

交通运输专业辅修学士学位培养方案

Training Program of Transportation as Bi-Major

一、培养目标 Objectives

坚持立德树人，培养主动适应新时代中国特色社会主义现代化建设和交通运输发展需要，德、智、体、美、劳全面发展，具有突出的科学文化素养和创新意识，深厚的人文底蕴，健全的人格和健康身心，良好的社会责任感和职业道德素质，较高的综合运输系统思想，较强的沟通能力、团队合作和终身学习能力，掌握扎实的工程知识，系统的轨道交通专业知识和技能，能够在交通运输特别是轨道交通领域从事规划设计、工程实施、运营管理、科学研究等工作的复合型人才。

This undergraduate bi-major program is designed to foster students' virtue through education and adapt to the needs of socialist modernization and transportation development in the new era. It emphasizes the comprehensive development of students in moral, intelligence, sports, aesthetics and labor education, as well as outstanding scientific and innovative consciousness, profound humanistic heritage, sound personality and health, good sense of social responsibility and professional ethics, and high comprehensive transportation system thinking . The students in this program are equipped with strong skills of communication, teamwork, and lifelong learning, and master solid engineering knowledge, systematic rail transit expertise and skills. Students are furnished with the ability to engage in composite talents in planning, engineering implementation, operations management, scientific research and other essential qualities in transportation, especially in rail transport.

二、毕业要求 Graduation Requirements

毕业要求 1 思想健康：热爱祖国，德智体美劳全面发展，充分理解马克思主义毛泽东思想，习近平新时代中国特色社会主义思想，坚持社会主义核心价值观，具有科学的世界观、坚定的政治立场，具备为国家富强、行业发展而奋斗的志向和社会责任感，具有良好的社会公德和法律意识，主动适应新时代中国特色社会主义现代化建设和交通运输行业发展需求。

Requirements 1 Ideologically Healthy: Loving the motherland, fully understanding Marxism, Mao Zedong Thought and Xi Jinping Thought on Socialism with Chinese Characteristics for a New Era. Adhering to the socialist core values and having a scientific world outlook and a firm political stand. Having a sense of social responsibility and ambition to strive for national prosperity and industrial development. Having a good sense of social morality and law, and actively adapts to the needs of socialist modernization construction and the development of transportation industry in the new era.

毕业要求 2 工程知识: 能够将数学、自然科学、专业理论基础和技术知识用于解决交通运输领域的规划设计、运输组织等复杂工程问题。

Requirements 2 Engineering Knowledge: Ability to apply mathematics, natural science, professional theoretical basis and technical knowledge to solve the complex engineering problems in the field of transportation, such as planning, design and transportation organization.

毕业要求 3 问题分析: 能够应用数学、自然科学和交通运输工程学科的基本原理识别、表达交通运输规划设计、运输组织等问题，并通过文献研究对具体的交通运输复杂工程问题进行分析，以获得有效结论。

Requirements 3 Problem Analysis: Ability to apply basic principles of mathematics, natural sciences, and transportation engineering disciplines to identify and describe the transportation planning and design, transportation organization and other problems. And based on the literature research, analyzing the specific traffic complex engineering problems, and acquiring an effective conclusion.

毕业要求 4 设计/开发解决方案: 能够针对交通运输专业领域复杂工程问题，设计满足特定行车、客运、货运要求和流程的解决方案，并能在设计过程中考虑社会、健康、安全、法律、文化以及环境等因素，体现创新意识。

Requirements 4 The Designing/Developing Solutions: Ability to formulate solutions to meet specific railway train operation, passenger and cargo transport requirements and processes for the complex engineering problems in the field of transportation. And considering the social, health, safety, legal, cultural and environmental factors during the design process, to reflect the innovative consciousness.

毕业要求 5 使用现代工具：能够针对交通运输复杂工程问题，开发、选择与使用恰当的技术、资源、现代工程工具和信息技术工具，包括对复杂工程问题的预测与模拟，并能够理解其局限性。

Requirements 5 The use of modern tools: Ability to develop, select and apply appropriate technologies, resources, modern engineering tools and information technology tools for the complex engineering problems in the field of transportation, including the prediction and simulation of complex engineering problems, and awareness of their limitations.

毕业要求 6 工程与社会：能够基于交通运输专业相关背景知识进行合理分析，评价专业工程实践和复杂工程问题解决方案对社会、健康、安全、法律以及文化的影响，并理解应承担的责任。

Requirements 6 Engineering and Society: Ability to conduct reasonable analysis based on relevant background knowledge of transportation major, evaluate the impact of professional engineering practice and complex engineering problem solutions on society, health, safety, law and culture, and understanding of the corresponding responsibilities.

毕业要求 7 个人和团队：能够在多学科背景下团队中承担个体、团队成员以及负责人的角色。

Requirements 7 Individuals and Teams: Ability to participate in the roles of the individual, team member and leader in a multi-disciplinary team.

毕业要求 8 环境和可持续发展：能够理解和评价针对交通运输工程领域中复杂工程问题的专业工程实践对环境、社会可持续发展的影响。

Requirements 8 Environment and Sustainable Development: Ability to understand and evaluate the impact of the professional engineering practices of complex engineering problems in the field of transportation engineering on environmental and social sustainability.

毕业要求 9 职业规范：具有人文社会科学素养、社会责任感、能够在交通运输相关问题实践中理解并遵守工程职业道德和规范，履行责任。

Requirements 9 Professional Norms: Possessing humanistic and social science literacy and social responsibility, and the ability to understand and abide by engineering

professional ethics and norms in the practice of transportation problems, and fulfil responsibilities.

