

Environmental Science and Engineering

Program Code: 082501

Duration: 4 years

Educational Objectives:

The Environmental Science and Engineering program is dedicated to cultivating high-caliber engineering and technical professionals who are equipped to support national modernization and address evolving demands in contemporary science and technology. The program aims to foster well-rounded graduates with a strong ethical foundation, intellectual prowess, physical well-being, aesthetic sensibility, and hands-on practical skills. Students will establish a robust foundation in the natural sciences and humanities. They will acquire proficient skills in computer applications and foreign languages, attain systematic mastery of theoretical knowledge in environmental science and engineering, and develop a global perspective alongside a capacity for innovation, creativity, and entrepreneurship. Graduates will be capable of undertaking responsibilities in the planning, design, construction, operation, management, scientific research, and education pertaining to environmental science and engineering projects. It is anticipated that within five years of graduation, they will assume key roles in research and development, technological innovation, or advance into senior management positions within the field.

Overview of educational objectives

(1) Acquire solid foundational knowledge: Students will master the basics of professional principles, methods and means of the major, and have the science and engineering knowledge of water, gas, solid waste and other pollution prevention, water supply and drainage engineering, environmental planning and resource protection.

(2) Problem-solving ability: Students will have the ability to design and operate pollution control engineering, develop ability of environmental planning and environmental management, as well as the ability to research and develop new theories, new processes and new equipment in environmental science and engineering.

(3) Teamwork and leadership skills: Students will develop ability to communicate and cooperate in a team, which will lead to leadership skills in the field of environmental science and engineering.

(4) Cognitive ability of engineering systems: Students will master that pollution control theory and technology are the core of environmental science and engineering system design and equipment, and apply it into practice to serve the social development.

(5) Professional social impact assessment ability: Students will be familiar with the principles, policies, laws and regulations of environmental protection and sustainable development, and be able to correctly view the impact of environmental science and engineering on the objective world and society.

(6) Global consciousness: Students will acquire the concepts of sustainable development, the ability to maintain a clear sense in a global environment, and to perform their responsibilities in a competitive and responsible manner.

(7) Lifelong learning ability: Graduates will work in government departments, planning departments, economic management departments, environmental protection departments, design units, industrial and mining enterprises, scientific research institutions, schools and other organizations, to perform work related to planning, designing, management, education and R&D with lifelong learning ability.

Graduation Requirements:

№1. Engineering Knowledge: Be able to use basic knowledge of mathematics, natural sciences, relevant engineering fundamental theories and expertise to develop solutions for complex engineering problems.

№1.1 Master the knowledge of mathematics and be able to use mathematics to describe, deal with and evaluate engineering problems, and be able to lay a solid mathematical foundation for basic engineering calculations and simulations.

№1.2 Master the knowledge of chemistry, microbiology and other natural sciences, which provides a solid basis to identify and analyze key problems involved in complex environmental engineering.

№1.3 Understand the basics of physics, mechanics, electricity, etc. in environmental science and engineering, master the engineering theories of fluid mechanics, mass transfer and separation, engineering drawing, etc., and be able to lay an engineering foundation to analyze, identify and describe the processes of equilibrium and transfer of matter and energy in complex environmental engineering problems.

№1.4 Understand the root causes, current situation and coping strategies of environmental problems, master the basics of environmental microbiology, environmental monitoring, chemical engineering principles, etc., and understand the basic theories and grounds of environmental engineering.

№1.5 Master the principles of engineering treatment of pollutants in water, gas, solid and other media, unit operations and technical means, master the basic theories of relevant majors to solve complex environmental engineering problems.

№2. Problem Analysis: Be able to use basic principles of mathematics, natural sciences and engineering sciences to identify, formulate, study and analyze complex environmental science and engineering problems for valid conclusions.

№2.1 Master the knowledge of mathematics, chemistry, microbiology and other natural sciences, be able to translate and formulate environmental science and engineering problems into problems of the corresponding field for analysis.

