

Program Handbook for Network Engineering

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1. Basic Information of the Program

College: School of Information Engineering	Industry College: Network College
Discipline Category: Engineering	Specialty Category: Computer
Program Name: Network Engineering	Program Code: 080903
Program Duration: Four Years	Degree Awarded: Bachelor of Engineering
CN Credits: 166	Total Contact Hours: 2896
ECTS: 198	Workload: 5544

2. Program Objectives

This program adopts the "Four Teachings and Four Achievements" educational framework to cultivate high-quality, application-oriented professionals with "HengXing five excellences" (Good moral character, Strong academic ability, Fine technology, Practical diligence and Internationalization), who embrace the core values of socialism and meet the demands of socialist modernization. (The Four Teachings refer to Ideological and Political Education, General Education, Professional Education, and Innovation and Entrepreneurship Education; the Four Achievements encompass Education for Adulthood, Growth, Talent Development, and Success.) These graduates are expected to attain well-rounded development in morality, intellectual ability, physical health, aesthetic appreciation, and labor skills, master the basic theories, knowledge and skills related to network engineering technology and network system management and maintenance, get basic training for network engineers and strong capabilities with network system design, implementation, management and maintenance, as well as good practical ability, innovation ability and teamwork ability, and they are able to engage in network planning, construction, operation and maintenance management in the field of information and communication.

2.1 The Intended Learning Outcomes (Graduation requirements)

The intended learning outcomes are the criteria for talent development, a concrete representation of the program objectives, and the foundation for designing and structuring teaching content and the curriculum system. They also serve as the basis for developing teaching plans and curriculum standards, organizing instruction, assessing and evaluating educational quality. Aligned

with the program objectives, graduates are expected to achieve the following intended learning results, closely tied to their employability.

R1 Engineering knowledge: Able to apply mathematics, natural science, engineering foundation and professional knowledge to solve problems in network engineering and related fields.

a) Demonstrate an understanding of mathematics and natural science and apply them to solve problems in network engineering and related fields;

b) Acquire foundational knowledge of computer network planning and design, network system development, network operation management and maintenance, and apply it to solve problems in network engineering and related fields;

c) Develop professional knowledge of network engineering, and apply it to solve engineering problems such as network engineering analysis and overall optimization in network engineering projects.

R2 Problem Analysis: Be able to apply the basic principles of mathematics, natural science and engineering science to identify, articulate, and analyze the problems in network engineering and related fields through literature research to obtain effective conclusions.

a) Be able to apply the basic principles of mathematics, natural science and engineering science to identify and judge problems in network engineering and related fields;

b) Be able to correctly express the problems in network engineering and related fields by applying the basic principles of mathematics, natural science and engineering science;

c) Be able to analyze complex problems in network engineering and related fields through literature research and professional collaboration, and get effective and reasonable conclusions.

R3 Design/Development Solutions: Be able to plan, design and propose solutions for engineering problems and economic problems, and consider social, health, safety, legal, cultural and environmental factors in the planning and design process to reflect the sense of innovation.

a) In view of engineering problems and economic problems, be able to make use of professional knowledge in network engineering and related fields, comprehensively consider social, health, safety, legal, cultural and other factors for scheme design, structural analysis, planning, etc., and fully reflect the sense of innovation;

b) Be able to use information technology to establish the ability of network engineering, solve the problems related to network engineering by computer, optimize resources, compare and choose

schemes and solve them.

R4 Research: Based on scientific principles and scientific methods, we can study problems in network engineering and related fields, mainly including collecting data, obtaining data, designing schemes, analyzing and interpreting data, and getting reasonable and effective conclusions through information synthesis and applying them to engineering practice.

a) According to the theoretical knowledge of network engineering and related disciplines, through theoretical analysis, literature research and related methods, the problems in network engineering and related fields can be investigated, and basic information and data can be collected by reasonable methods;

b) Be able to consider the multiple influencing factors and management objectives of problems in network engineering and related fields, use scientific principles and methods for data analysis and processing, and design concrete and feasible research schemes;

c) Be able to implement the specific research scheme and engineering practice, and make reasonable explanations according to the problems in the implementation process and scientific objectives, and get reasonable and effective conclusions and apply them to engineering practice.

R5 Use Modern Tools: Be able to develop, select and use appropriate technologies, resources, modern engineering tools and information technology tools for practical problems, including prediction and simulation of practical problems, and understand their limitations.

a) In view of the problems in network engineering and related fields, we can use modern information technology such as various search tools and professional software to carry out literature retrieval and information inquiry of this major;

b) Be able to develop or adopt suitable technologies, modern information tools and resources to predict and simulate problems in network engineering and related fields, while recognizing their limitations.

