

# 工程管理

## Construction Management

专业代码: 120103

学 制: 4 年

Program Code: 120103

Duration: 4years

### 培养目标:

适应现代化社会发展需要, 培养具备建设工程技术、经济、管理、法律、生态、人文等理论基础, 获得工程师基本训练, 具有较强实践能力、独立思考能力、组织管理能力以及国际视野的复合型高级工程管理人才, 在土木工程或其他工程领域进行工程策划、设计管理、投资或成本控制、进度控制、质量控制、安全管理、合同管理、信息管理和组织协调等方面成为骨干力量, 并为未来 20 年成为工程管理领域领军人才做好战略布局。

### Educational Objectives:

To meet the needs of modernization, comprehensive development in moral, intelligence and physical, having the basic knowledge in civil engineering technology, economics, management, law and others, accessing the basic training of the engineers, emphasizing the capacity in the practice, innovation, organizational management, parts of the professional courses are taught bilingually, training to have a global vision and the future; To become the backbone, and become a leader in the field of construction management in the next 20 years in the fields of project planning, design management, investment or cost control, schedule control, quality control, safety management, contract management, information management and organization and coordination in civil engineering or other engineering fields

### 毕业要求:

№1.工程知识: 掌握扎实的建设工程、项目管理及房地产开发经营相关的技术、管理、经济和法律等基础知识、专业基本原理、现代管理科学的理论方法和手段, 能够将数学、自然科学、工程基础和专业知识用于解决复杂工程问题。

№2.问题分析: 能够应用数学、自然科学、工程科学和社会科学的基本原理, 识别、表达、并通过文献研究分析工程技术与管理问题, 以获得有效结论。

№3.设计/开发解决方案: 能够设计针对工程建设技术与管理复杂工程问题的解决方案, 设计满足特定需求的系统、单元(部件)或工艺流程, 并能够在设计环节中体现创新意识, 考虑社会、健康、安全、法律、文化以及环境等因素。

№4.研究: 能够基于科学原理并采用科学方法对复杂土木工程或其它工程问题进行研究, 包括设计调查、实验、分析与解释数据、并通过信息综合得到合理有效的结论。

№5.使用现代工具: 能够针对复杂土木工程或其它工程问题, 开发、选择与使用恰当的技术、方法、资源、现代工程工具和信息技术工具, 包括对复杂土木工程或其它工程问题的预测与模拟,

并能够理解其局限性。

№6.工程与社会：能够基于工程相关背景知识进行合理分析，评价专业工程实践和复杂工程问题解决方案对社会、健康、安全、法律以及文化的影响，并理解应承担的责任。

№7.环境和可持续发展：能够理解和评价针对复杂工程问题的专业工程实践对环境、社会可持续发展的影响。

№8.职业规范：具有人文社会科学素养、社会责任感，能够在工程实践中理解并遵守工程职业道德和规范，履行责任。

№9.个人和团队：能够在多学科背景下的团队中承担个体、团队成员以及负责人的角色。

№10.沟通：能够就复杂工程问题与业界同行及社会公众进行有效沟通和交流，包括撰写报告和设计文稿、陈述发言、清晰表达或回应指令。并具备一定的国际视野，能够在跨文化背景下进行沟通和交流。

№11.项目管理：理解并掌握工程管理原理与经济决策方法，并能在多学科环境中应用。

№12.终身学习：具有自主学习和终身学习的意识，有不断学习和适应发展的能力。具有面对挑战和挫折的乐观主义态度，能应对危机和挑战。

## **Student Outcomes:**

**№1.Engineering Knowledge:** Master the knowledge of construction engineering, project management and real estate development and management and the relative basic knowledge of technology, management, economics, law, professional principles, modern management science theory and methods. Have the ability to apply knowledge of mathematics, science, engineering fundamentals and engineering specialization to the solution of complex engineering problems.

**№2.Problem Analysis:** An ability to identify, formulate and analyze civil engineering technique and management problems, reaching to substantiated conclusions using basic principles of mathematics, natural science, engineering science and social science.