№2.2 Master the basic principles of environmental science and engineering, analyze complex engineering problems in the field of environmental engineering and get solutions to relevant engineering problems.

№2.3 Apply engineering basis and basic professional principles, conduct literature research, study and analyze complex science and engineering problems in the field of environment, correctly express the

solution of the problem and obtain effective conclusions.

№3. Design/Development of Solutions: Be able to design solutions for complex engineering problems, as well as systems, units or processes to meet standards and clients' needs with innovation, and take due account of factors such as society, health, safety, laws, culture and environment.

№3.1 Have basic and professional knowledge of environmental science and engineering and be able to define design objectives based on complex environmental engineering problems.

№3.2 Be able to demonstrate the feasibility of engineering projects within the constraints of public health, safety, culture and society.

№3.3 Be able to choose the optimal pollution control process through research or modeling with innovation, and perform calculations for systems and units (components).

№3.4 Be able to present design results in the form of drawings, reports, etc.

№4. Research: Be able to use research methods to study complex engineering problems and systems, including research based on knowledge, design experiments, analysis and interpretation of data, and synthesis of information to provide effective conclusions.

Be able to study complex environmental science and engineering problems based on scientific principles and scientific methods in fields related to environmental science and engineering, such as chemistry, chemical engineering, physics, and electrical engineering, including designing experiments, analyzing and interpreting data, and summarizing information to reach reasonable and valid conclusions.

№4.1 Understand the basic status quo of research and development trends in the field of environmental science and engineering at home and abroad.

№4.2 Master the basic principles and methods of experiments in physics, chemistry, microbiology and other experiments related to environmental science and engineering.

№4.3 Master the basic experimental methods of engineering treatment of pollutants in water, gas, solid and other media, consolidate the understanding of the basic theoretical knowledge of the major and improve hands-on skills.

№4.4 Be able to design experiments for the study of complex environmental science and engineering problems, collect, analyze and interpret data using reasonable means, and obtain effective conclusions in a comprehensive manner.

№5. Use of Modern Tools: Be able to develop, select, and apply appropriate technologies, resources, and modern engineering and information technology tools aiming at complex environment and engineering problems, including prediction, modeling and recognition of the limitations of complex engineering problems.

№5.1 Master the methods of literature retrieval by web searching tools, master the basic methods of data searching and use modern information technologies to obtain information related to the environmental science and engineering major.

№5.2 Select and use appropriate modern engineering tools and information technology tools for the definition of engineering problems and expression of solutions.

№5.3 Apply appropriate tools and resources to predict or simulate the operation and effectiveness of solutions to complex environmental science and engineering problems, and be able to understand their limitations.

№6. Engineering and the Society: Be able to perform sound analyses based on engineering-related background knowledge, evaluate the social, health, safety, legal, and cultural impacts of environmental science and engineering practices and solutions to complex environmental problems, and understand the responsibilities involved.

№6.1 Have internship and practical experiences related to the environmental science and engineering major.

№6.2 Be familiar with technical standards, intellectual property rights, industrial policies and laws and regulations related to the field of environmental science and engineering.

№6.3 Be able to identify, quantify, analyze and evaluate the social, health, safety, legal and cultural impacts of the development and application of environmental science and engineering technologies and processes.

№7. Sustainable Development of Society and Environment: Be able to understand and evaluate the impact of professional engineering practice for complex environmental science and engineering problems on sustainable development of society and environment.

№7.1 Understand the impact of historically significant environmental events on sustainable development of society and environment.

№7.2 Understand and evaluate the impact of professional engineering practice for complex environmental science and engineering problems on the environment.

№7.3 Master the evaluation methods of the impact of professional engineering practice for complex environmental science and engineering problems on sustainable development of society.

№8. Professional norms: Have humanities and social sciences qualities, social responsibility, be able to understand and comply with the ethics and norms of the engineering profession and fulfill the responsibilities in the practice of environmental science and engineering.

