

环境工程专业培养方案

一、专业简介

环境工程是一门与土木建筑、化学工程、生物学、管理学和社会学等多门学科相关的交叉学科。通过评价人类生产和社会活动对环境的影响，用具体的工程、规划和管理措施，控制环境污染，促进社会、经济和环境协调发展。本专业以化学、微生物学、生态学、水文学与水文地质等知识体系奠定基础，结合我校地学特色，系统学习水、土、气、固、声等污染控制技术及地下水污染控制工程、环境监测、评价与管理等方面的基础理论和知识。

二、培养目标

本专业主要培养学生具有良好的思想品德、社会公德和职业道德，具有良好的体魄和健康的身心，达到国家规定的大学生体育和军事训练合格标准，具有可持续发展理念，具备水、土、气、声、固体废物等污染防治和给排水工程、环境规划和资源保护等方面的知识，具有进行污染控制工程的设计及运营管理能力，制定环境规划和进行环境管理的能力，以及环境工程方面的新理论、新工艺和新设备的研究和开发能力，满足注册环保工程师和注册环境影响评价工程师的工作要求。毕业生能在政府部门、设计单位、工矿企业、科研单位、学校等从事规划、设计、施工、运营、管理、教育和研究开发等方面工作。学生毕业五年左右，能成长为环境工程领域高级工程技术人才。

三、培养要求

本专业毕业生应掌握化学、工程力学和图学、微生物学、生态学与水文地质学等学科的基础理论和知识；掌握水、土、气、声、固等污染控制工程的基本原理和设计方法；具有环境监测、评价、规划与管理的初步能力；较熟练地掌握一门外语和计算机的基本操作；学会运用现代信息技术获取资料文献信息；了解学科发展动态；具有一定的设计开展实验、整理和分析实验结果、撰写论文及参与学术交流的能力。具体地，毕业生应获得以下几方面的知识和能力：

(1) 工程知识：具有解决复杂工程问题的数学、物理、化学等自然科学知识；具有解决复杂工程问题的计算机基础理论知识；具有解决复杂工程问题的专业基础知识。

(2) 问题分析：能够应用工程科学的基本原理，识别和表达科学问题，并通过中外文文献资料查询、文献检索的基本方法；了解本专业的发展动态；具有一定的实验设计，创造实验条件，归纳、整理、分析实验结果能力，能够分析复杂工程问题，以获得有效结论。

(3) 设计/开发解决方案：掌握水、土、气、声、固体废物污染防治基本原理；掌握给排水工程、环境规划和资源保护等方面的知识；掌握环境监测、评价、规划与管理的相关知识；具备环境工程方面的新理论、新工艺和新设备的研究和开发能力，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水、土、气、声、固体废物等污染问题进行研究，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；初步具备撰写论文，参与学术交流的能力。

(5) 使用现代工具：能够针对水、土、气、声、固体废物等污染问题，利用新理论、新技术对其进行有效处理；实时追踪环境监测、评价、规划与管理等方面的新理论、新思想、新举措。

(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水、土、气、声、固体废物等污染防治方案对社会、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：了解国家的可持续发展战略，及环境保护的相关法律法规；在具体工程设计中，具有环境保护意识，并考虑社会可持续发展的因素。

(8) 职业规范：具备正确的人生观、价值观和良好的人文素养；熟悉法律法规，了解环境工程相关的国家和行业标准；在工程实践中，理解并遵守工程职业道德和规范，具有工程安全意识，能够认真履行职责，具有社会责任感。

(9) 个人和团队：具备良好的个人素养，具有良好的团队合作意识和协作精神；能够在多学科背景下的团队中根据需要承担相应的责任。

(10) 沟通：能够就水、土、气、声、固体废物等污染问题的防治方案撰写设计报告、并能与同行进行沟通交流；具有外语交流能力和一定的国际视野。

(11) 项目管理：理解并掌握工程管理原理；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；能够采用合适的方法，提高自主学习能力，适应环境工程及社会发展需要的能力。