R6 Engineering and Sustainable Development: When solving problems, we can reasonably analyze and evaluate the design, construction and operation scheme of the project based on the background knowledge, standards and norms related to network engineering, including its impact on society, health, safety, law and social sustainable development, and understand the responsibilities we should bear.

a) According to the background knowledge, standards and specifications of network engineering

specialty, we can reasonably analyze and evaluate the design, construction and operation scheme of the project, and judge the impact of the use of new materials, new processes, new technologies and new methods;

b) Be able to analyze and evaluate the impact of practical activities in the field of network engineering on society, health, safety, law and culture, so as to understand the responsibilities that should be undertaken;

c) Be able to understand the national sustainable development strategy in environmental and social aspects, as well as policies, laws and regulations related to environmental and social sustainable development, and have awareness of environmental protection and sustainable development;

d) Be able to understand the impact of network engineering and related field practice on sustainable development, adopt scientific evaluation methods to analyze the impact of engineering practice on environmental and social sustainable development in network engineering and related field practice, and run the concept of sustainable development through engineering practice.

R7 Ethic and Professional Norms: Be with the literacy of humanities and social sciences and a sense of social responsibility, be able to understand and abide by the engineering professional ethics and norms in the practice of network engineering and related fields, and fulfill responsibilities.

a) Establish a correct world outlook, outlook on life and values, have good professional ethics and professionalism, and have a strong sense of collective honor and the spirit of unity and cooperation;

b) Be able to understand the professional nature and professional responsibility of network engineering professionals in the practice of network engineering and related fields, pay attention to professional ethics cultivation, abide by professional ethics and fulfill their responsibilities.

R8 Individual and Teams: Be able to assume the roles of individuals, team members and leaders in a multidisciplinary team.

a) Understand the meaning of teamwork, have a sense of teamwork, and be able to assume the roles of individual, team member and person in charge in the implementation of network engineering and related field practice;

b) Be able to play its due role in a multi-disciplinary background team according to the role requirements, organize and coordinate the work of team members, and coordinate the relationship

with other disciplines to jointly solve problems in network engineering and related fields.

R9 Communication: Be able to communicate effectively with peers in the industry and the public on issues in network engineering and related fields, including writing reports and designing manuscripts, making statements, clearly expressing or responding to instructions. Have a certain international vision and be able to communicate and exchange in cross-cultural background.

a) Be able to communicate effectively with industry peers and the public on network engineering and related issues through written or oral communication, be able to clearly express solutions to network engineering-related issues through writing reports, designing manuscripts, making statements, etc., and answer questions;

b) Have a good foreign language application ability in network engineering, understand the international status of network engineering and related fields, have a certain international perspective, and be able to communicate and exchange in cross-cultural background.

R10 Project Management: Understand and master the principles of network engineering, economic decision-making methods and related practical knowledge of network engineering drawing, and be able to apply it in a multidisciplinary environment.

a) Master the principles of network engineering management, have the ability of project management, and be able to choose appropriate management and economic decision-making methods according to the practice of network engineering and related fields;

b) Be able to apply the principles of network engineering, economic decision-making methods and practical knowledge of network engineering drawing to analyze and solve problems such as economic analysis, investment decision-making, cost (cost) control and scheme comparison of engineering projects.

R11 Life-Long Learning: Possess a commitment to lifelong learning and the ability to engage in continuous self-directed learning to adapt to evolving professional demands.

a) Develop the ability to identify and address knowledge gaps through self-directed learning.

b) Stay updated on advancements in network engineering and related fields, maintaining a multidisciplinary understanding.

2.2 Curriculum-Objectives Matrix

Table 1 The matrix of the support of the Network Engineering curriculum system to the intended learning outcomes

Course Name Rs	R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11
Ethics and the Rule of Law							√	√			√
Outline of Modern Chinese History							√	√			√
Basic Principles of Marxism						√	√			√	√
Introduction to Mao Zedong Thought and the Theoretical System of Socialism with Chinese Characteristics						√		√	√	√	
Xi Jinping Thought on Chinese Characteristics and Socialism in the New Era (Xi Jinping 2011)						√	√			√	
Situation and Policy I						√					√
Situation and Policy II						√					√
Situation and Policy III						√					√
Situation and Policy IV						√					√
Situation and Policy V						√					√
Situation and Policy VI						√					√
Situation and Policy VII						√					√
Situation and Policy VIII						√					√
Advanced Mathematics A I	√	√									
Advanced Mathematics A II	√	√									
Linear Algebra	√	√									
Probability and Mathematical Statistics	√	√									
University Physics II	√	√									
University Physics Laboratory	√	√									
Digital Intelligence English I					√				√		√
Digital Intelligence English II					√				√		√
Digital Intelligence English III					√				√		√
Digital Intelligence English IV					√				√		√

University Digit and Intelligence Literacy					√						√
Information Retrieval and Utilization				√	√						√
Military Theory							√	√			
University Sports I								√			√
University Sports II								√			√
University Sports III								√			√
University Sports IV								√			√
Mental Health Education							√	√	√		
Education on Chinese Excellent Traditional Culture							√	√			√
National Security Education							√	√			
University Students Career Development Planning							√	√	√		√
University Students Career Guidance							√	√	√		√
Art Literacy courses							√	√			
International Literacy Courses								√	√		
International Literacy Activities								√	√		
Social Science Courses						√	√				
Natural Science Courses	√	√				√					
Introduction to Network Engineering				√					√		√
Digital Logic			√				√			√	
C Language Programming		√	√					√			
Data Structures and Algorithms		√	√	√							
Discrete Mathematics	√	√		√							√
Operating Systems	√	√	√		√	√		√	√		
Computer Organization Principles		√	√	√							
Network Protocols Analysis	√	√			√			√	√		
Information Security Technology Fundamentals		√	√	√							
Database Technology and Application	√	√	√					√			

