资源与环境学院

本科学分制人才培养方案

Undergraduate Program for College of Resources and Environment

(2022 级)

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资源与环境学院简介

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College of Resources and Environmental Science

The College offers four undergraduate programs (Environmental Science, Environmental Engineering, Hydrology, and Water Resources Engineering, and Resource and Environmental Science). Major Environmental Engineering was accredited of China Engineering Education Accreditation in 2021. And, both major Environmental Science and Environmental Engineering were selected as a strategic new-type (pillar) industrial talent training program for ordinary colleges and universities in Hubei Province. The College provides a doctoral program in Environmental Chemistry, a academic master's program in Environmental Science and Engineering, and a professional master's program in Resources and Environmental Engineering.

Among the full-time teachers of the college, there are 3 outstanding talents in the new century of the Ministry of Education, 1 expert with outstanding contributions from the National Ethnic Affairs Commission, 2 young and middle-aged experts with outstanding contributions from Hubei Province, and 1 teaching team from Hubei Province. The college attaches great importance to teaching and scientific researches. The College has 7,000 square meters of comprehensive laboratory building, including 18 professional teaching laboratories, among which there are Environmental Monitoring Laboratories, Hydraulics Laboratories, Environmental Engineering Laboratories, Virtual Simulation Laboratories, and an additional 400 square meters of Analysis and Testing Center, 1 Weather Station in school. The college has Hubei Province Heavy Metal Pollution Prevention and Control Engineering Technology Research Center, National Ethnic Affairs Commission Key Laboratory of Resource Transformation and Pollution Control and other research institutions. Among them, the "Key Laboratory of Carbon Waste Resource Utilization" has been approved as a national circular economy engineering laboratory.

In recent years, the college has undertaken more than 80 scientific research projects, including more than 30 national projects such as the National Science and Technology Support Program, the National Natural Science Foundation of China, and key projects, the total funds received are more than 50 million yuan. Teachers of the college have won 1 special prize for Scientific and Technological Progress of Hubei Province, 1 second prize of Science and Technology Award of the Ministry of Environmental Protection, 1 second prize and 1 third prize of Hubei Province Natural Science Award, and 5 third prizes of Hubei Province Science and Technology Progress Award. The college actively integrates into national development strategies such as the ñBelt and Road Initiativeò and the construction of the Guangdong-Hong Kong-Macao Greater Bay Area, actively expands international and domestic cooperation and exchanges, and has hosted a number of relevant international academic conferences. It has established exchanges and cooperation with universities such as the University of California, the University of Bristol in the United Kingdom, and Concordia University in Canada, and has created a brand academic exchange column - Nanhu Environmental Forum.

The college implements the fundamental task of "cultivating people with morality", optimizes the working mechanism of "three comprehensive education", takes "cultivating morality, honoring learning, nature, and harmony" as the school motto, and fully implements the

undergraduate tutor system, "moral, intellectual, physical, and beautiful". Emphasis on labor and five education, all-round training of students, there have emerged outstanding students such as the National College Student Annual Character Nomination Award, the National Self-Reliance and Self-improvement Model, the winner of the "China Telecom" scholarship, and the "upward and good" good young people in Hubei Province. The college has trained nearly 2,000 graduates, and most of them have grown into leaders and backbone talents in the fields of resource development and environmental protection in China.

专业简介

环境科学专业

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Environmental science is a discipline, seeking the interaction of the development of human society and environmental evolution, and exploring co-evolution of human society and environment as well as new ways and methods of sustainable development.