四、学制与学位

学制四年。学生修满所规定的最低毕业学分，达到培养目标规定的各项要求后，授予工学学士学位。

五、核心课程

专业核心课程：给水处理工程、水污染控制工程、土壤与地下水污染控制工程、管道工程学、大气污染控制工程、固体废物处理处置工程、环境学、环境化学、环境微生物学、水文与水文地质学、环境监测、环境评价、环境管理、环境工程设计施工管理与技术经济、物理性污染控制、环境工程专业英语。

实践课程：环境工程综合实验、建筑给排水设计、城镇给排水管网设计、泵站设计、给水处理工程课程设计、大气污染控制工程课程设计、固体废弃物处理处置工程课程设计、环境评价课程设计、北戴河地质认识实习、教学实习、测量实习、专业实习（环境工程综合实习（1））、毕业实习（环境工程综合实习（2））、毕业设计（论文）。

Undergraduate Program in Environmental Engineering

1. Major Introduction

Environmental Engineering is an interdisciplinary that involves Civil Engineering, Chemical Engineering, Biology, Management and Sociology. Aiming at protecting the environment and coordinating the development of society, the economy and the environment, Environmental Engineering applies science and engineering principles to improving the environment (air, water, and/or land resources), providing clean water, air, and land for human habitation and for other organisms, and remediating polluted sites. Environmental Engineering in CUGB integrates a strong geological background, including hydrology and hydrogeology, with chemistry, microbiology and ecology. Undergraduate students take the following specialty courses: Pollution Control Technology (Air, Water, Solid and Noise), Water and Wastewater Engineering, Groundwater Pollution Control Engineering, Environmental Monitoring and Assessment, Environmental Planning and Management together with other general courses.

2. Academic Objectives

Students should love our country, support the leadership of the Communist Party of China, love work and labor, obey the law, and have good moral, and social morality and professional ethics. Students should be both physically and mentally healthy, have the necessary military training, and meet the requirements of the national college sports and military training standards.

When completing the 4-year study, students will obtain an understanding of sustainable development and the technology related to pollution control (air, water, solid and noise), water & wastewater engineering, environmental planning and natural resources conservation. They will learn field design principles regarding pollution control, and the operating outline of projects, and will be able to initiate an environmental proposal and to manage environmental events. In addition, they will develop creativity in their research for new theories, new technologies and new equipment, and will meet the requirements of Registered Environmental Engineer and Environmental Impact Assessment Engineer, so that they will be prepared to work in government agencies, academic institutes or industries. In five years after graduation, they will grow to be senior engineers and technical personnel.

3. Academic Requirements

When completing courses including Chemistry, Engineering Mechanics and Graphics, Microbiology, Ecology, Hydrology and Hydrogeology, students will take a series of courses in Pollution Control (air, water, solid and noise), Water and Wastewater Engineering, Groundwater Pollution Control Engineering, Environmental Monitoring and Assessment, Environmental Planning and Management, together with some general courses such as a foreign language, computer science, engineering graphics, engineering design, pollution monitoring and analysis, environmental assessment, management and planning. Students are expected to be capable of beginning research and practical work in the fields of environmental technology and water supply and drainage works.

After the four-year courses, the students should acquire the following knowledge and abilities:

(1) Engineering knowledge

Students will master the basic knowledge and basic principles in mathematics, physics, chemistry and computer. They will also master the basic field work method, and will possess the knowledge reserves for solving complex engineering problems.

(2) Problem analysis

Students will be able to identify and describe scientific problems by applying the basic principles of engineering science. They will know about the development trends of the specialty by inquiring and searching Chinese and foreign literature. Students will possess the ability of experimental design, experimental result induction, arrangement and analysis. They will be able to analyze complex engineering problems and draw valid conclusions.

(3) Designing and Developing Solutions

Students will grasp the basic principles of prevention and control of water pollution, soil pollution, air pollution, noise pollution, and solid waste pollution. They will also grasp the knowledge of water supply and drainage engineering, environmental planning and resource protection. They will learn knowledge of environmental monitoring, evaluation, planning and management. They will possess the ability to do research and development of new theories, new technologies and new equipment in environmental engineering. They will design and develop solutions to resolve the complex engineering problems with the sense of innovation with considerations of society, health, safety, law, culture and the environment.