Computer Networks	√	√	√			√					
Network Engineering						√		√	√	√	
Network Application Development	√		√		√						
Network Security		√	√			√	√				
Network Management	√	√		√		√					
Java Programming	√			√	√						
Modern Communication Technology	√		√				√				
Wireless and Mobile Network Technology	√		√					√			
Network Attack and Defense			√		√		√	√			
Network System Integration		√	√			√					
Network Testing	√	√			√					√	√
Next-Generation Internet Technology	√				√	√					
Foundation of Software Engineering	√	√	√							√	
CTF Fundamentals	√				√			√	√		√
Computer Professional English	√					√		√	√		
Introduction to Artificial Intelligence						√	√				√
Huawei Certification	√				√		√				
Innovative Design Thinking							√	√	√		
The Foundation of Entrepreneurship							√	√	√		√
“Internet+” Innovative Applications		√	√					√			
Internet of Things Applications	√	√				√	√			√	
Military Skills Training							√	√	√		
Labor Practice							√	√	√		
Network Engineering Drawing Practice	√	√	√	√	√	√		√			√
Network Cabling and Maintenance	√		√			√		√			
Multimedia Technology Application Practice			√				√	√			√

Practice of Web Front- end Development		√	√			√			√		
Hardware Detection and Maintenance Technology Practice			√	√							√
Network Device Configuration and Debugging Practice			√		√		√	√			
Wireless Communication Engineering Practice	√	√	√					√			√
Web Security Technology Application		√		√	√						
Network Intrusion Detection Practice	√		√		√						
Internet Programming and Project Practical Training			√	√	√					√	
Mobile Communication and Wireless Network Practice	√	√					√				
Mobile Application Development Practice	√		√					√	√	√	
Network Vulnerability Scanning Practice				√	√		√				
Linux Server Management and Application						√		√		√	
Network Comprehensive Application		√			√				√		
Graduation Internship	√	√	√		√			√	√	√	
Graduation Thesis (Design)	√	√	√	√	√			√	√	√	
Co-curricular Activities								√	√	√	√