**№3.Design / Development Solutions:** An ability to design solutions for complex construction engineering technique and management problems and innovatively design systems, components or process that meet specific needs with societal, public health, safety, legal, cultural and environmental considerations.

**№4.Research:** An ability to conduct investigations of complex civil or other engineering problems based on scientific theories and adopting scientific methods including design of survey, experiments, analysis and interpretation of data and synthesis of information to provide valid conclusions.

**№5.Applying Modern Tools:** An ability to create, select and apply appropriate techniques, resources, and modern civil engineering and IT tools, including prediction and modelling, to complex civil or other engineering activities, with an understanding of the limitations.

**№6.Engineering and Society:** An ability to apply reasoning informed by contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to professional engineering practice.

**№7.Environment and Sustainable Development:** An ability to understand and evaluate the impact of professional engineering solutions in environmental and societal contexts and demonstrate knowledge of and need for sustainable development.

**№8.Professional Standards:** An understanding of humanity science and social responsibility, being able to understand and abide by professional ethics and standards responsibly in engineering practice.

**№9.Individual and Teams:** An ability to function effectively as an individual, and as a member or leader in diverse teams and in multi-disciplinary settings.

**№10.Communication:** An ability to communicate effectively on complex engineering problems with the engineering community and with society at large, such as being able to comprehend and write effective reports and design documentation, make effective presentations, give and receive clear instructions, and communicate in cross-cultural contexts with international perspective.

**№11.Project Management:** Demonstrate knowledge and understanding of engineering management principles and methods of economic decision-making, to function in multidisciplinary environments.

**№12.Lifelong Learning:** Recognition of the need for, and ability to engage in independent and life-long learning with the ability to learn continuously and adapt to new developments; recognition of optimistic attitude towards challenges and setbacks, and ability to deal with crises and challenges.

## **专业简介:**

工程管理专业于 2010 年 9 月入学第一批本科生；从 1978 年就开始招收工程管理类研究生；工程管理系成立于 2013 年 4 月（前身是土木工程系综合教研室，可追溯到 1953 年华南工学院土木工程系建筑施工教研组），目前已形成本科、硕士、博士较完整的人才培养体系。拥有工程管理本科专业；有工程管理领域专业学位硕士点、建筑与土木工程领域建设管理方向硕士点；招收土木工程一级学科下土木工程建造管理方向学术型硕士研究生，招收工程经济管理研究方向博士生。目前，工程管理系已成立全英专业。工程管理系专任教师绝大多数具有博士学位，半数具有海外留学经历，多具有国家注册监理工程师、建造师、造价工程师、投资咨询工程师等执业资格，现有 1 名中国工程监理大师。工程管理系重视科研与教学实验工作，目前具备建筑全生命周期管理虚拟仿真及 BIM 实验室，与多家业内知名企业建立了长期合作关系，开展学生实习、科学研究和工程实践活动；注重学术交流，常邀请境内外专家教授到我系讲学，学生有较多机会到境内外进行学术交流活动。

## **Program Profile:**

Since September 2010, the first batch of undergraduate admission, construction management professional has three undergraduate graduates, while graduate students have been recruited since 1978. Founded in April 2013, the Department of Construction Management, formerly known as the Construction Technology Teaching and Research Section in the Department of Civil Engineering of South China Institute of Technology, dating back to 1953), has formed a complete education system which confer the degree of bachelor, master and doctoral. Currently, the Department of Construction Management enrolls around 60

undergraduate students including 30 in English class, around 100 research graduate students for master and doctoral degree.

There are 15 full-time academic staffs in the department of construction management: 3 professors, 5 associate professors and 7 lecturers and postdoctoral, engineers. Most of the academic staffs hold doctoral degrees, and many academic staffs have national registered supervision engineers, constructors, project cost engineers, investment consulting engineers and other professional qualifications. One professor also obtains the title of China Master of Engineering Supervision.

The department attaches great importance to scientific research and teaching work by conducting student practice, scientific research and engineering practice in laboratories including Building life cycle management Virtual Reality and BIM Laboratory, and in cooperative enterprise. The department also pays attention to academic exchanges, by inviting experts all over the world to lecture and supporting exchange programs for students.

