

Module description: Transportation Systems - Operations	
Module Code	t.BA.MO.VSB.24HS
ECTS Credits	4
Language of Instruction/Examination	German
Organizational Unit	IDP
Module Coordinator	Stephan Bütikofer
Legal Framework	The module description is part of the legal basis in addition to the general academic regulations. It is binding. During the first week of the semester a written and communicated supplement can specify the module description in more detail.
Module Characteristic	Type 2a 4 consecutive lecture lessons per semester week and class
Module Description	Focus in this module is given to: Relevant operational factors such as actors, production factors and procedures, legislation Static and dynamic operating principles for sections and nodes of road and rail Operational planning and control including timetabling of public transport Productivity : parameters and optimisations
Module Content	<p>Production: Fundamental terms and Definitions</p> <ul style="list-style-type: none"> - Different types/functions/responsibilities of entities being involved directly or indirectly in operative transport procedures. - Terms in context of transport procedures and economy such as traffic volumes, performances and efficiency - Production factors and -procedures for service performances of passenger and freight traffic basing on technical performances of infrastructures, operating equipment and maintenance. - Transport Service Procedures: characteristics and quality management. <p>Actors in the transport market and customer requirements (users, concerned, communities)</p> <ul style="list-style-type: none"> - Characterisation, co-operation and implications on transportation procedures, economic viability as well as for operators, transport users and concerned population. <p>Legal Frameworks</p> <ul style="list-style-type: none"> - Responsibility levels, rights and obligations regulated in laws, regulations and implementation rules for operators of infrastructures, public transport companies and road users. <p>Operations Control of Road Traffic</p> <ul style="list-style-type: none"> - Permanent and temporary traffic management of transport infrastructure and users. <p>Operation Control of Rail Traffic</p> <ul style="list-style-type: none"> - Assets used for operation, rolling stock and capacities taking into account signalling in relation to operational parameters and public transport service supply. - According to system characteristics transformation of service concepts to operational concepts including timetabling, turnaround planning and rostering plus <p>Production Processes its steering and monitoring.</p> <ul style="list-style-type: none"> - Methodologies, procedures for planning, execution, monitoring and adjustments. <p>Productivity</p> <ul style="list-style-type: none"> - Quantification including relations between input and output as well as optimisations.
Prerequisite Knowledge	none

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Learning Objectives (Competences)	Students...		Competencies	Taxonomies		
	The students are conscious of legal conditions and the principles of traffic management with relevance to operation on road and rail. They are able to apply these adequately with respect to specific tasks.		F	K3		
	The students are able to create common operational concepts taking into account the productivity of involved transport modes.		F	K3		
	The students are aware of the different rules, responsibilities and the co-operation of different operative actors in public and private transportation as well as of customer requirements with respect to service performances.		F	K2		
	The students know the particular product-technical requirements with relevance for operative transport services as well as the objective and service processes		F	K2		
Performance Assessment	End-of-module exam		Assessment	Length (min.)	Weighting	Form
	written exam		Grade	90	80	acc. to module agreement
	Performance assessment during the semester		Assessment	Length (min.)	Weighting	Form
	report		Grade		20	acc. to module agreement
Classroom Attendance Requirement	None					
Learning material	<ul style="list-style-type: none"> • Slides will be handed out in the lecture 					
Comments						