3. Curriculum Struture and Topology

3.1 Curriculum Structure

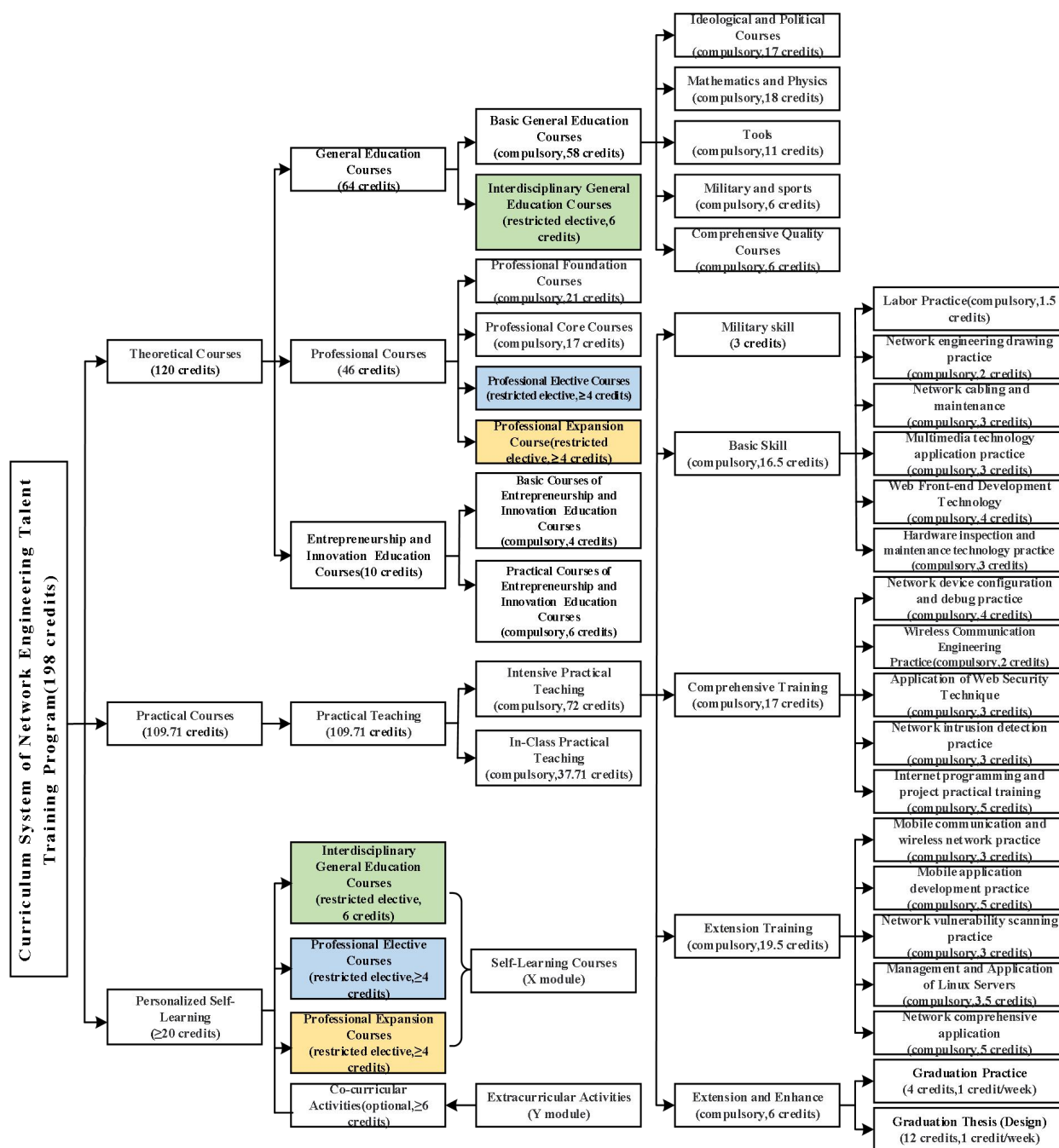
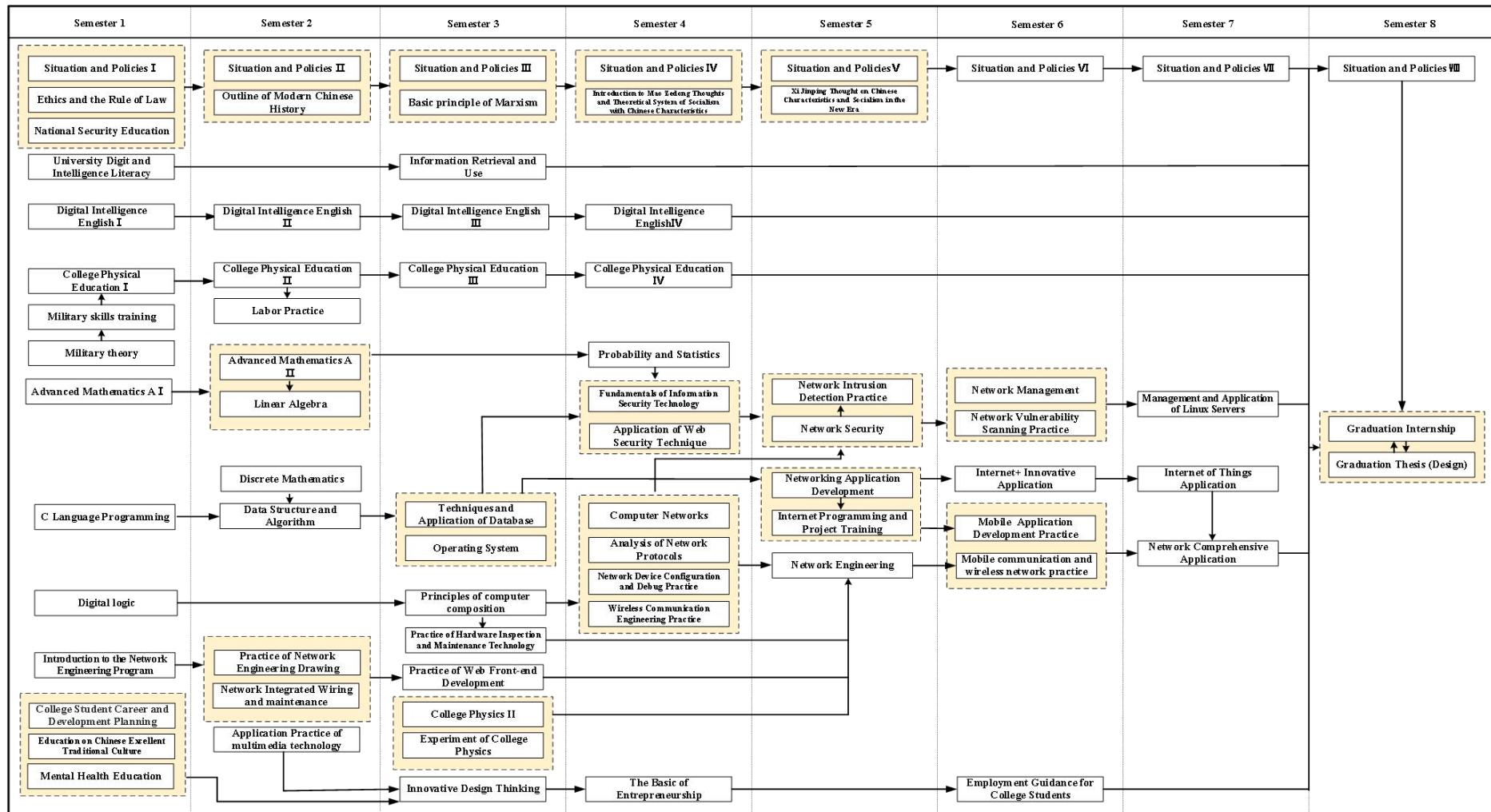