The major offers Environmental Chemistry, Modern Environmental Analysis, Environmental Monitoring, Environmental Impact and Assessment, Environmental Ecology, Environmental Toxicology, Environmental Microbiology, Environmental Engineering, Environmental Planning and Management and other professional courses, focusing on the basic training of pollutant

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四、核心课程

Core Courses

Environmental Science Environmental Chemistry Modern Environmental Analysis Environmental Monitoring Environmental Impact and Assessment Environmental Ecology Environmental Microbiology Environmental Soil Science Environmental Engineering

Environmental Plans and Management

五、主要实践性教学环节

Main Internship and Practical Training

Knowledge Acquirement Environmental Monitoring Practice

Environmental Impact and Assessment: Course Design

Factory or Graduation Practice Graduation Project (Thesis)

Experiments of Modern Environmental Analysis

Experiments of Environmental Chemistry Experiments of Environmental Microbiology Experiments of Environmental Monitoring

Experiments of Environmental Soil Science Experiments of Environmental Engineering Comprehensive Experiments

六、学时与学分

Hours/Credits

Table of Hours and Credits

<table>
<tr><th colspan="2" rowspan="2">Courses Classified</th><th rowspan="2">/
Period/Weeks</th><th colspan="2">Credits</th><th rowspan="2">Proportion of Credits</th></tr>
<tr><th>Theory</th><th>Practice</th></tr>
<tr><td rowspan="2">General Courses Platform</td><td>General Compulsory</td><td>698</td><td>27</td><td>10.5</td><td>22.1%</td></tr>
<tr><td>General Elective</td><td>192</td><td>12</td><td></td><td>7.1%</td></tr>
<tr><td rowspan="2">Basic Courses Platform</td><td>Compulsory</td><td>912</td><td>38</td><td>7</td><td>26.5%</td></tr>
<tr><td>Elective</td><td></td><td></td><td></td><td></td></tr>
<tr><td rowspan="2">Major Courses Platform</td><td>Compulsory</td><td>624</td><td>21</td><td>9</td><td>17.6%</td></tr>
<tr><td>Elective</td><td>376</td><td>20.5</td><td>1.5</td><td>12.9%</td></tr>
<tr><td rowspan="2">Practical Teaching Platform</td><td>Compulsory</td><td>18.5W</td><td></td><td>18.5</td><td rowspan="2">10.9%</td></tr>
<tr><td>Elective</td><td></td><td></td><td></td></tr>
<tr><td rowspan="2">InnovationandEntrepreneurshipPlatform</td><td colspan="2">Innovation Credits</td><td colspan="2">3</td><td rowspan="2">2.9%</td></tr>
<tr><td colspan="2">Entrepreneurship Credits</td><td colspan="2">2</td></tr>
<tr><td rowspan="2">Amount</td><td>Compulsory Credits</td><td>136</td><td>Elective Credits</td><td>34</td><td>Proportion ofElectiveCredits</td><td>20%</td></tr>
<tr><td>Theory Credits</td><td>118.5</td><td>Practice Credits</td><td>46.5</td><td>Proportion of Internship andPractical Training</td><td>25%</td></tr>
<tr><td colspan="2">The Lowest Graduate Credits</td><td colspan="4">170</td></tr>
</table>

Credits for Each Term

Creditsfor Each Term / Courses Classified		Term 1st	2nd	3rd	4th	5th	6th	7th	8th
General Courses Platform	General Compulsory	9	10	6	6	5	1	0.5	
	General Elective suggestive		2	2	2	2	2	2	
Basic Courses Platform	Compulsory	12.5	12.5	15.5	4.5				
	Elective								
Major Courses Platform	Compulsory				7.5	16.5	6		
	Elective				4		15	3	
Practical Teaching Platform	Compulsory		0.5		1	2	2	3	10
	Elective								
Amount		21.5	25	23.5	25	25.5	26	8.5	10
InnovationandEntrepreneurshipPlatform	Innovation Credits	3							
	Entrepreneurship Credits	2							
The Lowest Graduate Credits		170							

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七、教学进程计划表 / Teaching Schedule Form

/ Form : General Course Platform

A /Form I (A):General Compulsory Courses(General Required)