### **专业特色：**

本专业包括土木工程技术、经济、管理和法律四大类平台课程，强化 BIM 等先进信息化技术的实训，多采用工作坊教学模式，突出工程管理信息化人才的培养，重视实践、创新与国际化。

### **Specialty Features:**

Including the platform course of civil engineering technology, economy, management and law of the four categories of professional training, this major strengthens BIM and other advanced information technology practice, uses workshop teaching mode, emphasizes the training of engineering management informatization talents, attaches importance to practice, innovation and internationalization. Most of the courses of English class teaching in English curriculum.

**授予学位：**工学学士学位

**Degree Conferred:** Bachelor of Engineering

### **主干课程：**

建筑力学、混凝土结构理论与设计、土木工程施工、基础工程、土木工程项目管理、建设工程造价管理、工程经济、工程合同法律制度与合同管理、建设与房地产法规。

### **Main Courses:**

Construction Mechanics, Theory & Design of Concrete Structures, Civil Construction, Foundation Engineering, Project Management, Budget for the Project, Engineering Economy, Contract management, Construction and Real Estate Laws and Regulations.

### **特色课程：**

全英教学课程：对全英班学科基础课和专业领域课大部分采用全英教学

研究型课程：各类课程设计

讨论型课程：工程管理导论、学科讲座、各类课程设计

创新实践课程：工程管理工作坊（包括 BIM 工作坊）、工程结构综合实验

创业教育课程：创业教育报告

### **Featured Course:**

**Courses Taught in English:** Most Disciplinary Basic Courses and Specialty- related Courses taught in English for English class

**Research Courses:** Graduation Design or Thesis, All the course design work

**Seminar (including freshmen seminars and thematic seminars):** An Introduction to Construction Management (freshmen seminars) , Special Lecture, All the course design work

**Innovation Practice Courses:** Workshop of Construction Management (including BIM workshop), Integrated Test of Structures

**Entrepreneurship Education Courses:** Entrepreneurship Education Report, Social Practice, Construction Practice, Graduate Practice

## 一、教学计划总体安排表 (Teaching Plan Schedule)

学 年	学 期	教 学 进 度 安 排 (周)																			理 论 教 学	考 试	入 学 教 育	军 训	课 程 设 计	认 识 实 习	工 作 坊	测 量 实 习	综 合 实 验	社 会 实 践	生 产 实 习	毕 业 实 习	研 讨 课	中 外 合 作 项 目	毕 业 设 计	就 业 安 排	机 动	假 期	小 计	
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19																				20
		A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R																					
一	1		C	A	A	A	A	A	A	A	A	A	A	A	A	B	D	D	D	14	1	1	3											19						
	2	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	F	B	B	17	2			1									20							
二	3	A	A	A	A	A	A	A	A	A	A	A	A	A	E	E	G	B	B	15	2		2	1									20							
	4	A	A	A	A	A	A	A	A	A	A	A	A	A	I	H	H	G	B	15	1			1	2	1							20							
三	5	A	A	A	A	A	A	A	A	A	A	A	A	A	B	E	E	E	G	15	1		3	1									20							
	6	A	A	A	A	A	A	A	A	A	A	A	A	A	B	E	K	K	K	14	1		2				3						20							
四	7	A	A	A	A	A	A	A	A	A	A	A	A	A	Q	B	E	G	16	1		1	1								1	20								
	8	L	O	O	O	O	O	O	O	O	O	O	O	O	O	P	Q	Q	Q											1	15	1	3	20						
合 计 (周)																			106	9	1	3	8	1	4	2	1		3	1					15	1	4	159		

## 二、各类课程学分登记表 (Registration Form of Curriculum Credits)

### 1. 学分统计表 (Credits Registration Form)

课程类别 Course Category	课程要求 Requirement	学分 Credits	学时 Academic Hour	备注 Remarks
公共基础课 General Basic Course	必修 Compulsory	50.0	732	
	通识 Elective	10.0	160	
学科基础课 Disciplinary Basic Courses	必修 Compulsory	48.0	768	
	选修 Elective	0.0	0	
专业领域课 Specialty-related Courses	必修 Compulsory	8.0	128	
	选修 Elective	26.0	416	
合 计 Total		142.0	2204	
集中实践教学环节 (周) Practice Training (Weeks)	必修 Compulsory	40.0	40 周	
毕业生学分要求 Graduation Credit Required	142.0+40.0=182.0			

