

2015 土木工程专业本科培养计划

2015 Undergraduate Programs for the Major in Civil Engineering (for Foreign Students)

一、业务培养目标

I Educational Objectives

本专业旨在培养掌握土木工程学科基本理论和专业技能，具备较强的工程实践和创新能力，在房屋建筑、道路、桥梁等工程领域，能胜任土木工程项目的的设计、施工、管理和研究等工作的高级专门人才。

This program aims to produce senior specialized talents with fundamental theory and professional skills in civil engineering, and with the ability of engineering practice and innovation. This program provides graduates with multiple career pathways. The graduates will be competent for structural design, research, construction and management works in the fields of building, road and bridge engineering.

二、业务培养要求

II Educational Requirements

本专业学生主要学习土木工程学科的基础理论，获得土木工程师的基本训练，具备从事土木工程设计、施工和管理等工作的专业知识和实践技能。

毕业生应获得以下几方面的知识和能力：

1. 掌握土木工程学科的基本理论、基本知识；
2. 具有初步进行土木工程结构设计的能力；
3. 具有与土木工程相关的较强的计算机运用能力；
4. 熟悉土木工程结构设计和管理的有关方法、规范和标准；
5. 了解现代土木工程的理论前沿，应用前景和发展动态；
6. 掌握文献检索、资料查询的基本方法，具有科学研究和实际工作的初步能力；
7. 具有较强的分析和解决工程实际问题的能力。

Students under this program mainly study fundamental theories of civil engineering, receive basic training of being an eligible civil engineer, and master necessary professional knowledge and practical skills of structural design, construction and management in civil engineering.

In order to graduate with the Bachelor of Engineering (Civil Engineering) degree, students are required to master the following knowledge and abilities:

1. Mastering the basic theories and knowledge of civil engineering discipline;
2. Having the ability to conduct preliminary design of civil engineering structures;
3. Having strong ability of computer operation related with civil engineering;
4. Being familiar with relevant methods, norms and standards of engineering structure design, construction and project management;
5. Understanding the theoretical frontiers, application prospects and development trends of modern civil engineering;
6. Mastering the basic methods of literature retrieval and information query, and having the preliminary scientific research and practical work ability;
7. Having the abilities of analyzing and solving engineering practical problems.

三、主干学科

III Major Disciplines

主干学科：土木工程、力学

Major Disciplines: Civil Engineering, Mechanics

四、专业核心课程与专业特色课程

IV Core Courses and Characteristic Courses

专业核心课程：高等数学、理论力学、材料力学、结构力学、工程测量、工程图学、土力学、工程地质与岩体力学、基础工程、土木工程材料、混凝土结构设计原理、钢结构设计原理、混凝土结构设计、钢结构设计、桥梁工程、路基路面工程、土木工程施工。

Core Courses: Advanced Mathematics, Theoretical Mechanics, Materials Mechanics, Structural Mechanics, Engineering Survey, Engineering Graphics, Soil Mechanics, Engineering Geology and Rock Mass Mechanics, Foundation Engineering, Civil Engineering Materials, Fundamentals of Concrete Structure Design, Fundamentals of Steel Structure Design, Concrete Structure Design, Steel Structure Design, Bridge Engineering, Highway Subgrades and Pavement Engineering, Civil Engineering Construction.

专业特色课程：城市规划概论、土木工程试验原理、结构抗震抗风设计、工程项目管理。

Characteristic Courses: Introduction to Urban Planning, Principles of Civil Engineering Test, Earthquake and Wind Resistant Design of Structures, Engineering Project Management.

五、计划学制与学位

V Length of School and Degree

修业年限：四年

授予学位：工学学士

Duration: 4 years

Degrees Conferred: Bachelor of Engineering Science

六、最低毕业学分规定

VI Graduation Credit Criteria

Course Nature \ Course Classification	通识课程 Public Basic Courses	学科大类课程 Basic Disciplinary Courses	专业课程 Specialized Courses	集中性实践 Practice Courses	总学分 Total Credits
必修课 Required Courses	17	43.5	40.5	34	135
选修课 Elective Courses	0	0	0	0	

