

Railway Systems Engineering (RSE)

Nr.	Module	Lecture	1. Semester		2. Semester		3. Semester		4. Semester		Chair	Choices
			WS	CP	SWS	CP	WS	CP	SWS	CP		
RSE1	Railway Systems	Railway Systems	4	6			(4)	(6)			VIA	SCHALE 1 46 CP
RSE2	Principles of Rail Vehicle Technology	Principles of Rail Vehicle Technology	4	6			(4)	(6)			IFS	
RSE3	Railway Timetabling, Operations and Control Systems	Railway Capacity Management and Operations	1			6	(1)			(6)	VIA	
		Railway Operations Lab	1				(1)					
		Railway Control Systems			1				(1)			
RSE4	Track Guiding Technology	Track Guiding Technology	(4)	(6)			4	6			IFS	
RSE5	Rail Vehicle Vibration Dynamics	Rail Vehicle Vibration Dynamics			4	6			(4)	(6)	IFS	
RSE6	Mechatronic Systems in Vehicle Engineering	Mechatronic Systems in Vehicle Engineering			4	6			(4)	(6)	IKA/IFS	
RSE7	Power Electronics – Fundamentals, Topologies and Analysis	Power Electronics – Fundamentals, Topologies and Analysis	3	5			(3)	(5)			ISEA	
RSE8	Advanced Electrical Drives	Advanced Electrical Drives			3	5			(3)	(5)	ISEA	
RSE9	Environmental Sustainability in Transport Engineering	Environmental Sustainability in Transport Engineering	4	6			(4)	(6)			ISAC	SCHALE 2 min. 28 CP
RSE10	Mobility Research and Transportation Modeling	Mobility Research and Transportation Modeling			4	6			(4)	(6)	ISB	
RSE11	Verkehrswirtschaft II	Betrieb und Management von Schienengüterverkehrssystemen			2	8			(2)	(8)	VIA	
		Betrieb und Management von Schienenpersonenverkehrssystemen			2				(2)			
RSE12	Sustainability Assessment - Methods and Tools (2 Exams)	Sustainability Assessment - Methods and Tools			4	5			(4)	(5)	INAB	
RSE13	Angewandte Schienenfahrzeugtechnik	Angewandte Schienenfahrzeugtechnik	(4)	(6)			4	6			IFS	
RSE14	Mobile Propulsion Fundamentals	Mobile Propulsion Fundamentals	(3)	(5)			3	5			VKA	
RSE15	Elektrische Bahntriebe	Elektrische Bahntriebe	(3)	(5)			3	5			ISEA	
RSE16	Elektrische Nahverkehrssysteme	Elektrische Nahverkehrssysteme			(3)	(5)			3	5	ISEA	
RSE17	Power Electronics - Control, Synthesis and Applications	Power Electronics – Control, Synthesis and Applications	3	5			(3)	(5)			ISEA	
RSE18	Internship (Praktikum)*	Internship (Praktikum) (8-16 weeks) with final presentation (10-20 CP)	(8-16)	(10-20)	(8-16)	(10-20)	8-16	10-20	(8-16)	(10-20)	variable	
RSE19	Ausgewählte Aspekte des Schienenbahnwesens	Ausgewählte Aspekte des Schienenbahnwesens			2	3			(2)	(3)	VIA	SCHALE 3 variable (see § 4)
RSE20	Eisenbahnsicherungstechnik	Eisenbahnsicherungstechnik I	2			7	(2)			(7)	VIA	
		Eisenbahnsicherungstechnik II			2				(2)			
RSE21	Sustainability Strategies in Politics and Companies (2 exams)	Sustainability Strategies in Politics and Companies	4	5			(4)	(5)			INAB	
RSE22	Produktentwicklung im Schienenfahrzeugbau	Produktentwicklung im Schienenfahrzeugbau	(3)	(5)			3	5			IFS	
RSE23	Multibody Dynamics	Multibody Dynamics			4	6			(4)	(6)	IGM	
RSE24	Kunststoffverarbeitung I	Kunststoffverarbeitung I	(3)	(5)			3	5			IKV	
RSE25	Fügetechnik I - Grundlagen	Fügetechnik I - Grundlagen			(4)	(6)			4	6	ISF	
RSE26	Qualitätsmanagement	Qualitätsmanagement	(3)	(5)			3	5			WZL	
RSE27	Quality Management	Quality Management	(4)	(6)			4	6				
RSE28	Elektrische Bahnen, Linearantriebe, Magnetschwebetechnik	Elektrische Bahnen, Linearantriebe, Magnetschwebetechnik			(3)	(5)			3	5	IEM	
RSE29	Energy Storage Systems	Energy Storage Systems	(3)	(5)			3	5			ISEA	
RSE30	Relevant Additional Subjects for Studies Abroad - for non-German specialisations			10		(10)		(10)		(10)	variable	
RSE31	Elective course	Elective course					(maximal 8 CP)				variable	
RSE32	Master's thesis									24	24 CP	
	(Master's thesis)							(12)		(12)	(24 CP)	

*The work-related internship is regulated in the internship regulations.