Hunan City University

Self-assessment Report for ASIIN Certification

Electronic Information Engineering

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www.hncu.edu.cn

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1. Overview of major

Table 1-1 Overview of major

Major name (Chinese)	电子信息工程
Major name (English)	Electronic Information Engineering
Academic degree	Bachelor
Lengthy of study	Four years
ECTS credit	230
Learning style	Full-time
School website	https://www.hncu.edu.cn/
Time for enrollment	September 1, 2003
Beginning of new semester	Autumn
Number of enrollment	160-200
Tuition	5900 RMB/year
Institution	College of Information and Electronic Engineering
College website	https://xdy.hncu.edu.cn/
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2. Content and implementation of the training program

The Electronic Information Engineering program of Hunan City University was established in 2003, and in 2016, it was designated as a pilot program for comprehensive major reform in Hunan Province during the periods of 13th Five-Year Plan and 14th Five-Year Plan in 2021. In 2018, it was successfully completed the teaching audit and evaluation of general institute of higher education by Ministry of Education. In 2019, it was selected as a first-class undergraduate program construction site in Hunan Province, and in 2020, a national first-class undergraduate program construction site. In 2022, it was ranked first in the first-class major ranking (applied type) of China by the Almanac Network (a national third-party university evaluation institution). In 2023, the program has been granted the right to award Master degrees in Electronic Information Engineering. It was successfully accomplished the education and teaching audit and evaluation of general institute of higher education by Ministry of Education in 2024. This program closely aligns with China's rapidly developing electronic information industry and "Three Highs and Four New Things" developing strategy of Hunan Province, and pillar industries of electronic components and information manufacturing in Yiyang city. A "dual-wheel drive" strategy of "on-campus plus off-campus" industry-education integration is implemented by this program, collaborating with leading domestic and provincial enterprises such as Huawei Technologies Co., Ltd., Hunan AiHua Group Co., Ltd., AuShiKang Technology Co., Ltd., and Hunan KeRuiTe Technology Co., Ltd., to jointly build 13 platforms for industry-academia-research-application collaboration, including AiHua College, Hunan Electronic Information Modern Industrial College, provincial key laboratories, and intelligent manufacturing innovation bases. The program adheres to the combination of theory, practice and innovation, adopting a "one-line, two-combined, four-level" diversified and three-dimensional practical teaching system, connects disciplines and majors with industrial chains, aiming to cultivate high-quality talents who possess solid foundational theories, rich professional knowledge and skills, and the ability to apply their acquired knowledge and skills to solve complex engineering

problems. Graduates of this major demonstrate strong comprehensive innovation awareness, independent working ability, and team spirit in the field of engineering technology, while also possessing high cultural literacy, good professional ethics, a strong sense of social responsibility, international perspective, excellent social competitiveness, and creativity. Those enable graduates to meet the demands of industries and sectors related to electronic information engineering and satisfy internationally recognized engineering qualifications and professional engineer qualifications, laying a solid foundation for international recognition of engineer qualifications.

2.1 Training objectives

With the needs of the national strategy and the economic development of regional information manufacturing industries, this major deeply practices the mission of cultivating virtue and nurturing talents, while promoting the all-round development of morality, intelligence, physique, aesthetics, and labor. It aims to cultivate high-quality professionals who master modern electronic technology theory, electronic information system design, and application development, as well as possess capabilities in signal processing and hardware design and programming of electronic information systems. Graduates will be able to work in fields such as information communication, electronic technology, and intelligent control, engaging in product design, process manufacturing, application development, and technical management of various electronic devices and information systems. The specific objectives for students after four years of study are as follows:

Objectives of moral cultivation: Students of the Program should have understand the current social model in China, abided by social norms, professional ethics and ethical norms in engineering practice, and actively served the country and society by considering public interests.

Objective of Mathematics and physics ability: Students of the Program should have grasped the basic knowledge of mathematics and physics and other natural sciences, laid a solid foundation for subsequent courses, and been able to use the learned knowledge to solve complex engineering problems.

Objective of professional basic ability: Students of the Program should have a wide range of basic engineering and professional knowledge, so as to lay a solid foundation for future professional course study.

Objective of professional ability: Students of the Program should have learned professional knowledge to solve complex engineering problems in the field of electronic information, gotten skills to investigate, design, analyze and propose solutions for complex engineering problems in relevant fields, been competent in the research and development, production, sales and management of electronic information system products, and possessed certain innovation awareness and innovation ability.

Objective of comprehensive quality: Students of the Program should have been provided with comprehensive knowledge conducive to career development, the ability to adapt to social development and cross-cultural international cooperation and communication skills, and developed comprehensively in morality, intelligence, physique, aesthetics and labor.

Objective of lifelong learning: Students of the Program should have tracked the development trend of related fields in electronic information, mastered state of the art knowledge and skills in this field, with the awareness of independent learning and lifelong learning, and further self-development through job training.

The training objectives of the Electronic Information Engineering program can be viewed on the English homepage of the college of Information and Electronic Engineering (https://xdy.hncu.edu.cn/).

2.2 Achievements of the training

2.2.1 Expected outcomes of graduate training in knowledge, skill and competency

1) Knowledge of engineering: To be able to use mathematics, physics, engineering fundamentals and professional knowledge to express, analyze, derive, compare and evaluate complex engineering problems in information communication, electronic technology, intelligent control and other fields.

- Students have knowledge of mathematics, physics and basic engineering to understand and describe complex engineering problems in information communication, electronic technology, intelligent control and other fields;
- Students have knowledge of mathematics and physics, basic knowledge of electronics, information and computer; can abstract modeling and solve

electronic information devices, equipment and systems;

- Students are able to use electronic, information and other professional knowledge to analyze and deduce complex engineering problems in the field of electronic information;
- Students are able to comprehensively use engineering knowledge to compare and evaluate the design scheme of electronic circuit, signal processing and transmission system.

2) Ability of problem analysis: To be able to apply the principles of mathematics, natural science, electronic science and information science to identify, express and analyze complex engineering problems in the field of information communication, electronic technology and intelligent control through literature research, and obtain effective conclusions.

- Students are able to use the basic principles of natural science, electronic science and information science to identify the appearance and key components, modules, equipment and programs of complex engineering problems in the field of information communication, electronic technology and intelligent control;
- Students can express reasonably with electronic science, information science, mathematics modeling methods and program flow charts for complex engineering key devices, modules, equipment and programs in the fields of information communication, electronic technology and intelligent control;
- Students are able to understand the optional or alternative problem solutions through literature research, and be able to draw effective conclusions by analyzing the influencing parameters involved in key components, modules and equipment.

3) Ability of design/development solution: To be able to design electronic circuits, signal processing and transmission system solutions for user requirements, design unit circuits, functional modules, equipment design schemes and programs that meet the requirements of the scheme, and reflect innovative awareness in the design.

- Students are able to develop unit circuits, functional modules and program flows that meet specific requirements according to functional requirements;
- Students can propose systematic solutions, determine design objectives, technical requirements, development cycle and process for complex engineering problems in information and communication, electronic

technology, intelligent control and other field;

- Students are able to apply related knowledge of electronics and information to evaluate, optimize and improve the design/development solutions, and reflect innovation awareness.

4) Ability of research: To be able to use the principles of mathematics, natural science, engineering foundation, electronic science, information science and scientific methods to study complex engineering problems in the field of information communication, electronic technology and intelligent control, including designing experiments, analyzing and interpreting data, and drawing reasonable and effective conclusions through information synthesis.

- Students can determine the experimental objectives and methods and design the experimental scheme based on scientific principles with the solution to complex engineering problems in information and communication, electronic technology and intelligent control;
- Students are able to select, build or develop hardware and software experimental environment for electronic circuits and signal processing and transmission systems, carry out experiments and record and organize experimental data.
- Students are able to statistically analyze and interpret experimental data, and draw reasonable and effective conclusions through information synthesis.

5) Ability of using modern tools: To be able to use, select and develop appropriate technologies, resources, electronic measuring instruments and simulation software tools for complex engineering problems in information communication, electronic technology and intelligent control, including simulation analysis and prediction of complex engineering problems, and understand their limitations.

- Student can be able to use commonly used modern electronic measuring instruments, simulation software and information technology tools to measure, analyze and design typical modules and systems in electronic information engineering practice, and understand their characteristics;
- Students can obtain and select appropriate information technology tools, electronic measuring instruments and simulation software tools to test, calculate and simulate in the analysis, design and research of electronic circuits, signal processing and transmission systems;
- Students can simulate and predict by selecting and developing modern tools

that meet specific requirements, and understand and analyze their limitations for complex engineering problems in the fields of information and communication, electronic technology and intelligent control;

6) Ability of engineering and social practice: To be able to apply industrial policies, industry standards and relevant laws and regulations of electronic information industry to engineering practice; can evaluate the impact of solutions to complex engineering problems in information communication, electronic technology and intelligent control on society, health, safety, law and culture; and understand the responsibility to be borne.

- Students can have the experience of engineering training and social practice, understand the operation mode of related enterprises in the electronic information industry;
- Student can be able to apply technical standards, intellectual property rights, industrial policies and quality management systems related to electronics, information and computer fields to engineering practice of complex engineering problems in information communication, electronic technology and intelligent control fields;
- Student can able to objectively analyze and evaluate the impact of the development, production and operation of new products, technologies and processes on society, health, safety, law and culture, and understand the responsibilities to be undertaken.

7) Ability of environmental and sustainable development: to be able to understand and evaluate the impact of engineering practices on environment and social sustainable development in response to complex engineering problems in the field of information and communication, electronic technology and intelligent control.

- Students can understand the connotation and significance of environmental protection and social sustainability;
- Students are familiar with laws and regulations of environmental protection and able to understand relationship between the engineering practice of electronics and information and sustainable development of environment and society;
- Students can evaluate resource utilization efficiency, pollutant disposal and safety measures, and judge the damage to human beings and the environment during the product cycle for complex engineering problems in the fields of

information and communication, electronic technology and intelligent control.

8) Professional norms: To have humanistic and social science literacy, have a correct outlook on life, world and morality, understand the core socialist values and abide by professional ethics norms, be honest and trustworthy, have a sense of responsibility.

- Students can have humanistic and social science literacy, have a correct outlook on life, world and morality, understand the core values of society and abide by professional ethics norms, be honest and trustworthy, and have a sense of responsibility;
- Students can understand the core socialist values national conditions, be able to safeguard national interests and have a sense of social responsibility;
- Students can understand the core concept of engineering ethics, be able to abide by professional ethics and norms in the development, experiment and production practice of electronic information projects, and fulfill corresponding responsibilities.

9) Ability of individual and team cooperation: To be able to take on the role of individual, group and leader in a multidisciplinary team, with the ability of organizational management, interpersonal interaction, academic communication and team cooperation

- Students can be able to take the initiative to cooperate with members of other disciplines;
- Student can be able to perform the role and responsibilities of team members, listen to other team members opinions, and cooperate to complete team tasks;
- Student can be able to build a team according to the task and personnel characteristics, understand the role division and responsibilities in the team, and manage and coordinate the operation of the team.

10) Skill of communication: To be able to communicate and exchange with peers in the industry and the public effectively on complex engineering problems in the field of electronic information engineering, including writing reports, designing manuscripts, making statements, expressing or responding to instructions clearly, and having a certain international vision, and be able to communicate and exchange in a cross-cultural context.

- Student can be able to write reports and documents with standard format, clear

logic and accurate language according to the theoretical and technical research and engineering practice needs of electronic circuits, signal processing and transmission systems; and make electronic materials convenient for demonstration and communication;

- Student can be able to read foreign language materials in this major and express and respond to professional issues, and have basic cross-cultural background communication skills;
- Student can effectively communicate and exchange complex engineering problems in the field of electronic information through oral or written communication with fine expression and communication skills.

11) Ability of project management: To understand and master the principles of engineering management and economic decision-making methods, and apply them in a multidisciplinary environment.

- Student can master the engineering management principles and basic economic decision-making methods involved in electronic information engineering projects;
- Students can apply the management of time and cost, quality and risk, and human resource to the management of electronic information engineering projects in the multidisciplinary environment of engineering practice;
- Student can able to comprehensively apply engineering management principles and economic decision-making methods to the development, design and optimization of electronic circuits, signal processing and transmission systems.

12) Ability of lifelong learning: To have the awareness of independent learning and lifelong learning, and have ability to learn continuously and adapt to social development.

- Students can be able to correctly understand the current situation and development trend of electronic and information science, and have the awareness of independent learning and lifelong learning;
- Students can have a knowledge base for lifelong learning, be able to master the method of independent learning, understand the way to expand knowledge and ability;
- Students can have a sound physique, be able to choose appropriate self-learning methods according to the needs of personal or professional

development, adapt to the development of industry and society.

2.2.2 Evaluation and demand in knowledge, skill and competency

1) Major assessment and comprehensive evaluation

The major of Electronic Information Engineering is one of the undergraduate majors of Hunan City University. In 2012, 2018 and 2024, successfully completed the teaching audit and evaluation of general institute of higher education by Ministry of Education. Based on the 'Information and Communication Engineering' discipline, this major was selected as a 'Double First-Class' application-oriented characteristic discipline in Hunan Province in 2018. And this major has been rated as one of the top application-oriented majors in China and been consistently ranked first in the application-oriented category for Electronic Information Engineering majors by the Association Network, a third-party university evaluation organization (see also in http://www.chinaxy.com/2022index/news/news.jsp?information_id=12014).

2) Demand for employment

Graduates of this major are widely accepted in the job market, with a solid basic professional knowledge, strong practical ability, adaptability and innovation awareness, high comprehensive quality, broad international vision and open learning ability.

The employment direction of electronic information engineering major is mainly in manufacturing, service, education companies and institutions, covering electronic manufacturing, communication, information, electrical, automation and control, embedded systems, Internet of Things, intelligent hardware and other industries. The employment rate of this major is relatively high, and the actual employment rate in the past three years is above 93%.

3) Survey of graduates

The survey results of the graduates of this major show that the curriculum of this project is reasonable, closely related to the employment market demand. The graduates have strong adaptability after graduation, and their academic performance fully meets the expected objectives.

2.3 Achievements in the study of course modules

2.3.1 Module of training program

According to the course schedule, the whole curriculum system is divided into eight areas of competency: general education, foreign language, mathematics and physics basics, and engineering basics, engineering application, autonomous development (optional), centralized practice and graduation thesis/design.

1) General Education: they are aimed at cultivating student's humanistic qualities, social skills, and team spirit. Specific requirements are as follows: (1) To master the fundamentals of humanities and social sciences, possess good humanistic qualities, and undertake professional, social, and environmental responsibilities; (2) To receive training and exercise through various practical activities and team cooperation activities; (3) To be able to communicate and interact effectively, and possess the ability to adapt to the environment and society.

2) Foreign language: They are aimed to enable students to master a foreign language, pass CET-4(College English Test 4), have ability to read professional foreign literature and communicate with the language, as well as the ability of international cooperation and cross-cultural exchange.

3) Mathematics and physics basics: They are aimed at the basic knowledge of mathematics, physics and other natural sciences, deepening the understanding of natural sciences, improving the scientific literacy to solve practical problems in the application of science and technology, as to lay a solid foundation for further major study.

4) Engineering basics: They are aimed to enable students to master the engineering fundamentals and professional knowledge in the field of computer and information technology, electronic and circuit theory, as to lay a solid foundation for the major.

5) Engineering application: They are aimed to enable students to master the professional knowledge and skills related to electronic information engineering, especially the professional knowledge of computer software, hardware circuit and system design, as to be able to analyze and solve complex engineering problems in the

field of electronic information engineering.

6) Autonomous development (optional): They are designed to enable students to acquire cutting-edge knowledge and skills in the field of electronic information engineering, track the development trends in related fields such as embedded systems, FPGA, robotics, etc. Students can choose courses in this domain based on their interests to achieve further personal development.

7) Centralized practice: They are designed to cultivate students' professional experimental skills, engineering application concepts, and innovative practical skills, including comprehensive experiments of basic courses, design of engineering basics, comprehensive professional experiments and designs, training and internships for innovation and entrepreneurship projects, etc. The aim is to enable students to understand the actual processes of electronic information systems, printed circuit board (PCB) manufacturing processes, organizational management, and technical support, further verify and consolidate theoretical knowledge, deepen the understanding of applied knowledge, and emphasize the cultivation of students' ability to comprehensively apply professional knowledge to analyze and solve practical complex engineering problems in the process of practice.