№8.1 Understand the basic significance of worldview and outlook on life and their implications.

№8.2 Understand the path of sustainable development and individual responsibility.

№8.3 Understand the broader societal context in which engineering projects are implemented.

№8.4 Cultivate a strong foundation in the humanities and social sciences.

№8.5 Maintain personal physical fitness and perseverance, foster a sense of public welfare, and improve professionalism and a sense of social responsibility.

№8.6 Participate in various professional practice activities, develop good engineering ethics and fulfill responsibilities.

№9. Individual and Collaborative Team Work: Be able to effectively play a role as an individual, member or leader against a multidisciplinary background.

№9.1 Understand the role of the individual in a multidisciplinary team and be able to collaborate with team members.

№9.2 Be able to coordinate team members in group activities and possess a certain level of leadership skills.

№10. Communication: Be able to effectively communicate and exchange complex environmental science and engineering issues with industry peers and the general public, including report and document writing, presentations, clear expression, or response to instructions, and possess a certain international perspective, be able to communicate and exchange in a cross-cultural background.

№10.1 Master a foreign language and be able to apply it against the background of environmental science and engineering.

№10.2 Be able to effectively communicate and exchange complex environmental science and engineering issues with industry peers and the general public through oral and written methods.

№10.3 Be able to communicate and exchange in a cross-cultural background, with a certain international perspective.

№10.4 Be able to express personal thoughts on current international hot issues related to environmental science and engineering profession.

№11. Project Management: Understand and master the principles of engineering management and economic decision-making methods, and be able to apply them in a multi-disciplinary environment.

№11.1 Master the basic principles and methods of engineering management.

№11.2 Master the basic theories and methods of economic decision-making in engineering.

№11.3 Be able to apply the principles of engineering management and economic decision-making methods to professional engineering practice.

№12. Continuous Lifelong Learning: Possess awareness of self-directed and lifelong learning and the ability to constantly learn and adapt to development.

№12.1 Establish the concept of the importance of lifelong learning for self-development.

№12.2 Be able to continuously conduct self-learning and self-exercise through appropriate approaches and methods.

№12.3 Be able to demonstrate the achievement through self-learning and pave the way for lifelong learning.

Educational objectives Outcomes	Objective 1	Objective 2	Objective 3	Objective 4	Objective 5	Objective 6	Objective 7
	●						

Educational objectives Outcomes	Objective 1	Objective 2	Objective 3	Objective 4	Objective 5	Objective 6	Objective 7
requirement 1							
Graduation requirement 2	●	●					
Graduation requirement 3	●	●					
Graduation requirement 4	●	●					
Graduation requirement 5	●	●					
Graduation requirement 6				●	●		
Graduation requirement 7				●	●		
Graduation requirement 8	●			●			
Graduation requirement 9			●			●	
Graduation requirement 10		●		●			
Graduation requirement 11							●

Program Profile:

The Environmental Science and Engineering program adheres to an educational philosophy that emphasizes the integrated development of knowledge, competencies, and quality, and implements a training model characterized by a “solid foundation, broad scope, and competence orientation.” The program is supported by a first-level doctoral program in Environmental Science and Engineering, a Guangdong Provincial First-Class Key Discipline, and more than ten research platforms at or above the provincial-ministerial level. These include the National Engineering Laboratory for Volatile Organic Pollutants Control Technology and Equipment, the Key Laboratory of Pollution Control and Ecological Restoration in Industrial Agglomeration Areas under the Ministry of Education, and the Guangdong Provincial Key Laboratory of Atmospheric Environment and Pollution Control.

