Module name: Corporate Mobility

Module number: B 4	**ECTS credit points: 5**
Academic level	Master
Intended curriculum phase	2nd sem.
Compulsory module or compulsory elective module	Compulsory module

Ratio of in-person/online teaching	1.5 in-person teaching	3.5 online teaching
Assigned courses*/ stages / ECTS credit points *… Course types and associated workloads are explained in detail under planned didactics and methodology	1. Fundamentals of Corporate Mobility Management (Grundlagen des betrieblichen Mobilitätsmanagements); e-learning course – **online stage**, 1.5 ECTS credit points 2. Corporate Mobility, Systems and Technologies (Corporate Mobility, Systeme und Technologien); lecture / case studies – **in-person stage**, 1.5 ECTS credit points, VU (lecture with integrated exercises) 3. Transfer Project; e-learning project – **transfer stage**, 2 ECTS credit points, PT (project)	
Scope	5 ECTS credit points	
Required skills/modules; skills/modules to be acquired in parallel	none	
Prerequisite for	none	
Course language	English	
Central idea and skills to be imparted	In this module, the students acquire detailed knowledge of corporate mobility systems and related vehicles and infrastructure technologies. The corresponding technological innovations, both in terms of vehicle technologies and in the areas of infrastructure and mobility management, are discussed. This includes the use of alternative drive systems, automated and autonomous vehicles, as well as the development of new business models. The students gain an understanding of current and future mobility systems for corporate mobility management and are able to record and process the respective customer and corporate requirements, mobility behaviour and mobility demands. They develop skills to advance the further development of corporate mobility systems and to derive solution approaches from specific mobility scenarios. This enables them to carry out systematic analyses and assessments of mobility systems with regard to social, ecological, economic and technological criteria. Ultimately, the students are able to systematically optimise or develop new mobility systems, products, services and processes with regard to various criteria. They are able to develop corporate strategies for realising change and innovation potential based on future mobility scenarios, market developments and trends and to implement new business models for corporate mobility systems, products and services. In this context, specific topics of mobility are dealt with in depth in order to impart technologically sound knowledge.	

	Furthermore, the influencing factors and framework conditions for developing new mobility systems and designing development projects are discussed along with their management. This includes the integration of the required skills and infrastructures in development processes, as well as transformation aspects of existing processes and the associated background and framework conditions for designing new product groups and business models. The students develop specific concepts and solutions for developing new technologies and business models. After successfully completing the module, the students have fundamental knowledge in corporate passenger and goods transport and can apply what they have learned independently to develop transformation strategies for sustainable mobility. The students are able to adapt existing business processes to the new framework conditions and to manage the steps necessary for the transformation. They are able to apply what they have learned and to initiate and implement independent analyses and evaluations as part of operational decisions. They are also able to apply appropriate strategic measures efficiently and in a targeted manner.

Teaching content	**Learning outcomes / goals**
	Upon successful completion of the module, students are able to:
Transformation in the mobility sector - Legal framework and requirements - Transformation in passenger and goods transport - Change in mobility systems - Change in vehicle technologies - Customer behaviour and expectations Mobility management - Fundamentals of corporate mobility - Corporate mobility management - Transformation in mobility management - Alternative transport and mobility concepts	• know corporate mobility systems in passenger and goods transport • understand current and future framework conditions for the corporate passenger and goods transport sector and develop transformation strategies • evaluate technological developments and design procedural models for the expansion of existing mobility systems • develop solution approaches for the implementation of new technologies in existing mobility systems • record and process customer requirements, mobility behaviour and mobility demand • assess the potential and risks of digitising corporate mobility systems and develop strategies for successful implementation • assess the effects of new technologies on existing and new business models and provide concepts for a successful transformation • know approaches, tools and methods for managing corporate mobility systems and use the knowledge for specific applications

- Integration of new business models and technologies New mobility solutions - New requirements and technological development trends - New business models for mobility systems, products and services - Corporate strategies for implementing new mobility models Exercises, case studies, transfer project	• develop corporate strategies for realising change and innovation potential based on future mobility scenarios, market developments and trends • implement new business models for mobility systems, products and services

Teaching and learning activities and methods*

*… teaching and learning activities and methods along with their structuring are explained under planned didactics and methodology

Planned didactics and methodology:

The in-person stage is conducted as a mixture of front-of-class, question-based and discussion-based teaching and with much time devoted to joint discussion (whole-class, in groups).