8) Graduation thesis/design: They are aimed at enabling students to combine knowledge and skills with abilities to execute and complete thesis/design tasks, propose solutions and solve practical problems; students are required to independently complete the graduation thesis/design task under the guidance of a supervisor and successfully pass the graduation thesis/design defense.

2.3.2 Target matrix

Table 2-1 Matrix of objectives of Electronic Information Engineering

Program Objective	Expected achievements in knowledge, skill and competency	Module/Corresponding objective	Expected outcomes of graduate training in knowledge, skill and

			competency（see also in 2.2.1）
To establish virtue through education: to understand China's current social model, be able to abide by social norms, professional ethics and ethical norms in engineering practice, consider public interests, have a willingness and behavior to actively serve the country and society.	**Knowledge:** to master the knowledge of modern Chinese history, basic principles of Marxism, patriotism, humanistic spirit, physical education and military training. **Skill:** to comply with social norms, professional ethics and ethical norms in engineering practice and consideration of public interests. **Ability:** to form a sound personality and good psychological quality, have a correct outlook on life, value, morality and law, have humanistic quality and social responsibility.	**General education:** Ideological and moral cultivation and legal basis Outline of modern Chinese history Basic principles of Marxism An overview of MAO Zedong Thought and the theoretical system of socialism with Chinese characteristics An Overview of Xi Jinping Thought on Socialism with Chinese Characteristics for a New Era Situation and Policy(1) - (8) Mental health of college students Military theory for college students **Centralized practice** Matriculation education and military training	7) Ability of environmental and sustainable development; 8) Professional norms
Mathematics and physics basics: to master mathematics and physics and other natural sciences to	**Knowledge:** to master knowledge related to mathematics and physics. **Skill:** to use mathematical knowledge to understand and	**Mathematics and physics:** Advanced mathematics A (1)-(2) Linear algebra Probability theory and	1) Knowledge of engineering; 2) Ability of problem analysis;

lay a solid foundation for subsequent courses and apply the knowledge to solve complex engineering problems.	appropriately express practical engineering problems, and to establish basic models to solve various practical problems in technology and engineering applications. **Ability:** to observe, analyze and solve technical problems from the perspective and thinking mode of mathematics and natural science. According to the characteristics of mathematics and natural science, continuous analysis, synthesis, calculation, judgment and reasoning of engineering phenomena can be carried out to solve engineering problems.	mathematical statistics Discrete mathematics Function of complex variables College physics B (1)- (2) College physics experiment	
Professional competence: to master a wide range of basic engineering and professional knowledge to lay a solid foundation for the study of professional courses in the future.	**Knowledge:** to master the basic engineering and professional knowledge in electronic engineering, computer technology, information technology and other fields. **Skill:** to have relevant basic engineering and professional knowledge, analyze various engineering phenomena in electronic information engineering, master general	**General education:** College student computer basics **Engineering basics:** C language programming Circuit analysis Analog electronic technology Digital electronics Signals and Systems Data structure Communication Fundamentals	4) Ability of research; 5) Ability of using modern tools;

	engineering knowledge, methods and skills to solve practical problems in engineering applications. **Ability:** to master the relevant concepts and basic principles of electronics, computer and information, and have the basic knowledge of engineering. According to the characteristics of electronic information engineering, through continuous analysis, induction, judgment and reasoning of engineering phenomena, engineering problems can be understood.	Electromagnetic field and electromagnetic wave **Centralized practice:** Electronics technology internship and electronic product assembly and debugging internship Digital unit circuit simulation and development comprehensive practical training Simulation of unit circuit simulation and development comprehensive practical training internship Metalworking practice A Electrical and electronic training A	
Professional application: to master professional knowledge to solve complex engineering problems in the field of electronic information, have skills to investigate, design, analyze and propose solutions for	**Knowledge:** to master the professional knowledge of electronic information, especially the professional knowledge involved in the design of electronic information integration system and the comparison of integration system design scheme. **Skill:** to use relevant professional knowledge to model and propose solutions for complex problems in	**Engineering application:** C++ Programming Language PCB design and drawing Modern sensor and detection technology High frequency electronic circuits Digital signal processing Principle and application of microcontroller **Autonomous development**	3) Ability of design/development solution; 6) Ability of engineering and social practice;

complex engineering problems in relevant fields, be competent in the research and development, production, sales and management of electronic information system products, and have certain innovation awareness and innovation ability.	electronic information engineering, can design electronic information systems that meet specific requirements, and simulate and test the design and analyze its results. **Ability:** to master the design, diagnosis, optimization and operation of electronic information system, be competent in the research and development, production, sales and management of electronic information system products, and have a certain sense of innovation and innovation ability.	**(optional):** Option 1: STM32 electronic system design and engineering application Option 2: principles and applications of FPGA Option 3: principles and applications of embedded systems **Centralized practice and graduation thesis/design:** Integrated practical training of microcontroller system Electronic system engineering practice Embedded system comprehensive training internship Graduation field work Graduation comprehensive training (thesis/design)	
Comprehensive quality and competency: to master comprehensive knowledge conducive to career development, have	**Knowledge:** to master a foreign language and pass CET-4(College English Test 4), master comprehensive knowledge in morality, intelligence, physique, aesthetics and labor for career development. **Skill:** to read professional	**General education:** Literature search and paper writing College Physical Education and Health (1) - (4) **Foreign languages:** College English (1) - (2) College English Extension	9) Ability of individual and team cooperation; 10) Skill of communication; 11) Ability of project management;

the skills of international cooperation and communication adapted to social development and cross-cultural integration, and develop comprehensively in morality, intelligence, physique, aesthetics and labor.	literature in English, possess comprehensive quality of electronic information, and have skills of literature search and paper writing. **Ability:** to have cross-disciplinary communication and cross-cultural exchange skills.	Series (1) - (2) **Autonomous development:** Humanities and social sciences Art and physical education Others (1) - (2) (Cultural quality education, aesthetic education, cross-disciplinary independent development courses) **Centralized practice:** Laboring for public benefit Social practice and volunteer service	
Lifelong learning: to track the development trend of related fields in electronic information, master the cutting-edge knowledge and skills in this field, have the awareness of independent learning and lifelong learning, and further self-development through job experience.	**Knowledge:** to master cutting-edge professional knowledge and development trends in the field of electronic information. **Skill:** to have skills for independent development, innovation and entrepreneurship and employment. **Ability:** to improve self-development through job experience.	**General education:** Career development and employment guidance for college students (1)-(2) Innovation and entrepreneurship foundation **Engineering application:** Introduction to electronic information engineering **Autonomous development:** Robot development Innovation and entrepreneurship **Centralized practice:** Graduating education	12) Ability of lifelong learning

2.4 Employment prospects and practice relevance

2.4.1 Employment market prospects and orientation

This major (Electronic Information Engineering) was recognized as a national first-class undergraduate program in 2020, aiming to meet the demands of national engineering technology and industrial development strategies for talent cultivation of applied electronic information engineering, reflecting the educational mission of a modern applied engineering university. This major adheres to the industry-university-research cooperation model, oriented towards serving national strategies, meeting industrial needs, and facing future development, emphasizing the coordinated development of knowledge, competence, and quality, and strengthening the cultivation of innovative awareness and capabilities. It values the intersection and integration of disciplines such as electronic information engineering, communication engineering, computer science, and Artificial Intelligence (AI), constructing a teaching model that combines theoretical instruction, practical training, and quality education. The distinctive professional course system emphasizes "broad scope, solid foundation, emphasis on application, and innovation-seeking," reinforcing the training of comprehensive practical skills and forming a multi-layered, open, integration between industry and academia, unified system of fostering talents, achieving the objectives of professional talent cultivation.

The Electronic Information Engineering program focuses on cultivating research, design, development, and application capabilities in the fields of electronic system design, intelligent control technology, and embedded system development. The main job markets are in electronic product manufacturing, intelligent control equipment manufacturing, embedded system development, Internet of Things (IoT) product development, AI Applications and other fields.

In the past five years, graduates from the Electronic Information Engineering program have mainly worked in fields related to electronic system design, intelligent control technology, embedded system development, and IoT product development. Its labor markets have covered electronic product manufacturing, intelligent control

equipment manufacturing, embedded system development companies, and IoT technology enterprises. With the rapid development of artificial intelligence technology, the employment fields for graduates have further expanded to AI-related electronic product design, intelligent control system optimization, embedded AI application development, and the intelligent upgrading of IoT products.

The employment situation for graduates of the Electronic Information Engineering program is favorable, with consistently high employment rates. The employment situation for the past three years is shown in **Table 2-2**. A graduate tracking system has been established to conduct a comprehensive analysis of the graduate's circumstances, and the results indicate that graduates from the Electronic Information Engineering program are widely distributed across the country and have a high level of confidence and recognition in their respective industries. Employers have given positive evaluations of the quality of graduate training. In the past three years, nearly 500 graduates have been provided to relevant fields, including electronic technology, semiconductors, integrated circuits, computer software, communication/telecom/network equipment, instruments/industrial automation, etc. Most graduates have become key technical personnel and managers in these companies, particularly in areas such as electronic product manufacturing, intelligent control equipment manufacturing, embedded system development, and IoT product development. The specific situation of employment quality report and the tracking survey of its employment quality are listed in **Appendix A-1** and **Appendix A-2** respectively.

The employing units are China Telecom Corporation Hunan Branch, Zhuzhou Magmite Electrical Co., Ltd., Guangzhou Shiyuan Electronics Technology Co., Ltd., Shenzhen Yingzhong Century Intelligent Technology Co., Ltd., Hunan Ai Hua Group Co., Ltd., Shenzhen Haoyi Yuan Technology Co., Ltd., Hunan Chaoyue Electric Power Construction Co., Ltd., Guangdong Optoelectronics Technology Co., Ltd., Hunan Silicon Valley Digital Information Technology Co., Ltd., and VV Mobile Communication Co., Ltd.

Table 2-2 Employment situation of Electronic Information Engineering in the past three years (unit:%)

Year	2022	2023	2024
Number of people	125	180	169
Employment rate (%)	96%	98.89%	85.21%

2.4.2 Practical competence

(1) Experiment

The cultivation of experimental skills relies on the Engineering Innovation Training Center, Physics Experiment Center, and the Innovation Experiment Center of the School of Information and Electronic Engineering of Hunan City University. The experimental projects are categorized into three types: disciplinary fundamental experiments, professional fundamental course experiments, and comprehensive professional experiments. Among these, disciplinary fundamental experiments and professional fundamental course experiments are conducted through the Engineering Innovation Training Center and the Physics Experiment Center. Comprehensive professional experiments are carried out in the Comprehensive Laboratory of the Innovation Experiment Center of the School of Information and Electronic Engineering. Through experimental courses, students understanding of theoretical courses is reinforced, and their design and innovation capabilities are cultivated.

（2）Curriculum design

The curriculum design includes analog electronic technology course design, digital electronic technology course design, microcontroller system, comprehensive course design and embedded system comprehensive course design. Students are required to complete the course design at the schools' experimental center and during the acceptance of course design, they must perform a physical demonstration and functional explanation and submit the course design report under the guidance of their on-campus mentors.

（3）Internship

The internship includes cognitive internship, professional labor, graduation

practice, electronic technology observation and assembly of electronic product and debugging, metalworking training A, electronic and electrical training A, comprehensive electronic system design. The electronic technology observation and assembly of electronic product and debugging, metalworking training A, electronic and electrical training A, comprehensive electronic system design require students to complete it in the on-campus training center, with a defense and physical demonstration during the acceptance of internship phase, and submission of an internship report under the guidance of on-campus mentors. The cognitive internship and graduation practice require students to complete their internships at off-campus internship bases, with the internship report jointly completed under the guidance of on-campus instructors and part-time enterprise instructors, evaluated by the internship enterprises and off-campus mentors, and a defense conducted during the internship acceptance phase. The internship outline and relevant requirements are provided in **Appendix A-3.**

（4）Enterprise Internship and Practice

The enterprise internship and practice mainly cover courses such as electronic process internship, electronic product assembly and debugging internship, comprehensive training internship of electronic system design, and graduation internship. The internship outline and relevant requirements are shown in **Appendix A-3**. The corporate internship aims to let them understand the electronic industry and corporate culture, as well as the daily workflow of actual work, which generally lasts for 1-3 days. The corporate practice, according to the teaching plan and course arrangement, allows students to go deep into enterprises related to the electronic field and accumulate experience by participating in projects. The general course practice time is 1-2 weeks. The internship units within the above two weeks are shown in **Appendix A-4**. The graduation internship course is scored in the form of points, and the general internship time in enterprises is 3-6 months. A large part of the graduation interns who intern in enterprises consider becoming full-time employees of the enterprises in the future, as shown in **Appendix A-5**. The subsidy for off-campus corporate internship and training practice is shown in **Appendix A-6**.

（5）Graduation thesis/design

The thesis/design of the Electronic Information Engineering major closely aligns with practical engineering needs, and topics are typically derived from teacher research projects or engineering application projects at practice bases, aiming to test student's ability to comprehensively apply their knowledge to solve practical problems. These projects not only require students to master professional knowledge such as electronic system design, intelligent control technology, and embedded system development, but also encourage students to integrate cutting-edge technologies like artificial intelligence into their research to enhance the innovation and practicality of the projects. The entire process emphasizes design and comprehensive ability training, focusing on cultivating students engineering awareness, independent problem-solving skills, and teamwork spirit, particularly their innovative awareness and capabilities, encouraging new ideas, new improvements, and new discoveries. The thesis process involves multiple stages including topic proposal, topic selection, preliminary review, mid-term review, qualification examination for defense, guided and evaluated by teachers through defense, selection of excellent defense, and exhibition of outstanding graduation thesis/design papers. All is aimed at strictly controlling the content and quality of the graduation thesis/design the bachelor to ensure their quality. The graduation thesis/design has met the expected quality standards.

（6）Scientific research and innovation practice

In addition to participating in innovation and entrepreneurship training, students can also engage in extracurricular scientific research and innovative practice activities, with an average participation rate of over 90% for undergraduate innovation and entrepreneurship activities. The Electronic Information Engineering program relies on a teaching team that actively builds communication platforms between undergraduates and professional teachers, leveraging provincial teaching and research platforms such as the Undergraduate Innovation Training Center for Electronic Information Engineering, university-enterprise cooperation demonstration bases, and the Key Laboratory of All-Solid-State Energy Storage Materials and Devices. These platforms actively promote various undergraduate research-based learning and innovative experimental projects, encouraging students to participate in various academic

competitions and producing large number of high-quality outcomes. Innovative experimental projects and innovative practical works, details of some students' recent disciplinary competition awards and student-led provincial and national innovative practical projects are provided in **Appendix A-7**.

2.5 Admission requirements

2.5.1 Admission conditions

According to the Education Law of the Peoples Republic of China, the Higher Education Law of the Peoples Republic of China, and other relevant laws and regulations as well as the provisions of the Ministry of Education, all individuals entering Hunan City University to study for a bachelors' degree or pursue a bachelor degree must participate in the National Examination for College Admissions. Those who meet the following conditions may apply: (1) Complying with the provisions of the Constitution and laws of the Peoples Republic of China; (2) Holding high school graduation or equivalent academic qualifications; (3) Being in good health.

2.5.2 Admission process

Chinese universities implement unified national enrollment. According to the scores, candidates are divided into the first batch, second batch, and third batch, and are admitted in order of their scores (from high to low). Overall, Hunan City University's Electronic Information Engineering program is admitted in the first batch.

During the admission stage, the enrollment department of Hunan City University evaluates candidates comprehensively based on their moral, intellectual, and physical qualities according to the predetermined enrollment plan, primarily selecting the best candidates based on their scores. The typical admission process includes: file submission, document review, preliminary admission, admission examination, and issuance of admission notices.

When the freshmen enrolled at Hunan City University they need to provide their admission notices and identification documents and then register according to the recommendations in the registration guidelines at the corresponding department. The

typical enrollment process includes: confirming enrollment, paying tuition, registering for academic status, collecting learning tools and supplies etc.