Course Code	Course Names	Crs.	Hrs.	Period Classified				Semester	Notes
				The.	Exp.	Pra.	Ueb		
109100000418	Military Theory	2	36	36				1	1-18
109110000318	Military Skill Training	2	36			36		1	1-2
109100000818	National Security Education	1	16	16				1	/
112110010718	Labor Education	0/1	32			32		1	1-16
20W100000613	1 English 1	2	32	32				1	4-11
218110000313	1 Physical Education 1	0/1	26			26		1	4-15
217100014918	Moral Education and Rule of Law	2.5/0.5	52	40		12		2	4-17/1-14
217100015218	Situation and Policy	2	32	16		16		2	1-16
225100000118	Education of Chinese Minzu Community Consciousness	1.5/ 0.5	36	24		12		2	1-8
20W100000713	2 English 2	2	32	32				2	1-8/ 9-16
218110000213	2 Physical Education 2	0/1	32			32		2	1-16
2171000122	Essentials of China Modern and Contemporary History	2.5/ 0.5	52	40		12		3	1-14
20W100000813	3 English 3	2	32	32				3	1-8/ 9-16
218110000413	3 Physical Education 3	0/1	32			32		3	1-16
217100012318	Basis Principles of Maxism	2.5/0.5	52	40		12		4	1-14
2171000121	Introduction to MAO Zedong Thought and Socialist Theoretical System with Chinese Characteristics	4/1	88	64		24		5	1-16
20W100000913	4 English 4	2	32	32				4	1-8/ 9-16

Form III: Major Courses Platform

Course Classified	CourseCode	Course Names	Crs.	Hrs.	Period Classified				Semester	Notes
					The.	Exp.	Pra.	Ueb		
Required Courses	2241000073	Modern Environmental Analysis	2	32	32				4	
	2241100074	Experiments of Modern Environmental Analysis	1	32	0	32			4	
	224100017918	Environmental Chemistry	3	48	48				4	
	213113018813	Experiments of Environmental Chemistry	1.5	48		48			4	
	213103022413	A Environmental Monitoring (A)	3	48	48				5	
	213113023713	A Experiments of Environmental Monitoring (A)	1.5	48		48			5	
	213103016013	Environmental Soil Science	2	32	32				5	
	213113031313	Experiments of Environmental Soil Science	1	32		32			5	
	224100018018	A Environmental Engineering (A)	4	64	64				5	
	224110022518	Experiments of Environmental Engineering	2	64		64			5	
	224100018118	A Environmental Ecology (A)	3	48	48				5	
	224100003213	Environmental Impact and Assessment	2	32	32				6	
	213103029713	Environmental Plans and Management	2	32	32				6	
	224110004113	Comprehensive Experiments	2	64		64			6	
Elective courses	224100022818	Methods of Environmental Data Analysis	1.5/0.5	40	24	16			4	22 4 15 3
	2241000124	Physical Pollution Control	2	32	32				4	
	224100014918	Disposal and Reuse of Solid Waste	2	32	32				6	
	213103022013	Environmental Toxicology	2	32	32				6	
	213103020913	Pre-treating Methods for Environmental Samples	1.5	24	24				6	
	224101006013	Cleaner Production and Circular Economy	1.5	24	24				6	

Course Classified	CourseCode	Course Names	Crs.	Hrs.	Period Classified				Semester	Notes
					The.	Exp.	Pra.	Ueb		
Elective courses	213103022613	Specialized English	1.5	24	24				6	
	224100022618	Environmental nanomaterials	2	32	32				6	
	213103030113	B Geographic Information System B	2/0.5	48	32	16			6	
	213103017313	Protection of Water Environment	2	32	32				6	
	213103018913	Pollution Control Microbiology Engineering	1.5	24	24				6	
	213103019313	Environmental Information Systems	1.5	24	24				6	
	213103021713	Environmental Economy	1.5	24	24				6	
	224100022418	Environmental Laws	2	32	32				6	
	224100001413	Regional Ecological Environmental Quality Assessment and Ecological Function Regionalization	1.5	24	24				7	
	224100019618	Environmental Monitoring Instruments and Application	1.5	24	24				7	
	213103014813	Water and Soil Conservation	1.5	24	24				7	

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Form V: Innovation &Entrepreneurship Platform

Course Classified		Crs.
Innovation Credits		3
Entrepreneurship Credits		2
Amount	5	

环境工程　Î`Á(m•

Undergraduate Program for Environmental Engineering

一、培养目标

Educational Objectives

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1.4 Able to use the professional knowledge of water, air, solid and physical contamination control to the design, systematic control and improvement.