备注：学生在取得专业教学计划规定学分的同时，还必须取得第二课堂 2 个人文素质教育学分和 4 个创新能力培养学分。

## 2.类别统计表 (Category Registration Form)

学时 Academic Hours					学分 Credits						
总学时数 Total	其中 Include		其中 Include		总学分数 Total	其中 Include		其中 Include			其中 Include
	必修学时 Compulsory	选修学时 Elective	理论教学学时 Theory Course	实验教学学时 Lab		必修学分 Compulsory	选修学分 Elective	集中实践教学环节学分 Practice-concentrated Training	理论教学学分 Theory Course Credits	实验教学学分 Lab	创新创业教育学分 Innovation and Entrepreneurship Education
2204	1628	576	2041	163	182	146	36	40	137	5	10

## 三、专业教学计划表 (Teaching Schedule)

类别 Course Category	课程代码 Course No.	课程名称 Course Title	是否必修 C/E	学时数 Total Curriculum Hours				学分数 Credits	开课学期 Semester	毕业要求 Student Outcomes
				总学时 Class Hours	上机 Computer-aided Class Hours	实验 Lab Hours	实践 Practice Hours			
公共基础课 General Basic Course	143093	思想道德修养与法律基础 Cultivation of Thought and Morals & Fundamental of Law	必修课 C	(40) (36)				2.5	1	№8,12
	143091	中国近现代史纲要 Skeleton of Chinese Modern History		(32) 24				2.0	2	№8,12
	143106	毛泽东思想和中国特色社会主义理论体系概论 Thought of Mao ZeDong and Theory of Socialism with Chinese Characteristics		(80) 48				5.0	3	№8,12
	143090	马克思主义基本原理 Fundamentals of Marxism Principle		(40) 36				2.5	4	№8,12
	143094	形势与政策 Analysis of the Situation & Policy		(128)				2.0	1-8	№8,12
	144001	大学英语 (一) College English(1)		64				4.0	1	№10,13
	144002	大学英语 (二) College English(2)		64				4.0	2	№10,13
	145223	大学计算机基础 Foundations of Computer		32				2.0	1	№5
	152001	体育 (一) Physical Education (1)		32			32	1.0	1	№12,13
	152002	体育 (二) Physical Education (2)		32			32	1.0	2	№12,13
	152003	体育 (三) Physical Education (3)		32			32	1.0	3	№12,13
	152004	体育 (四) Physical Education (4)		32			32	1.0	4	№12,13
	106001	军事理论 Military Principle		(16)				1.0	2	№9,12
	140191	微积分 II (一) Calculus (1)		80				5.0	1	№2,5,12
	140192	微积分 II (二) Calculus (2)		80				5.0	2	№2,5,12

类别 Course Category	课程 代码 Course No.	课程名称 Course Title	是否 必修 C/E	学时数 Total Curriculum Hours				学 分 数 Credits	开 课 学 期 Semester	毕 业 要 求 Student Outcomes
				总学 时 Class Hours	上机 Computer- aided Class Hours	实 验 Lab Hours	实 践 Practice Hours			
	140197	线性代数与解析几何 Linear Algebra & Analytic Geometry		48				3.0	1	№2,5,12
	140019	概率论与数理统计 Probability & Mathematical Statistics		48				3.0	2	№2,5,12
	130199	画法几何及建筑制图 (一) Descriptive Geometry & Architecture Drawing (1)		48				3.0	1	№2,5,12
	130200	画法几何及建筑制图 (二) Descriptive Geometry & Architecture Drawing (2)		32				2.0	2	№2,5,12
		人文科学领域 Humanities Field	通 识 课 E	96				6.0		№6,7,8
		社会科学领域 Social Science Field		64				4.0		№6,7,8
		合 计		892			128	60.0		

