

Southwest Jiaotong University
Vehicle Engineering

Program Objectives

The program aims to provide students with an opportunity to develop functional expertise, strategic perspectives that they require to operate effectively in a changing social environment or to understand such an environment; help students to learn both the successes and failures in China's vehicle engineering; introduce students the techniques of vehicle engineering to meet the needs of social modernization, as well as sharpen their leadership and communication skills.

Major

Vehicle Engineering (Master/PhD)

Study Period

Master: Two years (course study for 1 year and thesis proposal for 1 year)

PhD: Four years (course study for 1 year and thesis proposal for 3 year)

Teaching Language

English

Curriculum

Level 层次	Type 类别	Code 代码	Name 名称	Credit/ hours 学分/ 学时	Semester 学期			Evaluation 考评	
					I	II	III		
Level 5 Intermediate Course	Public Course 公共课		基础汉语 I Basic Chinese I	2/32	√				
			中国文化 Chinese Culture	2/32	√				
			基础汉语 II Basic Chinese II	2/32		√			
			中国概况 China Overview	2/32		√			
			当代中国 Contemporary China	1/16		√			
		Common Basic Course 公共基础课	54012001	Numerical Analysis※ 数值分析※	3/48	√			Examination
			54012002	Modern Mathematical Physics 现代数学物理方程	3/48	√			Examination
			54012005	Mathematical Statistics and Multivariate Statistics ※ 数理统计与多元统计※	3/48	√			Examination
			54012006	Matrix Analysis ※ 矩阵分析※	3/48	√			Examination
			51232001	Vibration Theory and Application 振动理论及应用	3/48	√			Examination

	专业基础课 Basic Professional Course	52113001	Vehicle System Dynamics※ 车辆系统动力学※	3/48		√		Examination	
		52133001	Vehicle Strength□ 车辆强度□	3/48		√		Examination	
		52133002	Locomotive Vehicle Technology※ 机车车辆技术※	3/48	√			Examination	
	专业课 Professional Course	52124001	Locomotive vehicle vibration and control 机车车辆振动及控制	2/32		√		Examination	
		52124002	Railway Bearing* 铁路轴承*	2/32	√			Examination	
		52134001	Vehicle Aerodynamics 列车空气动力学	2/32		√		Examination	
		52134002	Computational Multibody Dynamics 计算多体系统动力学	2/32	√			Examination	
		52114001	Image Processing and Pattern Recognition 图像处理与模式识别	3/48	√			Examination	
	Level 7 Frontier Courses	公共课 Public Course		基础汉语 I Basic Chinese I	2/32		√		
				中国文化 Chinese Culture	2/32		√		
			基础汉语 II Basic Chinese II	2/32			√		
			中国概况 China Overview	2/32			√		
			当代中国 Contemporary China	1/16			√		
公共基础课 Common Basic Course		74012001	Modern Mathematics 现代数学	3/48		√		Examination	
		74012002	Reliability Mathematics 可靠性数学	3/48		√		Examination	
		74032001	Rough Set Model and Application 粗糙集模型及其应用	2/32	√			Examination	
专业课 Professional Course		72134001	High-speed Train Coupling System Dynamics 高速列车耦合大系统动力学	2/32	√			Performance review	
		72134002	Application of Modern Control Theory on Vehicle 现代控制理论及在车辆上的应用	2/32	√			Performance review	
		72134003	Vehicle Structure Reliability 车辆结构可靠性	2/32	√			Performance review	

		72134004	Vehicle System Nonlinear Dynamics 车辆系统非线性动力学	2/32		√		Performance review
		72134005	Vehicle Structure and Para-meter Optimization 车辆结构及参数优化	2/32	√			Performance review

Practice Training

Level	Type	Code	Name	Credit /hours	Semester			Evaluation
					I	II	III	
Level 5 Intermediate Level	Segments	54316100	Current Situation and Policy 形势与政策	0/16	√	√		Performance review
		52116001	Academic Lectures (≥5 lectures) 学术报告 (至少参加 5 次)	1/16		√		Performance review
	Practice	52126001	Scientific Research Practice 科研实践	1/16		√		Performance review
Level 7 Advanced Level	Segments	72116001	Frontier Academic Seminars (≥4 lectures, each lasting 4~10 hours) 前沿性学术专题 (不少于 4 个, 每个 4~10 学时)	2/32		√		Performance review
		72116002	Academic Lectures (≥8 lectures, as a lecturer once) 学术报告 (至少参加 8 次, 其中本人主讲 1 次)	1/16		√		Performance review

- Note: 1. The courses taught in foreign language or with textbook are marked with ‘*’.
以外语教材、外语授课的课程在课程名称的后面填“*”;
2. The courses classified as key professional courses are marked with ‘※’.
专业核心课程在课程名称后面填“※”。
3. Level 5 is for Master program, Level 6 is for Master/PhD program, Level 7 is for PhD program.

Thesis

(1) Topic selection

Students are expected to select a topic which has important application value and theoretical significance to the construction of national economy, and it also should be combined with tutor's research projects as far as possible. The selected topic must be approved by mentor and through the arguments.

(2) Thesis proposal

Master students are required to complete the thesis proposal during the second semester; PhD Students are required to complete the thesis proposal during the second academic year. In the report meeting, students should solicit opinions widely, and the thesis proposal will be determined by the related discipline experts after the examination and approval. The contents and requirements of the thesis proposal consist of: dynamic and research level about thesis topic; the purpose and significance of the selected topic; the research contents and research methods; the results and level expected to achieve; thesis writing arrangements; qualifications for subject research and so on.

(3) Thesis writing program

Students are supposed to formulate a detailed thesis writing program under the guidance of tutor. In the program, there should be a detailed arrangements and instructions about research methods, experiments, funds and equipment, thesis writing deadline and the results expected to achieve.

(4) Thesis appraisal and defense and degree awarding should be executed according to relevant regulations of Southwest Jiaotong University.

Degree Requirements

Master: Students are required to successfully complete 26 credit-worth course work and a master thesis and thesis defense within the required time period. After meeting the above requirements and with the approval of Southwest Jiaotong University Degree Committee, the master degree will be awarded.

PhD: Students are required to successfully complete 17 credit-worth course work and a doctor thesis and thesis defense within the required time period. After meeting the above requirements and with the approval of Southwest Jiaotong University Degree Committee, the doctor degree will be awarded.