

建筑环境与能源应用工程专业人才培养方案

Undergraduate Program for Building Environment and Energy Application

Engineering Major

学科门类：工学

代码：08

Discipline Type: Engineering

Code: 08

类别：土木类

代码：0810

Type: Construction

Code: 0810

专业名称：建筑环境与能源应用工程

代码：081002

Title of the Major: Building Environment and Energy Application Engineering Code: 081002

一、学制与学位

Length of Schooling and Degree

学制：四年

Duration: Four years

学位：工学学士

Degree: Bachelor of Engineering

二、培养目标

Educational Objectives

本专业培养具备建筑环境与能源应用工程领域扎实的基础理论，具备暖通空调工程、能源应用工程、建筑公用设备及其自动控制等方面的工程应用能力和科研开发能力，能从事建筑环境与能源应用工程领域设计咨询、研发制造、施工安装、运营管理、教学等工作，品德优良、身心健康，具有高度社会责任感，创新意识强、具有一定的国际视野和良好发展潜力，适应经济社会发展、特色鲜明的高素质专门人才。

This major is dedicated to cultivate high-quality bright professionals with solid ground of fundamental theory related to the area of building environment and energy application engineering, who have the abilities of engineering application and research & development in the areas of HVAC engineering, energy application engineering, building public equipment & automatic control, and etc., and can be qualified for the jobs such as design consultation, equipment development, engineering construction, equipment manufacture & installation, operation management, teaching and etc., and who also have the qualities of strong sense of social responsibility, sense of innovation, certain international vision, good development potential, and ability to adapt to society and economic development.

三、专业培养基本要求

Skills Profile

本专业学生主要学习建筑物理环境和环境控制系统的基础理论和基本知识，接受建筑环境与能源应用专业工程师的基本训练，并具备建筑设备及系统的设计、调试和运行管理等方面的基本能力。

This major require under-graduates to learn the basic theory and knowledge on building inside environment and its controlling system, and to take the fundamental training as an engineer for building environment and energy application engineering, and also to have the basic abilities of design, debug, operation and management for building equipment & system.

毕业生应获得以下几方面的知识和能力：

Graduates should be with the following knowledge, capability and ethics:

1.工程知识：掌握数学、自然科学、工程基础和专业知识，能够用于解决复杂建筑环境与能源应用工程领域工程问题。

1. Engineering knowledge: Master the knowledge of mathematics, natural science, engineering fundamentals and can solve the complex engineering problems in the area of building environment and energy application engineering.

2.问题分析能力：能够应用数学、自然科学和工程科学的基本原理，识别、表达并通过文献研究分析复杂工程问题，并给出合理的解决方案和措施。

2. Ability of problem analysis: Can identify, formulate, research by reviewing literature and analyze the relative complex engineering problems and provide their solutions and measures, by using first principles of mathematics, natural sciences and engineering sciences.

3.设计/开发解决方案能力：能够设计满足特定约束的系统、设备或工艺流程，具有设备开发、系统设计、技术改造的能力并能够在设计环节中体现创新意识，具有系统运行和维护能力，考虑社会、健康、安全、法律、文化、节能以及环境等因素。

3. Ability of design/ development of solutions: Can design or development, operate & maintain the relative equipment, technological processes, and systems with special specifications; have the sense of innovation during these design process, and at the same time consider the public health & safety, cultural, societal and environmental.

4.研究能力：能够基于科学原理并采用科学方法对复杂建筑环境与能源应用工程问题进行研究，包括设计实验、分析与解释数据，并通过信息综合得到合理有效的结论。

4. Investigation ability: Conduct investigations of complex problems about this major by using research-based knowledge and research methods, including design of experiments, analysis and interpretation of data, and synthesis of information to provide valid conclusions.

5.使用现代工具的能力：能够针对复杂建筑环境与能源应用工程问题，选择、使用与开发恰当的技术、资源、现代工程工具和信息技术工具，包括对复杂工程问题的模拟、仿真与预测，并能够理解其局限性。

5. Ability of modern tool usage: Create, select and apply appropriate techniques, resources and modern engineering and IT tools for the problems about this major, including modelling, simulation and prediction for complex engineering problems with an understanding of their limitations.