Figure1 Curriculum System and Credit Composition Diagram of Network Engineering

3.2 Curriculum Topology



*Specialization Courses and Professional Elective Courses Not Included

Figure2 Topology Diagram of Network Engineering Professional Curriculum

3.3 Curriculum Balance Ratio

Table 2 Semester Teaching Balance Table for Network Engineering Curriculum

Semester distribution	1	2	3	4	5	6	7	8	Proportion
Theoretical Compulsory	20.11	15.86	14.86	13.36	9.25	5.25	2.25	0.25	41.01%
Practical Compulsory	9.14	12.89	12.39	12.89	11	13	9.5	16	48.89%
Recommended Elective	0.5	0.5	1.5	1.5	4.5	5.5	4.5	1.5	10.10%
Total	29.75	29.25	28.75	27.75	24.75	23.75	16.25	17.75	100.00%

3.4 Curriculum Allocation Ratio

Table 3 Credit Hours Allocation and Proportion Table of Network Engineering Major

Category	Credits	Proportion of total credits	Class Hours	Proportion of Total Credit Hours
Basic General Education	58	29.29%	1624	29.29%
Compulsory Professional Education	38	19.19%	1064	19.19%
Innovation and Entrepreneurship	10	5.05%	280	5.05%
Individualized Development	20	10.10%	560	10.10%
Intensive Practical Teaching Components	72	36.36%	2016	36.36%
Total	198	100.00%	5544	100.00%

4. Course list - Fundamental, Core, Elective and Featured Courses

4.1 Fundamental Courses(9 Courses, 21 Credits)

Introduction to Network Engineering (1 Credit), Digital Logic(2 Credits), C Language Programming(3 Credits), Data Structures and Algorithms(4 Credits), Discrete Mathematics(2 Credits), Operating System(2 Credits), Computer Organization Principles (2 Credits), Network Protocols Analysis(3 Credits), Information Security Technologies Fundamentals(2 Credits).

4.2 Core Courses(6 Courses, 17 Credits)

Database Technology and Application(3 Credits), Computer Networks(2 Credits),

Network Engineering(4 Credits), Networking Application Development(3 Credits), Network Security(2 Credits), Network Management(3 Credits).

4.3 Elective Courses(7 Courses, 14 Credits)

Java Programming(2 Credits), Modern Communication Technology(2 Credits), Wireless and Mobile Network Technology(2 Credits), Network Attack and Defense(2 Credits), Network System Integration(2 Credits), Network Testing(2 Credits), Next-Generation Internet Technology(2 Credits).

4.4 Featured Courses(1 Course, 2Credits)

Huawei Certification (2 Credits): The course is designed in line with the concept of Industry-Education integration in our university, and it collaborates with Huawei, the leading enterprise in the industry, to jointly cultivate students. Relying on school-enterprise cooperation projects, "dual-qualified" teachers and enterprise experts are equipped to give lectures to improve students' practical application ability. Through this course, students can reach the industry standard and obtain the corresponding Huawei certification certificate. At the same time, combined with Huawei related competition content, we pay attention to the cultivation of students' innovative consciousness, creative thinking, improve the ability of teamwork and problem solving, and realize the improvement of students' comprehensive quality and ability.

5. Course list -Concentrated Practice Module

5.1 Military Skills Training (1 Course, 3 Credits)

5.2 Basic Skills (6 Courses, 16.5 Credits)

Labor Practice(1.5 Credits), Network Engineering Drawing Practice(2 Credits), Network Cabling and Maintenance(3 Credits), Multimedia Technology Application Practice(3Credits), Web Front-end Development Technology(4 Credits), Hardware Detection and Maintenance Technology Practice(3 Credits).

5.3 Comprehensive Training(5 Courses, 17Credits)

Network Device Configuration and Debugging Practice(4 Credits), Wireless Communication Engineering Practice(2 Credits), Web Security Technology Application(3

Credits), Network Intrusion Detection Practice(3 Credits), Internet Programming and Project Practical Training(5 Credits).

5.4 Extension Training(5 Courses, 19.5Credits)

Mobile Communication and Wireless Network Practice(3 Credits), Mobile Application Development Practice(5 Credits), Network Vulnerability Scanning Practice(3 Credits), Linux Server Management and Application (3.5 Credits), Network Comprehensive Application(5 Credits).

5.5 Extension Enhancement(2 Courses, 16 Credits)

Graduation Internship(4 Credits), Graduation Thesis (Design)(12 Credits).