2) Problem Analysis: Able to apply the rationales, knowledge and references of mathematics, natural science and environmental engineering to recognize, explain and analyze for requiring effective conclusions;

2.1 Able to use the rationales and professional knowledge of mathematics, natural science and environmental engineering to recognize complex problems of environmental engineering;

2.2 Able to use the concepts, rationales and methods of mathematics, natural science and environmental engineering to analyze and explain the key links and parameters of environmental pollution prevention and control projects;

2.3 Able to use the basic theory and knowledge of environmental engineering as well as references to analyze the factors and related technologies in the process of environmental pollution prevention and make effective conclusions.

3) Designing/developing solutions: Able to use the rationales and methods of water pollution control, air pollution control as well as treatment, disposal and recycling of solid waste to develop and design the technological process and treatment units;

3.1 Able to put forward solutions of complex problems of environmental engineering according to characterizations and prevention requirements of environmental pollution;

3.2 Familiarize and grasp the technical standards, intellectual properties as well as policies and regulations of industry and can do feasibility studies to designing schemes through techno-economic appraisal under the constraint condition of reality;

3.3 Able to design the technology system of pollution control and treatment units, take the factors of society, health, security, law and culture into the design, reflect the sense of innovation and then optimize the design scheme.

4) Research: Able to use the scientific methods and treatments based on principles of environmental engineering to forecast and analyze the problems in technologies of environmental pollution treatments and engineering and provide proper conclusion for solving the complex engineering problems in the practices of environmental pollution treatments;

4.1 Grasp modern analytical method, can recognize the constraint conditions in the complex engineering problems and analyze the basic characterizations of research objects;

4.2 Able to choose proper research routes and design feasible research projects based on professional theories of environmental engineering as well as the characterizations of polluted objects;

4.3 Able to collect and clear up the research data correctly, analyze and deal with the research

results and obtain the proper conclusions.

5) Usage of modern tools: Able to develop, choose and use correct technologies and tools of computer aided design in the area of environmental engineering, expertly use modern analytical instruments and able to forecast, simulate and optimize complex engineering problems in the practices of environmental pollution prevention;

5.1 Able to choose, use and develop correct modern tools such as the computer language programs and software of computer aided design;

5.2 Able to use modern analytical instruments, forecast, simulate and evaluate complex engineering problems, and make clear the boundedness of methods.

6) Engineering and society: Able to solve complex engineering problems based on background knowledge of environmental engineering while simultaneously analyze and evaluate the influences of designing project to society, health, safety, law and culture and understand the responsibility;

6.1 Have practice experiences of environmental engineering and senses of engineering and society;

6.2 Be familiar with the relevant technical regulations, laws and ethnic regional policies in the area of environmental engineering, able to evaluate the influences to society, health, security, law and culture in the process of prevention for environmental pollutions, and understand the responsibilities in the process of prevention for environmental pollutions.

7) Environment and sustainable development: able to understand and evaluate the influences of engineering practices of environmental pollutions prevention to the sustainable progress of environment and society;

7.1 Understand the connotation and meaning of environmental protection and sustainable development of society and know the relevant policies and laws of environmental protection well;

7.2 Able to correctly understand and evaluate the impacts of engineering practices on sustainable development of environment and society in the process of production, operation and maintenance for environmental pollution prevention and control project.

8) Professional norms: have the literacy of humanity and social science as well as responsibility for society, able to understand and comply with the professional ethics and regulations in projects and fulfill the duty;

8.1 Have the scientific world outlook, correct view of life, values and patriotism and have the literacy of humanity and social science as well as responsibility for society;

8.2 understand the core idea of engineering ethics, be familiar with the profession and responsibility of environmental engineer, can comply with the professional ethics and regulations

in projects and fulfill the duty.

