

工程力学专业辅修培养方案

Minor Program of Engineering Mechanics Specialty

一、培养目标 Objectives

设置辅修工程力学专业的课程模块，为其它专业的学生“跨专业深造”或“跨专业就业”提供有效支撑，加强交叉学科人才培养。完成辅修专业的毕业生，应具有较为扎实的力学基础和专业知识，具有一定的力学建模和理论分析能力，并具有一定的分析与解决与工程力学专业相关问题的能力，能参与力学问题相关的工程设计与计算及其实验研究工作。

The course module of engineering mechanics as a minor is set up to provide effective support for students of other majors to pursue further study or obtain employment across majors”, and to strengthen the training of talents of cross-disciplines. Graduates should have a solid foundation and professional knowledge of mechanics, a certain capacity of mechanical modeling and theoretical analysis, and a certain ability to analyze and solve problems related to engineering mechanics, and be able to participate in engineering design, calculation and experimental research related to mechanical problems.

二、培养要求 Requirement

工程力学辅修专业设置“跨学科学习”和“跨学科就业”课程模块，为其它专业学生提供有效支持，本专业学生主要学习力学基本理论和结构工程知识，具有应用计算机和现代实验技术手段对工程结构进行分析的基本能力。

The course module of engineering mechanics as a minor is set up, such as “cross major to study” or “cross major employment”, to provide effective supports for students of other specialties, they mainly study the basic theory of mechanics and engineering knowledge structure, with application of computer and modern experimental techniques for structural analysis of the basic skills.

毕业生应获得以下几方面的素质、知识和能力：

Graduates should acquire the following qualities, knowledge and abilities:

1. 较系统地掌握力学专业的基础理论知识，了解本专业的前沿发展现状和趋势。

1. Graduates should systematically grasp the basic theoretical knowledge of mechanics major, and understand the current situation and trend of the frontier development of this major.

2. 具有一定的力学专业知识和工程结构数值分析能力、设计能力及实验技能。

2. Graduates should have certain mechanical professional knowledge, engineering structure numerical analysis ability, design ability and experimental skills.

3. 具有一定的力学建模和理论分析能力，能参与本专业技术领域的应用研究、技术开发及经营管理等相关工作。

3. Graduates should have a certain capacity of mechanical modeling and theoretical analysis, and can participate in the applied research, technical development, business management and other related work in the professional technical field.

4. 具备一定的工程意识和实践能力，熟练的计算机应用能力，具有综合运用力学理论知识、技术手段和工程方法解决工程实际问题的能力。

4. Graduates should have certain engineering consciousness and practical ability, skilled computer application ability, have comprehensive use of mechanical theory knowledge, technical means and engineering methods to solve practical engineering problems.

5. 掌握与工程力学相关的基本创新方法，具有追求创新的态度和意识；具有较强的自学能力、较高的综合素质，对交叉学科的学习有正确认识，具有不断学习和适应发展的能力。

5. Graduates should master the basic innovation methods related to engineering mechanics, have the attitude and consciousness of pursuing innovation; Have strong self-learning ability, high comprehensive quality, have a correct understanding of interdisciplinary learning, can continue to learn and adapt to development.

三、学分要求 Credits Requirements

选本专业为辅修专业的学生应修学本专业的 43 学分核心必修课，并符合《西南交通大学本科生辅修与双学位管理办法》规定者，方可颁发本专业辅修证书。

Students who choose this major as a minor major should study the core required courses of 43 credits, and comply with the provisions of “Southwest Jiaotong University undergraduate

minor and double degree management measures”, only then the minor certificate of this major can be issued.

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
专业基础课 Specialized Foundational Courses	计算力学 A Computational Mechanics A	必修 Compulsory	3	春季学期 Spring Semester	力学与航空航天学院 School of Mechanics and Aerospace Engineering	
	机械制图 B Mechanical Drafting B	限修 Distributional Elective	3	秋季学期 Fall Semester	机械工程学院 School of Mechanical Engineering	限修 3 学分 Distributional Elective 3 Credits
	电路和电子技术基础 Fundamentals of Circuit and Electronic Technology		3	春季学期 Spring Semester	电气工程学院 School of Electrical Engineering	
专业核心课程 Specialized Core Course	理论力学 AI Theoretical Mechanics AI	必修 Compulsory	3	春季学期 Spring Semester	力学与航空航天学院 School of Mechanics and Aerospace Engineering	
	理论力学 AII Theoretical Mechanics AII	必修 Compulsory	3	秋季学期 Fall Semester	力学与航空航天学院 School of Mechanics and Aerospace Engineering	
	材料力学 AI Mechanics of Materials AI	必修 Compulsory	3	秋季学期 Fall Semester	力学与航空航天学院 School of Mechanics and Aerospace Engineering	
	材料力学 AII Mechanics of Materials AII	必修 Compulsory	3	春季学期 Spring Semester	力学与航空航天学院 School of Mechanics and Aerospace Engineering	
	结构力学 D Structural Mechanics D	必修 Compulsory	4	春季学期 Spring Semester	土木工程学院 School of Civil Engineering	
	流体力学 A Fluid Mechanics A	必修 Compulsory	4	春季学期 Spring Semester	力学与航空航天学院 School of Mechanics and Aerospace Engineering	
	弹性力学 A Elasticity A	必修 Compulsory	4	秋季学期 Fall Semester	力学与航空航天学院 School of Mechanics and Aerospace Engineering	

专业核心课程 Specialized Core Course	振动力学 A Vibration Mechanics A	必修 Compulsory	3	秋季学期 Fall Semester	力学与航空航 天学院 School of Mechanics and Aerospace Engineering	
	塑性力学 Plasticity	必修 Compulsory	2	春季学期 Spring Semester	力学与航空航 天学院 School of Mechanics and Aerospace Engineering	
	实验力学 A Experimental Mechanics A	必修 Compulsory	3	春季学期 Spring Semester	力学与航空航 天学院 School of Mechanics and Aerospace Engineering	
	疲劳与断裂力学 A Fatigue and Fracture Mechanics A	必修 Compulsory	3	秋季学期 Fall Semester	力学与航空航 天学院 School of Mechanics and Aerospace Engineering	
专业限修课程 Specialized Restricted Courses	复合材料力学 Mechanics of Composites	限修 Distributional Elective	2	春季学期 Spring Semester	力学与航空航 天学院 School of Mechanics and Aerospace Engineering	限修 2 学分 Distributional Elective 2 Credits
	结构可靠性分析 Structural Reliability Analysis		2	秋季学期 Fall Semester	力学与航空航 天学院 School of Mechanics and Aerospace Engineering	
总学分 Total Credits			43			