6.工程与社会关系的能力：能够基于工程相关背景知识进行合理分析，评价建筑环境与能源应用工程专业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。

6. Responsibility of the engineering and society: Can evaluate the impact of the professional practices of this major and its engineering solutions on the societal, health, safety, legal and cultural issues, and take the relative responsibilities.

7.环境和可持续发展理念：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。

7. Idea of the sustainability of environment and society: Can understand and evaluate the impact of the professional solution for the complex engineering problems of this major on the sustainability of environment and society.

8.职业规范素养：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。

8. Ethics & attainments: Qualify the humanity & social science attainments and the social responsibility, can observe the professional ethics and regulations, and take the relative responsibilities during the engineering practice.

9.个人和团队能力：具有能够在多学科背景下的团队中承担个体、团队成员或者负责人等角色的能力，具有较强的工作适应能力和协作精神。

9. Ability about individual and teamwork: Function effectively, with individual working ability and cooperation ability, as an individual, and as a member or leader in a work team for the interdisciplinary background.

10.沟通能力：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。

10. Communication ability: Communicate effectively with the engineering peer and society public, including comprehending and writing technical reports and design documentation, make effective presentations, and give & receive clear instructions. Have certain international vision, and the preliminary ability of communication, competition and cooperation in cross-cultural environment.

11.项目管理能力：理解并掌握建筑环境与能源应用工程管理原理与经济决策方法，并能在多学科环境中应用。

11. Abilities of project management and finance: Can apply the knowledge and understanding of engineering management principles and economic methodologies in the area of this major or cross-major environment.

12.终身学习能力：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。

12. Sense of life-long learning: Have the senses of life-long learning and the ability of independent learning for the continuous self-development.

四、学时与学分 Hours and Credits

| 类别 Category | | | 学时 Hours | 学分 Credits | 比例 Percentage | 合计 Subtotal |
|---|--------------------------------------|--|-------------|---------------|------------------|----------------|
| 理论 Theory courses | 必修课 Required courses | 公共基础教育 Public infrastructure | 564 | 29 | 23.87% | 100% |
| | | 学科门类基础 Subject category foundation | 514 | 32 | 26.34% | |
| | | 专业类基础 Major basis courses | 680 | 42.5 | 34.98% | |
| | | 专业核心 Major core courses | 288 | 18 | 14.81% | |
| | 必修课小计 Subtotal of Required course | | 2046 | 121.5 | 85.87% | 100% |
| | 选修课 Elective course | | | 20 | 14.13% | |
| | 理论课程小计 Subtotal of theory course | | | 2046 | 141.5 | 81.09% |
| 集中实践 Intensive practical training | | | | 28 | 16.05% | |
| 课外实践学分 Practical credits of extra-curricular | | | | 5 | 2.87% | |
| 总计 Total | | | | 174.5 | | |

五、专业核心课程 Main Courses

传热学 Heat Transfer Science、工程流体力学 Engineering Fluid Dynamics、工程热力学 Engineering Thermodynamics、机械设计基础 Foundation of Mechanism Design、建筑环境学 Building Environment Theory、建筑环境测试技术 Measurement of Building Environment、建筑概论 Introduction to Architecture、热质交换原理与设备 Heat and Mass Exchange Theory and Equipment、流体输配管网 Fluid Transmission and Distribution Pipe Networks、暖通空调 HVAC、空调用制冷技术 Refrigerating Technology for Air-conditioning、供热工程 Heating Engineering

六、总周数分配 Arrangement of the Total Weeks

总周数分配

Arrangement of the Total Weeks

| 学期 Semester | 一 | 二 | 三 | 四 | 五 | 六 | 七 | 八 | 合计 |
|-------------------------------|----|----|----|----|----|----|----|----|-----|
| 教学环节 Teaching Program | | | | | | | | | |
| 理论教学 Theoretic Teaching | 16 | 16 | 16 | 16 | 16 | 16 | 16 | | 112 |
| 复习考试 Review and Exam | 2 | 2 | 2 | 2 | 2 | 2 | 2 | | 11 |
| 集中进行的实践环节 Intensive Practical | 2 | 2 | 2 | 4 | 2 | 2 | 3 | 19 | 36 |
| 小计 Subtotal | 20 | 20 | 20 | 22 | 20 | 20 | 21 | 19 | 162 |
| 寒假 Winter Vacation | 5 | | 5 | | 5 | | 5 | | 20 |
| 暑假 Summer Vacation | | 6 | | 6 | | 6 | | | 18 |
| 合计 Total | 25 | 26 | 25 | 28 | 25 | 26 | 26 | 19 | 200 |