(4) Research

They will do research on pollutions of water, soil, air, noise, solid waste based on scientific principles by using scientific methods, including designing experiments, analyzing and interpreting data, and drawing reasonable and valid conclusions through information integration. They will gain the initial abilities to write academic papers and participate in academic meetings.

(5) Using modern tools

Students will be able to use new theories and new technologies for effective treatments to pollutions of water, soil, air, noise, and solid waste. They will track new theories, new ideas, and new initiatives of real-time environmental monitoring, evaluation, planning and management.

(6) Engineering and society

Students will be able to make reasonable analysis based on engineering knowledge, to evaluate the effects of engineering practice and pollution prevention schemes on society, health, safety, law, and culture, and to understand relevant responsibilities.

(7) Environment and sustainable development

Students will be able to understand and evaluate the effects of pollution prevention schemes on the environment and social sustainable development. They will understand the national sustainable development strategy, and relevant laws and regulations of environment protection. Students will develop awareness of environmental protection and social sustainable development in specific practices of engineering designing.

(8) Professional norms

Students will develop correct outlooks on life, values and the world as well as positive personal attributes. They will abide by laws and regulations. They will understand the related national and industrial standards of environmental engineering, comply with the engineering ethics and norms, and fulfill responsibilities in practice. In engineering practice, they will understand and comply with engineering ethics and norms, possess engineering safety consciousness, be responsible for their duties, and have sense of social responsibilities.

(9) Individuals and teams

Students will get to know the importance of team work as well as responsibilities and obligations of various roles through participating in practices, National College Students' innovation experiment projects, graduation projects, and thesis writing, etc. Students will develop team spirit and personal attributes to work in an inter-disciplinary team.

(10) Communication

Students will be able to communicate effectively with counterparts and the public about prevention schemes of water pollution, soil pollution, air pollution, noise pollution, and solid waste pollution by writing papers or reports, delivering speeches at conferences or talking personally. Students will master a foreign language up to the national level Four. They will acquire communication skills of the foreign language, will develop certain international visions, and will be able to communicate with professionals of different cultural backgrounds.

(11) Project management

Students will understand and master principles of engineering management and will be able to apply the principles in multi-disciplinary fields.

(12) Lifelong learning

Students will have the awareness of autonomous, lifelong learning and will have the ability to learn continuously to adapt to new developments of environment engineering and society.

4. Length of Schooling and Degree

The length of schooling is four years of full-time study. Students will be awarded the Bachelor Degree of Engineering when they have completed the required minimum credits and have met all other requirements.

5. Core Courses

Specialized Core Courses: Water Supply Treatment Engineering, Water Pollution Control Engineering, Soil and Groundwater Pollution Control Engineering, Pipeline Engineering, Air Pollution Control Engineering, Solid Waste Treatment and Disposal Engineering, Environmentology, Environmental Chemistry, Microbiology for Environmental Engineering, Hydrology and Hydrogeology, Environmental Monitoring, Environmental Assessment, Environmental Management, Environmental Engineering Design-Construction, Management and Economy-Technology, Physical Pollution Control, Specialty English for Environmental Engineering.

Practice Courses: Environmental Engineering Comprehensive Experiment, Building Water Supply and Drainage Design, Design of Municipal Mains Network, Design of Pump Station, Water Supply and Treatment Course Design, Air Pollution Control Engineering Course Design, Solid Waste Treatment and Disposal Engineering Course Design, Environmental Assessment Course Design, Geological Survey Field Trip in Beidaihe, Teaching Practice, Surveying Practice, Professional Practice (Environmental Engineering Comprehensive Practice (1)), Graduation Practice (Environmental Engineering Comprehensive Practice (2)), Graduation Design (Thesis).