6. Graduation and Degree Conferment Requirements

6.1 Graduation Requirements

To qualify for graduation, students must fulfill the requirements set forth in the Qingdao Hengxing University of Science and Technology Student Graduation Management Regulations. It includes successfully completing all credits stipulated in the curriculum plan, achieving passing grades in all courses, and attaining at least the “Pass” level in meeting the program’s educational objectives (i.e., graduation requirements). Students who satisfy these conditions are awarded the Bachelor’s Degree Graduation Certificate in Network Engineering from Qingdao Hengxing University of Science and Technology.

Grading Scale for Achievement of Educational Objectives,using a five-tier grading scale: Excellent, Good, Satisfactory, Pass, and Fail. This grading scale is aligned with the centesimal system as follows:

90-100 points: Excellent

80-89 points: Good

70-79 points: Satisfactory

60-69 points: Pass

Below 60 points: Fail

6.2 Degree Conferment Requirements

Students who meet the graduation requirements and satisfy the criteria outlined in the

Qingdao Hengxing University of Science and Technology Bachelor's Degree Awarding Implementation Rules will be reviewed and approved by the University's Academic Committee. Upon approval, they will be conferred the Bachelor of Engineering Degree from QHUST

7. Implementation Plan of Program

Table4 Implementation Plan for Network Engineering Teaching

Type	Level	Course Module	Course Names	Course Code	Course Nature	Credit	ECT S	Contact Hours	Work Load	Commencement term								Assessment Method	Offering Department
										First Year		Second Year		Third Year		Fourth Year			
										1	2	3	4	5	6	7	8		
General Education Courses	Basic General Education Courses	Ideological and political courses	Ethics and the Rule of Law	3000000101	C	3	3	48	84	√								E	School of Marxism
			Outline of Modern Chinese History	3000000102	C	3	3	48	84		√							E	
			Basic Principles of Marxism	3000000103	C	3	3	48	84			√						E	
			Introduction to Mao Zedong Thought and Theoretical System of Socialism with Chinese Characteristics	3000000104	C	3	3	48	84				√					E	
			Xi Jinping Thought on Chinese Characteristics and Socialism in the New Era (Xi Jinping 2011)	3000000147	C	3	3	48	84					√				E	
			Situation and Policy I	3000000105	C	0.25	0.25	8	7	√								NE	
			Situation and Policy II	3000000182	C	0.25	0.25	8	7		√							NE	
			Situation and Policy III	3000000106	C	0.25	0.25	8	7			√						NE	
			Situation and Policy IV	3000000183	C	0.25	0.25	8	7				√					NE	
			Situation and Policy V	3000000107	C	0.25	0.25	8	7					√				NE	
			Situation and Policy VI	3000000184	C	0.25	0.25	8	7						√			NE	
			Situation and Policy VII	3000000108	C	0.25	0.25	8	7							√		NE	
			Situation and Policy VIII	3000000185	C	0.25	0.25	8	7								√	NE	

Type	Level	Course Module	Course Names	Course Code	Course Nature	Credit	ECTS	Contact Hours	Work Load	Commencement term								Assessment Method	Offering Department		
										First Year		Second Year		Third Year		Fourth Year					
										1	2	3	4	5	6	7	8				
General courses	Basic General Education Course		Subtotal 1				17	17	304	476									5 Exam-Based Courses		
		Mathematics and Physics	Advanced Mathematics A I	3000000160	C	5	5	80	140	√									E	School of Education	
			Advanced Mathematics A II	3000000161	C	5	5	80	140		√								E		
			Linear Algebra	3000000113	C	2	2	32	56		√								E		
			Probability and Mathematical Statistics	3000000114	C	2	2	32	56				√						E		
			University Physics II	3000000140	C	2	2	32	56				√						E		
			University Physics Laboratory	3000000401	C	2	2	32	56				√						E		
		Subtotal 2				18	18	288	504										6 Exam-Based Courses		
		Tools	Digital Intelligence English I	300000010B	C	2	2	64	56	√									E	School of International Education	
			Digital Intelligence English II	300000010C	C	2	2	64	56		√								E		
			Digital Intelligence English III	300000010D	C	2	2	64	56				√						E		
			Digital Intelligence English IV	300000010E	C	2	2	64	56					√					E		
			University Digit and Intelligence Literacy	3000000186	C	2	2	32	56	√									NE	School of Information Engineering	
			Information Retrieval and Utilization	3000000134	C	1	1	16	28					√							NE
		Subtotal 3				11	11	304	308											4 Exam-Based Courses	
		Military and sports	Military Theory	3000000131	C	2	2	32	56	√										NE	Student Development Office
			University Sports I	3000000192	C	1	1	36	28	√										NE	School of Physical

