

铁道工程专业辅修培养方案

Undergraduate Programme for minor of Railway

Engineering Specialty

一、培养目标 Objectives

面向国家重大需求，坚持学校“双严”传统，培养理论基础扎实，专业知识宽厚，具有创新能力和国际视野，能够引领现代铁路维护与管理的领军及高级专门人才。毕业生应德、智、体、美、劳全面发展：具有深厚的历史底蕴和广阔的国际视野，较强的社会担当和健全的人格修养，积极的创新精神和严谨的批判思维，良好的人文情怀和扎实的科学素养、高尚的职业操守和优秀的专业才能。掌握铁道工程学科的基本原理和专业知识，获得工程师的良好训练，具备较强的实践能力，能从事现代铁路维护和运营管理工作。

To meet the major demands of the country, we carry on the tradition of rigorous scholarship and strict requirement to cultivate leaders and senior professionals with solid theoretical foundation, broad professional knowledge, innovative ability and international vision, who can lead the future development of transportation and Railway Engineering. Our graduates have a strong sense of social responsibility, good professional ethics, humanistic sentiments, scientific literacy, innovative spirit and critical thinking ability. With enhanced training and practice, they are well acquainted with the basic principles and professional knowledge in Railway Engineering, and are able to engage in the planning, surveying, design, construction, maintenance, research and management of large-scale Railway Engineering projects in the fields such as railway and road, urban rail transit, bridge, tunnel, housing construction and geotechnical engineering.

二、培养要求 Requirement

要求学生基本掌握铁道工程专业基础知识，具备扎实的专业基础和铁道工程勘测设计、施工、设施维护的基本技能与方法。培养学生成为具有扎实专业知识和高质量的工程技术、规划设计、建设管理、科学研究的复合型人才。

Students are required to master the basic knowledge of railway engineering, have solid professional foundation and basic skills and methods of railway engineering survey and design, construction and facility maintenance. To train students to become compound talents with solid professional knowledge and high quality in engineering technology, planning and design, construction management and scientific research.

三、前置课程 Pre course

辅修铁道工程专业的学生,应先完成以下课程学习:《高等数学 I》、《高等数学 II》、《线性代数 B》、《概率论与数理统计》、《理论力学 B》、《材料力学 AI》、《材料力学 BII》、《工程测量 I》、《工程测量 II》、《土木工程地质》、《土木工程制图与信息模型 I》、《土木工程制图与信息模型 II》。

Students majoring in Railway Engineering should first complete the following courses: Advanced Mathematics I, Advanced Mathematics II, Linear Algebra B, Probability Theory and Mathematical Statistics, Theoretical Mechanics B, Mechanics of Materials AI, Mechanics of Materials BII, Engineering Surveying I, Engineering Surveying II, Civil Engineering Geology, Civil Engineering Drafting and Information Modeling I, Civil Engineering Drafting and Information Modeling II.

四、学分要求 Credits Requirements

修学本专业的必修课(见:课程设置,共计49学分),成绩合格,并符合《本科生辅修专业修读及辅修学位授予管理办法》规定者,可颁发本专业辅修证书。学制要求:学制不超过2年(从申请修读辅修专业起)。

A minor bachelor's certificate can be awarded to those who have completed the required courses (see: curriculum design, 49 credits in total) and have passed the examination, and meet the requirements of the administrative measures for the granting of minor majors and minor degrees for undergraduates. Length of schooling: no more than 2 years (from the application for minor major).

五、课程设置 Course Programs

课程类型 Course Type	课程名称 Course Name	课程性质 Category of Course	总学分 Credits	开课学期 Semester	开课学院 School	备注 Notes
专业基础课 Professional Foundational Courses	结构力学 AI Structural Mechanics AI	必修 Compulsory	4	春季学期 Spring semester	土木工程学院 School of Civil Engineering	
	结构力学 AII-B Structural Mechanics AII-B	必修 Compulsory	2	秋季学期 Fall semester	土木工程学院 School of Civil Engineering	
	土力学 Soil Mechanics	必修 Compulsory	3	秋季学期 Fall semester	土木工程学院 School of Civil Engineering	
	基础工程 B Foundation Engineering B	必修 Compulsory	2	春季学期 Spring semester	土木工程学院 School of Civil Engineering	

专业基础课 Professional Foundational Courses	土木工程材料 Civil Engineering Materials	必修 Compulsory	3	秋季学期 Fall semester	土木工程学院 School of Civil Engineering	
	工程流体力学 A Engineering Fluid Mechanics A	必修 Compulsory	3	秋季学期 Fall semester	土木工程学院 School of Civil Engineering	
	电工与电子技术基础 A Fundamentals of Electronics & Electron Technology A	必修 Compulsory	2	春季学期 Spring semester	电气工程学院 School of Electrical Engineering	
	铁道工程机械 Railway Engineering Machinery	必修 Compulsory	2	春季学期 Spring semester	机械工程学院 School of Mechanical and Technology	
	环境工程概论 Environmental Engineering and Disaster Prevention	必修 Compulsory	1	秋季学期 Fall semester	土木工程学院 School of Civil Engineering	
	轨道交通大型综合体建筑 Large Complex Building of Rail Transit	必修 Compulsory	1	秋季学期 Fall semester	建筑学院 School of Architecture	
	建设法规与工程伦理 Construction Regulations and Engineering Ethics	必修 Compulsory	1	秋季学期 Fall semeste	土木工程学院 School of Civil Engineering	
	铁道工程试验与量测技术 Railway engineering test and measurement technology	必修 Compulsory	2	秋季学期 Fall semeste	土木工程学院 School of Civil Engineering	
	结构设计原理 Design Principles of Structures	必修 Compulsory	4	秋季学期 Fall semester	土木工程学院 School of Civil Engineering	
	土木工程经济与项目管理 Economic and Project Management of Civil Engineering	必修 Compulsory	3	秋季学期 Fall semester	土木工程学院 School of Civil Engineering	
专业核心课程 Specialized Core Courses	选线设计 Railway Location Design	必修 Compulsory	4	春季学期 Spring semester	土木工程学院 School of Civil Engineering	
	路基工程 A Subgrade Engineering A	必修 Compulsory	3	春季学期 Spring semester	土木工程学院 School of Civil Engineering	
	轨道工程 A Track Engineering A	必修 Compulsory	3	春季学期 Spring semester	土木工程学院 School of Civil Engineering	
	铁路桥梁工程 Railroad Bridge Engineering	必修 Compulsory	2	春季学期 Spring semester	土木工程学院 School of Civil Engineering	
	铁路隧道工程 Railroad Tunnel Engineering	必修 Compulsory	2	春季学期 Spring semester	土木工程学院 School of Civil Engineering	
	轨道交通减振与降噪 Rail Vibration and Noise Reduction	必修 Compulsory	2	秋季学期 Fall semester	土木工程学院 School of Civil Engineering	
总学分 Total Credits			49			