The program is staffed by a strong academic team and supported by teaching and research laboratories

covering an area of 1,000 square meters. These facilities include specialized instructional laboratories in areas such as water pollution control engineering, air pollution control engineering, solid waste treatment and disposal, environmental engineering microbiology, physical pollution control, environmental monitoring, industrial wastewater treatment, environmental analysis, and ecological restoration. The laboratories are rationally designed and equipped with advanced instrumentation, including high-performance liquid chromatography, gas chromatography, ion chromatography, ultraviolet spectrophotometers, and atomic absorption spectrophotometers, with a total equipment value exceeding RMB 7.3 million. In addition, the program maintains 13 off-campus practice teaching bases, including the Guangzhou Development Zone Water Purification Center, Guangzhou First Thermal Resources General Plant (Likeng Waste Incineration Plant), Guangzhou Shijing Sewage Treatment Plant, and Huangpi Water Purification Plant. The curriculum is structured around two specialized modules: Environmental Science and Water Engineering. The Environmental Science module focuses on environmental science research and environmental management, while the Water Engineering module emphasizes water supply and drainage engineering. Students are admitted into the Environmental Science and Engineering program under a “1+3” training model, commencing specialized coursework in the third semester and selecting their module of study in the sixth semester.

Program Features:

1. Adopt a small-class teaching mode, pay attention to the cultivation of students' engineering practical abilities for application, with a focus on the combination of theory and practice. Enhance students' comprehensive qualities and abilities through involvement of the research topics and practical engineering projects of professional teachers, as well as practical engineering projects of professional design institutes.
2. Give full play to the close combination of disciplines and industry enterprises, and invite industry experts to participate in core courses, design courses, internships, graduation designs, and other teaching processes, promoting collaborative education.
3. Specialize in the fields of water pollution control engineering, atmospheric pollution control engineering, solid waste treatment and disposal, environmental biotechnology, and optimization operation of water supply and drainage pipeline network systems.

Degree Conferred:

Bachelor of Engineering

Core Courses:

Introduction to Environmental Science; Environmental Geology; Environmental Engineering Microbiology; Environmental Chemistry; Hydrodynamics and Heat Transfer; Mass Transfer and Separation Engineering;

Physical Pollution Control; Water Pollution Control Engineering; Solid Waste Treatment and Disposal; Atmospheric Pollution Control Engineering; Environmental Monitoring

Featured Courses:

Freshmen Seminars: Environment and Human Civilization, Development and Prospect of Water Supply and Drainage Industry

Frontier Courses: Frontier of Environmental Science and Engineering, Theory and Technology of Carbon Neutrality

Bilingual Teaching Course: Atmospheric Pollution Control Engineering

MOOC Course: Modern Environmental Analysis Techniques

School-enterprise Cooperation Course: Water Pollution Control Engineering, Atmospheric Pollution Control Engineering, Solid Waste Treatment and Disposal, Environmental Monitoring, Environmental Planning and Management, Environmental Quality Evaluation, Environmental Ecology, Environmental Engineering Microbiology, Water Quality Engineering, Building Water Supply and Drainage Engineering, Water Engineering Instrumentation and Control, Computer Data and Graphics Applications, Water Pollution Control Engineering Design, Atmospheric Pollution Control Engineering Design, Solid Waste Treatment and Disposal Design

Entrepreneurship Education Course: Environmental Protection Industry Entrepreneurship Education ("Three Ones" Course)

Labor Education Course: Production Practice

1. Registration Form of Curriculum Credits

1.1 Credits Registration Form

M. Sc. Registration Form								
Course Category	Requirement			Credits		Academic Hours		Remarks
General Education & Basic Courses	Compulsory			42.0		828		
	General Education			10.0		160		
Program Core CoursesProgram Core Courses	Compulsory			56.0		1048		
Elective Courses	Elective			14.0		224		
Total				122.0		2260		
Centralized Practice Training	Compulsory			27.0		32 weeks		
Credits Required for Graduation	122.0+27.0=149.0							
Suggested Credits for Each Semester	1	2	3	4	5	6	7	8
	18.5	23	21	21.5	25	25	4	11

Note: Students must complete the required credits of the professional teaching plan and obtain 5 credits of humanities education and 4 credits of innovation and entrepreneurship education in the Extracurricular Learning before graduation.

