

车辆工程专业辅修培养方案

Minor Training Program for Vehicle Engineering

一、培养目标 Objectives

本专业培养国家交通装备战略与发展所需要的，具有科学素养和人文情怀，具有历史眼光和国际化视野，能够提出并解决带有挑战性的专业问题的，职业操守与自我发展融合的，德、智、体、美、劳全面发展的车辆工程创新型高级专门人才。

毕业生经过五年左右全面的专业实践与深造，获得完整的职业能力，在专业知识与能力、沟通交流与管理能力、职业和专业素养、学习与发展能力等方面都取得卓越的成就，职业与专业成就得到领域专家的普遍认同。毕业生成为研发设计与制造领域、运用维修与技术管理领域的优秀工程师，特别优秀的毕业生具备成为本领域技术专家、技术领军人才或学术精英的能力。

According to the development needs of national transportation equipment, the objective of this major is to cultivate high-level specialized personnel in vehicle engineering who are characterized by all-round development in terms of morality, intelligence, physics and so on. These students will be equipped with scientific literacy and humanistic feelings, as well as historical perspectives and international visions, and be able to propose and solve challenging professional problems.

Graduates have undergone comprehensive professional practice and further study for about five years, it is expected that the graduates can acquire completed professional abilities and achieve outstanding achievements in professional knowledge and abilities, communication and management skills, professional literacy, as well as learning and development abilities. Graduates will be best engineers in the field of R&D and manufacturing, and the field of maintenance and technical management. Some outstanding graduates will be able to become domain experts, engineering leaders or academic elites in this field.

二、培养要求 Requirement

1. 掌握车辆构造与原理的专业知识以及专业基础知识，同时掌握车辆强度

动力学、或者车辆分系统某一方向深入分析的专业知识，能够用于车辆工程问题的解决。

1. Master the professional knowledge of vehicle structure and principles, as well as professional basic knowledge, and master vehicle strength dynamics, or professional knowledge of in-depth analysis of a certain direction of vehicle sub-systems, it can be used to solve vehicle engineering problems.

2. 具有针对车辆工程问题的解决，或者采用力学分析的科学方法进行分析研究，得出有效结论；或者针对具体的车辆分系统进行深入的分析研究，得出有效结论的基本能力。

2. Have the solution to vehicle engineering problems or adopt scientific methods of mechanical analysis, carry out analysis and research, and draw effective conclusions; or conduct in-depth analysis and research for specific vehicle sub-systems, and the basic ability to draw effective conclusions.

3. 具有采用交叉学科的理论知识与车辆工程原理，创造性地提出车辆工程总体或者分系统的带有创新意识的解决方案的基本能力。

3. Have the ability to use of interdisciplinary theoretical knowledge and vehicle engineering principles, and creatively propose vehicle engineering overall or its sub-systems with innovative solutions.

4. 能够针对交叉学科的研究与设计需要，掌握车辆工程的研究方法与基本的实验研究手段，运用现代工程工具并理解其局限性。

4. Able to meet the needs of interdisciplinary research and design, master the research methods and basic experimental research methods of vehicle engineering, use modern engineering tools and understand its limitations.

5. 具备初步的车辆工程科研思维、团队合作意识以及专业素养。

5. Have Preliminary vehicle engineering scientific research thinking, teamwork awareness and professionalism.

三、学分要求 Credits Requirements

选择车辆工程专业的学生应最低修满 36 学分即完成学习，并符合《西南交通大学本科生辅修专业修读与辅修学位管理办法》规定者，方可颁发本专业辅修证书。

Students who choose to major in Vehicle Engineering must complete a minimum of 36 credits to complete their studies, and comply with the regulations of the Management Measures for Undergraduate Minor Majors and Minor Degrees of Southwest Jiaotong University before they can be awarded a minor certificate in this major.

四、课程设置 Course Programs

课程类型 Course Type	课程名称 Course Name	课程性质 Nature of Course	学分 Credits	开课学期 Semester	开课学院 School	备注 Notes
学科基础课程 8 学分 Discipline Foundational Courses 8 Credits	理论力学 B Theoretical Mechanics B	必修 Compulsory	4	秋季 Autumn	力学与航空航天学院 School of Mechanics and Aerospace Engineering	
	材料力学 B Mechanics of Materials B	必修 Compulsory	4	春季 Spring	力学与航空航天学院 School of Mechanics and Aerospace Engineering	
专业基础课程 必修 19 学分 Professional Foundational Courses Compulsory 19 Credits	设计制图及 CAD I Design Drawing and CAD I	必修 Compulsory	2	春季 Spring	机械工程学院 School of Mechanical Engineering	
	设计制图及 CAD II Design Drawing and CAD II	必修 Compulsory	3	秋季 Autumn	机械工程学院 School of Mechanical Engineering	
	机械原理 A Mechanisms and Machine Theory A	必修 Compulsory	4	春季 Spring	机械工程学院 School of Mechanical Engineering	
	机械设计 A Mechanical Design A	必修 Compulsory	4	秋季 Autumn	机械工程学院 School of Mechanical Engineering	

		机械精度设计与检测基础 Mechanical Accuracy Design and Verification Foundation	必修 Compulsory	2	秋季 Autumn	机械工程学院 School of Mechanical Engineering	
		制造技术 A Manufacturing Technology A	必修 Compulsory	4	秋季 Autumn	机械工程学院 School of Mechanical Engineering	
实践环节 3 学分 Practice 3 Credit		工程训练 A Engineering Training A	必修 Compulsory	2	春季 Spring	工程中心 Engineering Training Center	
		专业实习 Professional Cognition Practice	必修 Compulsory	1	短 3 Short Semester 3	机械工程学院 School of Mechanical Engineering	
任选一 课程组 不少于 6 学分 Distributional Elective 1 group ≥6 credits	第 1 课程 组 Course Group 1	轨道车辆构造与原理 ^Δ Structure and Principle of Urban Rail Transit Vehicle	限修 Distributional Electives	3	春季 Spring	机械工程学院 School of Mechanical Engineering	
		轨道车辆强度及动力学 Strength and Dynamics of Urban Rail Vehicle	限修 Distributional Electives	3	秋季 Autumn	机械工程学院 School of Mechanical Engineering	
		轨道车辆牵引传动与制动 Urban Rail Vehicle traction transmission and braking	限修 Distributional Electives	3	春季 Spring	机械工程学院 School of Mechanical Engineering	
	第 2 课程 组 Course Group 2	汽车构造 ^Δ Automotive Structure	限修 Distributional Electives	3	春季 Spring	机械工程学院 School of Mechanical Engineering	
		汽车理论 Theory of Automotive	限修 Distributional Electives	3	春季 Spring	机械工程学院 School of Mechanical Engineering.	
		汽车设计 A Design of Automotive A	限修 Distributional Electives	3	秋季 Autumn	机械工程学院 School of Mechanical Engineering	
总学分 Total Credits				≥36			

注：课程名称后带“Δ”号的为必选课。