Theoretical input from the teacher is illustrated and consolidated with the aid of examples. Participants work on other tasks during in-person time, either on their own or in groups, preparing and following up by means of self-study.

Independent work is offered on the basic literature and acquisition of principles in preparation and follow-up for the in-person stages as an asynchronous distance learning element.

Each in-person unit begins with a voluntary short oral quiz on what was previously learned during the online stage.

An application-oriented transfer project rounds off the didactic concept of this module and is devoted to actual corporate tasks performed by the students.

Distribution of ECTS credit points:

	Estimated time commitment in units of 60 minutes
E-learning (preparation for the in-person stage)	37.5
In-person teaching units	20
Course assessment	17.5
Transfer project (follow-up to in-person stage)	50
Total	**125**

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<tr><td>Assessment</td><td>
Assessment methods and criteria:

The online stage is assessed online (multiple-choice exam). The in-person stage is assessed by means of a written examination along with developing and presenting a group project (case study discussions), while the transfer stage is assessed on the basis of a transfer project in the form of a project report or presentation of the project results.

Weighting of the individual assessments in the overall assessment of the module:
<table>
<tr><td></td><td>Weighting</td><td>Minimum required positive assessment for a completion of the course on the first try</td></tr>
<tr><td>Online assessment</td><td>30%</td><td>> 50%</td></tr>
<tr><td>Written exam – in-person stage</td><td>30%</td><td>> 50%</td></tr>
<tr><td>Project report, presentation</td><td>40%</td><td>> 50%</td></tr>
<tr><td>Total</td><td>100%</td><td>> 50%</td></tr>
<tr><td colspan="3">Any deviations from this description of the overall assessment are announced at the beginning of the module.</td></tr>
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<tr><td>Specialist literature and other learning materials</td><td>
Core literature:
Books, each in the current edition:

Winkelhake, Uwe (2017): Die digitale Transformation der Automobilindustrie, Springer. ISBN 978-3-662-54935-3
Maurer, M. et.al. (2015): Autonomes Fahren, Springer. ISBN 978-3-662-45854-9
Wang, Wuhong; Baumann, Martin; Jiang, Xiaobei (ed.) (2020): Green, Smart and Connected Transportation Systems, Proceedings of the 9th International Conference on Green Intelligent Transportation Systems and Safety, Springer. ISBN: 978-981-15-0644-4
Schallmo, Daniel; Rusnjak, Andreas; Anzengruber, Johanna; Werani, Thomas; Jünger, Michael (ed.) (2017): Digitale Transformation von Geschäftsmodellen, Grundlagen, Instrumente und Best Practices, Springer. ISBN: 978-3-658-12388-8
Komarnicki, Przemyslaw; Haubrock, Jens; Styczynski, Zbigniew (2018): Elektromobilität und Sektorenkopplung, Infrastruktur- und Systemkomponenten, Springer. ISBN: 978-3-662-56249-9
Nathanail; Adamos; Karakikes (ed.) (2021): Advances in Mobility-as-a-Service Systems, Proceedings of 5th Conference on Sustainable Urban Mobility, Virtual CSUM2020, Springer. ISBN: 978-3-030-61075-3
Paiva, Sara; Lopes, Sérgio Ivan; Zitouni, Rafik; Gupta, Nishu; Lopes, Sérgio F.; Yonezawa, Takuro (ed.) (2021):

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	Science and Technologies for Smart Cities, 6th EAI International Conference, SmartCity360°, virtual event, December 2-4, 2020, proceedings, Springer.
	Other learning materials: • TU Graz learning videos (20-30 min.) • screencasts and slidecasts • other free learning and teaching materials