Number of Module	Name of Module	Lecturer
VW-ATL-72a	Agent-based Modelling in Transportation	Prof. Regine Gerike regine.gerike@tu-dresden.de
Qualification Aim	Students are familiar with activity-based approaches to traffic modeling, particularly agent-based simulations. They are able to create their own traffic simulation models, identify and prepare suitable input data for this purpose, and derive traffic supply and demand from it. They can implement traffic planning measures and research questions in simulation models, and generate and interpret results using application software and simple data analysis scripts.	
Content	The module covers the following topics: 1. Activity-based traffic models and traffic simulation models, as well as their application in traffic planning, 2. Agent-based traffic simulations, 3. Processing of input data for model development, 4. Development of simulation models for specific application contexts, 5. Submodels and algorithms, 6. Behavioral economic concepts, 7. Development of simulation models using application software, and 8. Model analysis using appropriate analysis tools and methods.	
Teaching and Learning Methods	2 SWS lecture, 1 SWS tutorial, and independent study. The teaching language of the lecture and the tutorial can be German or English and will be determined by the lecturer at the beginning of each semester and announced in the usual manner.	
Requirements for Participation	A bachelor's-level understanding of linear algebra, functional analysis of a single variable, differential equations, and differential calculus for functions of several variables is required.	
Usability	This module is one of 27 elective modules in the master’s degree program Air Transport and Logistics, which must be chosen according to § 32 paragraph 3 of the examination regulations.	
Requirements for the Awarding of Credits	Credit points are awarded upon passing the module exam. The module exam consists of a comprehensive project totaling 60 hours. The language of the comprehensive project is either German or English, at the student’s discretion.	
Credit Points and Grades	5 credit points can be acquired through the module. The module grade corresponds to the grade of the examination performance.	
Frequency of Module	The module is offered each academic year in the summer semester.	
Workload	The total workload is 150 hours.	
Duration of the Module	The module lasts one semester.	