### 三、专业教学计划表 (续 1) (Teaching Schedule) (Continued 1)

类别 Course Category	课程 代码 Course No.	课程名称 Course Title	是否 必修 C/E	学时数 Total Curriculum Hours				学 分 数 Credits	开 课 学 期 Semester	毕 业 要 求 Student Outcomes
				总学 时 Class Hours	上机 Computer- aided Class Hours	实 验 Lab Hours	实 践 Practice Hours			
学 科 基 础 课 Disciplinary Basic Courses	133328	工程管理导论 An Introduction to Construction Management	必 C	16				1.0	1	№1
	132065	土木工程材料 Materials for Civil Engineering	必 C	48		10		3.0	4	№1,2
	132161	工程测量 Civil Engineering Surveying	必 C	48		9		3.0	4	№1,5
	133346	建筑力学 (一) Construction Mechanics I	必 C	48				3.0	3	№1,2
	133347	建筑力学 (二) Construction Mechanics II	必 C	48				3.0	4	№1,2
	135082	电工学基础 Fundamentals of Electrical Engineering	必 C	40		8		2.5	4	№1,2
	132074	土力学 Soil Mechanics	必 C	48		8		3.0	5	№1,2,3,4
	133401	混凝土结构理论与设计 Theory & Design of Reinforced Concrete Structures	必 C	96				6.0	5	№1,2,3,4
	132100	土木工程施工 Civil Engineering Construction	必 C	64				4.0	6	№1,2,3,4
	132093	基础工程 Foundation Engineering	必 C	32				2.0	6	№1,2,3,4
	132268	土木工程项目管理 Project Management of Civil Engineering	必 C	32				2.0	7	№1,2,3,11
	133348	建设工程造价管理 Construction Project Cost Management	必 C	32				2.0	6	№1,2



类别 Course Category	课程 代码 Course No.	课程名称 Course Title	是否 必修 C/E	学时数 Total Curriculum Hours				学分数 Credits	开课 学期 Semester	毕业 要求 Student Outcomes
				总学 时 Class Hours	上机 Computer-aided Class Hours	实验 Lab Hours	实践 Practice			
	133337	建设与房地产法规 Construction and Real Estate Laws	必 C	24				1.5	2	№1,6
	132101	工程经济 Engineering Economics	必 C	32				2.0	5	№1,2,4,11
	133221	经济学 Economics	必 C	32				2.0	3	№1,2,4
	133338	管理学原理 Principles of management	必 C	32				2.0	2	№1,2,4
	168014	会计学 Accounting	必 C	32				2.0	3	№1,2,4
	142056	统计学原理 Theory of Statistics	必 C	32				2.0	4	№1,2,4
	133405	工程管理 IT 技术 IT Technology of Project Management	必 C	32				2.0	3	№1,2,5
		<b>合计 Total</b>	必 C	768		35		48.0		

### 三、专业教学计划表（续 2）（Teaching Schedule）（Continued 2）

类别 Course Category	课程 代码 Course No.	课程名称 Course Title	是否 必修 C/E	学时数 Total Curriculum Hours				学分数 Credits	开课 学期 Semester	毕业 要求 Student Outcomes
				总学时 Class Hours	上机 Computer-aided Class Hours	实验 Lab Hours	实践 Practice			
专业 领域 课 Specialty- related Courses	132137	房屋建筑学 Architectural Design and Construction	必 C	48				3.0	3	№1
	133364	工程合同法律制度与合同管理 Construction Contract Law System and Contract Management	必 C	32				2.0	4	№1,6
	132272	建设工程招标投标 Construction Project Tendering and Bidding	必 C	24				1.5	5	№1,11
	132105	建设工程监理 Construction Supervision	必 C	24				1.5	7	№1,11
	133111	专业英语 Specialized English	选 E	16				1.0	3	№1,10
	133468	建筑结构试验原理** Principle of Building Structure Test	选 E	16		16		0.5	6	№3,4
	132256	工程结构综合实验** Comprehensive Experiment of Engineering Structures	选 E	16		16		0.5	7	№3,4
	133315	土木工程学科讲座** Special Lecture of Civil Engineering	选 E	(8)				0.5		№6,7
	133441	工程管理学科讲座** Special Lecture of Construction Management	选 E	(8)				0.5		№6,7
	133195	土木工程概论 An Introduction to Civil Engineering	选 E	18				1.0	1	№1

