Southwest Jiaotong University
Transportation 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 environment or to understand such an environment; help students to learn both the successes and failures in China's transportation engineering; introduce students the techniques of transportation engineering to meet the needs of modernization, as well as sharpen their leadership and communication skills.

Major

Transportation 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	Name 名称	Credit/hours 学分/学时	Semester 学期			Evaluation 考评
				I	II	III	
Level 5 Intermediate Course 5 级课程	Public Course 公共课程	基础汉语 I Basic Chinese I	32/2	√			Examination
		中国文化 Chinese Culture	48/3	√			Examination
		基础汉语 II Basic Chinese II	16/1		√		Examination
		中国概况 China Overview	16/1		√		Examination
		当代中国 Contemporary China	32/2		√		Examination
	Common Basic Course 公共基础课	随机过程与时间序列分析 Analysis of the Random Process and Time Series	48/3		√		Examination
		数理统计与多元统计 Mathematical Statistics and Multivariate Statistics※	48/3	√			Examination
	Basic Professional Course 基础专业课	Transportation Engineering 交通运输工程学	32/2	√			Examination
		最优化理论与方法 Optimization Theory and Methods	32/2		√		Examination

		技术经济学理论 Theory of Technical Economics	32/2	√			Examination
	Professional Course 专业课	计算机编程原理与方法 Principles and Methods of Computer Programming	32/2		√		Examination
		交通运输信息系统分析与设计 Analysis and Design of Transportation Information System	32/2		√		Examination
		客运专线运输组织方法与实践 Organization Method and Practice of Passenger Dedicated Line	32/2	√			Examination
		铁路枢纽综合设计理论与方法 Design Theory and Method of Railway Hub	32/2		√		Examination
		集装箱多式联运规划理论与方法 Theory and Method of Container Multimodal Transportation Planning	32/2	√			Examination
	Lab experiment 实验	交通运输规划与管理创新实验 Innovation Experiment of Transportation Planning and Management	/2		√		Performance review
Level 6 Advanced Courses 6 级课程	公共基础课 Common Basic Course	应用功能分析 Applied Functional Analysis	48/3	√			Examination
	Basic Professional Course 基础专业课	综合运输系统规划理论与方法 Theory and method of Comprehensive Transportation System Planning＊	32/2	√			Examination
		交通运输系统工程 Transportation System Engineering＊※	32/2	√			Examination
		图与网络优化 Graph and Network Optimization ＊※	32/2		√		Examination

	Professional Course 专业课	智能铁路运输系统 Intelligent Railway Transportation System	32/2	√			Examination
		交通运输通道规划理论 Planning Theory of Transportation Channel	32/2		√		Examination
		交通运输大数据应用技术 Big Data Application Technology of Transportation	32/2	√			Examination
		现代车流组织理论与方法 Theory and Method of Modern Traffic Organization※	32/2		√		Examination
		铁路货物运输组织方法与实践 Method and Practice of Railway Freight Transportation Organization	32/2	√			Examination
		交通运输发展理论 Modern Passenger Transport Organization Theory	32/2		√		Examination
Level 7 Frontier Courses 7 级课程	Public Course 公共课程	基础汉语Ⅰ Basic Chinese Ⅰ	32/2	√			Examination
		中国文化 Chinese Culture	48/3	√			Examination
		基础汉语Ⅱ Basic Chinese Ⅱ	16/1		√		Examination
		中国概况 China Overview	16/1		√		Examination
		当代中国 Contemporary China	32/2		√		Examination
	Public Course Common Basic Course 公共基础课程	现代数学 Modern Mathematics	48/3		√		Examination
		可靠性数学 Reliability Mathematics	48/3		√		Examination
		粗糙集模型及其应用 Model and Application of Rough Set	32/2	√			Examination
	Professional Course 专业课程	交通运输发展理论 Transportation Development Theory	32/2		√		Examination
		交通运输系统集成理论与技术 Transport System Integration Theory and Technology★	32/2		√		Examination

		运输系统优化理论与方法 Optimization Theory and Method of Transportation System	32/2	√			Examination
		运输企业管理理论与方法 Theory and Method of Transportation Enterprise Management	32/2	√			Examination
		现代智能优化算法设计与现实 Design and Implementation of Modern intelligent optimization algorithm	32/2		√		Examination

note: 1. The courses taught in foreign language or with textbook are marked with '＊'.

2. The courses classified as key professional courses are marked with '※'.

Level	Type	Code	Name	Credit/ hours	Semester			Evaluation
					I	II	III	
Level 5 Intermediate Level 5 级课程	Segments	54316100/1	形势与政策 Current Situation and Policy	0/16	√	√		Performance review
			学术报告（至少参加五次） Academic Lectures（≥5 lectures）	1/16		√		Performance review
			前沿技术专题（至少听 5 个） Frontier Technology Seminars（≥5 lectures）	1/16	√	√		Performance review
	实践 Practice		科研实践 Scientific Research Practice	1/16		√		Performance review
			专业实践 Professional Practice	5/80			√	Performance review
Level 7 Advanced Level 7 级课程	Segments		前沿性学术专题（不少于 4 个，每个 4 到 10 学时） Frontier Academic Seminars（≥4 lectures, each lasting 4～10 hours）	2/32		√		Performance review
			学术报告（至少参加 8 次，其中本人主讲一次） Academic Lectures（≥8 lectures, as a lecturer once）	1/16		√		Performance review

注：Level 5: 硕士层次；Level 6：硕士/博士层次；Level 7：博士层次。

Note: 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

Mater 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 appraisement 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.