2.5.3 Admission transparency

The admission and enrollment process for freshmen at Hunan City University strictly follows relevant procedural documents, ensuring a high degree of transparency. According to the "Education Law of the Peoples Republic of China," the recruitment and enrollment work for ordinary higher education institutions in China operates under a mechanism where "universities are responsible, and the admissions office supervises." Here, the "admissions office" refers to the provincial admissions office where the candidate is located, not the university admissions office. This means that for candidates who have passed the political and ideological assessment, abode by laws and regulations, completed the physical examination, scored above control line of the same batches admission, and met the schools file adjustment requirements. Whether they are admitted and which major they will be enrolled in are determined by the higher education institution itself.

The school has promulgated and implemented the "Hunan City University 2024 General Higher Education Admission Brochure" (see **Appendix A-8**), the "Hunan City University Online Admission Management Regulations" (see **Appendix A-9**), and the "Hunan City University Online File Review Guidelines" (see **Appendix A-10**) to standardize the enrollment process and improve promotional channels.

The institutions of higher education shall be responsible for the interpretation of candidates without being admitted and the problems unsolved. The provincial enrollment offices where the candidates are located shall organize and implement the submission of electronic files of qualified students to the institutions of higher education, supervise the institutions of higher education to implement national admission policies, admission plan adjustment and implementation, and correct behaviors that violate national admission policies and regulations.

2.6 Training program/content

The training program is the fundamental basis for organizing various teaching

activities and serves as the foundational document for schools to manage, monitor, and evaluate teaching quality. To verify the quality of training program formulation, standardize the workflow for formulating training programs in schools, ensure the realization of talent cultivation goals, and better optimize and improve training programs, the school has formulated "Management Measures of Talent Cultivation Program in Hunan City University " and "Rational Evaluation and Implementation Measures of Talent Cultivation Program in Hunan City University" (see **Appendix A-11**). These documents clearly define the formulation and revision of training programs. The training program for this major is jointly drafted by the college, department, industry, and enterprise experts, and is subject to quality monitoring organized by the vice president in charge of teaching, involving professor committees and professional committees (the list of the Teaching Guidance Committee is detailed in **Appendix A-12**). It is reviewed by the Hunan City University Teaching Guidance Committee (See **Appendix A-13** for the training plan of Electronic Information Engineering).

3 Degree courses: Structures, Methodology and Implementation

3.1 Structures and modules

3.1.1 Structures

The undergraduate training plan is a four-year program. Overall, the curriculum is divided into eight competence fields, with the learning content of different competency being interconnected in chronological order. In terms of credit points and workload for each competency, language courses and general courses are scheduled in semesters 1-7, including English, Philosophy (Humanistic Ideology), Physical Education, etc., which help students become familiar with relevant English, humanities, and legal knowledge, aiming to cultivate students language skills, humanistic qualities, and sports spirit, laying the foundation for their all-round development.

The mathematics and physics basis are scheduled in semesters 1^{th}-5^{th}, gradually advancing from basic to advanced levels to lay a solid foundation for students subsequent specialized course studies. For example, Advanced Mathematics is arranged

in semesters 1-2, cultivating student's logical thinking and abstract abilities, providing a basis for other mathematics courses. Linear Algebra, Discrete Mathematics, and Probability Theory and Mathematical Statistics are scheduled in semesters 3-4, further broadening student's mathematical perspectives and providing mathematical tools for applications in fields such as engineering and computer science. Functions of complex variables are arranged in the 5th semester, enhancing students thinking patterns and improving their ability to analyze and solve problems. College Physics is scheduled in semesters 1-2, enabling students to understand the fundamental laws of nature and providing theoretical support for technological innovation in engineering fields. College Physics Experiments are arranged in the 3rd semester, deepening students understanding of physical theories and enhancing their application skills through practical operations.

The engineering basics are scheduled in semesters 1-6, covering courses related to electronic technology and information technology, such as C language programming, data structures, circuit analysis, analog electronics, digital electronics, etc., laying the groundwork for subsequent engineering applications and specialized course studies. The applied engineering are scheduled in semesters 3-6, encompassing core professional courses of this major, such as C++ language programming, PCB design and drafting, microcontroller principles and applications, etc. These applied engineering courses are crucial in the entire curriculum system, deepening and expanding professional knowledge and its application in the field of electronic information engineering, as well as modeling and proposing solutions for complex problems in electronic information engineering. Autonomous development (optional) courses are scheduled in semesters 3-7, with professional options arranged in semesters 5-6 to broaden interdisciplinary knowledge and skills and meet student's personal and professional interests. Centralized practice courses run throughout the program, scheduled in semesters 1-7, enabling students to promptly connect theoretical knowledge with design practice. Graduation thesis/design is scheduled in 8th semester, with most topics derived from mentors research projects or actual engineering projects in enterprises. Centralized practice courses and the Graduation thesis/design help

students accumulate substantial practical engineering experience, enhancing their employ ability. According to the curriculum, the program is designed so that students will earn 230 credits after eight semesters of study.

3.1.2 Modules

According to the training objectives, all courses cover eight competency areas, corresponding courses and expected learning outcomes are as follows:

General Education

Expected learning achievements: To cultivate student's humanistic literacy, social skills, computer operation skills, and team spirit. To master the basic knowledge of humanities and social sciences, possess good humanistic qualities, undertake professional, social, and environmental responsibilities; to participate in practical activities and group activities for self-improvement; communicate effectively, adapt to new environments and new societies. Maintain physical health through sports exercises.

Basic requirements: To strengthen physical exercise, maintain physical and mental health, promote self-realization and the cultivation of team spirit as a team member; to carry out various social practical activities, understand relevant knowledge of humanities and social sciences, adapt to social development, and assume social responsibilities.

Corresponding courses: Ideological and Moral Cultivation and Legal Basis, Outline of Modern Chinese History, Basic Principles of Marxism, Introduction to Mao Zedong Thought and the Theoretical System of Socialism with Chinese Characteristics, Introduction to Xi Jinping Thought on Socialism with Chinese Characteristics for a New Era, Situation and Policy, Mental Health for College Students, Military Theory for College Students, Computer Basics for College Students, Literature Search and Thesis Writing, College Physical Education and Health, Career Development and Employment Guidance for College Students, Basics of Innovation and Entrepreneurship, General Optional Courses.

Mathematics and physics basics

Expected learning achievements: To master the basic knowledge and principles of mathematics, physics and other natural sciences, deepen the understanding of natural sciences, improve the scientific literacy of solving problems, and lay a foundation for the subsequent study of engineering basic courses.

Basic requirements: To use the perspective and thinking mode of mathematics and natural science to observe, analyze and solve technical problems. To continuously analyze, synthesize, calculate, judge and reason engineering phenomena to solve related engineering problems according to the characteristics of mathematics and natural science.

Corresponding courses: advanced mathematics, linear algebra, probability theory and mathematical statistics, discrete mathematics, functions of complex variables, college physics, and college physics experiment.

Foreign language

Expected learning achievements: To have the intercultural communication skills required for international cooperation and to better adapt to the international development of societies.

Basic requirements: To master the learning methods and skills of English, be able to read professional literature, and engage in professional foreign language communication.

Corresponding courses: College English, College English Extension series.

Engineering basics

Expected learning achievements: To master a wide range of engineering fundamentals to lay a solid foundation for subsequent engineering application courses.

Basic requirements: To master the relevant concepts and basic principles of electronics, computer and information, and have relevant basic engineering and professional knowledge. To master the basic methods and skills to solve engineering problems through continuous analysis, induction, judgment and reasoning of engineering phenomena.

Corresponding courses: C language programming, Introduction to electronic information engineering, circuit analysis, analog electronic technology, digital

electronic technology, signal and system, data structure, communication principle, electromagnetic field and electromagnetic wave.

Engineering application

Expected learning achievements: To master professional knowledge and skills in electronic information engineering and related fields, and to be able to analyze and solve complex engineering problems.

Basic requirements: To possess the ability to investigate, design, analyze complex engineering problems in relevant fields and propose solutions, capable of designing electronic information systems that meet specific requirements, and to simulate, test, and analyze the results of the designed systems. To master the design, diagnosis, optimization, and operation of electronic information systems, competent in the research, development, production, sales, and management of electronic information system products, and possess a certain degree of innovative awareness and capability.

Corresponding courses: C++ language programming, PCB design and drawing, modern sensor and detection technology, high frequency electronic circuits, digital signal processing, microcontroller principle and application.

Autonomous development (optional)

Expected learning achievements: To understand cutting-edge professional knowledge and interdisciplinary knowledge in electronic information engineering and related fields, and keep up with the development trends in relevant fields.

Basic requirements: to master the professional knowledge involved in interdisciplinary and new fields such as STM32 electronic system design, embedded system principles and applications, robot development, etc., possess professional skills for related work and the ability to transform and optimize existing systems, as well as skills for independent development, innovation and entrepreneurship, and employment.

Students must complete 9 credits of profession optional courses, 2 credits of natural science such as humanities and social sciences, art and physical education, and innovation and entrepreneurship, and no less than 4 credits of other independent development courses (including cultural quality education, aesthetic education, and cross-major optional courses).

Corresponding courses: STM32 electronic system design and engineering application, FPGA principles and application, embedded system principles, robot development, innovation and entrepreneurship, humanities and social sciences, art and physical education, other (cultural quality education, aesthetic education, and cross-major optional courses).

Centralized practice

Expected Learning achievements: To cultivate students experimental skills, engineering application capabilities, and innovative and practical abilities. Through the study of centralized practical training, students will gain an understanding of the units (components), process flows, system operation management, and other aspects of electronic system development and design, consolidate theoretical knowledge, enhance the level of applied knowledge, and develop students experimental skills, engineering application capabilities, and innovative and practical abilities, with a focus on cultivating students ability to analyze and solve complex engineering problems using engineering fundamentals and professional knowledge.

Basic requirements: To be able to use theoretical knowledge and practical skills to solve practical problems, consolidate basic theoretical knowledge, deepen the understanding of electronic information engineering application field, and enhance innovation ability.

Corresponding courses: Orientated Education and Military Training, Electronic Engineering Observation and Assembly and Debugging Practice of Electronic Products, Digital Unit Circuit Simulation and Development Comprehensive Practical Training Internship, Analog Unit Circuit Simulation and Development Comprehensive Practical Training Internship, Metalworking Practice, Electronic and Electrical Practice, Microcontroller System Comprehensive Practical Training Internship, Electronic System Engineering Practice Internship, Embedded System Comprehensive Practical Training Internship, Graduation Internship, Labor of Public Benefit, Social Practice and Volunteer Service, Graduation Education.

Graduation thesis/design

Expected learning achievements: To combine knowledge and skills to analyze and solve engineering problems, execute and complete design tasks.

Basic requirements: To complete the graduation thesis/design task under the guidance of the supervisor, write the graduation thesis/design, and pass the defense.

Corresponding courses: thesis/project.

The number of hours and credits for each competency are shown in **Appendix B-1**.

The proportion of credits in each competency in the entire training program is shown in **Figure 3.1**.

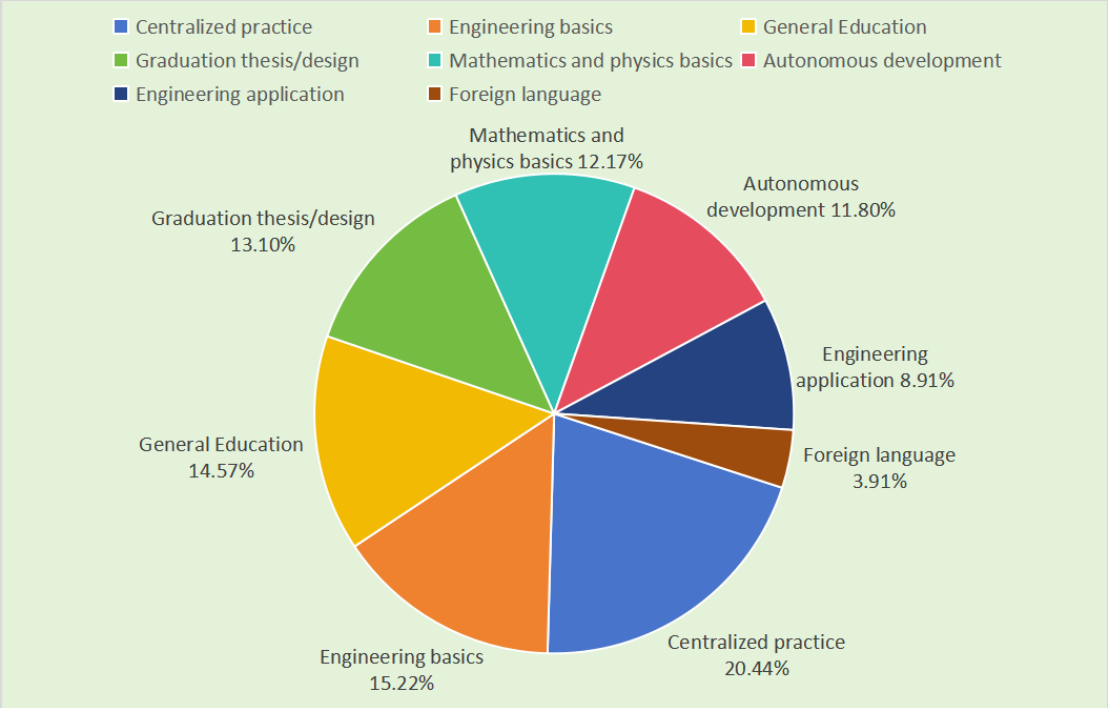

Figure 3.1 Credit composition of different competency

3.2 Workload and credit points

For courses of theoretical module, 16 contact hours of study is equivalent to one Chinese credit in Hunan City University. For courses of experimental module or practical training, one Chinese credit is equal to 32 contact hours of study. Chinese credits only count contact hours, while European Credit Transfer System (ECTS) credits not only count contact hours but also self-study hours. From the perspective of

ECTS credits, a student's workload is the sum of their contact hours and self-study hours. Generally, 30 hours (including contact hours and self-study hours) are equivalent to one ECTS credit, but the difference between the two credit systems only exists in self-study hours. When converting Chinese credits to ECTS credits, the average number of credits per academic year is 57.5 ECTS credits or 1725 hours (workload).

Table 3-1 Overview of Study Hours and credit points of the Four-Year Program

Type of course	**Contact hours**	**Self-study hours**	**Total study hours**	**ECTS credits**	**Proportion of credits**
General Courses	584	421	1005	33.5	14.57%
Language Courses	144	126	270	9	3.91%
Science and Engineering Courses	1648	1667	3315	110.5	48.04%
Practical Training	832	578	1410	47	20.44%
Graduation thesis/design	448	452	900	30	13.04%
Total	**3656**	**3244**	**6900**	**230**	
Compulsory Courses	3272	2818	6090	203	88.26%
Optional Course	384	426	810	27	11.74%
Total	**3656**	**3244**	**6900**	**230**	
Professional Courses	2192	2083	4275	142.5	61.96%
Non-Professional Courses	1320	1035	2355	78.5	34.13%
Language Courses	144	126	270	9	3.91%
Total	**3656**	**3244**	**6900**	**230**	

3.2.1 Study hours (workload)/Contact hours, credit points and self-study

Please refer to **Appendix B-1** for the study hours and credit points of each module of courses of the Electronic Information Engineering. For the syllabus of each course, see **Appendix A-3 and Appendix B-2 to Appendix B-7**. **Table 3-1** provides statistics on the study hours of students in four years, in order to show the structure and classification of the workload of compulsory courses, major degree courses, elective courses, language courses, etc.

3.2.2 Credit system

The learning achievements of students are primarily reflected in the form of credits. Each undergraduate student must earn ECTS credits equivalent to 230, which is approximately 29 ECTS credits per semester, after completing four years of study. The credit deviation between different semesters should not exceed 3 ECTS credits. The class hours per semester are relatively balanced to avoid significant pressure on students learning and instructors teaching. Examination results are evaluated by the teaching staff, while the student's self-study time is verified by counselors and academic mentors to obtain the actual learning workload per semester, ensuring that the actual learning workload aligns with the planned workload. Each student must complete approximately 860 class hours (workload) per semester. 30 class hours (workload) is equivalent to 1 ECTS credit.