建筑环境与能源应用工程专业必修课程体系及教学计划

Table of Teaching Schedule for Required Course and Teaching Plan

| 类别 Type | 课程编号 ID | 课程名称 Course name | 学分 Credits | 总学时 Hours | 课内学时 In class hours | 实验学时 Lab hours | 上机学时 Computer hours | 课外学时 Off class hours | 开课学期 Semester | 必修 选修 Required or elective |
|--|--|--|---------------|--------------|------------------------|-------------------|------------------------|-------------------------|------------------|-------------------------------------|
| 公共基础 教育 Public basic courses | 00700972 | 中国近现代史纲要 Chinese Modern and Contemporary History Outline | 2 | 32 | 24 | | | 8 | 1 | 必修 Required |
| | 00701351 | 思想道德修养与法律基础 Ideology and Moral Cultivation & Law Basis | 3 | 48 | 32 | | | 16 | 2 | |
| | 00700981 | 毛泽东思想和中国特色社会主义理论体系概论 Mao Zedong Thought and the Theory of Building Socialism with Chinese Characters | 6 | 96 | 64 | | | 32 | 4 | |
| | 00700971 | 马克思主义基本原理 Basic Principles of Marxism | 3 | 48 | 32 | | | 16 | 2 | |
| | 00701650 | 形势与政策 Current Event and Policy | 2 | 32 | 12 | | | 20 | 1 | |
| | 01390011 | 军事理论 Military Theory | 1 | 16 | 16 | | | | 1 | |
| | 00801410 | 通用英语 English for General Purpose | 4 | 64 | 48 | | 16 | | 1 | |
| | 00801400 | 学术英语 English for Academic Purpose | 4 | 64 | 64 | | | | 2 | |
| | 01000010 | 体育（1） Physical Education (1) | 1 | 36 | 30 | | | 6 | 1 | |
| | 01000020 | 体育（2） Physical Education (2) | 1 | 36 | 30 | | | 6 | 2 | |
| | 01000030 | 体育（3） Physical Education (3) | 1 | 36 | 30 | | | 6 | 3 | |
| | 01000040 | 体育（4） Physical Education (4) | 1 | 36 | 30 | | | 6 | 4 | |
| | 公共基础教育小计 Subtotal of public basic courses | | | 29 | | | | | | |
| 学科门类 基础课 | 00900130 | 高等数学 B（1） Advanced Mathematics B(1) | 5.5 | 90 | 90 | | | | 1 | 必修 Required |

| 类别 Type | 课程编号 ID | 课程名称 Course name | 学分 Credits | 总学时 Hours | 课内学时 In class hours | 实验学时 Lab hours | 上机学时 Computer hours | 课外学时 Off class hours | 开课学期 Semester | 必修选修 Required or elective |
|-----------------------------------|---|---|---------------|--------------|------------------------|-------------------|------------------------|-------------------------|------------------|------------------------------|
| Basic courses of disciplines | 00900140 | 高等数学 B(2) Advanced Mathematics B(2) | 6 | 96 | 96 | | | | 2 | Required |
| | 00900462 | 线性代数 Linear Algebra | 3 | 48 | 48 | | | | 2 | |
| | 00900111 | 概率论与数理统计 B Probability and Mathematical Statistics B | 3.5 | 56 | 56 | | | | 3 | |
| | 00900050 | 大学物理(1) College Physics (1) | 4 | 64 | 64 | | | | 2 | |
| | 00900060 | 大学物理(2) College Physics (2) | 2.5 | 40 | 40 | | | | 3 | |
| | 00900440 | 物理实验(1) Experiments of Physics(1) | 2 | 32 | | 32 | | | 2 | |
| | 00900450 | 物理实验(2) Experiments of Physics(2) | 2 | 32 | | 32 | | | 3 | |
| | 00600200 | 高级语言程序设计(C) Advanced Language programming (C) | 3.5 | 56 | 30 | | 26 | | 2 | |
| | 学科门类基础课小计 Subtotal of basic courses of disciplines | | | 32 | | | | | | |
| 专业类基础课 The major basic courses | 00600210 | 工程图学 B(1) Engineering Drawing and Computer Aided(1) | 3.5 | 56 | 56 | | | | 1 | Required |
| | 00600220 | 工程图学 B(2) Engineering Drawing and Computer Aided(2) | 2 | 32 | 32 | | | | 2 | |
| | 00300730 | 理论力学 Theoretical Mechanics | 3 | 48 | 48 | | | | 3 | |
| | 00200130 | 电工技术基础 Fundamentals of Electro Techniques | 4 | 64 | 64 | 14 | | | 3 | |
| | 00300460 | 工程热力学 Engineering Thermodynamics | 4.5 | 72 | 72 | 6 | | | 3 | |
| | 00300110 | 材料力学 Mechanics of Materials | 3 | 48 | 48 | 6 | | | 4 | |
| | 00300610 | 机械设计基础 A Fundamentals of Machinery Design A | 4 | 64 | 64 | 6 | | | 4 | |
| | 00300440 | 工程流体力学 A Fluid Mechanics A | 4.5 | 72 | 72 | 6 | | | 4 | |

