| Module number | Module name | Module coordinator |
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| 3012215 | Environmental Sustainability in Transport Engineering | Prof. Dr. Alvaro Garcia-Hernandez<br>alvaro@isac.rwth-aachen.de |
| **Learning goals** | Grasp the fundamental principles of sustainability, Understand the economic, environmental, and societal consequences of transport decisions, Gain knowledge of pavement structures, materials, and sustainable design principles, Comprehend various cost analysis methods and their importance in evaluating the long-term implications of transport projects, Recognize the need for resilient transport infrastructure and the role of standardized sustainable design approaches, Apply theoretical concepts to real-world scenarios, Stay informed about potential future directions and innovations in sustainable transport design. | |
| **Content** | Introduction to Sustainability, Measurement of Sustainability, Economic Quantification of Greenhouse Gases, Environmental Prices, Environmental Product Declaration, Materials in Pavement Construction, Introduction to Pavement Design, Life Cost Analysis in Pavement Design, Whole Life Cost Analysis, Social Life Cycle Analysis (SLCA) in Transport Engineering, Resilience Engineering in Transport, Taxonomy in Sustainable Transport Design, Numerical Examples and Practical Applications, Future View of Sustainable Design. | |
| **Teaching and learning methods** | 2 SWS lectures, 2 SWS exercise per week, and self-study. | |
| **Prerequisites** | None | |
| **(recommended) Requirements** | - | |
| **Language** | English | |
| **Applicability** | Compulsory elective module in the Master's program Transport Engineering and Mobility. | |
| **Requirements for earning credit points** | Graded written exam. Admission requirements for participation in the written exam: passed term paper with a presentation. | |
| **Credit points and grades** | 6 ECTS Credits | |
| **Module frequency** | The module is offered every academic year in winter semester. | |
| **Workload** | The total workload is 180 hours. | |

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| **Module duration** | The module lasts one semester. |