七、理论教学进程表

VII Theory Course Schedule

课程类别 Course Classification	课程性质 Course Nature	课程编号 Course Number	课程名称 Course Title	学分 Crs	学时分配 Including					建议修读学期 Suggested Term	先修课程 Prerequisite Course
					总学时 Tot hrs.	实验 Exp.	上机 Operation	实践 Practice	课外 Extra-cur		
通识课程 Public Basic Courses	必修课程 Required Courses		大学计算机基础 Foundation of Computer	2	32		12			1	
			计算机程序设计基础 (C 语言) Fundamentals of Computer Program Design (C Language)	3	48		12			2	
			初级汉语会话 Basic Chinese Conversation	6	96					1	
			科技汉语会话 Scientific Chinese Conversation	3	48					2	
			中国概况 Introduction to China	3	48				16	3	
			小 计 Subtotal	17	272		24				
学科大类课程 Basic Disciplinary Courses	必修课程 Required Courses		土木工程专业导论 Introduction of Civil Engineering	1	16					1	
			材料力学 Mechanics of Material	3.5	56					3	
			土木工程材料 Civil Engineering Material	3	48					3	
			理论力学 Theoretical Mechanics	3	48					2	
			工程图学 Engineering Graphics	4	64		12			2	
			工程测量 Engineering Survey	3	48					3	
			高等数学 1 Advanced Mathematics I	5	80					1	
			高等数学 2 Advanced Mathematics II	5	80					2	
			线性代数 Linear Algebra	2.5	40					3	
			概率论与数理统计 Probability and Mathematics Statistic	3	48					3	
			大学物理 1 Physics I	3.5	56					2	
			大学物理 2 Physics II	3.5	56					3	
			电工与电子技术基础 A1 Fundamentals of Electrical Engineering & Electric Technology A1	3.5	56	10				3	
	小 计 Subtotal	43.5	696	10	12						

课程类别 Course Classification	课程性质 Course Nature	课程编号 Course Number	课程名称 Course Title	学分 CrS	学时分配 Including					建议修读学期 Suggested Term	先修课程 Prerequisite Course	
					总学时 Tot hrs.	实验 Exp.	上机 Operation	实践 Practice	课外 Extra-cur			
专 业 课 程 Specialized Courses	必 修 课 Required Courses		城市规划概论 Introduction to Urban Planning	2	32					3		
			结构力学 I Structural Mechanics I	4	64					4		
			结构力学 II Structural Mechanics II	2	32					5		
			土木工程试验原理 Principles of Civil Engineering Test	1.5	24					4		
			工程地质与岩体力学 Engineering Geology and Rock Mass Mechanics	2.5	40					4		
			土力学 Soil Mechanics	2.5	40	8				5		
			基础工程 Foundation Engineering	2	32			8		6		
			钢结构设计原理 Fundamentals of Structural Steel Design	3	48	8				5		
			钢结构设计 Steel Structural Design	2.5	40					6		
			混凝土结构设计原理 Principles of Concrete Structure Design	3	48					5		
			混凝土结构设计 Concrete Structure Design	2	32					6		
			砌体结构 Masonry Structure Design	2	32					6		
			土木工程施工 Civil Engineering Construction	2	32					6		
			桥梁工程 Bridge Engineering	3.5	56					7		
			路基路面工程 Highway Subgrades and Pavement Engineering	2	32					7		
			结构抗震抗风设计 Earthquake and Wind Resistant Design of Structures	2	32					7		
			工程项目管理 Engineering Project Management	2	32					7		
			小 计 Subtotal		40.5	648						

八、集中性实践教学进程表

VIII Practice Training Table

课程编号 Course Number	实践环节名称 Practice Courses Name	学分 CrS	周数 Weeks	建议修读学期 Suggested Term
	土木工程认识实习 Civil Engineering Cognition Practice	1	1	2
	测量实习 Surveying Practice	2	2	3

课程编号 Course Number	实践环节名称 Practice Courses Name	学分 Crs	周数 Weeks	建议修读学期 Suggested Term
	基础工程课程设计 Course Design of Foundation Engineering	2	2	5
	混凝土结构课程设计 Course Design of Concrete Structures	2	2	6
	土木工程材料与结构实验 Experiments on Civil Engineering Materials and Structures	2	2	6
	砌体结构课程设计 Course Design of Masonry Structures	2	2	6
	钢结构课程设计 Course Design of Steel Structures	2	2	6
	桥梁工程课程设计 Course Design of Bridge Engineering	2	2	7
	路基路面工程课程设计 Course Design on Highway Subgrades and Pavement	2	2	7
	毕业实习 Graduation Practice	2	2	8
	毕业设计 Graduation Design	15	15	8
小 计 Subtotal		34	34	