9) Individuals and teams: have the team spirit in the multi-disciplinary teams of science research, engineering design and practices, ability for organization, management and coordination as well as the adaptive capacities for different roles in the work;

9.1 Able to undertake the roles in the multi-disciplinary teams, Listen to different opinions, have certain ability of organization and management, able to sum up the conclusions of team members and make a proper decision;

9.2 Have strong team work and interpersonal skills, can communicate with other members effectively and properly deal with internal and external relationships of the organization.

10) Communication: have great writing and communicating skills, debate competences, listening skills, application ability for language, able to effectively communicate with industry peers and publics for complex engineering problems, have a certain international vision and able to communicate in a cross-cultural context;

10.1 Have good abilities for writing, communicating and listening;

10.2 Able to express ideas and opinions orally or in writing and effectively communicate with industry peers and publics for complex engineering problems;

10.3 Able to study the international developments of environmental engineering and relevant areas and can have a communication in a cross-cultural context.

11) Project management: able to understand and grasp the principles of engineering management and methods of economic decision and apply the professional knowledge of environmental engineering into the design, operation and management of projects for prevention of environmental pollutions;

11.1 Understand and grasp the principles of engineering management and methods of economic decision in the practices of environmental projects;

11.2 Able to apply the principles of engineering management and methods of economic decision to the design, operation and management of projects for prevention of environmental pollutions.

12) Lifelong learning: have the sense of independent study and lifelong learning as well as the ability for self-improvement and adaptive development;

12.1 Able to realize the necessity of continuous discovery and study as well as the senses of independent study and lifelong learning;

12.2 Grasp the methods of independent study and pathway to expand knowledge and improve ability as well as the ability for self-improvement.

毕业要求实现矩阵

Graduation requirement realization matrix

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		1.1	1.2	1.3	1.4	2.1	2.2	2.3	3.1	3.2	3.3	4.1	4.2	4.3	5.1	5.2	6.1	6.2	7.1	7.2	8.1	8.2	9.1	9.2	10.1	10.2	10.3	11.1	11.2	12.1	12.2
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四、核心课程

Core Courses

Microbiology of Environmental Engineering B Environmental Monitoring B Environmental Engineering Principle Physical Pollution Control Engineering Air Pollution Control Engineering A1 Water Pollution Control Project (A1) Environmental Planning and Management A2 Water Pollution Control Project (A2) Solid Waste Treatment and Disposal Environmental Impact Assessment.

五、主要实践性教学环节

Main Internship and Practical Training

Principle Experiments of Environmental Engineering Experiments of Environmental Monitoring Experiments of Environmental Engineering Microbiology Experiments of Water Pollution Control Engineering Experiments of Solid Waste Treatment and Disposal Course Design of Environmental Engineering Principles Course Design of Air Pollution Control Engineering Course Design of Water Pollution Control Engineering Course Design of Treatment and Disposal of Solid Wastes Engineering Surveying Practice Metalworking Practice Cognition Practice Production Practice Graduation Practice Graduation Design (Thesis)

六、学时与学分

Hours/Credits

Table of Hours and Credits

Courses Classified				**/ Period/Weeks**	**Credits**		**Proportion of Credits**
					Theory	**Practice**	
General Courses Platform	General Compulsory			698	27	10.5	22.06%
	General Elective			192	12		7.06%
Basic Courses Platform	Compulsory			1064	46.5	10	33.24%
	Elective						
Major Courses Platform	Compulsory			616	26.5	6	19.12%
	Elective			96	6.0		3.53%
Practical Teaching Platform	Compulsory			20.5W		20.5	12.06%
	Elective						
InnovationandEntrepreneurshipPlatform	Innovation Credits				3		2.94%
	Entrepreneurship Credits				2		
Amount	Compulsory Credits	152	Elective Credits	18	Proportion ofElectiveCredits		10.59%
	Theory Credits	118	Practice Credits	47	Proportion of Internship andPractical Training		25.29%
The Lowest Graduate Credits				**170**			