3.3 Teaching methods

Theoretical courses are mainly taught in large classes (about 80 students), some courses include theoretical content and in-class experiments, which are usually conducted in batches and groups. Optional courses can be chosen by students according to their own interests and developing needs.

Apart from classroom teaching, practical training and exercises are also important components of undergraduate education. The School of Information and Electronic Engineering, which this major belongs to, possesses 10 provincial-level teaching and research platforms including the Hunan Provincial Modern Industrial College of

Electronics and Information, the Hunan Provincial Innovation Training Center for Electronics and Information Majors, university-enterprise cooperation demonstration bases, innovation and entrepreneurship education bases, the Hunan Provincial Key Laboratory of All-Solid-State Energy Storage Materials and Devices, and the Hunan Provincial Engineering Research Center for Intelligent Monitoring and Disaster Prevention Technology in the Dongting Lake Regional Ecological Environment. Additionally, the school has established 37 on-and off-campus internship and training centers/bases, including the Basic Teaching and Innovation Laboratory for Electronics and Information Majors, the Harmony Mobile Application Development Laboratory, the Artificial Intelligence Laboratory, the Cybersecurity Laboratory, the Hunan Cybersecurity Base, and the Ai Hua Group Internship Base, providing students with excellent engineering training conditions and ample practical internship opportunities. Moreover, students can participate in major innovation projects, academic competitions, or engage in practical learning through in-house research projects led by professional teachers. Furthermore, every student must undertake professional foundation experiments, comprehensive professional experiments, integrated course design, innovation and entrepreneurship training, graduation internships, graduation labor practice, and graduation thesis/design.

Figure 3.2 Login interface of teaching management information system of Hunan City University

In the teaching of this major, the online teaching model is widely adopted. Most courses have corresponding course websites on the Hunan City University's online teaching platform. The established teaching management information platform and open online course websites provide students with abundant learning resources, which can stimulate students autonomous learning and improve their self-study abilities.

3.4 Support and consultation

1) The Office of Academic Affairs

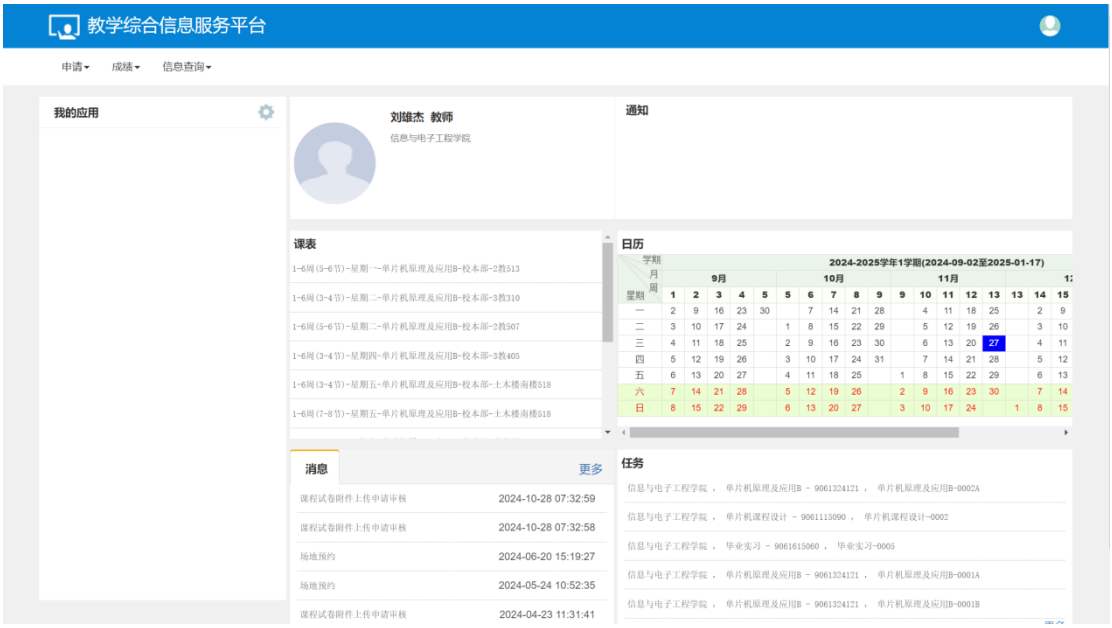

Figure 3.3 The login interface of teaching management information system of Hunan City University

The daily management and training of undergraduate teaching are mainly responsible by the Academic Affairs Office and the Teaching Quality Monitoring and Evaluation Office. The Academic Affairs Office comprises the Comprehensive Department, the Major Construction Department, the Teaching Operation Department, the Practical Teaching Department, and the Student Record Management and Examination Center. The website of school teaching management information system is http://58.47.143.9:6038/jwglxt/xtgl/login_slogin.html. Each faculty and staff can log in with their account passwords, those without cannot. After logging in, the interface for faculty and staff is shown in **Figures 3.2 and 3.3**.

2) Student Affairs Department (Office)

The Student Affairs Department (Office) of Hunan City University is a functional department responsible for student management, education, and services. Its main responsibilities include: implementing ideological and political education, legal education, school rules and regulations education, health education, psychological quality education, and moral character education for students; providing daily guidance and services to students, managing student affairs such as school spirit construction, comprehensive quality evaluation, excellence awards, student scholarships (assistance), student loans, hardship assistance, dormitory management, etc.; being responsible for work of Communist Youth League, education of League members, and League organization construction and management; being responsible for the cultivation and evaluation of activists of party application, running the branch school of Party; being responsible for the selection and review of scholarships (assistance), handling the "green channel" work for freshmen; being responsible for investigating and statistics on economically disadvantaged students, establishing files and databases for extremely poor students; being responsible for formulating various regulations for student education and management; being responsible for establishing, improving, and preserving various student management archives; being responsible for recommendations and management of graduate employment.

3) Student counselor system

Hunan City University has established a comprehensive counselor system covering multiple aspects such as ideological education, party and league construction, school spirits management, mental health, career planning, theoretical and practical research, aiming to promote the all-round development of students. The specific responsibilities of counselors include: being in charge of students ideological and theoretical education and value guidance, helping students establish correct worldviews, outlooks on life, and values; being responsible for party league and class building, mainly including the selection, cultivation, and motivation of student leaders, as well as the cultivation and education of student party members and active applicants for party membership, guiding the construction of student party branches and class league

organizations; being responsible for school spirits construction and daily management, including matriculation education, graduate education, military training, etc., guiding students to develop good study habits and correct learning methods, ensuring orderly student life; being responsible for mental health education and counseling, conducting preliminary screening and guidance for students psychological issues, organizing mental health knowledge dissemination activities, cultivating students rational, peaceful, optimistic, and positive mental attitudes; being responsible for career planning and employment entrepreneurship guidance, providing scientific career planning and employment guidance services. Counselors assist students in developing a proper understanding of employment, guiding them to pursue careers at the grassroots level, especially in western regions where the country's needs are the greatest. At the same time, counselors also actively provide guidance and support for students innovation and entrepreneurship to stimulate their innovative spirit and entrepreneurial enthusiasm; counselors are also responsible for theoretical and practical research, they need to study the basic theories of ideological and political education and related disciplines, participate in academic exchange activities in relevant fields, engage in research topics or projects of ideological and political education both inside and outside the school, continuously improve their professional qualities and working abilities. In addition, counselors are responsible for organizing students to participate in social practice, volunteer services, and other activities, cultivating student's sense of social responsibility and dedication, as well as paying attention to student's special needs, such as managing students with special medical conditions, providing personalized services and support to students.

4) Academic mentors

In the challenging and opportunistic field of electronic information engineering, each undergraduate student has a dedicated academic mentor who not only imparts professional knowledge but also plays the role of a guide and partner on the student's growth journey. The primary task of the academic mentor is to help students clarify their academic goals and develop personalized learning plans. By thoroughly understanding the student's foundation, interests, preferences, and career planning, the

mentor will guide students to reasonably arrange their course studies, ensuring that they grasp fundamental theories while also delving into the forefront of their major. In terms of professional knowledge and skills training, the academic mentor will make full use of laboratory resources to guide students in practical operations and project development. Through participation in research projects, innovative experiments, and academic competitions, students can not only consolidate their theoretical knowledge but also cultivate innovative thinking and teamwork skills in practice. Career planning and employment guidance are another crucial responsibility of the academic mentor. The mentor will combine industry trends to provide students with employment information and job-seeking skills, helping them formulate practical career plans. Additionally, the academic mentor pays attention to student's mental health and humanistic care. Through regular communication and interaction, the mentor understands the students learning and living conditions, identifies issues in a timely manner, and provides psychological support and assistance.

5) Corporate mentors

Hunan City University implements an enterprise mentor system, dedicated to providing students with a practical platform closely aligned with industries, aiming to stimulate their innovative thinking and entrepreneurial potential. Enterprise mentors are rigorously selected and certified by Hunan City University, typically comprising management elites or highly skilled engineers with extensive experience in various industries. The principle of mutual selection is applied between students and enterprise mentors, allowing students to autonomously choose their mentors based on their career plans and research interests. Meanwhile, enterprise mentors can also select suitable students according to project requirements, ensuring the efficiency and harmony of mentorship relationships. Enterprise mentors provide professional insights and practical strategies throughout the process, assisting students in transforming theoretical knowledge into practical application. Additionally, enterprise mentors maintain close communication with academic advisors within the university, jointly establishing a "dual-mentor system" teaching model, optimizing resource allocation, promoting deep

integration of industry, academia, and research, and facilitating a smooth transition for students from campus to society.

6) Course website

Online teaching has become an indispensable part of educational activities, greatly enriching teaching methods and improving teaching efficiency. The online course resources for this major are mainly concentrated on the schools official online course teaching platform (https://hncu.mh.chaoxing.com), Classroom (https://www.ketangpai.cn/#/homePage), Xuetang Cloud, and Yu Classroom (https://hncu.yuketang.cn/pro/portal/courselist). This platform integrates various course resources, allowing students to log in and access detailed web pages for each course. These web pages are rich in content, covering aspects such as course introduction, course background, teaching content, syllabus, and exercises, providing comprehensive learning guidance for students. On the platform, students can not only browse various materials closely related to the courses but also engage in real-time online communication with instructors. Students can ask questions to teachers at any time, and teachers can respond promptly. This face-to-face communication method enables students to gain a deeper understanding of the course content and allows teachers to more accurately gauge students learning situations, thereby adjusting teaching strategies and improving teaching quality.

7) Transfer of specialty within the university

At Hunan City University, to fully embody the educational philosophy of "student-centeredness," further mobilize students enthusiasm and initiative for learning, and promote their free and individualized development, based on a thorough consideration of the existing teaching resources and conditions of the university and college, we have formulated the "Hunan City University Full-time Undergraduate Student Specialty Transfer Management Regulations" as shown in **Appendix B-8**. The process for changing majors follows the principles of procedural standardization, fairness, and merit-based adjustment, primarily targeting first-year undergraduate students. Students can only change their major once during their academic career, and once an application for a major change is approved by the university, it cannot be changed again.

Transferring specialty is divided into two types: normal and special.

For general cases, students who wish to transfer to new engineering/new humanities classes (registered with the Academic Affairs Office) or music, arts, and sports majors will be assessed and interviewed by their respective colleges to determine a list of recommended transfers. Other students must participate in the unified transfer examination organized by the Academic Affairs Office. The specific process is as follows: (1) Apply personally, fill out the "Hunan City University Transfer Application Form" (see **Appendix B-8**) within 30 days before the end of the second semester of the first year, along with relevant supporting documents and a personal commitment letter (see **Appendix B-8**); (2) Obtain the signature of the Dean of the transferring college; (3) Receive a comprehensive evaluation from the transferring college and obtain the Dean's signature; (4) Preliminary review by the Academic Affairs Office; (5) Review by the university leader in charge of undergraduate teaching; (6) Approval by the President Office.

For special circumstances, specifically: (1) having certain strengths and special interests in the intended major; (2) having certain illness or physical defect; (3) returning to school after military service or entrepreneurship; (4) resuming after suspension with the original major ceased or revoked; (5) having other special circumstances without being included above. Students who fall under any of the above conditions may apply for a change of major. The specific process for changing majors is: (1) student application; (2) participation of the major change examination or assessment after the completion of the first semester of the first year at university; (3) preliminary review of the list of students intending to change majors by the Academic Affairs Office; (4) review by the university leadership in charge of undergraduate teaching; (5) public announcement by the Academic Affairs Office; (6) approval by the President Office; (7) processing of major adjustment procedures.

For those who have retired or returned to school after starting a business, or those who have got suspended and whose original major has been closed or revoked, etc., other special circumstances apply for changing majors, according to the relevant policies of the higher authorities, with the consent of the transferring out and

transferring in colleges, the review of the teaching office, and the approval of the university leaders in charge of undergraduate teaching.

Students who are approved to transfer to a new major must meet the requirements of the new major in terms of tuition payment and other procedures before they can register and start studying in the new major. After transferring to a new major, students will be strictly reviewed according to the talent cultivation program of the new major for graduation eligibility. If the credits obtained before transferring to the new major meet the requirements of the talent cultivation program of the new major, the "Hunan City University Student Course Credit Mutual Recognition Application Form" (see **Appendix B-8**) must be filled out and confirmed by the college of transfer before being reported to the Academic Affairs Office for recognition. Credits earned in courses that have not yet been completed but are offered in the new major must be obtained through retaking.

4. The system, concept and organization of the examination

4.1 Examination methods

To standardize the management of undergraduate course assessment in schools, promote classroom teaching reform, enforce examination discipline, establish good teaching and learning styles, improve academic evaluation systems, and enhance the quality of talent cultivation, according to relevant documents and in combination with the actual situation of our university, the "Hunan City University Full-time Ordinary Higher Education Undergraduate Course Assessment and Grade Management Measures" (**Appendix C-1**) is hereby formulated.

The assessment is divided into two categories: examination and evaluation. The examination is mainly conducted through closed-book written tests, but open-book exams may be conducted according to the needs of the course. The evaluation of assessment courses shall not adopt the method of closed-book examination, and the distinction between examination and evaluation courses shall be based on the provisions of the training program. The examination content must cover the expected

learning outcomes specified in the course syllabus (**Appendix A-3, B-2 to B-7**) and shall be explained in the Hunan City University Examination Question Review Form (**Appendix C-2**).

The examination of courses can adopt various forms such as oral examination, evaluation, and defense, emphasizing the students learning process and understanding of knowledge. Practical components such as comprehensive graduation training, course design, educational internships, and production internships are generally assessed through evaluation or defense methods. Course examination scores can be calculated on a percentage basis, or a five-level grading system can be adopted: 90~100 for excellent, 80~89 for good, 70~79 for average, 60~69 for pass, and below 60 for fail. Special types of courses, upon approval, may adopt other grading systems.

The examination courses are mainly closed-book written tests, but open-book exams can be conducted according to course needs. Course examination scores generally account for 60% of the final grade, while regular performance accounts for 40% of the final grade. The ratio of final exam scores to regular performance can be appropriately adjusted based on course teaching requirements. A process evaluation mechanism must be established for the assessment of regular performance, which should include more than three forms of evaluation. The content of process evaluation should be diversified and standardized, verifiable, and traceable. Evaluation forms include: pre-class online preview and discussion, classroom questioning, classroom discussion, mid-term tests, unit quizzes, experiments, assignments, course papers, attendance, etc. The proportion of experimental scores should comply with the requirements of the teaching (examination) syllabus. Regular performance evaluations must be recorded and reflected in the "Hunan City University Student Academic Record Form" (**Appendix C-3**), and once regular performance is determined, it cannot be changed. The proportion of self-study hours can be seen in the course outline (**Appendix A-3, B-2 to B-7**). The self-study scores are reflected in various assessments of daily grades, such as online preview, homework, course content, etc. The specific scores are ultimately reflected in the "Hunan City University Student Achievement Registration Form" (**Appendix C-3**).