1.2 Category statistical table

Academic Hours			Credits			
Total	Include	Include	Total	Include	Include	Include

	Compulsory	Elective	Theory Course	Lab		Compulsory	Elective	Centralized Practice Training	Theory Course Credits	Lab	Innovation and Entrepreneurship Education
2260	1876	384	1596	664	149	125	24	27	101	21	2

Note: 1. General courses are included in the elective part;

2. Experimental teaching includes experiments, internship and others in the "Professional Teaching Schedule";

3. Innovation and entrepreneurship education credits: the courses in the training plan, identified by the Teaching Steering Committee of each School, including courses combining teaching and competition, innovative practice courses, entrepreneurship education courses and other courses with credits;

4. Compulsory hours + Elective hours = Total hours; Theoretical teaching hours + Experimental teaching hours = Total teaching hours; Required Credits + Elective credits = Total credits; Concentrated practice teaching credits + Theoretical teaching credits + Experimental teaching credits = Total scores.

2. Courses Schedule

2. Courses Schedule												
Course Category	Course No.	Course Title		C/E	Total Curriculum Hours					Credits	Semester	
					Class Hours	Theoretic al class hours	Lab Hours	Practice Hours	Other Hours			
General Education & Basic Courses	044101382	Academic English (I)	For English A class	C	48	48				3.0	1	
	044102453	Academic English (II)		C	48	48				3.0	2	
	044103681	College English (I)	For English B and C class	C	48	48				3.0	1	
	044103691	College English (II)		C	48	48				3.0	2	
	052100332	Sports (I)			C	36				36	1.0	1
	052100012	Sports (II)			C	36				36	1.0	2
	052100842	Sports (III)			C	36				36	1.0	3
	052100062	Sports (IV)			C	36				36	1.0	4
	006100111	Military theory			C	36	18			18	2.0	2
	045101644	University computer basics			C	32				32	0	1
	045102811	Python language programming			C	40	32			8	2.0	2
	040100591	Calculus I (I)			C	80	80				5.0	1
	040100662	Calculus I (II)			C	64	64				4.0	2
	040100401	Linear algebra and analytic geometry			C	48	48				3.0	1
	055101781	Probability theory and mathematical statistics			C	48	48				3.0	2
	041100582	College physics I (I)			C	48	48				3.0	2
	041101391	College physics I (II)			C	48	48				3.0	3
	041100671	College physics experiment (I)			C	32		32			1.0	2
	041101051	College physics experiment (II)			C	32		32			1.0	3
	074102163	Engineering drawing (I)			C	48	48				3.0	3
	074102173	Engineering drawing (II)			C	32	32				2.0	4
		Humanities and social sciences			General	128	128				8.0	
		Science and technology				32	32				2.0	
		Total					988	722	64		202	52.0

Note: Time spent on computer learning and practice can be included in the total hours.