| 类别 Type | 课程编号 ID | 课程名称 Course name | 学分 Credits | 总学时 Hours | 课内学时 In class hours | 实验学时 Lab hours | 上机学时 Computer hours | 课外学时 Off class hours | 开课学期 Semester | 必修 选修 Required or elective | |
|---|--|--|---|--------------|------------------------|-------------------|------------------------|-------------------------|------------------|-------------------------------------|----------------|
| | 00500160 | 电子技术基础 B Fundamentals of Electronics B | 4 | 64 | 64 | 14 | | | 5 | | |
| | 00300160 | 传热学 Heat Transfer | 4.5 | 72 | 72 | 6 | | | 5 | | |
| | 00301930 | 建筑环境测试技术 Building Environment Test Technology | 2.5 | 40 | 40 | 2 | | | 5 | | |
| | 00400500 | 自动控制理论 B Automatic Control Theory B | 3 | 48 | 48 | | | | 6 | | |
| | 专业类基础课小计 Subtotal of major basis courses | | | 42.5 | | | | | | | |
| 专业 核心 课 Major core courses | 00300321 | 专业 必修 Major Required | 建筑概论 Introduction of Building | 2 | 32 | 32 | | | | 4 | 必修 Required |
| | 00300661 | | 建筑环境学 A Built Environment A | 3 | 48 | 48 | | | | 5 | |
| | 00300721 | | 制冷技术 Refrigerant Technology | 2 | 32 | 32 | | | | 5 | |
| | 00301960 | | 流体输配管网 Fluid Conveying & Distributing | 3 | 48 | 48 | | | | 5 | |
| | 00301300 | | 暖通空调 HAVC | 3 | 48 | 48 | | | | 6 | |
| | 00302000 | | 热质交换原理与设备 Principle and Equipment of Heat & Mass Transfer | 3 | 48 | 48 | | | | 6 | |
| | 00300511 | | 供热工程 Heating Engineering | 2 | 32 | 32 | | | | 6 | |
| | 专业核心课小计 Subtotal of major core required Courses | | | 必修 18 | | | | | | | |
| 必修课程学分小计 Subtotal of required Courses | | | 121.5 | | | | | | | | |