The course assessment results will be recorded in the students file as an overall assessment score. The overall assessment score includes regular performance and final exam scores. In principle, regular performance scores account for 30%-50% of the overall course evaluation score, while final exam scores account for 50%-70% of the overall course evaluation score. A total evaluation score of 60 indicates passing, and only those with a passing or higher total evaluation score can earn credits for the corresponding course. Starting from the second semester of 2024, students whose final exam scores are below 45 (previously 40) will not be eligible to participate in the overall course evaluation based on their regular performance scores, nor will they earn credits; grades will be determined solely by the exam scores.

The form of the examination and the specific composition of the total score have been clearly stated in the course syllabus. Therefore, students can know the examination form and the specific composition of the total score of the course after selecting the course.

The assessment of student's moral character is based on the Code of Conduct for Students in Higher Education Institutions, and the form of individual summary and democratic evaluation is adopted to write comments on the actual performance of the student and give grades.

Public sports are evaluated according to the National "Standards for Physical Fitness of College Students and Implementation Measures" and the "Sports Assessment Measures of Hunan City University". The university sports assessment method combines regular performance scores (40%) and final exam scores (60%). Regular performance scores are assessed based on morning running results: 70 kilometers is passing, 110 kilometers is full score, and so on; Final exam scores consist of three parts: 1) Free-throw shooting (30% of final exam score); 2) 1000 meters for males/800 meters for females (40% of final exam score); 3) Push-ups for males/ sit-ups for females (30% of final exam score).

The results of labor of public benefit are mainly evaluated based on student's attendance, labor attitude, and labor discipline and task completion.

The assessment results of student's military training are mainly evaluated according to the completion of the military training teaching plan.

All course evaluations are conducted on a credit point system. Credit points are the basis for measuring students learning quality, and the "Hunan City University Full-time Ordinary Higher Education Undergraduate Course Evaluation and Grade Management Measures" (**Appendix C-1**) provides the correspondence between evaluation grades and grade points, as shown in **Table 4-1**:

Table 4-1 Correspondence between assessment scores and grade points

Percentile results	Grade	Grade point	Median Grade point
90~ 100	Excellent	4.0-5.0	4.5
80~ 89	Good	3.0-3.9	3.5
70~ 79	Secondary	2.0-2.9	2.5
60~ 69	Pass	1.0-1.9	1.5
59 or below	Fail	0	0

Explanation: For those using the percentage system, an assessment score of 90 is equivalent to 4.0 GPA (Grade Point Average)), a score of 91 is equivalent to 4.1 GPA, and so on; scores below 60 are equivalent to 0 GPA. For those using the grading system, an excellent assessment score is equivalent to 4.5 GPA, a good score is equivalent to 3.5 GPA, a passable score is equivalent to 2.5 GPA, a failing score is equivalent to 1.5 GPA, and an unpassed score is equivalent to 0 GPA.

The calculation formula of GPA is:

Grade <60, GPA = 0

Grade ≥ 60, GPA = (grade-50)/10

The calculation formula of credit points is:

The credit point of a course = the grade point × the credit point of the course

The average credit point of a semester, academic year or graduation = ∑ (credit point × course credit) / ∑ course credit

Graduation comprehensive training is a professional comprehensive training phase for undergraduate students before graduation, which is an important practical phase for

students to comprehensively apply the basic knowledge, basic theories, and basic skills they have learned, learn the basic methods of scientific research or engineering design, undergo basic scientific research training, and cultivate innovative ability, practical ability, and entrepreneurial spirit.

The eighth semester will arrange 14 weeks of bachelor degree thesis/design, requiring students to complete tasks independently and in the guidance. Under the guidance of the supervisor, students write their thesis, graduation thesis/design according to the "Hunan City University Undergraduate Comprehensive Training Management Measures" (**Appendix C-4**). The title of the thesis, the tasks students need to complete, and the schedule are all detailed in the task book for the graduation thesis/design (**Appendix C-5**). After selecting the thesis title, students can obtain all information through the task book. During the thesis process, students are required to maintain contact with their supervisors through both online and offline means, and to submit a written report on the progress of the thesis and the main issues that need to be addressed at least once a week. Supervisors are required to provide feedback on the progress and address the issues in the report provided by the student to ensure timely completion of the thesis and guarantee its accuracy and reasonableness. The final grade for the graduation comprehensive training is determined by a combination of comments from the instructor, evaluators, and the defense panel, as well as a comprehensive assessment of the student's performance (refer to the Graduation Thesis/Design Grade Evaluation Form in **Appendix C-6**). Upon completion of the graduation comprehensive training, each secondary college should promptly report the results to the Academic Affairs Office and conduct a self-assessment and summary of the graduation comprehensive training. The university organizes a special inspection or spot check of the graduation comprehensive training.

All the assessment results of the courses can be viewed by students through the teaching system by using their student number and password. The interface for students to check their grades is shown in **Figure 4.1**.

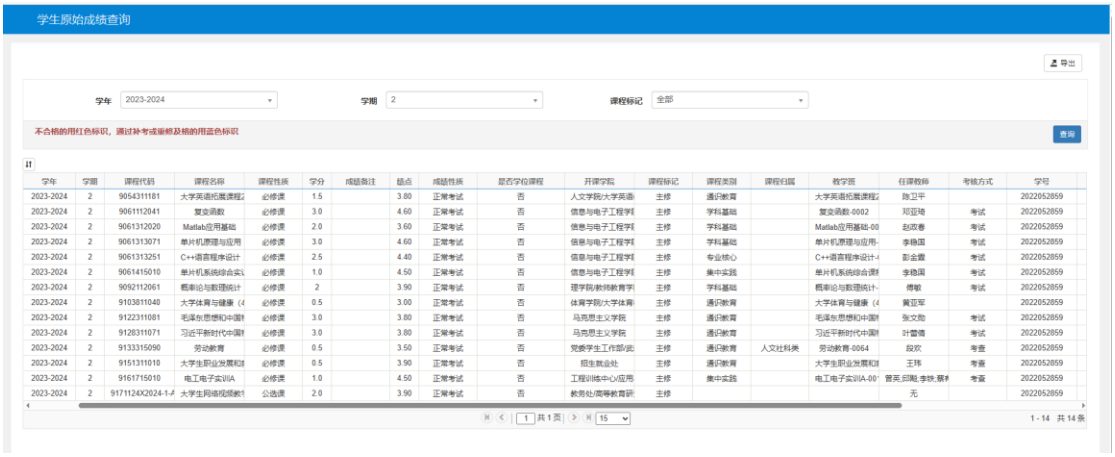

Figure 4.1 Student score query interface

4.2 Organization of the examination

The assessment of public course examinations is uniformly planned and arranged by the Academic Affairs Office, with examination time generally scheduled in the 19th and 20th weeks (final term) of each semester. The assessment of specialized courses and professional fundamentals is organized and arranged by the respective colleges offering the courses, with examination courses typically completed within two weeks after the end of teaching sessions or during the teaching period. Examination courses are generally completed before the 18th week. The time and location of examinations are meticulously arranged by each secondary college and the Academic Affairs Office Examination and Student Status Management Center, ensuring that examination venues meet the requirements for normal examinations, which are published in the teaching management system.

The examination is organized in accordance with the Examination Management Measures of Hunan City University, and the main rules and regulations (**Appendix C-7**) include:

- Measures for the Assessment and Score Management of Full time Undergraduate Courses in Ordinary Higher Education at Hunan City University
- Measures for Handling Violations and Cheating in Examinations by Students of Hunan City University

- Management Measures for Undergraduate Experimental Teaching at Hunan City University
- Management Measures for Undergraduate Course Design of Hunan City University
- Management Measures for Undergraduate Internship Teaching at Hunan City University
- Management Measures for Undergraduate Comprehensive Training at Hunan City University
- Management Measures for Student Labor Courses at Hunan City University
- Regulations on the Management of Public Elective Courses at Hunan City University
- Regulations on Student Management of Hunan City University
- Regulations on Student Status Management of Hunan City University
- Interim Regulations on the Management of Foreign Students' Academic Status at Hunan City University
- Management Measures for Overseas Study and Internship of Hunan City University
- Regulations on Student Management of Sino Foreign Cooperative Education at Hunan City University
- Construction and Teaching Management Measures for Online Open Courses at Hunan City University

For the same exam graded by multiple teachers, the reference answers and grading standards established by the proposition group will be jointly followed. The method of using the same teacher to correct the same question and exchanging papers for calibration and review is adopted to ensure the fairness of correction. After the grading is completed, the grading teacher should analyze the course paper, fill out the "Hunan City College Paper Score Analysis Form" (**Appendix C-8**), and provide comments and improvement suggestions on students' grades, propositions, and teaching aspects. According to the spirit of relevant documents, the "Hunan City University Student Appeal Handling Measures" (**Appendix C-9**) have been formulated. To ensure the fair

and just handling of student appeals and disciplinary actions, and to safeguard the legitimate rights and interests of students.

4.3 Course postponement, make-up and retake

In general, students cannot apply for deferred exams; only those who meet the relevant requirements of the school can apply for deferred exams. Students who wish to apply for deferred exams should generally complete the application three days before the exam, but in special circumstances, they can apply within one week after the exam. Examination courses cannot be deferred. If students are unable to participate in the deferred exams during the normal makeup examination period due to special reasons, they can reapply for deferred exams, but this can only be done once. The deferred exam scores are generated by weighting regular grades and exam results, and teachers will record the regular grades of deferred students when entering final grades at the end of the term. The credit points for deferred exam scores are calculated as 1.0.

All students who failed the assessment of the previous semester courses (excluding course design and other centralized practical teaching components) are eligible to retake the course in the next semester. The retake examination will use the reserve paper for the final exam. The retake arrangements will be made by the Academic Affairs Office in conjunction with relevant schools (departments/centers), and the retake will take place before the start of the next semester. Retake scores will be recorded in the grade system based on actual examination results. Students who achieve a score of 60 (percentage system) or passing (grading system) or above in the course retake will have their GPA calculated according to Article 38, with a maximum of 2.0.

For courses that fail the make-up examination, students must apply and pay for retaking within the specified time, with no limit on the number of times. In principle, a student should not exceed 3 courses (excluding experiments, practical training, internships, and course design) that are retaken in one semester. Course retaking is generally completed and assessed within the corresponding semester of the next academic year. There are two methods of retaking: class-based retaking and online retaking. Retake classes follow regular teaching schedules for attendance and

assessment, with grades consisting of final and ongoing performance. Students who are allowed to retake due to failing grades will receive corresponding credits upon passing the retake examination, which will be recorded as actual grades and marked with the word "Retake", see **Appendix C-1**.

5 Resources

5.1 Faculty

The School of Information and Electronic Engineering boasts a faculty with a reasonable age and academic background structure, high comprehensive quality, and profound academic attainments. The school currently has a total of 129 staff members, including 108 full-time teachers, with the ratio of undergraduate students to full-time teachers 27:1. Among the full-time teachers, 33 hold doctoral degrees, representing a doctoral rate of 30.56%, and 46 have senior titles, accounting for 42.59%. There are 38 young teachers aged 40 or below, representing 35.19%. Additionally, 80 teachers possess dual qualifications, representing 74.77%. In terms of academic teams, there is 1 expert enjoying the special allowance from the State Council, 1 Furong Scholar, 4 provincial-level talent project candidates such as leading talents in science and technology entrepreneurship in Hunan Province, 2 provincial-level academic leaders in higher education institutions, 9 young backbone teachers in higher education institutions, and 4 young teachers recognized as teaching experts in Hunan Province.

5.1.1 Composition of teachers

The Electronic Information Engineering program has established a faculty team with high academic standards, diverse academic backgrounds, and a reasonable age structure. The program has a total of 27 full-time teachers, including 7 professors, 7 associate professors, 7 lecturers, and 6 teaching assistants, with 54.85% of the faculty being under 45 years old. Among them, 10 teachers hold doctoral degrees, 15 hold masters degrees, and the proportion of teachers with masters degrees or higher is 92.59%. There are 8 master supervisors, one person selected for the Hunan Province 121 Innovation Talent Project, one person recognized as a leading academic figure in

the higher education institutions of Hunan Province, six young backbone teachers in the higher education institution of Hunan Province, and three young teaching experts in Hunan Provinces higher education institutions, with a 100% ratio of dual-qualified teachers. The academic backgrounds of the faculty cover fields such as electronics, communications, electrical engineering, and artificial intelligence, involving areas like product design, manufacturing processes, application development, and technical management, capable of meeting the course teaching requirements for Electronic Information Engineering. For a detailed list of resumes of the faculty members, see **Appendix D-1**.

5.1.2 Development of teaching and research by teachers

The Electronic Information Engineering program offers over 50 specialized courses, not only for undergraduate students in this major but also for undergraduate students in related fields such as Mechanical Engineering, Artificial Intelligence, and Communication Engineering. In recent years, the program has undertaken 19 teaching reform and course construction projects related to Electronic Information Engineering and other related disciplines, including 5 teaching reform research projects at ordinary higher education institutions in Hunan Province, and has developed 8 university-level quality courses. The program has won 1 university-level teaching achievement award, published over 40 teaching papers, and released 5 professional textbooks and monographs. For details on provincial and ministerial-level course construction projects, university-level and above quality courses, university-level and above excellent teaching achievement awards, and published professional textbooks and monographs, please refer to **Appendix D-2**.

In the past five years, teachers in this major have completed 30 research projects, including 11 national-level, provincial-level, and municipal-level scientific research projects funded by institutions such as the National Natural Science Foundation of China, Hunan Provincial Natural Science Foundation, and Hunan Provincial Department of Education, as well as 19 enterprise cooperation topics, with a total research funding of approximately 2 million yuan. They have published over 60

research papers in core journals, of which more than 40 are indexed by SCI and EI, obtained over 30 invention patents, and received 3 awards for scientific and technological achievements. For some samples of research results, national-level and provincial-level scientific research projects, and award-winning situations, please refer to **Appendix D-3**.

5.1.3 Teachers' workload

The rated workload for each professional teacher undergraduate teaching is 320 class hours per year, with actual workload requirements varying slightly depending on position and title. In addition to essential theoretical teaching, every teacher must provide students with adequate guidance, homework correction, and innovation and entrepreneurship guidance. Serving as an academic mentor and undertaking scientific innovation guidance for students in certified projects is an important reference for teacher promotion. These measures ensure that every student in the program receives sufficient guidance regarding courses and extracurricular assignments, helping students complete the required courses of the training program, acquire the various skills needed for their major, and achieve the training objectives set out in the program.

In order to cultivate student's international communication ability, the major is equipped with teachers who can teach in English, and some bilingual teaching courses (Introduction to Electronic Information and Literature Search and Thesis Writing) are offered, so as to create a good environment for student's professional English learning and communication.

5.2 Teachers' self- development

5.2.1 Relevant training

The school has established a Teacher Teaching Development Center, which mainly conducts teaching research, teaching resource construction, teaching evaluation, and teacher development work. This institution is under the Management Office and affiliated with the Personnel Department. It aims to enhance teachers teaching abilities through teacher training, teaching exchanges, teaching evaluations, teaching research,

and teaching consultations, providing services for improving teaching quality and promoting teaching reform and innovation, thereby continuously enhancing teaching quality. Currently, it has organized various forms of teaching training, teaching forums, and teaching demonstration observations, and has invited numerous educational experts and distinguished teaching masters from both inside and outside the school to give lectures.

(1) Pre-service training for new teachers: According to the requirements of the Hunan Provincial Department of Education Notice on Bettering the Pre-service Training and Examination (Evaluation) Work for Ordinary Higher Education Teachers in Hunan Province in 2024 and other documents, all newly employed personnel engaged in educational and teaching work in higher education institutions, including full-time teachers, counselors, experimental technicians, other professional and technical personnel, administrators, and those transitioning from non-full-time teacher positions to full-time teacher positions, must participate in pre-service training organized by their institutions. Pre-service training consists of two parts: course training and school-based training. Course training includes 136 hours of learning content covering professional ethics cultivation for higher education teachers, higher education studies, higher education psychology, an introduction to higher education laws, and teaching skills for higher education teachers. School-based training involves educating new teachers on professional ethics, school conditions and history, regulations, and teaching skills, with each participating teacher being assigned a mentor from a secondary unit who possesses high moral integrity, rich teaching experience, and holds a senior-level title or above to guide the comprehensive assessment of the course "Teaching Skills for Higher Education Teachers." The assessment work for pre-service training includes both course exams and comprehensive evaluations. Course exam content covers the subjects of course training. Comprehensive evaluation work is organized by the school with experts assessing the course "Higher Education Teacher Education." The training information of the course "Learning Skills", the listening notes of the on-the-job internship, the teaching video of the 15-minute mini-course and the teaching design and reflection of the video course will be comprehensively assessed.