六、最低毕业总学分要求及学分分配 (Minimum Required Credits and Distribution)

| 课程类别 Course Classification | 学时 Hours | 学分 Credits | 学期 Semester | | | | | | | | | | | |
|--|-------------|---------------|-------------|----|----|----|------|----|------|---|----|---|----|-------|
| | | | 1 | 2 | 2夏 | 3 | 4 | 4夏 | 5 | 6 | 6夏 | 7 | 8 | |
| 通识教育必修课程 Required Courses of General Education | 680 | 39 | 13 | 12 | | 3 | 4 | | | | | | | 2 |
| 学科基础课程 Disciplinary Fundamental Courses | 904 | 56.5 | 12.5 | 11 | | 12 | 13.5 | | 5.5 | | | 2 | | |
| 必修课 Required Courses | | | | | | | | 4 | 13 | | | 4 | | |
| 专业核心课程 Specialized Core Courses | 560 | 35 | | | | | | | | | | | 14 | 4 |
| 实践教学 Practice Courses | 38周+96学时 | 36 | | 3 | 6 | 1 | 1 | 5 | | | | 2 | 6 | 3 |
| 通识教育选修课程 Selective Courses of General Education | 256 | 16 | | | | | | | ---- | | | | | |
| 创新创业实践 Creativity and Entrepreneurship | ---- | 6 | | | | | | | | | | | | ---- |
| 选修课 Selective Courses | | | | | | | | | | | | | | |
| 最低毕业总学分 Total Credits | | | | | | | | | | | | | | 188.5 |

七、课程设置 (Curriculum)

1、通识教育必修课程 (Required Courses of General Education): 680 学时 (680 Hours), 39 学分 (39 Credits)

| 课程代码 Course Code | 课程名称 Course Name | 学时 Hours | 学分 Credits | 讲课时 Lecture | 实验学时 Experiment | 考核方式 Assessment | 开课学期 Semester | 备注 Notes |
|---------------------|--|-------------|---------------|----------------|--------------------|--------------------|------------------|-------------|
| GR181001 | 思想道德修养与法律基础 Ethics and Fundamentals of Law | 48 | 3 | 48 | | 考试 Exam | 1 | |
| GR182002 | 中国近现代史纲要 Essentials of Modern Chinese History | 32 | 2 | 32 | | 考试 Exam | 3 | |
| GR182003 | 马克思主义基本原理 Principles of Marxism | 48 | 3 | 48 | | 考试 Exam | 4 | |
| GR183004 | 毛泽东思想和中国特色社会主义理论体系概论 Introduction to Mao Zedong Thoughts and Theoretical System of the Chinese Characteristic Socialism | 64 | 4 | 64 | | 考试 Exam | 6 | |
| GR180005 | 形势与政策 Situation and Policies | 32 | 2 | 32 | | 考查 Term Paper | 1-8 | |
| GR301001 | 大学生心理素质教育 Mental Health | 16 | 1 | 16 | | 考查 Term Paper | 1 | |
| GR081001 | 大学英语 (1-2) College English (1-2) | 96 | 6 | 96 | | 考试 Exam | 1 | |
| GR081002 | 大学英语 (3-4) College English (3-4) | 96 | 6 | 96 | | 考试 Exam | 2 | |

| 课程代码 Course Code | 课程名称 Course Name | 学时 Hours | 学分 Credits | 讲课学时 Lecture | 实验学时 Experiment | 考核方式 Assessment | 开课学期 Semester | 备注 Notes |
|---------------------|---|-------------|---------------|-----------------|--------------------|--------------------|------------------|-------------|
| GR141001 | 体育 (1) Physical Education (1) | 30 | 1 | | 30 | 考试 Exam | 1 | |
| GR141002 | 体育 (2) Physical Education (2) | 30 | 1 | | 30 | 考试 Exam | 2 | |
| GR142003 | 体育 (3) Physical Education (3) | 30 | 1 | | 30 | 考试 Exam | 3 | |
| GR142004 | 体育 (4) Physical Education (4) | 30 | 1 | | 30 | 考试 Exam | 4 | |
| GR041001 | 大学计算机 College Computer | 32 | 2 | 16 | 16 | 考试 Exam | 1 | |
| GR041002 | 计算机语言程序设计 Computer Language Programming | 64 | 4 | 32 | 32 | 考试 Exam | 2 | |
| GR301002 | 大学生职业生涯规划与就业指导 (1) Career Planning and Employment Guidance for University Students (1) | 16 | 1 | 16 | | 考试 Exam | 2 | |
| GR303003 | 大学生职业生涯规划与就业指导 (2) Career Planning and Employment Guidance for University Students (2) | 16 | 1 | 16 | | 考试 Exam | 6 | |

