C O U R S E G U I D E – s h o r t f o r m

Academic year 2014-2015

Course name	**Modern systems for railway transport**					Course code		MSTCFC. DI.DS.202	
Course type	DS	Category	DI	Year of study	M2	Semester	3	Number of credit points	7

Faculty	Faculty of Mechanical Engineering	Number of teaching and learning hours					
Field	Mechanical Engineering.	Total	L	T	LB	P	IS
Specialization	Railway transport systems	56	28	-	-	28	-

Pre-requisites from the curriculum		
	Compulsory	Machine parts, Strength of Materials, Technical Drawing
	Recommended	Electronics, Electrotechnics, Sensors and transducers

General objective	The course aims to present modern systems of transport by railway and the particularities of these systems. The project aims to familiarize the graduate engineers with the modeling of high-speed railway systems.
Specific objectives	The course presents modern systems of transport by railway, detailing current constraints affecting the development of high-speed rail and existing solutions. The project is particularly complex, teaching graduate engineers to model the entire system that is included in high-speed trains. Finally, will be determined the influence of a double cardan transmission on the electric motor bearings endurance, taking into account the angles between bogie and double cardan transmission for various railway routes (topographic maps).
Course description	Course: modern systems of railway transport; current constraints in high-speed rail; existing solutions; dynamic overloads in wheel-rail contact; electric current collection at high speeds; hunting movement; wheel-rail adhesion at high speeds; suspension and aero-dynamic high-speed trains. Project: modeling of high-speed trains; the bogie; gearbox; motor; double cardan transmission; sustainability electric motor bearings; the influence of the complexity of railway routes on the maximum speed of train and its transmissions.

Assessment			Schedule	Percentage of the final grade (minimum grade)
Continuous assessment	Class tests along the semester		-	%
	Activity during laboratory works		weeks 1-14	40 %
	Assignments		-	%
Final assessment	Final assessment form	Exam	week 14	60 %
	Examination procedures and conditions: 1. Exam; tasks - written thesis; working conditions - T (Traditional) 60%; 2. Project; tasks - Activity during design meetings; working conditions - Practical and Computer (M); share 40%			

Course organizer	Associate professor, PhD eng, VIOREL PALEU	
Teaching assistants	Associate professor, PhD eng, VIOREL PALEU	