类别 Course Category	课程 代码 Course No.	课程名称 Course Title	是否 必修 C/E	学时数 Total Curriculum Hours				学分数 Credits	开课 学期 Semester	毕业 要求 Student Outcomes
				总学时 Class Hours	上机 Computer-aided Class Hours	实验 Lab Hours	实践 Practice			
				133402	钢结构理论与设计 Theory & Design of Steel Structures	选 E	64			
133045	工程地质 Engineering Geology	选 E	24				1.5	4	№1,2,4	
133442	创业教育报告** Entrepreneurship Education Report	选 E	(8)				0.5		№12,13	
132009	城市规划原理 Urban Planning	选 E	32				2.0	3	№1	
132168	建筑设备 Construction Equipment	选 E	48				3.0	4	№1,2	
133434	环境保护概论 Introduction to Environmental Protection	选 E	16				1.0	7	№7	
133142	经济法 I Economic Law	选 E	16				1.0	6	№1,6	
133477	国际工程合同管理 International Project Contract Management	选 E	24				1.5	7	№1,6	
133119	运筹学 Operations Research	选 E	32				2.0	3	№1,2,5	
133403	房地产估价 Real Estate Valuation	选 E	24				1.5	6	№1,2,3,4	
133404	房地产市场营销 Real Estate Marketing	选 E	24				1.5	7	№1,2,3,4	
142065	财务管理 Financial Management	选 E	32				2.0	5	№1,2,3,4	
133406	建设项目投资与融资 Construction Project Investment and Financing	选 E	16				1.0	6	№1,2,3,4	
132109	建设项目策划 Construction Project Planning	选 E	16				1.0	6	№1,2,3,4,6	
132106	房地产开发与经营 Real Estate Development and Management	选 E	24				1.5	5	№1,2,3,4,6	
132108	物业管理概论 Introduction to Property Management	选 E	16				1.0	5	№1,2,3,4	
142043	组织行为学 Organizations and Behaviors	选 E	24				1.5	3	№9,10	
133407	桥梁工程 Bridge Engineering	选 E	32				2.0	6	№1,2,3,4	
133370	道路工程 Road Engineering	选 E	32				2.0	5	№1,2,3,4	
133201	交通工程 Traffic Engineering	选 E	24				1.5	5	№1,2,3,4	
120003	创新研究训练 Innovation Research Training	选 E	32				2.0		№12,13	
120004	创新研究实践 I Innovation Research Practice I	选 E	32				2.0		№12,13	
120005	创新研究实践 II Innovation Research Practice II	选 E	32				2.0		№12,13	

类别 Course Category	课程 代码 Course No.	课程名称 Course Title	是否 必修 C/E	学时数 Total Curriculum Hours				学分数 Credits	开课 学期 Semester	毕业 要求 Student Outcomes
				总学时 Class Hours	上机 Computer-aided Class Hours	实验 Lab Hours	实践 Practice			
	120006	创业实践 Entrepreneurial Practice	选 E	32				2.0		№12,13
	<b>合计 Total</b>		必 C	128				8.0		
			选 E	选修课修读最低要求 26.0 学分 minimum elective course credits required:26						

备注：1.“\*\*”是建议优先选的课程。2.学生根据自己开展科研训练项目、学科竞赛、发表论文、获得专利和自主创业等情况申请折算为一定的专业选修课学分（创新研究训练、创新研究实践 I、创新研究实践 II、创业实践等创新创业课程）。每个学生累计申请为专业选修课总学分不超过 4 个学分。经学校批准认定为选修课学分的项目、竞赛等不再获得对应第二课堂的创新学分。