(2) Mentor system for young teachers: To strengthen the cultivation of young teachers, according to the requirements of the "Implementation Measures for the Mentor System for Young Teachers at Hunan City University (Revised)" (see **Appendix D-4)**, the college must assign a mentor with an associate professor or higher title to each newly employed young teacher, fully leveraging the role of core teachers in imparting knowledge, assistance, and guidance to promote the healthy growth of young teachers, comprehensively improve the ideological and moral qualities and teaching and research levels of the faculty, and ensure the steady improvement of talent cultivation quality. Mentors provide guidance and training in aspects such as professional ethics, teaching and research reforms, and scientific research, helping master the principles and methods of higher education. The mentorship period is generally 2 years. New teachers must familiarize themselves with teaching processes and acquire the basic methods and skills required for teaching and research under the guidance of their mentors after joining the college, thereby becoming qualified higher education professionals. The list of young teachers in charge of electronic information engineering is in **Appendix D-4**.

(3) Personal career planning for teachers: To further strengthen faculty development and enhance the schools overall competitiveness, the school provides clear guidance on research disciplines and key research directions, research objectives (including short-term, medium-term, and long-term goals), plans for further education and social practice, teaching plans, and applications for teaching and research projects. Additionally, the school encourages young faculty members to pursue degrees while working, further strengthening our faculty team, improving and maintaining the faculty training system, enhancing the overall level of teaching and management staff, and cultivating and improving the professional capabilities of young teachers and administrators.

(4) Part-time or on-the-job training and overseas visiting scholarships: To strengthen the construction of "dual-qualified" and high-level faculty teams, the university encourages teachers to intern at enterprises for one year or serve as science and technology commissioners in regional enterprises for three years, and to conduct

research and study at universities for one year. The goal is to establish a new integrated mechanism with dual roles for teachers and engineers. Many teachers in this major have scientific cooperation projects with enterprises, helping to solve practical technical problems, and some teachers have work experience in enterprises. In addition, according to the requirements of documents such as the "Implementation Measures for the Domestic Visiting Scholars Program for Middle-aged and Young Backbone Teachers in Ordinary Higher Education Institutions of Hunan Province" and the "Hunan City University Research and Study Management Measures," the university annually selects young backbone teachers to visit and study at high-level universities, with a visiting cycle generally lasting 1 year, aiming to strengthen the cultivation of academic leaders and academic backbone personnel and enhance academic standards.

5.2.2 Related funding

The Hunan Provincial Department of Education provides multi-level and various forms of financial assistance to teachers in ordinary higher education institutions in Hunan Province, including domestic and international visiting scholar programs, industry-university-research collaboration, and experimental team building plans, to enhance their professional academic research and teaching capabilities. Among these, the Hunan Provincial Department of Education implements the "Implementation Measures for the Domestic Visiting Scholar Program for Middle-aged and Young Backbone Teachers in Ordinary Higher Education Institutions in Hunan Province," providing funding support for young backbone teachers participating in domestic visiting scholar programs, with a funding amount of 0.5 million yuan per project.

Hunan City University provides research start-up funds for newly hired teachers, offering 100,000 RMB per person to young teachers with doctoral degrees. Since 2019, the university has implemented the "351 Talent Project," which includes three levels of talent programs: academic leaders, academic pioneers, and academic backbone talents, with funding amounts ranging from 160,000 to 400,000 RMB, and the funding of teacher development is detailed in **Appendix D-4**.

5.3 Institutional environment, financial and material resources

5.3.1 School Profile

Hunan City University is a full-time ordinary undergraduate institution sponsored by the Peoples Government of Hunan Province. In March 2002, approved by the Ministry of Education, it was formed by the merger of the then Hunan Urban Construction College (a national model college) and Yiyang Normal College. The university adheres to the educational policy of the Party, implements the fundamental task of cultivating virtue and nurturing people, upholds the motto of "Cultivation of morality and academics, integration of knowledge and practice." and strives to run a university that satisfies the people. In 2012, it was rated as one of the second batch of "National Model Universities for Graduate Employment"; in 2014, it became a "Pilot Unit for Information Construction by the Ministry of Education"; in 2018, it joined the ranks of Hunan Provinces "High-Level Applied Characteristic Colleges"; in 2020, it was promoted to one of the first-round universities to enroll undergraduates in Hunan and was listed as a pilot unit for the "Three-All Education" comprehensive reform in Hunan; in 2021, it was approved as the only new master degree-granting institution in Hunan Province; in 2022, six disciplines were selected as provincial "14th Five-Year Plan" applied characteristic disciplines, and it was approved for 4 national and provincial first-class undergraduate programs and 29 provincial first-class undergraduate programs; in 2023, it began admitting its first batch of master degree students; in 2024, it added 8 new master degree authorization points, achieving basic coverage of all disciplines, and officially launched the construction of a new campus (Xiyuan District).

The school covers an area of 1415 mu (approximately 20 acres), with a total construction area of 592,500 square meters and fixed assets totaling 1.543 billion yuan. It houses over 2.84 million physical books and over 2.28 million e-books. There are 1,475 full-time teachers, including 141 with senior titles and 429 with doctoral degrees. The university boasts 138 national and provincial high-level talents, including members of the Ministry of Educations Undergraduate Teaching Steering Committee and experts

with special allowances from the State Council. It offers 1 national first-class undergraduate course, 66 provincial course teaching teams, and 1 provincial high-level research team. The school comprises 14 secondary colleges and offers 56 undergraduate programs, primarily focusing on engineering while covering multiple disciplines such as science, literature, management, education, art, economics, law, and agriculture. It is known as the most comprehensive university in Hunan Province for urban construction-related majors, often referred to as the "cradle of urban construction talent." The university recruits students from 30 provinces, municipalities, and autonomous regions, currently enrolling 25,178 full-time undergraduate students. It has 12 master degree authorization points with 114 current master degree students.

The school aims to cultivate high-quality applied talents and has established a "1234" applied talent cultivation system. That is to take student capability cultivation as the main thread, integrate ideological and political education and innovation entrepreneurship education throughout the talent cultivation process, through three major course modules: fundamental capability courses, professional capability courses, and developmental capability courses, to meet the four cultivation requirements of "solid foundation, emphasis on application, distinctive features, and high quality." To actively serve national strategic needs and Hunan's "three highs and four news" beautiful blueprint, aligning with industries and sectors, strengthening professional connotation construction, optimizing urban construction-related fields, strengthening information manufacturing-related fields, innovating management service-related fields, and solidifying teacher education-related fields. The Urban and Rural Planning major is a national characteristic major and a comprehensive reform pilot major, while Urban and Rural Planning, Electronic Information Engineering, Civil Engineering, and Engineering Management are national first-class undergraduate professional construction points. Mechanical Design and Manufacturing Automation, Landscape Architecture, Physical Education, and other majors are provincial first-class undergraduate professional construction points. There are 78 provincial-level and above first-class courses and quality courses. The school has cumulatively won 3 national teaching achievement awards and 39 provincial teaching achievement awards.

The school possesses 52 provincial-level or above teaching platforms, including a National Experimental Teaching Demonstration Center for Civil Engineering and a provincial-level industry-university cooperation talent training base for electronic information majors. The National Experimental Teaching Demonstration Center for Civil Engineering has been rated excellent in on-site inspections by the Ministry of Education and has received 100 million yuan in construction funding support. The School of Electronic Information Modern Industry, jointly established with Huawei Technology Co., Ltd., Hunan Kerui Te Technology Co., Ltd., and Hunan Ai Hua Group Co., Ltd., is a modern industry college in Hunan Province and has founded the first "Rural Revitalization Planning College" in Hunan. The school has signed industry-university-research cooperation agreements and internship base agreements with over 400 enterprises, including China National Nuclear Corporation (CNNC), China Construction Engineering Group Corporation (CCEG), and China Railway Engineering Corporation (CREC). It owns two school-run enterprises: Design Research Institute Co., Ltd. and Civil Engineering Testing Center, with Design Research Institute Co., Ltd. holding 10 Class A qualifications in urban and rural planning, architectural engineering, and municipal roads, and being a "National High-Tech Enterprise" with an annual output value exceeding 200 million yuan, providing planning and design services to over 200 counties and towns (townships) both within and outside the province.

The school possesses six "Double First-Class" applied characteristic disciplines in Hunan Province: Civil Engineering, Urban and Rural Planning, Information and Communication Engineering, Management Science and Engineering, Chemical Engineering and Technology, Chinese Language and Literature. It boasts 43 provincial-level or higher research and innovation platforms, including a national-level coworking space, the Hunan Provincial Key Laboratory of Digital Urban and Rural Spatial Planning Key Technologies, the Hunan Provincial Key Laboratory of Hei Tea Golden Flower, the Hunan Provincial Research Center for the Chinese Socialist Theory System, and a postdoctoral scientific research collaborative innovation center. In recent years, it has cumulatively secured 60 national projects including those from the National Natural Science Foundation and the National Social Science Foundation. It has won 24 national

and provincial science and technology awards and excellent results awards from social science funds; its architectural design achievements have received over 150 industry awards at or above the provincial level, including 14 national-level awards. The rural revitalization planning achievements for Xinmen Village in Turpan City have been highly praised by President Xi Jinping; the "Changsha-Zhuzhou-Xiangtan Ecological Green Heart Area Spatial Development Strategy Plan" it compiled won first place in international bidding; and the "Classification Standards for Town (Village) Green Spaces" it led in formulating was approved by the Ministry of Housing and Urban-Rural Development as a national industry standard. The "Global Faithful" doctoral team of the Schools Information and Electronic Engineering College has obtained more than 40 core intellectual property rights for wildlife satellite tracking technology and three internationally advanced achievements, with relevant research results being broadcast in CCTV and recommended by the American magazine National Geographic. It was approved as a provincial university intellectual property center, ranking among the top in technology contract transactions among provincial universities. The Hunan Provincial Urban Research Association was firstly founded, and the newly established Hunan New Urbanization Research Institute has been selected as a specialized and distinctive think tank in Hunan Province. The university's "Urban Studies Journal" has been honored with titles including "Top 100 Social Science Journals of National Universities, "Top Ten Local University Journals, "National Higher Education Social Science Quality Journal," and "Core Journal of Chinese Humanities Social Sciences," serving as the official publication of the Urban Governance and Policy Research Committee of the Chinese Society for Urban Planning.

The school adheres to an open educational approach, with significant achievements in international cooperation and exchange. It collaborates with Victoria Polytechnic Institute in New Zealand on the undergraduate program in Visual Communication Design; and co-hosts a Confucius Institute with Cape Coast University in Ghana, becoming the first institution of its kind in the province. Under the active promotion of the school, Chinese has been officially integrated into the Ghanaian national education system. The school has organized two sessions of the International

Academic Conference on Urban Construction between China and Africa, inviting over 20 universities from China and Africa, more than 1,000 scholars, government officials, and international students to participate, providing a comprehensive platform for in-depth cooperation between China and African countries. The school has successfully been approved as a member university of the "China-Africa University Alliance Mechanism" by the Ministry of Education.

In recent years, the characteristics and the comprehensive reform experiences of university have been publicized and reported on the national and the provincial media platforms. With the title of "Promoting Rapid Development with Great Reform - The Road of the Breaking and Establishment of the Hunan City University", China Education News introduced the comprehensive reform experience of "six breakthroughs and six establishments" with the goal of building a high-level applied university. With the title of "Hunan City University Strengthens the Allocation of Teaching Resources and Pays Close Attention to Teaching Reform", China Education News reported on the achievements of the university in paying close attention to the reform of education and teaching. "Guang'ming Daily", "China Education News" and the others reports that the president of the university has become an "employment recommendation officer", opening up a new path for graduate employment and building a new bridge for the university-enterprise cooperation. The "Frontline Sketch" column on the official website of the Ministry of Education published an article titled "Hunan City University Vigorously Strengthens the Construction of Grassroots Teaching Organizations", which introduced the adherence to the principle of focusing on undergraduate education and focusing on the foundational role of grassroots teaching departments (rooms) in the moral education. "Hunan Daily" published an article titled that "Strict Supervision and Good Guidance, Escorting Moral Education" to publicize and report on the innovations and the practical experiences of university in teaching supervision work.

The university will hold high the great banner of the new era's socialist thought with the Chinese characteristics, and adhere to the socialist direction of school-running, be courageous in taking on responsibilities, and be bold in taking action, and to cultivate

a greater number of high-quality applied talents for the modernization with the Chinese characteristics and contributing to the great rejuvenation of the Chinese nation!

5.3.2 College Profile

The School of Information and Electronic Engineering at Hunan City University is one of the largest and most comprehensive colleges in terms of overall strength. The colleges educational history can be traced back to 1970, and it was formed through the merger of the School of Communication and Electronic Engineering (formerly the Physics Department of Yiyang Normal College) and the School of Information Science and Engineering (formerly the Information Engineering Department of Hunan City Construction College and the Computer Science Department of Yiyang Normal College) in February, 2017.

The college possesses a master degree program in Electronic Information, and the discipline of Information and Communication Engineering is a "Double First-Class" applied characteristic discipline in Hunan Province. The college has the Hunan Provincial Key Laboratory of All-Solid-State Energy Storage Materials and Devices, the Hunan Provincial Engineering Research Center for Intelligent Monitoring and Disaster Prevention Technology of Dongting Lake Regional Ecological Environment, the Hunan Provincial Key Laboratory of Urban Computing and Internet of Things, and the Hunan Provincial Key Laboratory of Network Technology and Information Security. These research platforms have significantly promoted talent cultivation, local economic development, and industrial advancement. The doctoral team has achieved new breakthroughs in serving ecological civilization construction, focusing on wildlife satellite tracking technology research and development and big data services, establishing the largest wildlife tracking big data center in China, which fills the gap in wildlife tracking technology in China.

The college currently offers seven undergraduate programs: Electronic Information Engineering, Computer Science and Technology, Communication Engineering, Physics, Network Engineering, Internet of Things Engineering, and Artificial Intelligence. Among these, the Electronic Information Engineering program

is a national first-class undergraduate program construction site and a pilot program for comprehensive reform of higher education majors in Hunan Province, ranking first in the Almanac of Chinas First-Class Undergraduate Programs (Applied Type). The Computer Science and Technology, Communication Engineering, Physics, and Network Engineering programs are first-class undergraduate program construction sites in Hunan Province. The Computer Science and Technology program offers a "New Engineering Experimental Class," leading reforms and explorations in new engineering education among similar universities. Programs such as Electronic Information Engineering, Computer Science and Technology, Communication Engineering, and Network Engineering rank high in professional comprehensive evaluations among similar universities in Hunan Province.

The college has achieved remarkable results in scientific research and teaching reform. In recent years, it has undertaken 41 national and provincial-level scientific research projects, obtained 33 national invention patents and 29 software copyrights, won 1 second prize of Science and Technology Progress Award in Hunan Province, 2 third prize, 1 second prize of Technology Invention Award in Hunan Province, and 1 third prize, published 119 high-level scientific research papers, undertaken 26 provincial educational reform projects and provincial educational planning projects, approved 11 provincial first-class undergraduate courses; published more than 120 papers on teaching and educational reform, and edited 15 textbooks.

The college possesses the Electronic Information Specialty Undergraduate Innovation Training Center, the Electronic Information Specialty Innovation and Entrepreneurship Education Base, Information Technology Specialty School-Enterprise Cooperation Innovation and Entrepreneurship Education Base of Hunan Province, the National "Mass Innovation Space" Undergraduate Innovation and Entrepreneurship Incubation Base, and the Hunan Province Higher Education Institutions Undergraduate Innovation and Entrepreneurship Incubation Demonstration Base. In recent years, it has been approved for 34 Ministry of Education industry-university cooperation collaborative talent cultivation projects. The college has established good school-enterprise cooperation relationships with specialized

enterprises such as Huawei, China Unicom, China Telecom, Sangfor, Qianxin, Xinwei Communications, Topvision Information, Visteon Technology, HaoYuan Technology, AiHua Group, and AusiKang Technology. The integration of industry and education is deepened, fostering collaborative talent cultivation that aligns well with corporate needs.