毕业要求 10 项目管理: 理解并掌握交通运输行业的管理原理与经济决策方法, 并能在多学科环境中应用。

Requirements 10 Project Management: Understanding and mastering the management principles and economic decision-making methods of the transportation industry, and applying in a multidisciplinary environment.

三、 学分要求 Credits Requirements

选本专业为学士学位的学生必须预修 10 学分以上高等数学 (BI、BII), 在此基础上完成并通过课程设置中要求的所有课程, 符合《西南交通大学学士学位授予工作细则》和《西南交通大学本科生辅修与双学位管理办法》规定者, 方可授予本专业学士学位证书。

Students who choose this major as a double degree must take more than 10 credits of advanced mathematics (BI, BII). Based on this, complete and pass all the courses required in the curriculum. Only those students met the requirement of "Southwest Jiaotong University Bachelor's Degree Award Working Rules" and "Administrative Measures for Minor and Double Degrees of Undergraduates of Southwest Jiaotong University" can be awarded a double degree certificate for this major.

四、 学位 Degree

工学学士

Bachelor's Degree

五、 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
专业基础课	运筹学 Operation Research	必修 Compulsory	4	第 4 学期 Semester 4	交通运输与物流学院 School of Transportation and Logistics	

专业基础课 Professional Foundational Courses	运筹学实验 A Experiments in Operation Research A	必修 Compulsory	1	第 4 学期 Semester 4	交通运输与物 流学院 School of Transportation and Logistics	
	交通运输经济 Transportation Economics	必修 Compulsory	2	第 5 学期 Semester 5	交通运输与物 流学院 School of Transportation and Logistics	
	线路基础与铁路选线 设计 Railway Location and Design	必修 Compulsory	2	第 4 学期 Semester 4	土木工程学院 School of Civil Engineering	
	机车车辆与列车牵引 计算 Locomotive、Vehicle and Train traction calculation	必修 Compulsory	2	第 4 学期 Semester 4	交通运输与物 流学院 School of Transportation and Logistics	
	铁路通信信号与列车 运行控制 Railway Communication Signal and Train Operation Control	必修 Compulsory	3	第 4 学期 Semester 4	交通运输与物 流学院 School of Transportation and Logistics	
	综合运输工程 Integration Transportation Engineering	限修 Distributi onal Elective	2	第 3 学期 Semeste 3	交通运输与物 流学院 School of Transportation and Logistics	限修 6 学 分 Distributi onal Elective 6 Credits
	交通运输规划原理 Principles of Transportation Planning		2	第 5 学期 Semester 5	交通运输与物 流学院 School of Transportation and Logistics	
	交通运输安全工程 Safety Engineering		2	第 5 学期 Semester 5	交通运输与物 流学院 School of Transportation and Logistics	
运输市场与商务 Transportation Market and Business	2		第 4 学期 Semester 4	交通运输与物 流学院 School of Transportation and Logistics		
专业核心课程 Specialized Core Course	行车组织 A Railway Train Operation A	必修 Compulsory	4	第 6 学期 Semester 6	交通运输与物 流学院 School of Transportation and Logistics	
	铁路站场及枢纽 A Railway Yard and Terminal A	必修 Compulsory	3	第 6 学期 Semester 6	交通运输与物 流学院 School of Transportation and Logistics	
	铁路货物运输组织 A Railway Freight Transport Organization A	必修 Compulsory	3	第 6 学期 Semester 6	交通运输与物 流学院 School of Transportation and Logistics	

	铁路旅客运输组织 Railway Passenger Transport Organization	必修 Compulsory	2	第 7 学期 Semester 7	交通运输与物流学院 School of Transportation and Logistics	
	交通运输统计 Transportation Statistics	必修 Compulsory	2	第 5 学期 Semester 5	交通运输与物流学院 School of Transportation and Logistics	
	铁路规章 Technical Regulations of Railway Operation	必修 Compulsory	2	第 7 学期 Semester 7	交通运输与物流学院 School of Transportation and Logistics	
集中性实践教学环节：基本技能训练、工程实践、综合课程设计、社会与文化素质和实践、毕业实习与毕业设计 Centralized Practical Teaching Process: Basic Skills Training, Practical Training, Integrated Curriculum Design, Social and Cultural Quality Practice, Graduation Internship and Graduation Design	旅客运输组织课程设计 Passenger Transport Organization Experiments	必修 Compulsory	1	第 7 学期 Semester 7	交通运输与物流学院 School of Transportation and Logistics	
	行车组织课程设计 A Course Design in Railway Train Operation A	必修 Compulsory	2	第 6 学期 Semester 6	交通运输与物流学院 School of Transportation and Logistics	
	货物运输组织课程设计 Course Design in Freight Transport Organization	必修 Compulsory	1	第 6 学期 Semester 6	交通运输与物流学院 School of Transportation and Logistics	
	铁路站场及枢纽课程设计 Course Design in Railway Yard and Terminal	必修 Compulsory	1.5	第 6 学期 Semester 6	交通运输与物流学院 School of Transportation and Logistics	
	生产实习（运输） Specialized Production Practice (Transportation)	必修 Compulsory	2	短 3 学期 Short Semester 3	交通运输与物流学院 School of Transportation and Logistics	
	毕业设计（论文） Graduation Dissertation	必修 Compulsory	8	第 8 学期 Semester 8	交通运输与物流学院 School of Transportation and Logistics	
总学分 Total Credits			51.5			