

Southwest Jiaotong University
Road and Railway 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 road and railway engineering; introduce students the techniques of science and technology of road and railway engineering to meet the needs of modernization, as well as sharpen their leadership and communication skills.

Major

road and railway engineering (Master)

Study Period

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

Teaching Language

English

Curriculum

Category	Course Type	Course Name	Credit Hours	Credits	Semester		Assessment
					<input type="checkbox"/>	<input type="checkbox"/>	
Compulsory Course in Common Sense (6 Credits)		Basic Chinese I		2	√		
		Chinese Culture		2	√		
		Basic Chinese II		2		√	
		China Overview		2		√	
		Contemporary China		1		√	
Basic Course(≥10 Credits)		Numerical Analysis	51	3	√		
		Elastic Theory	51	3		√	
		Mathematical Statistics and Multivariate Statistics	51	3	√		
		Finite Element Method	32	2		√	
		Vibration Theory	32	2		√	
Professional Course(≥15 Credits)		<input type="checkbox"/> Geotechnical Principles	34	2	√		Examination
		<input type="checkbox"/> Train - Track -Subgrade System Dynamics	34	2	√		Examination
		Pavement Materials Design Theory	34	2	√		Examination
		Railway and Highway Planning and Design Theory	34	2	√		Examination
		Railway Engineering Information Technology	34	2	√		Examination
		Track Structure and Mechanics	34	2		√	Examination

		Subgrade Structure and Dynamic Analysis	34	2		√	Performance review
		Pavement Structure Theory and Mechanical Analysis	34	2		√	Performance review
		High Speed Railway Construction and Maintenance Technology	34	2		√	Performance review
		Nonlinear Finite Element Analysis	34	2	√		Examination
Practice		Research, Manufacturing or Teaching Practice		5		√	
		Involvement in international academic conferences relevant to the “One Belt, One Road” initiatives		1		√	
		Proposal for Dissertation		0	√		
		Intermediate Review of Dissertation		0			

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. 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.