建筑环境与能源应用工程专业选修课程体系及教学计划

Table of Teaching Schedule for Elective Course

| 类别 Groups | 课程编号 ID | 课程名称 Course name | | 学分 Credits | 总学时 Hours | 课内学时 In class hours | 实验学时 Lab hours | 上机学时 Computer hours | 课外学时 Off class hours | 开课学期 Semester | 必修 选修 Required or elective |
|--|------------|--|---|---------------|--------------|------------------------|-------------------|------------------------|-------------------------|------------------|-------------------------------------|
| 选修课 Elective courses | 00302130 | 专业 基础 选修 Major basic elective | 建筑环境与能源应用工程专业概论 Introduction of HV&AC | 1.5 | 24 | 24 | | | | 4 | 选修 Elective |
| | 00301950 | 专业 选修 Major elective | 建筑给排水 Water-supply and Drainage Engineering | 2 | 32 | 32 | 2 | | | 6 | |
| | 00302010 | | 专业英语阅读（建环） Professional English | 2 | 32 | 32 | | | | 6 | |
| | 00400530 | | 智能建筑 Intellectual Building | 2 | 32 | 32 | | | | 5 | |
| | 00302071 | | 建筑设备施工安装技术 Building Equipment construction and | 2 | 32 | 32 | | | | 6 | |
| | 00301360 | | 建筑节能 Energy Saving in Building | 2 | 32 | 32 | | | | 7 | |
| | 00301380 | | 冰蓄冷与低温送风 Ice Thermal Storage | 2 | 32 | 32 | | | | 7 | |
| | 00301330 | | 燃气供应 Gas Supply | 2 | 32 | 32 | | | | 7 | |
| | 00302260 | | 热泵技术 Heat pump technology | 1.5 | 24 | 24 | | | | 6 | |
| | 00301940 | | 锅炉及锅炉房设备 Boiler and Relevant | 2 | 32 | 32 | | | | 7 | |
| 通识教育选修课程 General education elective courses | | | | 建议 3 | | | | | | | |
| 跨专业课程 Other major courses | | | | 建议 2 | | | | | | | |
| 研究生学位课程 Postgraduate degree courses | | | | 建议 0 | | | | | | | |
| 选修小计 Subtotal of elective courses | | | | 20 | | | | | | | |

建筑环境与能源应用工程专业集中实践环节设置及教学计划

Table of Teaching Schedule for Main Practical Training

| 类别 Type | 课序号 ID | 环节名称 Name | 学分 Credits | 周数 Weeks | 学时数 Hours | 开课学期 Semester | 必修 Required |
|--|-----------|---|---------------|-------------|--------------|------------------|----------------|
| 集中 实践 Intensi ve practic al trainin g | 01390012 | 军事实践 Military Training | 2 | 2 | | 1 | |
| | 00390160 | 公益劳动 Public Laboring | 1 | (1) | | 7 | |
| | 00390200 | 金工实习 Metalworking Practice | 2 | 2 | | 4 | |
| | 00390230 | 认识实习 Acquaintanceship Practice | 2 | 2 | | 4 | |
| | 00390570 | 流体输配管网课程设计 Fluid Conveying & Distributing Pipes Course Design | 2 | 2 | | 5 | |
| | 00390610 | HVAC 课程设计 HVAC Course Design | 2 | 2 | | 6 | |
| | 00390660 | 空调与制冷综合实验 Air Conditioning & Refrigeration Test | 2 | 2 | | 7 | |
| | 00390030 | 毕业实习 Graduation Practice | 2 | 2 | | 8 | |
| | 00390020 | 毕业设计 Graduation Thesis | 13 | 13 | | 8 | |
| 集中实践小计 Subtotal of intensive practical training | | | 28 | | | | |