2、学科基础课程 (Disciplinary Fundamental Courses): 904 学时 (904 hours), 56.5 学分 (56.5 Credits)

| 课程代码 Course Code | 课程名称 Course Name | 学时 Hours | 学分 Credits | 讲课时 Lecture | 实验学时 Experiment | 考核方式 Assessment | 开课学期 Semester | 备注 Notes |
|---------------------|--|-------------|---------------|----------------|--------------------|--------------------|------------------|-------------|
| DR191003 | 高等数学 B (1) Advanced Mathematics B (1) | 96 | 6 | 96 | | 考试 Exam | 1 | |
| DR191004 | 高等数学 B (2) Advanced Mathematics B (2) | 64 | 4 | 64 | | 考试 Exam | 2 | |
| DR192005 | 线性代数 Linear Algebra | 32 | 2 | 32 | | 考试 Exam | 3 | |
| DR192006 | 概率论与数理统计 Probability and Mathematics Statistics | 48 | 3 | 48 | | 考试 Exam | 4 | |
| DR191008 | 大学物理 (1) College Physics (1) | 48 | 3 | 48 | | 考试 Exam | 2 | |
| DR192009 | 大学物理 (2) College Physics (2) | 48 | 3 | 48 | | 考试 Exam | 3 | |
| DR191011 | 无机化学 Inorganic Chemistry | 48 | 3 | 48 | | 考试 Exam | 1 | |
| DR052001 | 分析化学 (环境工程类) Analytical Chemistry (For Environmental Engineering) | 32 | 2 | 32 | | 考试 Exam | 4 | |
| DR052002 | 有机化学 (环境工程类) Organic Chemistry (For Environmental Engineering) | 32 | 2 | 24 | 8 | 考试 Exam | 4 | |

| 课程代码 Course Code | 课程名称 Course Name | 学时 Hours | 学分 Credits | 讲课学时 Lecture | 实验学时 Experiment | 考核方式 Assessment | 开课学期 Semester | 备注 Notes |
|---------------------|--|-------------|---------------|-----------------|--------------------|--------------------|------------------|-------------|
| DR192017 | 物理化学 B Physical Chemistry B | 48 | 3 | 48 | | 考试 Exam | 3 | |
| DR021001 | 工程图学 Engineering Graphics | 56 | 3.5 | 48 | 8 | 考试 Exam | 1 | |
| DR042126 | 电工电子技术 A Electrical and Electronic Technology A | 64 | 4 | 64 | | 考试 Exam | 3 | |
| DR122001 | 测量学 A Surveying A | 40 | 2.5 | 24 | 16 | 考试 Exam | 4 | |
| DR021029 | 工程力学 Engineering Mechanics | 56 | 3.5 | 52 | 4 | 考试 Exam | 5 | |
| DR052003 | 化工原理 Principles of Chemical Engineering | 32 | 2 | 32 | | 考试 Exam | 4 | |
| DR052004 | 流体力学与流体机械 Hydrodynamics and Hydromachine | 32 | 2 | 32 | | 考试 Exam | 4 | |
| DR054005 | 水文地球化学 Hydrogeochemistry | 32 | 2 | 32 | | 考试 Exam | 7 | |
| DR011036 | 地球科学概论 Geosciences | 64 | 4 | 32 | 32 | 考试 Exam | 2 | |
| DR053006 | 环境生态学 Environmental Ecology | 32 | 2 | 32 | | 考试 Exam | 5 | |