Credits for Each Term

Courses Classified \ Creditsfor Each Term		Term							
		1st	**2nd**	**3rd**	**4th**	**5th**	**6th**	**7th**	**8th**
General Courses Platform	General Compulsory	9	10	6	6	5	**1**	0.5	
	General Elective suggestive		4	5	3				
Basic Courses Platform	Compulsory	12.5	12.5	16	14	1.5			
	Elective								
Major Courses Platform	Compulsory					16.5	14	2.0	
	Elective				1.5		3	1.5	
Practical Teaching Platform	Compulsory		0.5		2	2	2	2	12
	Elective								
Amount		26.5	27	27	26.5	25	20	6.0	12
InnovationandEntrepreneurshipPlatform	Innovation Credits	3							
	Entrepreneurship Credits	2							
The Lowest Graduate Credits		**170**							

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七、教学进程计划表 / **Teaching Schedule Form**

/ Form : General Course Platform

A /Form I (A):General Compulsory Courses(General Required)

Course Code	Course Names	Crs.	Hrs.	Period Classified				Semester	Notes
				The.	Exp.	Pra.	Ueb		
109100000418	Military Theory	2	36	36				1	1-18
109110000318	Military Skill Training	2	36			36		1	1-2
109100000818	National Security Education	1	16	16				1	/
112110010718	Labor Education	0/1	32			32		1	1-16
20W100000613	1 English 1	2	32	32				1	4-11
218110000313	1 Physical Education 1	0/1	26			26		1	4-15
217100014918	Moral Education and Rule of Law	2.5/0.5	52	40		12		2	1-14
217100015218	Situation and Policy	2	32	32				2	1-16
225100000118	Education of Chinese Minzu Community Consciousness	1.5/ 0.5	36	24		12		2	1-8
20W100000713	2 English 2	2	32	32				2	1-8/ 9-16
218110000213	2 Physical Education 2	0/1	32			32		2	1-16
2171000122	Essentials of China Modern and Contemporary History	2.5/ 0.5	52	40		12		3	1-14
20W100000813	3 English 3	2	32	32				3	1-8/ 9-16
218110000413	3 Physical Education 3	0/1	32			32		3	1-16
217100012318	Basis Principles of Maxism	2.5/0.5	52	40		12		4	1-14

2171000121	Introduction to MAO Zedong Thought and Socialist Theoretical System with Chinese Characteristics	4/1	88	64		24		5	1-16
20W100000913	4 English 4	2	32	32				4	1-8/ 9-16
218110000113	4 Physical Education 4	0/1	32			32		4	1-16
218110012718		0/0.5	0			0		7	1-16
115100000113	Employment Guidance	1	16	16				6	1-8/ 9-16
: 37.5 Demand of Credits:Credits: 37.5									

20W100000813 3 20W100000913 4 20W100001018

20W100001318 20W100001518 20W100001818

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B /Form I (B): General Elective Courses

Module	Crs.
Psychological Health and Safety	2
Humanistic Accomplishment and Writing	2
Art Appreciation and Aesthetics	2
Science and Technology & Science Popularization	2
Contemporary China and the World	2
Chinese Culture and Civilization	1
Exercise and Health	1

Form II. Basic Course Platform

Course Classified	Numbers of courses	Course Names	Crs.	Hrs.	Period Classification				Semester	Notes
					The.	Exp.	Pra..	Ueb		
Require Basic Courses	213100035618	Inorganic Chemistry	3	48	48				1	
	213110035818	Inorganic Chemistry Experiments	/0.5	16		16			1	
	213103005213	Analytical Chemistry	2	32	32				1	
	213110036418	Analytical Chemistry Experiments	1	32		32			1	
	2101000113	A(1) Higher Mathematics A (1)	4	80	64			16	1	
	2101000118	Linear Algebra	2	48	32			16	1	
	224100000913	& Descriptive Geometry & Engineering Drawing	2	32	32				2	
	210102000413	A(2) Higher Mathematics A (2)	5	96	80			16	2	
	211100011118	B(1) College Physics B (1)	3	56	48			8	2	
	211112000113	B(1) University Physics B(1) Experiments	0.5	16		16			2	
	2241000067	Engineering Surveying	2	32	32				2	
	2101000112	Probability Theory and Mathematical StosBC tsTcb								