2. Courses Schedule

Course Category	Course No.	Course Title	C/E	Total Curriculum Hours					Credits	Semester
				Class Hours	Theoretical class hours	Lab Hours	Practice Hours	Other Hours		
Specialty Basic Course	069100773	Introduction to environmental science	C	32	32				2.0	1
	037102522	Inorganic chemistry I	C	32	32				2.0	1
	037101622	Inorganic chemistry experiment (engineering) (I)	C	16		16			0.5	1
	037101632	Inorganic chemistry experiment (engineering) (II)	C	16		16			0.5	2
	037101791	Organic chemistry I	C	48	38				3.0	2
	037102571	Organic chemistry experiment I	C	32		32			1.0	2
	037102611	Analytical chemistry I	C	32	32				2.0	3
	037102651	Analytical chemistry experiments	C	32		32			1.0	3
	033100573	Engineering mechanics I	C	48	42	2		4	3.0	3
	069100783	Environmental engineering microbiology	C	32	32				2.0	3
	069101951	Environmental engineering for microbiology experiments	C	16		16			0.5	3
	069102281	Scientific and technological literature retrieval and paper writing	C	32	32				2.0	4
	069101851	Environmental geoscience	C	32	32				2.0	3
	069100693	Environmental chemistry	C	32	32				2.0	4
	069101971	Environmental chemistry experiment	C	16		16			0.5	4
	024100213	Electrician and electronic technology	C	64	64				4.0	4
	037101531	Physical chemistry I	C	48	48				3.0	4
	037102001	Physical chemistry experiments	C	32		32			1.0	5
	069100681	Physical pollution control	C	32	28	4			2.0	5
	069100741	Solid waste treatment and disposal	C	32	32				2.0	5
	069101961	Solid waste treatment and disposal experiment	C	16		16			0.5	5
	069101361	Environmental monitoring	C	32	32				2.0	5
	069102021	Environmental monitoring experiment	C	16		16			0.5	5
	024100141	Electrician and electronic technology experiments	C	24		24			1.0	5
	069101191	Water pollution control project	C	64	64				4.0	5
	069101941	Water pollution control engineering experiment	C	16		16			0.5	6
	037100303	Fluid mechanics and heat transfer	C	48	48				3.0	5
	037100271	Mass transfer and separation engineering	C	48	48				3.0	6
	047101721	Fluid dynamics and heat transfer experiments	C	16		16			0.5	5
	047101731	Mass transfer and separation engineering experiments	C	16		16			0.5	6
	069100321	Atmospheric pollution control project	C	48	48				3.0	6
	069102001	Atmospheric pollution control engineering experiment	C	16		16			0.5	6

	069102241	Comprehensive experiment in environmental science and engineering	C	32		32			1.0	6
	Total		C	1048	726	318		4	56.0	
Elective Courses	1. Platform elective courses									
	069101541	Science and engineering in the environment	Choose one out of three	E	16	16			1.0	1
	069101441	Environment and human civilization			16	16			1.0	1
	069102181	Development and prospect of water supply and drainage industry			16	16			1.0	1
	069101042	Environmental ecology	E		32	32			2.0	3
	069101921	Technical economics	E		32	32			2.0	3
	033100274	Metrology	E		32	26	6		2.0	4
	069100383	Hydraulics	E		48	48			3.0	4
	069100952	Civil engineering basics	E		24	24			1.5	4
	069101292	Environmental statistics	E		24	24			1.5	4
	069100651	Marine environmental protection	E		24	24			1.5	4
	069100751	Environmental economics	E		32	32			2.0	5
	069102301	Carbon neutralization theory and technology	E		16	24			1.0	6
	069100521	Environmental Science and Engineering Major in English	E		16	16			1.0	6
	069101982	Computer data and graphics applications	E		32			32	2.0	6
	069101211	Entrepreneurship education in environmental protection industry	E		16	16			1.0	6
	069102271	Environmental science and engineering frontier	E		16	16			1.0	7
	069100891	Environmental ethics	E		24	24			1.5	7
	069100352	Environmental law	E		24	24			1.5	7
	020100051	Innovative research training	E		32	32			2.0	7
	020100041	Innovative research practice I	E		32	32			2.0	7
	020100031	Innovative research practice II	E		32	32			2.0	7
	020100061	Entrepreneurship practice	E		32	32			2.0	7
	2. Module elective courses									
	A. Elective courses of the environmental science module									
	069100573	Environmental planning and management	E		32	32			2.0	6
	069100291	Environmental quality valuation	E		32	32			2.0	6
	069100331	Environmental remediation technology	E		32	32			2.0	6
	069100972	Water supply and drainage pipe network system	E		40	40			2.5	5
	069100032	Sanitary science	E		24	24			1.5	6
	069102071	Environmental nanomaterials	E		24	24			1.5	6