建筑环境与能源应用工程专业分学期教学进程

| 第一学年 | | | | | | | | | | |
|--------|----------|------------|------|------|--------|----------|----------------------|------|------|---|
| 第一学期 | | | | | 第二学期 | | | | | |
| 课程性质 | 课程编号 | 课程名称 | 学分 | 课程类别 | 课程性质 | 课程编号 | 课程名称 | 学分 | 课程类别 | |
| 必修 | 00701651 | 形势与政策 | 2 | 理论 | 必修 | 00701351 | 思想道德修养与法律基础 | 3 | 理论 | |
| | 00700972 | 中国近现代史纲要 | 2 | | | 00900140 | 高等数学 B (2) | 6 | | |
| | 0900130 | 高等数学 B (1) | 5.5 | | | 0900462 | 线性代数 | 3 | | |
| | 00801410 | 通用英语 | 4 | | | 00900050 | 大学物理 (1) | 4 | | |
| | 00600210 | 工程图学 B (1) | 3.5 | | | 00801400 | 学术英语 | 4 | | |
| | 01000010 | 体育 (1) | 1 | | | 00600220 | 工程图学 B (2) | 2 | | |
| | 01390011 | 军事理论 | 1 | | | 00700971 | 马克思主义基本原理 | 3 | | |
| | | | | | | 01000020 | 体育 (2) | 1 | | |
| | | | | | | 00600200 | 高级语言程序设计 (C) | 3.5 | | |
| | 01390012 | 军事实践 | 2 | 实践 | | 00900440 | 物理实验 (1) | 2 | 实践 | |
| 必修学分小计 | | | 24.5 | | 必修学分小计 | | | 31.5 | | |
| 第二学年 | | | | | | | | | | |
| 第三学期 | | | | | 第四学期 | | | | | |
| 课程性质 | 课程编号 | 课程名称 | 学分 | 课程类别 | 课程性质 | 课程编号 | 课程名称 | 学分 | 课程类别 | |
| 必修 | 00900111 | 概率论与数理统计 B | 3.5 | 理论 | 必修 | 00700981 | 毛泽东思想和中国特色社会主义理论体系概论 | 6 | 理论 | |
| | 00900060 | 大学物理 (2) | 2.5 | | | 00300610 | 机械设计基础 A | 4 | | |
| | 00300730 | 理论力学 | 3 | | | 00300440 | 工程流体力学 A | 4.5 | | |
| | 01000030 | 体育 (3) | 1 | | | 00300321 | 建筑概论 | 2 | | |
| | 00200130 | 电工技术基础 | 4 | | | 00300110 | 材料力学 | 3 | | |
| | 00300460 | 工程热力学 | 4.5 | | | 01000040 | 体育 (4) | 1 | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | 00900450 | 物理实验 (2) | 2 | | | 实践 | 00390200 | 金工实习 | | 2 |
| | | | | | | 00390230 | 认识实习 | 2 | 实践 | |
| 必修学分小计 | | | 20.5 | | 必修学分小计 | | | 24.5 | | |
| 选修专业模块 | | | | | 选修专业模块 | 00302130 | 建筑环境与能源应用工程专业概论 | 1.5 | 理论 | |

| 第三学年 | | | | | | | | | |
|--------|----------|------------|-----|----------|--------|-----------|------------|-----|------|
| 第五学期 | | | | | 第六学期 | | | | |
| 课程性质 | 课程编号 | 课程名称 | 学分 | 课程类别 | 课程性质 | 课程编号 | 课程名称 | 学分 | 课程类别 |
| 必修 | 00500160 | 电子技术基础 B | 4 | 理论 | 必修 | 00400500 | 自动控制理论 B | 3 | 理论 |
| | 00300160 | 传热学 | 4.5 | | | 00301300 | 暖通空调 HVAC | 3 | |
| | 00301930 | 建筑环境测试技术 | 2.5 | | | 00302000 | 热质交换原理与设备 | 3 | |
| | 00300661 | 建筑环境学 A | 3 | | | 00300511 | 供热工程 | 2 | |
| | 00300721 | 制冷技术 | 2 | | | | | | |
| | 00301960 | 流体输配管网 | 3 | | | | | | |
| | 00390570 | 流体输配管网课程设计 | 2 | 00390610 | | HVAC 课程设计 | 2 | 实践 | |
| | | | | | | | | | |
| 必修学分小计 | | | 21 | | 必修学分小计 | | | 13 | |
| 选修专业模块 | 00400530 | 智能建筑 | 2 | | 选修专业模块 | 00301950 | 建筑给排水 | 2 | 理论 |
| | | | | | | 00302010 | 专业英语阅读（建环） | 2 | |
| | | | | | | 00302071 | 建筑设备施工安装技术 | 2 | |
| | | | | | | 00302260 | 热泵技术 | 1.5 | |
| 第四学年 | | | | | | | | | |
| 第七学期 | | | | | 第八学期 | | | | |
| 课程性质 | 课程编号 | 课程名称 | 学分 | 课程类别 | 课程性质 | 课程编号 | 课程名称 | 学分 | 课程类别 |
| | 00390660 | 空调与制冷综合实验 | 2 | 实践 | | 00390030 | 毕业实习 | 2 | 实践 |
| | 00390160 | 公益劳动 | 1 | | | 00390510 | 毕业教育 | 0 | |
| | | | | | | 00390020 | 毕业设计 | 13 | |
| | | | | | | | | | |
| 必修学分小计 | | | 3 | | 必修学分小计 | | | 15 | |
| 选修专业模块 | 00301330 | 燃气供应 | 2 | 理论 | 选修专业模块 | | | | |
| | 00301360 | 建筑节能 | 2 | | | | | | |
| | 00301380 | 冰蓄冷与低温送风 | 2 | | | | | | |
| | 00301940 | 锅炉及锅炉房设备 | 2 | | | | | | |