Type	Level	Course Module	Course Names	Course Code	Course Nature	Credit	ECTS	Contact Hours	Work Load	Commencement term								Assessment Method	Offering Department	
										First Year		Second Year		Third Year		Fourth Year				
										1	2	3	4	5	6	7	8			
			University Sports II	3000000193	C	1	1	36	28		√							NE	Education	
			University Sports III	3000000194	C	1	1	36	28			√						NE		
			University Sports IV	3000000195	C	1	1	36	28				√					NE		
			Subtotal 4					6	6	176	168	4	2	2	2	0	0	0	0	
General courses	Basic General Education Course	Comprehensive Quality Course	Mental Health Education	3000000129	C	2	2	32	56	√								NE	School of Education	
			Education on Chinese Excellent Traditional Culture	3000000197	C	1	1	16	28	√									NE	School of Humanities
			National Security Education	3000000187	C	1	1	16	28	√									NE	School of Marxism
			University Students Career Development Planning	3000000132	C	1	1	16	28	√									NE	School of Business
			University Students Career Guidance	3000000133	C	1	1	16	28						√				NE	
			Subtotal 5					6	6	96	168									
	Interdisciplinary General Education Courses	Interdisciplinary General Education Courses	Art Literacy Courses		RE	2	2	32	56										NE	All Department
			International Literacy Courses		RE	1	1	16	28										NE	
			International Literacy Activities		RE	1	1	16	28										NE	
			Social Science Courses		O	0	0	0	0										NE	
			Natural Science Courses		O	2	2	32	56										NE	
			Subtotal 6					6	6	96	168									
	Sum 1=Subtotal 1+Subtotal 2+Subtotal 3+Subtotal 4+Subtotal 5+Subtotal 6					64	64	1264	1792											
Professional	Professional	Professional Foundation	Introduction to Network Engineering	3080903260	C	1	1	16	28	√								NE	School of Information	

Type	Level	Course Module	Course Names	Course Code	Course Nature	Credits	ECTS	Contact Hours	Work Load	Commencement term								Assessment Method	Offering Department
										First Year		Second Year		Third Year		Fourth Year			
										1	2	3	4	5	6	7	8		
Courses	Foundational Courses	Foundational Courses	Digital Logic	3080900202	C	2	2	32	56	√								E	Engineering
			C Language Programming	3080900242	C	3	3	48	84	√								E	
			Data Structure and Algorithms	3080900230	C	4	4	64	112		√							E	
Professional Courses	Professional Foundational Courses	Professional Foundational Courses	Discrete Mathematics	3080900204	C	2	2	32	56		√							E	School of Information Engineering
			Operating System	3080900205	C	2	2	32	56			√						E	
			Computer Organization Principles	3080900203	C	2	2	32	56			√						E	
			Network Protocols Analysis	3080903269	C	3	3	48	84				√					E	
			Information Security Technology Fundamentals	3080903278	C	2	2	32	56				√					E	
			Subtotal 1				21	21	336	588								8 Exam-Based Courses	
	Professional Core Courses	Professional Core Courses	Database Technology and Application	3080903263	C	3	3	48	84			√						E	School of Information Engineering
			Computer Networks	3080900206	C	2	2	32	56				√					E	
			Network Engineering	3080903210	C	4	4	64	112					√				E	
			Networking Application Development	3080903262	C	3	3	48	84					√				NE	
			Network Security	3080900208	C	2	2	32	56					√				E	
			Network Management	3080903219	C	3	3	48	84						√			E	
			Subtotal 2				17	17	272	476								5 Exam-Based Courses	
	Professional Specialization Courses	Specialization Courses	Java Programming	3080900261		2	2	32	56						√			NE	School of Information

Type	Level	Course Module	Course Names	Course Code	Course Nature	Credit	ECTS	Contact Hours	Work Load	Commencement term								Assessment Method	Offering Department	
										First Year		Second Year		Third Year		Fourth Year				
										1	2	3	4	5	6	7	8			
	Elective Courses		Modern Communication Technology	3080903214		2	2	32	56						√			NE	Engineering	
			Wireless and Mobile Network Technology	3080903218		2	2	32	56						√			NE		
			Network Attack and Defense	3080903223		2	2	32	56						√			NE		
			Network System Integration	3080903213		2	2	32	56						√			NE		
			Network Testing	3080903220		2	2	32	56						√			NE		
			Next-Generation Internet Technology	3080903234		2	2	32	56						√			NE		
			Subtotal 3				≥ 4	≥ 4	≥ 64	≥ 112										
	Professional Expansion Course	Professional Expansion Course	Foundation of Software Engineering	3080903274	Select at least 4 credits	2	2	32	56					√				NE	School of Information Engineering	
			CTF Fundamentals	3080903276		2	2	32	56					√				NE		
			Computer Professional English	3080900209		2	2	32	56						√			NE		
			Introduction to Artificial Intelligence	3080900333		2	2	32	56						√			NE		
			Huawei Certification	3080903275		2	2	32	56						√			NE		
			Subtotal 4				≥ 4	≥ 4	≥ 64	≥ 112										
			Sum 2=Subtotal 1+Subtotal 2+Subtotal 3+Subtotal 4					≥ 46	≥ 46	≥ 736	≥ 1288									
Entrepreneurship and Innovation Education Courses	Entrepreneurship and Innovation Courses	Basic Courses of Entrepreneurship and Innovation	Innovative Design Thinking	3000000305	C	2	2	32	56				√					NE	School of Entrepreneurship and Innovation	
			The Foundation of Entrepreneurship	3000000306	C	2	2	32	56					√						NE
			Subtotal 1				4	4	64	112										
		Practical Courses of Entrepreneurship	Internet+ Innovative Application	3080903332	C	2	3	32	84							√			NE	School of Information Engineering

