

Transilvania University of Braşov, Romania

Study program: Virtual Engineering in Automotive Design (in English)

Faculty: Mechanical Engineering
 Study period: 2 years (master)
 Academic year structure: 2 semesters (14 weeks per semester)
 Examination sessions (two): winter session (January/February)
 summer session (June/July)

Courses per years (C= course; S = seminar; L = laboratory; P = project)

1st Year

No. crt.	Course	Code	1 st Semester					2 nd Semester				
			C	S	L	P	Cred	C	S	L	P	Cred
01	Multi-physics simulations	VAD.I.01	2		1	1	7					
02	CAD and Graphics programming	VAD.I.02	2		1	1	6					
03	Multi-body systems dynamics: Theory and Simulation	VAD.I.03	2		1	1	7					
04	Tribology	VAD.I.04	2		2		6					
05	Practice for Research and Development I	VAD.I.05				168	4					
06	Advanced simulation in automotive design	VAD.II.01						2			2	7
07	Product Development and Simulation	VAD.II.02						1			1	4
08	Finite Element Analysis in Automotive Design	VAD.II.03						2		1	1	6
09	Virtual and augmented reality in automotive design and maintenance	VAD.II.04						2		1	1	6
10	Practice for Research and Development II	VAD.II.05									168	4
11	Advanced Mechanical Transmissions in Automotive Engineering	VAD.II.06a						1			1	3
	Fundamentals in Electronics and Computers	VAD.II.06b										

2nd Year

No. crt.	Course	Code	3 rd Semester					4 th Semester				
			C	S	L	P	Cred	C	S	L	P	Cred
01	Experimental systems for testing the automotive elements	VAD.III.01	1		1		4					
02	Virtual Instrumentation	VAD.III.02	1		1		6					
03	Practice for Research and Development III	VAD.III.03				168*	4					
One discipline is chosen from each package:												
Optional package 1												
04a	Automotive energy management	VAD.III.04b	2			2	4					
04b	Vehicle Dynamic Simulation of Systems in MATLAB C++	VAD.III.03b	2			2	4					

Optional package 2											
05b	Virtual crash modeling and testing	VAD.III.03a	2		1	1	6				
06a	Virtual manufacturing in automotive technologies	VAD.III.05a	2		1	1	6				
Optional package 3											
06b	Sensory and Control Systems for Vehicles	VAD.III.05b	2		2		6				
05a	Automotive mechatronics systems	VAD.III.04a	2		2		6				
07	Practice for Research and Development IV	VAD.IV.01								168*	5
08	Research and/or Development Activities for Dissertation Accomplishment	VAD.IV.02								150*	13
09	Dissertation Accomplishment	VAD.IV.03								60*	10
10	University ethics	VAD.IV.04						1			2