七、教学进程计划表 /VII Teaching Schedule Form

/ Form I:General Course Platform

A /Form I (A):General Compulsory Courses (General Required)

Course Code	Course Names	Crs.	Hrs.	Period Classification				Semester	Notes
				The.	Exp.	Pra..	Ueb		
109100000418	Military Theory	2	36	36				1	1-18
109110000318	Military Skills Training	0/2	36			36		1	1-2
109100000818	National Security Education	1	16	16				1	/
112110010718	Labor Education	0/1	32			32		1	1-16
20W100000613	1 English 1	2	32	32				1	4-11
218110000313	1 Physical Education 1	0/1	26			26		1	4-15
217100014918	Moral Education and Rule of Law	2.5/0.5	52	40		12		2	4-17/1-14
217100015218	Situation and Policy	2	32	32				2	1-16
225100000118	Education of Chinese Minzu Community Consciousness	1.5/0.5	36	24		12		2	1-8
20W100000713	2 English 2	2	32	32				2	1-8/9-16
218110000213	2 Physical Education 2	0/1	32			32		2	1-16
2171000122	Essentials of China Modern and Contemporary History	2.5/0.5	52	40		12		3	1-14
20W100000813	3 English 3	2	32	32				3	1-8/9-16
218110000413	3 Physical Education 3	0/1	32			32		3	1-16

Course Code	Course Names	Crs.	Hrs.	Period Classification				Semester	Notes
				The.	Exp.	Pra..	Ueb		
217100012318	Marxist Fundamentals	2.5/0.5	52	40		12		4	1-14
20W100000913	4 English 4	2	32	32				4	1-8/9-16
218110000113	4 Physical Education 4	0/1	32			32		4	1-16
2171000121	Introduction to MAO Zedong Thought and Socialist Theoretical System with Chinese Characteristics	4/1	88	64		24		5	1-16
115100000113	Employment Guidance	1	16	16				6	1-8/9-16
218110012718		0/0.5	16			16		7	1-16
: 37.5 Demand of Credits: Credits: 37.5									

20W100000813 3 20W100000913 4 20W100001018

20W100001318 20W100001518

20W100001818 3,4 4

B /Form I (B): General Elective Courses

Module	Crs.
Psychological Health and Safety	2
Humanistic Accomplishment and Writing	2
Art Appreciation and Aesthetics	2
Science and Technology & Science Popularization	2

Module	Crs.
Contemporary China and the World	2
Chinese Culture and Civilization	1
Exercise and Health	1

Form II. Basic Course Platform

Course Classified	Numbers of courses	Course Names	Crs.	Hrs.	Period Classification				Semester	Notes
					The.	Exp.	Pra.	Ueb		
Require Basic Courses	213100035618	B Z Inorganic Chemistry (B) Z	3	48	48				1	
	213110035818	C Inorganic Chemistry Experiments (C)	0/0.5	16		16			1	
	213103005213	B Analytical Chemistry (B)	2	32	32				1	
	213110036418	B Analytical Chemistry Experiments (B)	0/1	32		32			1	
	2101000113	A(1) Higher Mathematics A (1)	4	80	64			16	1	
	2101000118	Linear Algebra	2	48	32			16	1	
	210102000413	A(2) Higher Mathematics A (2)	5	96	80			16	2	
	211100011118	B(1) College Physics B (1)	3	56	48			8	2	
	211112000113	B(1) University Physics B(1) Experiments	0/0.5	16		16			2	
	2241000067	Engineering Surveying	2	32	32				2	
	224100000913	& Descriptive Geometry & Engineering Drawing	2	32	32				2	
	2101000112	Probability Theory and Mathematical Statistics	2.5	56	40			16	3	
	211100011218	B(2) College Physics B (2)	2	40	32			8	3	
	211112000213	B(2) University Physics B(2) Experiments	0/0.5	16		16			3	
	213100035218	C Organic Chemistry (C)	3	48	48				3	
	213110036118	B Organic Chemistry Experiments (B)	0/1	32		32			3	
	213100034518	B Physical chemistry (B)	3.5	56	56				3	

