3) The selection committee shall rank the applicants in order of preference. The list documents the following for each participant in the selection process:

1. Number of points achieved for each criterion.
2. Total number of points.
3. Decision on selection (admission or rejection)

(4) Selected applicants receive prompt notification along with a deadline for providing written acceptance of the place in the program and for enrollment. If the applicant does not accept the place within the deadline, it is offered to the next candidate on the list.

(5) Applicants who are not admitted to the program receive notification of rejection, with reasons.

Section 8 – Capacity and application deadline

(1) The number of program places available is limited to 30 per year unless Technische Universität Berlin publishes other decisions on capacity in the Official Gazette of Technische Universität Berlin.

(2) The application deadline is April 30 of each year, unless Technische Universität Berlin publishes other deadlines in the Official Bulletin of Technische Universität Berlin.