3、专业核心课程 (Specialized Core Courses): 560 学时 (560 Hours), 35 学分 (35 Credits)

| 课程代码 Course Code | 课程名称 Course Name | 学时 Hours | 学分 Credits | 讲课学时 Lecture | 实验学时 Experiment | 考核方式 Assessment | 开课学期 Semester | 备注 Notes |
|---------------------|--|-------------|---------------|-----------------|--------------------|--------------------|------------------|-----------------|
| SR053014 | 给水处理工程 Water Supply Treatment Engineering | 32 | 2 | 32 | 0 | 考试 Exam | 5 | 双语 Bilingual |
| SR053015 | 水污染控制工程 Water Pollution Control Engineering | 48 | 3 | 48 | 0 | 考试 Exam | 6 | |
| SR053016 | 土壤与地下水污染控制工程 Soil and Groundwater Pollution Control Engineering | 32 | 2 | 32 | 0 | 考试 Exam | 6 | |
| SR052017 | 管道工程学 Pipeline Engineering | 32 | 2 | 32 | 0 | 考试 Exam | 4 | |
| SR053018 | 大气污染控制工程 Air Pollution Control Engineering | 32 | 2 | 32 | 0 | 考试 Exam | 6 | |
| SR054019 | 固体废物处理处置工程 Solid Waste Treatment and Disposal Engineering | 32 | 2 | 32 | 0 | 考试 Exam | 7 | |
| SR053020 | 环境学 Environmentalology | 32 | 2 | 32 | 0 | 考试 Exam | 5 | |
| SR053021 | 环境化学 Environmental Chemistry | 32 | 2 | 32 | 0 | 考试 Exam | 5 | 双语 Bilingual |
| SR053022 | 环境微生物学 Microbiology for Environmental Engineering | 32 | 2 | 32 | 0 | 考试 Exam | 6 | |

| 课程代码 Course Code | 课程名称 Course Name | 学时 Hours | 学分 Credits | 讲课时 Lecture | 实验学时 Experiment | 考核方式 Assessment | 开课学期 Semester | 备注 Notes |
|---------------------|--|-------------|---------------|----------------|--------------------|--------------------|------------------|------------------|
| SR053023 | 水文与水文地质学 Hydrology and Hydrogeology | 48 | 3 | 46 | 2 | 考试 Exam | 5 | |
| SR052024 | 环境监测 Environmental Monitoring | 32 | 2 | 32 | 0 | 考试 Exam | 4 | |
| SR054025 | 环境评价 Environmental Assessment | 32 | 2 | 32 | 0 | 考试 Exam | 7 | |
| SR053026 | 环境管理 Environmental Management | 32 | 2 | 32 | 0 | 考试 Exam | 5 | |
| SR053027 | 环境工程设计施工管理与技术经济 Environmental Engineering Design- Construction, Management and Economy-Technology | 32 | 2 | 32 | 0 | 考试 Exam | 6 | |
| SR053028 | 物理性污染控制 Physical Pollution Control | 32 | 2 | 32 | 0 | 考试 Exam | 6 | |
| SR053029 | 环境工程专业英语 Specialty English for Environmental engineering | 32 | 2 | 26 | 6 | 考试 Exam | 5 | |
| | 学科前沿课 Discipline Frontiers | 16 | 1 | 16 | | 考查 Term Paper | 6 | 全院任选 Optional |

4、实践教学 (Practice Courses): (38 周 +96 学时) (38 Weeks and 96 Hours), 36 学分 (36 Credits)

| 课程代码 Course Code | 课程名称 Course Name | 周 (学时) Weeks (Hours) | 学分 Credits | 考核方式 Assessment | 开课学期 Semester | 备注 Notes |
|---------------------|--|-------------------------|---------------|--------------------|------------------|-------------|
| PR311001 | 军事理论及训练 Military Theory and Training | 2 | 2 | 考查 Term Paper | 2 夏 | |
| PR183006 | 思想政治社会实践 Political Social Practice | 2 | 2 | 考查 Term Paper | 6 | |
| PR191045 | 实验物理 (1) Physics Experiments (1) | 24 | 1 | 考试 Exam | 2 | |
| PR192046 | 实验物理 (2) Physics Experiments (2) | 24 | 1 | 考试 Exam | 3 | |
| PR191047 | 实验化学 Chemistry Experiments | 48 | 2 | 考试 Exam | 2 | |
| PR052052 | 环境工程综合实验 (1) Environmental Engineering Comprehensive Experiment (1) | 2 | 2 | 考查 Term Paper | 3 夏 | |
| PR053053 | 环境工程综合实验 (2) Environmental Engineering Comprehensive Experiment (2) | 2 | 2 | 考查 Term Paper | 6 夏 | |
| PR052054 | 建筑给排水设计 Building Water Supply and Drainage Design | 1 | 1 | 考查 Term Paper | 4 夏 | |
| PR052055 | 城镇给排水管网设计 Design of Municipal Mains Network | 1 | 1 | 考查 Term Paper | 4 夏 | |