Type	Level	Course Module	Course Names	Course Code	Course Nature	Credits	ECTS	Contact Hours	Work Load	Commencement term								Assessment Method	Offering Department	
										First Year		Second Year		Third Year		Fourth Year				
										1	2	3	4	5	6	7	8			
		urship and Innovation																		
			Internet of Things Application	3080903335	C	2	3	32	84							√		NE	School of Information Engineering	
			Subtotal 2				4	6	64	168										
		Sum 3=Subtotal 1+Subtotal 2				8	10	128	280											
		Military Skill Training		3000000196	C	2	3	32	84	√								NE	Student Development Office	
Concentrated Practice Teaching Component	Concentrated Practice Teaching Component	Basic Skills	Labor Practice	3080903501	C	1	1.5	16	42		√							NE	School of Information Engineering	
			Network Engineering Drawing Practice	3080903502	C	2	2	32	56		√							NE		
			Network Cabling and Maintenance	3080903503	C	2	3	32	84		√							NE		
			Multimedia Technology Application Practice	3080903504	C	2	3	32	84		√							NE		
			Practice of Web Front- end Development	3080903505	C	3	4	48	112			√						NE		
			Hardware Detection and Maintenance Technology Practice	3080903506	C	2	3	32	84			√						NE		
		Comprehensive Training	Network Device Configuration and Debugging Practice	3080903507	C	3	4	48	112				√							NE
			Wireless Communication Engineering Practice	3080903508	C	2	2	32	56				√							NE
			Web Security Technology Application	3080903509	C	2	3	32	84				√							NE
			Network Intrusion Detection Practice	3080903515	C	2	3	32	84					√						NE

Type	Level	Course Module	Course Names	Course Code	Course Nature	Credits	ECTS	Contact Hours	Work Load	Commencement term								Assessment Method	Offering Department	
										First Year		Second Year		Third Year		Fourth Year				
										1	2	3	4	5	6	7	8			
			Internet Programming and Project Practical Training	3080903516	C	3	5	48	140					√				NE		
		Extension Training	Mobile Communication and Wireless Network Practice	3080903517	C	2	3	32	84						√			NE		
			Mobile Application Development Practice	3080903518	C	3	5	48	140						√			NE		
			Network Vulnerability Scanning Practice	3080903519	C	2	3	32	84						√			NE		
		Extension Training	Linux Server Management and Application	3080903520	C	2	3.5	32	98							√		NE	School of Information Engineering	
			Network comprehensive application	3080903521	C	3	5	48	140							√		NE		
		Extension and Enhance	Graduation Internship	3080903522	C	2	4	32	112								√	NE		
			Graduation Thesis (Design)	3080903601	C	4	12	64	336								√	NE		
		Sum 4						44	72	704	2016									
		Co-curricular Activities	Co-curricular Activities	Co-curricular Activities	Labor Activities	3000000907	RE	1	1.5	16	42									NE
Reading of 100 Selected Classics from Chinese and Foreign Literature	3000000901				RE	1	1.5	3	3								NE			
Freshman Orientation	3000000902				RE			3	3							NE				
Student Associations	3000000904				RE			3	3							NE				
Sports Activities	3000000905				RE			4	4							NE				
Aesthetic Education Activities	3000000906				RE			3	3								NE			
Ideological and Political Development	3000000908				O	2	3	32	84								NE			
Club and Cultural Activities	3000000909				O												NE			

Type	Level	Course Module	Course Names	Course Code	Course Nature	Credit	ECTS	Contact Hours	Work Load	Commencement term								Assessment Method	Offering Department
										First Year		Second Year		Third Year		Fourth Year			
										1	2	3	4	5	6	7	8		
			Volunteer and Public Service	3000000910	O													NE	
			Innovation, Entrepreneurship, and Creativity	3000000911	O													NE	
			Practical Training, Internship, and Hands-On Activities	3000000912	O													NE	
			Skill and Talent Development	3000000913	O													NE	
			Sum 5							≥ 4	≥ 6	≥ 64	≥ 168						
Total=Sum 1+Sum 2+Sum 3+Sum 4+Sum 5						≥ 166	≥ 198	≥ 2896	≥ 5544										

Note C stands for Compulsory; RE stands for Restricted Elective and O stands for Optional; E stands for Exam-Based Courses and NE stands for Non-Exam-Based Courses

8.Courses Offered for External Program (Courses that include public elective courses)

Introduction to Network Engineering (1 credit) .

Revision	Head of Teaching and Research Office Signature:	Zhao Xia		
	Administrative Program Director Signature:	Zhao Xia	Academic Program Leader Signature:	Li Jinhua
Review	Dean of Industry College Signature:	Li Yan	Academic Dean Signature:	Jiang Zhijun
	Executive Dean Signature and Date:	Xu Ying		