The college adheres to the talent cultivation goal of "solid foundation, emphasis on application, distinctive characteristics, and high quality," aiming to cultivate well-rounded, high-quality applied talents with moral integrity, intelligence, physique, aesthetics, and labor. In recent years, over 120 national, provincial, and university-level undergraduate innovation projects have been initiated; more than 600 awards have been won in various national and provincial competitions, including the first prize in the National Undergraduate Electronic Design Competition, the grand prize in the Blue Bridge Cup National Software Entrepreneurship Team Competition, and the first prize in the National Finals of the National Software and Information Technology Professional Talent Competition. The employment rate of graduates exceeds 95%, with the vast majority achieving high-quality employment. The postgraduate admission rate for new graduates exceeds 12%, with some graduates being admitted to prestigious universities such as the University of Chinese Academy of Sciences, Shanghai Jiao Tong University, Central South University, Hunan University, and University of Electronic Science and Technology of China as the master degree candidates. The college has produced a large number of outstanding alumni, including Xu Zhijun, Deputy Chairman and Rotating Chairman of Huawei; Zhou Dihui, Chairman of Bowei Electrical Co., Ltd.; Wen Limin, Chairman of Shenzhen Haoyi Yuan Technology Co., Ltd.; and Zang Zhigang, a recipient of the "Changjiang Scholars Program," leading talent in Chongqing, and doctoral supervisor at Chongqing University.

5.3.3 Laboratory

In order to ensure the normal and efficient operation of undergraduate teaching experiments, the college has formulated a perfect experimental teaching management system according to the rules and regulations of university. The relevant management system documents are detailed in **Appendix D-5**, and the director of the Experimental

Center is responsible for organizing and implementing and checking the implementation.

(1) Regulatory bodies

The Experimental Center of the School of Information and Electronic Engineering was established in 2017, formed by the merger of the former Communication and Electronic Engineering College Central Laboratory and the Information Science and Engineering College Central Laboratory. The total construction area of the Experimental Center is 5188 square meters, with a total value of equipment assets of 47.15 million yuan. The Experimental Center is jointly managed by the university and the college. The university provides guidance on asset management and safety management of the Experimental Center through the Laboratory Asset Management Office and the Security Office, while offering policy support, position evaluation and appointment, project approval, and funding guarantees; the college uniformly allocates and uses the space and assets of the Experimental Center and conducts performance evaluations of the Experimental Center. The Experimental Center is mainly responsible for the daily management and maintenance of laboratories and equipment. The Experimental Center operates under the director responsibility system, where the main responsibilities of the Director of the Experimental Center include overall coordination and academic guidance, responsibility for experimental teaching and construction, laboratory management, and internal and external services.

(2) Management responsibilities

To strengthen the construction and management of laboratories in the School of Information and Electronic Engineering, enhance the experimental team building, improve the quality of experimental teaching and research level, the management of the Experimental Center operates through four levels: the School Laboratory Asset Management Office, the Deputy Dean in charge of laboratories at the college level, the Director and Deputy Director of the Experimental Center, and laboratory administrators. The School Laboratory Asset Management Office implements macro-coordinated unified management planning, with each level of management personnel having clear responsibilities to ensure the normal conduct of experimental teaching. Scientific

management, team cooperation, active completion of various tasks are conducted to ensure continuous improvement of experimental teaching quality and level of research and management.

(3) Safety management

The College has formulated the "Laboratory Environment and Safety Regulations for the college of Information and Electronic Engineering" to strengthen students experimental safety education and practice, ensuring the normal conduct of experimental work. In addition to posting rules and regulations such as the Student Machine Operation Guidelines and Laboratory Safety Regulations in the laboratories, necessary safety reminders must be provided to students to ensure safe operation during experiments. Before entering relevant laboratories, students must participate in laboratory safety education, understand the relevant regulations for laboratory safety operations, sign a safety responsibility agreement, complete laboratory safety training and examinations, and those who fail the safety test are not allowed to enter the relevant laboratories. The security department of university and safety officers of college aim to enhance student’s safety awareness by conducting various forms of safety training. Training content includes watching safety education videos, conducting survey of fire knowledge quizzes, and on-site learning of how to use fire extinguishers. All faculty and students conduct two fire safety evacuation drills annually in the laboratory building, ensuring constant vigilance.

Abiding by the rules and regulations of "Hunan City University Laboratory Safety Management Measures", "Regulations on the Safety Management of Hazardous Chemicals in Ordinary Higher Education Institutions Laboratories", "Hunan City University Laboratory Work Regulations", and "Information and Electronic Engineering College Laboratory Environment and Safety System" , students are required to participate in a safety seminar once a year closely cooperating with the Security Office and the Asset and Laboratory Management Office. The safety seminar includes topics such as practical safety work, good laboratory practices, personal protective equipment, safety equipment, electrical safety, chemical safety, waste disposal, and emergency evacuation, and submission of a self-inspection report to the

school.

(4) Equipment management

The laboratory has always attached great importance to the management of instruments, equipment, and components, formulating regulations such as the "Management Measures for Experimental Materials and Low-Value Consumables of the School of Information and Electronic Engineering" and the "Instruments and Equipment Management System of the School of Information and Electronic Engineering," to improve the efficiency of instrument and equipment usage, extend their lifespan, conserve material consumption, prevent damage, loss, accumulation, and waste, and ensure the orderly conduct of professional experimental teaching and research. All equipment manuals and technical documents are strictly listed in the instrument and equipment register upon entry, with clear records of the purchaser and custodian on file. Routine maintenance is carried out by laboratory custodians, while usage and maintenance during teaching periods should primarily be managed by the purchasers and users, with coordination provided by custodians. Specialized equipment is managed separately by each specialized laboratory, responsible for regular repairs, calibration, precision verification, and other maintenance tasks. For key instruments and equipment purchased with funds from major disciplines, such as precision, valuable, rare, and critical instruments, specific purchasers, storage rooms, and custodians are designated upon entry. Laboratory personnel with operational experience manage these devices, responsible for establishing equipment registers and archives.

(5) Equipment maintenance and borrowing

The College has formulated the "Instrumentation and Electronics Engineering College Equipment Management System". The daily maintenance of experimental equipment is carried out by the custodians, who must report the condition of the equipment once per semester. In case of equipment damage or malfunction, the custodian must promptly report the equipment failure within one week, identify the cause, and then promptly report for repair. Each maintenance should be documented and recorded in the equipment file. The lending of instruments and equipment should be conducted under conditions that do not interfere with normal teaching and research

activities, and must be approved by the relevant principal leader. Upon return, the custodian must promptly inspect the equipment; if there is any damage, the borrower must be responsible for compensation. At the same time, a register should be maintained to record the borrowing and returning dates, and timely account cancellation procedures must be completed upon return.

(6) Subject professional laboratories

This major conducts metalworking internships and foundational experiments (such as physics experiments, metalworking experiments, and electrical and electronic experiments) at the training center. The Information and Electronic Engineering Colleges Experimental Center has multiple experimental training centers including the Electrical and Electronic Training Center, Metalworking Experiment Teaching Center, Computer Experiment Center, and Innovation and Entrepreneurship Training Center. The Experimental Center possesses 52 undergraduate teaching laboratories with over 40 experimental courses, and more than 10,000 students visit the Experimental Center annually. The Information and Electronic Engineering Experimental Teaching Center has established 11 laboratories including the Circuit Board Design and Manufacturing Laboratory, Programmable Logic Device Laboratory, Artificial Intelligence Laboratory, Analog Circuit Laboratory, Microcomputer Principles and Microcontroller Laboratory, Circuit Analysis Laboratory, Digital Electronics Technology Laboratory, and High-Frequency Electronic Circuit Laboratory, primarily conducting professional foundation experiments and comprehensive professional experiments, with a comprehensive and design-oriented experiment offering rate of 95%. For detailed introductions to the main laboratories, please refer to **Appendix D-6**.

5.3.4 Subject construction points and research platforms

The college has the authority to confer Master degree in Electronic Information Major Degree, relying on the discipline of Electronic Information to autonomously set up three secondary disciplines: New Generation Electronic Information Technology, Computer Technology, and Optoelectronic Information Engineering. Currently, it has formed a disciplinary construction system and a Master degree training system with

mathematics and physics as the fundamental, communication and computer technology as the support, and electronic information engineering as the main trunk. There are also graduates from this major who are currently pursuing the master's degrees in this program. In addition, the subject of the electronic information engineering is a comprehensive reform pilot major for "the 13th Five-Year Plan" of ordinary universities in Hunan Province, and the subject of the information and communication engineering is an applied characteristic discipline for both the "13th Five - Year Plan" and "14th Five-Year Plan" in Hunan Province. The above-mentioned major construction points are conducive to the students' further study and the development.

The college possesses 10 provincial-level teaching and research platforms, including the Hunan Provincial Key Laboratory of All-Solid-State Energy Storage Materials and Devices, the Hunan Provincial Key Laboratory of Smart Energy Perception and Edge Computing for Smart Cities, the Hunan Provincial Engineering Research Center for Intelligent Monitoring and Disaster Prevention Technologies for the Dongting Lake Regional Ecological Environment, the Hunan Provincial Key Laboratory of Urban Computing and Internet of Things, and the Hunan Provincial Key Laboratory of Network Technology and Information Security under the Hunan Provincial Economic and Information Commission. It has established 37 on-and off-campus internship and training centers/bases, including professional fundamental teaching and innovation laboratories for electronic information, Harmony mobile application development laboratory, artificial intelligence laboratory, cybersecurity laboratory, Hunan Cybersecurity Base, and AiHua Group Internship Base. In 2016, it was approved as a National Mass Innovation Space. In 2023, the Electronic Information Modern Industrial College was selected for the third batch of Hunan Province Modern Industrial College. It has more than 20 off-campus internship bases.

The School of Information and Electronic Engineering currently has more than 50 research laboratories, providing strong support for scientific research by faculty and students. The school also boasts five student innovation and entrepreneurship bases: the Hunan Province Electronic Information Specialty Undergraduate Innovation Training Center, the Hunan Province Electronic Information Specialty Innovation and

Entrepreneurship Education Base, the Hunan Province Information Technology Specialty School-Enterprise Cooperation Innovation and Entrepreneurship Education Base, the National "Mass Innovation Space" Undergraduate Innovation and Entrepreneurship Incubation Base, and the Hunan Province Higher Education Institutions Undergraduate Innovation and Entrepreneurship Incubation Demonstration Base. The innovation and entrepreneurship projects organized by these bases include: the National Undergraduate Electronic Design Competition, the "Challenge Cup" National Undergraduate Extracurricular Academic and Scientific Works Competition, the National Undergraduate Internet+ Innovation and Entrepreneurship Competition, the Lanqiao Cup National Software and Information Technology Specialty Talent Competition, and the National Undergraduate Robot Competition, among over thirty others. In the past five years, students majoring in Electronic Information Engineering have actively participated in numerous competitions and innovation and entrepreneurship training projects, including the National Undergraduate Electronic Design Competition, the "Lanqiao Cup" and "Challenge Cup" National Undergraduate Extracurricular Academic and Scientific Works Competition, and the National Undergraduate Internet+ Innovation and Entrepreneurship Competition. For details on participation in projects and awards, see **Appendix A-7**.

In 2021, the Electronic Information Engineering program signed an internship base agreement with Hunan AiHua Technology Group to jointly build AiHua College. In 2023, it signed an off-campus internship base agreement with Ma Bingbing (Beijing) Educational Technology Co., Ltd., adding one new graduation internship unit, which can provide an internship and practical training base for students in this major. In 2024, it collaborated with Changsha Seven Friends Network Technology Co., Ltd. to jointly establish an off-campus innovative internship and practice base (See in **Appendix A-4**).

5.3.5 International exchange and cooperation platform

The school adheres to an open educational approach, with significant achievements in international cooperation and exchange. It has established close

collaborations with universities in Singapore, Australia, Ghana, New Zealand, Malaysia, the United States, and Macao. The school collaborates with Victoria Polytechnic Institute in New Zealand on visual communication design programs; it also co-hosts the Confucius Institute with Cape Coast University in Ghana, becoming the first institution of its kind in the province. The school has organized two international academic conferences on urban construction between China and Africa, inviting over 20 universities from China and Africa, more than 1,000 scholars, government officials, and international students to participate, providing a comprehensive platform for in-depth cooperation between Chinese and African countries. Under the active promotion of the school, Mandarin has been officially integrated into Ghanas national education system. The school has successfully been approved as a member university under the Ministry of Educations "China-Africa University Alliance Mechanism." Since 2023, the school has vigorously advanced international cooperation and exchange programs with universities in South America and Central America.

In recent years, the School of Information and Electronic Engineering has attached great importance to the implementation of the "international exchange" strategy, aiming at forefront and strengthening international cooperation. In May 2024, the School of Information and Electronic Engineering jointly organized the "2024 Green Intelligent Quality: Urban Construction and Development" International Academic Conference on Artificial Intelligence and Urban Development with the University of Cape Coast in Ghana, which was successfully held in the Library Auditorium. The school maintains close ties and exchanges with multiple universities abroad, including the University of Cape Coast, and the number of students participating in international cooperation and exchanges has been increasing year by year. The cultivation of student international perspective and innovative capabilities has shown significant results, laying a solid foundation for international cooperation. The international cooperation projects and the international conferences held by the college and the specialized subject in recent years are shown in **Appendix D-7**.

To assist students who are not proficient in Chinese to study at our university’s Electronic Information Engineering program, on the one hand, the teachers of this major

are committed to further enhancing English speaking proficiency and offering more bilingual courses. On the other hand, we will also strengthen Chinese language training for international students applying to study in China, thereby helping them to adapt quickly to the campus life and learning environment at Hunan City University.

5.3.6 Enterprise practice platform

There are a total of 22 off-campus internship and practical teaching bases for this major. The main internship and practical teaching bases are listed in **Appendix A-4**, which can provide students with good practical internship opportunities. Both the school and enterprises jointly formulate internship teaching outlines, write internship guidelines, and establish corresponding support measures according to the talent cultivation goals and requirements of the training program. Each base is equipped with stable enterprise internship instructors who work together with in-school teachers to guide and manage student internships. In-school instructors are responsible for clarifying matters such as internship content, tasks, schedule, daily arrangements, and internship management regulations to students; enterprise instructors provide education on safety production, rules and regulations, confidentiality policies, etc., based on school requirements and actual enterprise production conditions. These off-campus practical bases can meet the professional internship and graduation internship needs of students majoring in Electronic Information Engineering, admitting approximately 180 students annually, enabling students to fully engage in good engineering practice and training, enhancing their ability to handle practical problems, thereby achieving the teaching objective of improving comprehensive abilities.

5.3.7 Library and information resource platform

The library is rich in reference materials including papers and electronic books, journals, etc., with standardized management and a high degree of sharing, capable of meeting students learning needs as well as teacher’s daily teaching and research requirements. The library has an adequate number of computers and a rich information resource platform, allowing students to access the internet and use online resources through computer labs, classrooms, and the campus wireless network. Students can

obtain the required teaching resources through various channels. Through clear requirements for literature search in major course research topics, experimental teaching, course design, graduation thesis/design, etc., students are encouraged to fully utilize library and network resources for literature search, problem analysis, and analysis of domestic and international research status, supporting their achievement of graduation requirements.

(1) Library resources

Hunan City University has established a "1+1+13" library system comprising the Yifu Library (Main Library), the Planning and Architecture Branch Library, and the data rooms of 13 secondary colleges. The Yifu Library (Main Library) has a building area of 20,200 square meters with 9 stories. The Planning and Architecture Branch Library covers nearly 900 square meters. The library offers over 2,900 seats (including those in the secondary college data rooms) and over 60 in electronic reading rooms. The library operates on an open-shelf borrowing system, opening from 7:00 AM to 10:00 PM, and totaling 105 hours per week. The library features an academic lecture hall, meeting rooms, and 14 faculty research rooms. It supports wireless internet access and remote VPN access from outside the library. According to the university's disciplinary layout of "engineering technology as the main focus, economics management, and art design as the two wings," the library collects a wide range of major documents. Currently, it houses over 2.845 million volumes of Chinese and foreign printed documents, nearly 400 types of Chinese and foreign printed journals, and nearly 9.75 million theses and doctoral dissertations.