Course Classi-fied	Numbers of courses	Course Names	Crs.	Hrs.	Period Classification				Semester	Notes
					The.	Exp.	Pra.	Ueb		
Require Basic Courses	213110034618	Physical Chemistry Experiments	0/1	32		32			3	
	212100018318	Electronic Engineering	2	32	32				3	
	2241100071	Electronics and Electrotechnics Experiments	0/0.5	16		16			3	
	224100014318	CAD Chemical CAD	1	16	16				3	
	224110014418	CAD Experiments of Chemical CAD	0/1.5	48			48		3	
	2241000073	Modern Environmental Analysis	2	32	32				4	
	2241100074	Experiments of Modern Environmental Analysis	0/1	32		32			4	
	209100030818	Python Python Language Programming	1/1	48	16		32		4	
Demand of Credits:			: 48.5 Credits: 48.5			48.5 Required: 48.5		0 Elective: 0		

Form III: Major Courses Platform

Course Classified	Course Code	Course Names	Crs.	Hrs.	Period Classification				Semester	Notes
					The.	Exp.	Pra.	Ueb		
Required Courses	224100013818	Chemical Engineering A1	3	48	48				4	
	224110014018	Experiments of Chemical Engineering A1	0/1	32		32			4	
	224100019818	Chemical Reaction Engineering	2	32	32				4	
	224100019918	Ore Science	1.5	24	24				4	
	224100020818	Resource Microbiology	2	32	32				4	
	224110015318	Experiments of Resource Microbiology	0/1	32		32			4	
	224100013918	Chemical Engineering A2	3	48	48				5	
	224110014118	Experiments of Chemical Engineering A2	0/1	32		32			5	
	224100014518	Resource Processing Process and Equipment	3	48	48				5	
	224110014618	Experiments of Resource Processing Process and Equipment	0/1	32		32			5	
	224100014718	Chemical Engineering Thermodynamics	3	48	48				5	
	224100014818	Metallurgical Principle	3	48	48				5	
	224100014918	Disposal and Reuse of Solid Waste	2	32	32				6	
	224110015018	Experiments of Disposal and Reuse of Solid Waste	0/1	32		32			6	

Course Classi-fied	Course Code	Course Names	Crs.	Hrs.	Period Classification				Semester	Notes
					The.	Exp.	Pra.	Ueb		
Required Courses	224100015118	B Environmental Engineering	2	32	32				6	
	213113019613	Experiments of Environmental Engineering	0/1	32		32			6	
	224100015418	Separation Engineering	2	32	32				6	
	224101006013	Clean Production and Recycling Economy	1.5	24	24				6	
Elective courses	213103021513	B Environmental Monitoring (B)	2	32	32				5	9.5
	224100019518	Professional English for Resource Recycling Science and Engineering	1.5	24	24				6	
	213103029713	Environmental Plans and Management	2	32	32				6	
	224100018318	Biochemistry	2	32	32				6	5
	224100015718	Solid Waste Disposal and Ecological Materials	1.5	24	24				6	2 6
	224100015818	Fundamental Chemical Process Equipment	2	32	32				6	5.5
	224100021018	Remote Sensing Technology and Application	2	32	32				6	7 2
	224100015918	Crystallography and Industrial Crystallization	2	32	32				6	
	224100015518	Chemical Safety and Environmental Protection	2	32	32				6	
	224100022118	Literature Retrieval and Scientific Paper Writing	0.5/0.5	24	8	16			7	

Course Classi-fied	Course Code	Course Names	Crs.	Hrs.	Period Classification				Semester	Notes
					The.	Exp.	Pra.	Ueb		
Elective courses	2241000095	Application of Computer in Resource Circulation Science and Engineering	2	32	32				7	
	224100020918	Ecology	2	32	32				7	
	224100016118	Resource Recycling Processing Plant Design	1.5	24	24				7	
	224100016218	Chemical technology	2	32	32				7	
	224100016318	Biochemical Separation Engineering	1.5	24	24				7	

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CAD	M				H							
	H	M	L	L								
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