069101382	Environmental toxicology	E	32	32				2.0	7
069100922	Modern environmental analysis techniques	E	32	16	16			1.5	7
069101101	Environmental information system	E	24	24				1.5	7
069101391	Indoor environment detection and control	E	24	24				1.5	7
069100562	Soil environment	E	24	24				1.5	7
B. Elective course of water engineering module									
069100972	Water supply and drainage pipe network system	E	40	40				2.5	5
069100412	Pump and pump station	E	24	24				1.5	6
069102221	Water quality engineering	E	48	48				3.0	6
069102201	Water quality engineering experiment	E	16		16			0.5	6
069100712	Building water supply and drainage works	E	32	32				2.0	7
069100032	Sanitary science	E	24	24				1.5	6
069102291	Hydrology and hydrogeology	E	24	24				1.5	6
069101421	Water process and equipment basics	E	24	24				1.5	6
069102251	Engineering design, construction and management	E	32	32				2.0	6
069102211	Water engineering instrumentation and control	E	24	24				1.5	6
069100533	Water analysis chemistry	E	24	24				1.5	6
069101871	Industrial wastewater treatment process and design	E	32	32				2.0	7
069100482	Water engineering construction	E	24	24				1.5	7
069100722	Utilization and protection of water resources	E	24	24				1.5	7
Total		E	Minimum requirement for elective courses is 14.0 credits						

Note:

1. Students must choose the Environmental Science module or the Water Engineering module as the study direction. Once selected, students can only choose courses within the modules;
2. Students can apply for certain professional elective credits based on their participation in research training projects, discipline competitions, publications, patents, and independent entrepreneurship (such as innovative research training, innovation research practice I, innovation research practice II, and entrepreneurship practice). The total number of credits for professional elective courses that can be applied for by each student shall not exceed 4 credits. Projects and competitions recognized and approved by the University as elective credits will not receive corresponding innovation credits in the Extracurricular Learning.

3. Centralized Practice Training

Course No	Course Title	C/E	Total Curriculum Hours		Credits	Semester
			Practice weeks	Lecture Hours		
1. Public practice class						
069100241	Understanding of internship	C	1 week		1.0	2
030100702	Engineering training I	C	2 weeks		2.0	4
069100301	Production practice	C	2 weeks		2.0	5
023100021	Electronic process practice I	C	1 week		1.0	5

069102051	Solid waste treatment and disposal design	C	2 weeks		2.0	5
069100251	Water pollution control engineering design	C	2 weeks		2.0	5
069100841	Atmospheric pollution control engineering design	C	2 weeks		2.0	6
069101371	Graduation internship	C	2 weeks		2.0	8
069100473	Graduation project	C	15 weeks		10.0	8
2. Practice course of environmental science module						
069100862	Environmental planning practice	C	1 week		1.0	6
069101272	Environmental evaluation course design	C	1 week		1.0	7
069100113	Environmental monitoring practice	C	1 week		1.0	7
3. Practice course of water engineering module						
069101522	Water supply plant engineering design	C	1 week		1.0	6
069100183	Water supply and drainage pipeline network engineering design	C	1 week		1.0	6
069102231	Building water supply and drainage engineering design	C	1 week		1.0	7
Total		C	32 weeks		27.0	

4. “Extracurricular Learning” Activities

“Extracurricular Learning” Activities are comprised of two parts, Humanities & Social Sciences Education and Innovation & Entrepreneurship Development.

(1) Basic Requirements of Humanities & Social Sciences Education

In addition to obtaining the required credits of the professional teaching plan, students should also participate in extracurricular humanities education activities according to their interests, accumulating no less than 5 credits. Among them, the university sports teaching team offers extracurricular sports courses, which are mandatory for senior undergraduate students, corresponding to 72 hours and 1 credit, which is included in the Extracurricular Learning humanities education credits. The university mental health education course, corresponding to 2 credits, is offered in the virtual third semester and included in the Extracurricular Learning humanities education credits.

(2) Basic Requirements of Innovation & Entrepreneurship Development

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 Innovation & Entrepreneurship Development that last a certain period of time (e.g. subject contests, academic lectures), acquiring no less than four credits.