#### 四、集中实践教学环节(Practice-concentrated Training)

课程 代码 Course No	课程名称 Course Title	是否 必修 C/E	学时数 Total Curriculum Hours		学分数 Credits	开课 学期 Semester	毕业要求 Student Outcomes
			实践 Practice weeks	授课 Lecture Hours			
106002	军训 Military Training	必 C	3 周		3.0	1	№8、12
143197	马克思主义理论与实践 Marxism Theory and Practice	必 C	2 周		2.0	假期	№6、8、13
132139	认识实习 Cognition Practice	必 C	1 周		1.0	2	№6、13
132216	房屋建筑学课程设计 Project of Building Architecture	必 C	2 周		2.0	3	№3
132160	测量实习 Engineering Measurement Practice	必 C	2 周		2.0	4	№3、5
133478	工程管理工作坊（一） Workshop of Construction Management I	必 C	1 周		1.0	3	№4、5
133479	工程管理工作坊（二） Workshop of Construction Management II	必 C	1 周		1.0	4	№4、6
133480	工程经济学课程设计 Project of Engineering Economics	必 C	1 周		1.0	5	№5、11
133208	钢筋混凝土结构课程设计 Project of Reinforced Concrete Structures	必 C	2 周		2	5	№3
133220	生产实习 Construction Practice	必 C	3 周		3.0	6	№11、12、13
132134	土木工程施工课程设计 Project of Civil Engineering Construction	必 C	1 周		1.0	6	№3、11
133352	建设工程造价课程设计 Project of Construction Costs	必 C	1 周		1.0	6	№3、11
133481	工程管理工作坊（三） Workshop of Construction Management III	必 C	1 周		1.0	5	№3、11
133482	工程管理工作坊（四） Workshop of Construction Management IV	必 C	1 周		1.0	7	№4、6、7
133440	建设管理综合课程设计 Integrated Project of Construction Management	必 C	1 周		1.0	7	№6、11
133257	毕业实习 Graduation Practice (Research Report on Construction Management and Construction Market)	必 C	1 周		1.0	8	№6、12、13
133274	毕业设计（论文） Graduation Design or Thesis	必 C	15 周		15.0	8	№3、4、5、 11、12、13
133483	境外工程实践 Overseas Engineering Practice	必 C	1 周		1.0	暑假	№11、12、13

<b>合 计</b> <b>Total</b>	必 C	40 周		40.0		
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备注：1.毕业实习主要开展建设管理与建设市场调研报告；2.工程管理工作坊（一）作为工程管理 IT 技术工作坊，属于学院自行开设的 3 学分计算机类课程；3.境外工程实践针对全系学生进行。

## 五、第二课堂

第二课堂由人文素质教育和创新能力培养两部分组成。

### 1.人文素质教育基本要求

学生在取得专业教学计划规定学分的同时，还应结合自己的兴趣适当参加课外人文素质教育活动，参加活动的学分累计不少于 2 个学分。

### 2.创新能力培养基本要求

学生在取得本专业教学计划规定学分的同时，还必须参加国家创新创业训练计划或广东省创新创业训练计划或 SRP（学生研究计划）或百步梯攀登计划或一定时间的各类课外创新能力培养活动（如学科竞赛、学术讲座等），参加活动的学分累计不少于 4 个学分。

## 5.“Second Classroom” Activities

“Second Classroom” Activities are comprised of two parts, Humanities Quality Education and Innovative Ability Cultivation.

### 1)Basic Requirements of Humanities Quality Education

Besides gaining course credits listed in one’s subject teaching curriculum, a student is required to participate in extracurricular activities of Humanities Quality Education based on one’s interest, acquiring no less than two credits.

### 2)Basic Requirements of Innovative Ability Cultivation

Besides gaining course credits listed in one’s subject teaching curriculum, a student is required to participate in any one of the following activities: National Undergraduate Training Programs for Innovation and Entrepreneurship, Guangdong Undergraduate Training Programs for Innovation and Entrepreneurship, Student Research Program (SRP), One-hundred-steps Innovative Program, or any other extracurricular activities of Innovative Ability Cultivation that last a certain period of time (e.g. subject contests, academic lectures), acquiring no less than four credits.