| 课程代码 Course Code | 课程名称 Course Name | 周(学时) Weeks (Hours) | 学分 Credits | 考核方式 Assessment | 开课学期 Semester | 备注 Notes |
|---------------------|---|------------------------|---------------|--------------------|------------------|-------------|
| PR052056 | 泵站设计 Design of Pump Station | 1 | 1 | 考查 Term Paper | 4 夏 | |
| PR053057 | 给水处理工程课程设计 Water Supply and Treatment Course Design | 2 | 2 | 考查 Term Paper | 6 夏 | |
| PR054058 | 大气污染控制工程课程设计 Air Pollution Control Engineering Course Design | 1 | 1 | 考查 Term Paper | 7 | |
| PR054059 | 固体废物处理处置工程课程设计 Solid Waste Treatment and Disposal Engineering Course Design | 1 | 1 | 考查 Term Paper | 7 | |
| PR054060 | 环境影响评价课程设计 Environmental Assessment Course Design | 1 | 1 | 考查 Term Paper | 7 | |
| PR011044 | 北戴河地质认识实习 Geological Survey Field Trip in Beidaihe | 2 | 2 | 考查 Term Paper | 2 夏 | |
| PR051061 | 教学实习 Teaching Practice | 2 | 2 | 考查 Term Paper | 2 夏 | |
| PR122059 | 测量实习 Surveying Practice | 1 | 1 | 考查 Term Paper | 4 | |
| PR053062 | 专业实习：环境工程综合实习(1) Professional Practice: Environmental Engineering Comprehensive Practice (1) | 2 | 2 | 考查 Term Paper | 6 夏 | |
| PR054063 | 毕业实习：环境工程综合实习(2) Graduation Practice: Environmental Engineering Comprehensive Practice (2) | 3 | 3 | 考查 Term Paper | 8 | |
| PR054064 | 毕业设计(论文) Graduation Design (Thesis) | 12 | 6 | 考查 Term Paper | 8 | |

5、通识教育选修课程 (Selective Courses of General Education): 16 学分 (16 Credits)

| 序号 No. | 课程名称 Course Name | | 学分 Credits | 备注 Notes |
|-----------|--|---|---------------|-------------|
| 1 | 人文社科类 (含在线课程) Humanities and Social Sciences Courses (Inc. Online Courses) | | 6 | 附件 1 |
| 2 | 自然科学类 (含在线课程) Natural Science Courses (Inc. Online Courses) | | 6 | 附件 2 |
| 3 | 创新创业类 Innovation and Entrepreneurship Courses | 专业导论课 Professional Introduction Courses | 1 | 附件 3 |
| | | 新生研讨课 Freshman Seminar | 1 | 附件 4 |
| | | 系列创业课 (含在线课程) Entrepreneurial Courses (Inc. Online Courses) | 2 | 附件 5 |

6、创新创业实践 (Innovation and Entrepreneurship): 6 学分 (6 Credits)

包括社会实践、科研训练和创新创业活动 3 大类。每位学生在校期间须完成 6 学分方可毕业。其中，社会实践 2 学分，包括志愿者、勤工俭学、暑期社会实践等；科研训练 2 学分；创新创业活动 2 学分。

创新创业活动学分的认定按照教务处相关规定执行。

Innovation and Entrepreneurship includes three categories: social practice, scientific research training, and innovation and entrepreneurship activities. Each student is required to complete 6 credits in the university before graduation. There are two credits for social practice, including working as a volunteer, having the work-study program and social practice in summer vacation, etc. There are two credits for scientific research training and two for innovation and entrepreneurship activities.

The recognition of the credits for innovation and entrepreneurship shall be implemented according to the regulations of Academic Affairs Office.