In recent years, the library has increased its efforts in building a digital library, with the number of accessible e-books reaching over 4.7 million volumes, and the variety of Chinese and foreign e-journals reaching 120,000 types. There are over 60 usable electronic document databases, including Chinese databases such as China National Knowledge Infrastructure (CNKI), Wanfang Data, Duxiu, and Chaoxing Weekly, and foreign databases such as ScienceDirect, IEEE, ACS, SciFinder, ASME, SpringerLink, EBSCOHost, Emerald, EI, PQDD, Web of Science, ESI, JCR, Incites, etc. Additionally, the library possesses multimedia databases such as Online

Auditorium (https://wb.bjadks.com/home) and Global English (http://www.englibrary.com/userLogin.htm), among others. The diverse collection structure across multiple media platforms broadens service channels, providing effective literature resource support for faculty and students in teaching, research, discipline construction, and management. To ensure the full utilization of library resources, the library offers the following services: document borrowing, document photocopying, printing, binding, interlibrary loan, document delivery, electronic reading, audio-visual materials, subject navigation, novelty checking of scientific achievements, topic search, literature retrieval assistance, literature inclusion inquiry, and information retrieval training.

In recent years, the school has increased its efforts in building a digital library and launched the "Chaoxing Mobile Library" allowing teachers and students to use library resources anytime and anywhere via mobile phones or iPads without being restricted by IP address ranges. The download address for the mobile library client version is http://m.5read.com/appdown.html (See **Figure 5.1**).

The relevant management files of the Hunan City University Library are shown in **Appendix D-8**.

This major explicitly requires teachers to make full use of computers, networks, and library resources in course teaching. For all aspects including experimental courses, course design, professional internships, graduation thesis/design, and most professional courses throughout the four years of university, students are required to utilize reference books and online resources for learning. This primarily includes collecting and screening relevant literature, reviewing reference books, translating foreign language documents, and preliminarily formulating experimental plans. Teachers assess students learning outcomes through major assignments and course reports. Multiple computer network service sites are set up in the Academic Affairs Office and Library to meet the needs of students without access conditions. Teachers can effectively utilize the library and network resources to promptly obtain world scientific trends, frontiers, and related professional knowledge and information, thereby enhancing the quality of teaching and research. The Chinese and foreign language databases of the school library are listed in

Appendix D-8, and the list of academic journals related to this major is also included in **Appendix D-8**. Lectures organized by the library for students are listed in **Appendix D-8**.

Figure 5.1 Download address of mobile library client version

The school has rich book resources, standardized management and high degree of sharing for this major, which can fully meet the learning needs of students in this major, the daily teaching and research needs of teachers, and the supporting conditions required by the certification standards of this major.

The school has established relevant management systems and measures for computer, network, and library resources, including the "Hunan City University Library Violation Handling Rules", "Hunan City University Library Borrowing System", "Hunan City University Campus Card Management Regulations", "Hunan City

University Information Office Core Computer Room Rules", "Hunan City University Network Server Hosting Regulations", "Hunan City University Campus Information and Network Security Management Regulations", "Hunan City University Website Management and Information Release Regulations", "Hunan City University Campus Network Email Application and Usage Regulations", "Hunan City University Book Loss, Damage, and Theft Handling Regulations", "Hunan City University Library Security System", "Hunan City University Library Fire Safety System", "Hunan City University Library Postgraduate Study Room Management Regulations", and "Hunan City University Electronic Reading Room Management Regulations". The sharing and use of computer, network, and library resources include the following aspects:

1) Establishing dynamic departmental web pages and add service modules such as reciprocal links and information sharing spaces. The WeChat platform of library sends out nearly 60 posts annually, including about 100 articles. Online responses to reader inquiries occur on average 2-3 times per week, totaling nearly 100 times per year.

2) Constructing an information sharing space covering more than 1200 square meters, divided into a multimedia area, a leisure area, an experience area, and a discussion area. The multimedia area is equipped with computers and ergonomic chairs, the leisure area provides internet access and power supply, the experience area is furnished with computers and high-precision 3D printers, and the stepped area can host new technology experiences, lectures, and film screenings. The discussion area includes seminar rooms and semi-open discussion zones. The information sharing space operates well.

3) The library has multiple terminals for self-service printing, copying and scanning. The number of pages printed, copied and scanned is nearly 200,000 pages per year (220,000 pages in 2019), which greatly facilitates teachers and students to obtain and use materials in the library.

4) Modern management of reading room seat resources is implemented through the seat management system, and nearly 500,000 people choose seats by swiping card system every year.

5) Every year, the APP of mobile library is logged by 275,000 times, the number

of clicks is 1.2 million times, and the book download volume of digital book borrowing machine reaches 74,000 copies.

(2) Computer resources

The school has sufficient computer resources, among which the computer resources closely related to this major are mainly distributed in the engineering training center and the college computer room of telecommunication building.

The library has many computers for book and paper retrieval and information inquiry, which improves student's ability to obtain information resources.

The college has established a multimedia computer room with over 300 computers that are freely available to students throughout the day, primarily for daily classes, graduation thesis/design, and other professional teaching activities. It also provides hardware support for the Electronic Information Engineering program to conduct professional design competitions. Currently, the platform is equipped with professional design software for Electronic Information Engineering, including: Multisim, Keil, Proteus, Matlab, and Visual Studio Code.

The computer resources of the school and college can meet the needs of student study, teachers teaching and scientific research work.

(3) Information resource platform

1) Campus network infrastructure platform

The school campus network has an outbound bandwidth of 2.5G, with the core backbone reaching ten gigabits and desktop access up to one gigabit. The wired network covers all teaching, research, and office environments on campus, fully implementing identity authentication for internet access within the campus. In 2016, the school initiated the first phase of wireless network construction, achieving full coverage of wireless broadband networks (WIFI). This advanced campus network infrastructure platform provides crucial support for improving undergraduate teaching quality and management levels.

2) Campus information infrastructure platform

The school has established 3 basic platforms, including a shared database platform, a comprehensive service portal for teachers and students, and a unified identity

authentication platform. The shared database platform serves as a unified data resource sharing and exchange application service platform, achieving public data sharing among five departments, namely personnel, research, academic affairs, student affairs, and graduate studies. The comprehensive service portal for teachers and students provides all-round integrated information services to students and teachers, covering areas such as student affairs, academic affairs, finance, library services, campus cards, and daily life. The unified identity authentication platform is one of the basic platforms for smart campus construction, offering a unified user management platform and identity authentication services for various network services and application systems in smart campuses.

3) Campus card

Teachers and students use campus card, which is mainly used for canteen dining, borrowing books on campus, access control and many other aspects. It has the function of replacing work card, student card and library card. It has become an indispensable tool for students and teachers to study and work on campus.

4) Hunan City College Course Center

Building a network teaching platform is one of the important ways to guide student's autonomous learning. The School Course Center is a new network-assisted teaching platform that aggregates a wealth of undergraduate teaching information resources, serving as a creative teaching assistance platform for teachers, a personalized autonomous learning assistance platform for students, and functions as a teaching service information platform, a teaching achievement display platform, and a teaching management application platform. The school has purchased network teaching platforms such as Chaoxing, Yuchangtai, and Zhihuishu, and all courses approved at or above the school level have been developed into course teaching websites on these platforms. The Course Management Center has been established to integrate all course teaching platforms across the university, merging digital teaching resources and fully implementing online teaching and student self-study. Each year, more than half of the students engage deeply in learning within the website. Through the Course Center, teachers can manage courses, and students can learn online. To date, over 600 courses

have been conducted online or blended online and offline based on digital resources, with more than 30,000 students participating in learning, making it an excellent teaching resource sharing platform for both teachers and students. This platform facilitates teachers in transforming their teaching and educational concepts, promotes timely updates of teaching content, continuously improves teaching methods, and facilitates mutual exchanges between teachers and students as well as among teachers and students. For students, it can enhance their learning experience. The ability and interest in autonomous learning and research-based learning create conditions for cultivating more and better innovative talents. The core courses of this major have already established a teaching website on the curriculum center, all electronic teaching materials for the courses have been made available online, leveraging the internet can break the limitations of time and location, increasing opportunities for interaction between teachers and students.

Through the construction of digital course resources, the teaching ability of school teachers has significantly improved, with course project teachers winning 32 provincial-level or higher teaching competition awards, including 1 national second prize, 1 provincial special prize, and 6 provincial first prizes, accounting for more than 95% of the total number of awards won by the entire school. The quality of talent cultivation has shown significant results, with over 1,500 awards received in provincial-level or higher student competitions, including 38 national first prizes and 268 provincial first prizes. The postgraduate admission rate has quadrupled compared to the end of the "13th Five-Year Plan". Graduates are highly regarded by employers, with an employment rate consistently exceeding 95%. In the salary ranking list of graduates five years after graduation in Hunan Province higher education institutions, the university has consistently ranked first among provincial undergraduate institutions in recent years.

5) Teaching management information system

The school has established a teaching management information system which serves as the primary platform for implementing teaching management and ensuring the smooth operation of teaching activities responsible for resource allocation of

various teaching tasks teacher scheduling and recording of student academic progress throughout their schooling. The system is equipped with numerous personalized functional points covering all aspects of teaching management meeting the requirements for teaching management and the needs of daily teaching operation management. This platform is powerful and user-friendly serving as the main platform for conducting teaching management. Students can use this platform to select courses evaluate teaching quality and check course evaluation results. Through this platform teachers can access student information class schedules and manage examination scores among other tasks.

6) Graduation thesis/design management platform

The college has established an undergraduate thesis/design management system, namely the Bachelors Thesis Management Information Platform. Teachers can use this platform to release topics for bachelor theses, and students can freely choose topics of interest. The system can monitor the quality of graduation theses/designs, achieving comprehensive management from topic selection, mid-term checks to defense.

5.3.8 Teaching and office facilities

The main teaching venues for this major are three: school teaching buildings, engineering training centers, and college (telecom building) experimental centers. The total area of classroom space in the school is 96,700 ㎡ (518 classrooms), equipped with flexible combination desks and chairs, smart classroom systems (Rain Classroom), and automatic recording and broadcasting functions. High-quality recording studios, smart classrooms, observation rooms, and micro-teaching classrooms totaling 96 rooms have been built; 281 classrooms are equipped with HD cameras with audio pickup capabilities; a smart teaching monitoring platform, a smart classroom patrol platform, and a smart teaching monitoring center have been constructed, achieving real-time classroom monitoring and online classroom observation. Ordinary classrooms are all equipped with multimedia computers and projectors. Teachers can control multimedia equipment in the classroom through the classrooms network control system. Smart classrooms are intelligent teaching environments composed of multiple subsystems,

mainly used for specialized course instruction and flipped classrooms, emphasizing the role of students in class, collaborative learning, and teacher-student interactive discussions. The Asset and Laboratory Management Office has set up multiple management duty rooms in the teaching buildings, responsible for managing, maintaining, and repairing teaching facilities to ensure their normal operation. To enhance the management and openness of teaching facilities and improve resource utilization, the usage arrangements for all multimedia classrooms across the school can be managed through the query of the teaching system management information system, teachers can apply in the teaching management information system to ensure the needs of undergraduate teaching.

The Experimental Center of the School of Information and Electronic Engineering currently owns physics laboratories, electronic and communication laboratories, and a computer experimental teaching center. It comprises a total of 52 undergraduate teaching laboratories, which are used to meet the needs of teaching, external exchanges, and cooperation, as well as to satisfy teachers requirements for public and office spaces. The undergraduate laboratories offer over 40 experimental courses, with more than 10,000 students visiting the Experimental Center annually. Additionally, the college has several small meeting rooms for hosting seminars and academic reports by visiting scholars. The Experimental Center of the School of Information and Electronic Engineering is open to students in this major for independent academic research and experimental studies. The Experimental Teaching Center has established 11 laboratories, including a circuit board design and fabrication laboratory, a programmable logic device laboratory, an artificial intelligence laboratory, an analog circuit laboratory, a microcomputer principles and microcontroller laboratory, a circuit analysis laboratory, a digital electronic technology laboratory, and a high-frequency electronic circuit laboratory, primarily conducting professional fundamental experiments and comprehensive professional experiments, with a comprehensive and design-oriented experiment offering rate of 95%(For information on the teaching and the office space, see **Appendix D-9**).

5.3.9 Barrier-free facilities

All offices, laboratories, lecture halls and libraries on campus are covered by full wireless network; the computers in the computing center are updated every year according to actual needs to meet the needs of development; Network and virtual reality technology can easily realize the remote operation of high-end computer-aided equipment.

All newly built laboratories, classrooms and office buildings are equipped with barrier-free facilities so that disabled students can enter these teaching places smoothly.

In short, in order to meet the needs of educational informatization, the school has comprehensively constructed a safe, efficient, scalable, and open information-based campus infrastructure, achieving full coverage of wireless networks in public areas within the school, realizing functions such as networked administrative offices, teaching informatization management, and resource sharing, thus meeting the needs of student's learning, teacher's instruction, and research work.

5.3.10 Other external cooperation

The school has fully launched strategic cooperation with the government and large enterprises, establishing comprehensive strategic partnerships with Yiyang City, Qiyang City, Heshan District, Huawei Technology Co., Ltd., Hunan AiHua Technology Group, China National Nuclear Corporation, China State Construction Engineering Corporation, China Railway Engineering Corporation, and other cities and large enterprises. The school possesses 40 provincial-level or higher teaching platforms, including a provincial-level demonstration base for talent cultivation through industry-university cooperation in electronic information specialties. The Electronic Information Engineering major has signed industry - university - research cooperation agreements with enterprises and institutions such as Huawei Technologies Co., Ltd., Aihua Group, and Aoshikang Technology Co., Ltd., and has carried out "order - based" talent training. The university owns several school-run enterprises, including the New-type Smart City Research Institute Co., Ltd. of the Hunan Province (in which the school has shares), Design Institute Research Co., Ltd., and Civil Engineering Testing Center 2. These

school-run enterprises receive 1,000 to 2,000 students for internships and practical training every year, providing real - life projects for students to work on. They have become an important platform for nurturing talents.

The Electronic Information Engineering program actively serves national strategic needs and Hunan "Three Highs and Four New Things" vision, aligning with industries and sectors, strengthening professional connotation construction, and enhancing information manufacturing capabilities. In 2021, the Electronic Information Engineering program was recognized as a national first-class undergraduate program and a pilot program for comprehensive reform of higher education programs in Hunan Province. Meanwhile, it continuously optimizes disciplinary directions and strengthens university-enterprise cooperation and exchanges. It has established good university-enterprise cooperation relationships with specialized enterprises such as Huawei, China Unicom, China Telecom, Sangfor, Qianxin, Sunway Communications, Topvision Information, Kerui Te, Visteon Technology, Haoyuan Technology, AiHua Group, Ausi Kang Technology, and YueXin Communication Technology, promoting deep integration of industry and education, collaborative talent cultivation, and students who are highly aligned with corporate needs. Additionally, it aligns with national needs and collaborates with Hunan AiHua Group Co., Ltd. and Hunan Kerui Te Technology Co., Ltd. to form the Electronic Information Modern Industry Research Institute, enhancing the university’s collaborative innovation capabilities in industry-academia-research integration. It engages in deep exchanges and discussions with partner enterprises in areas such as faculty development, talent cultivation, university-enterprise cooperation, and industry-education integration, achieving joint talent cultivation and resource sharing, promoting effective connection between the education chain and the industrial chain. It collaborates closely with Huawei and other leading enterprises in Yiyang characteristic industries, serving and addressing national critical projects of "High-end Capacitors" and "High-end Printed Circuit Boards" intelligent manufacturing, assisting the Yiyang municipal government in building the "World Capacitor Capital", constructing the Hunan Provincial Electronic Information Modern Industrial College, and establishing the Hunan Provincial Key Laboratory of All-Solid-State Energy

Storage Materials and Devices. The university-enterprise collaborative research and development of high-end aluminum electrolytic capacitors for LED lighting has broken through foreign technological barriers and filled domestic gaps. Some graduates have become key technical personnel in well-known enterprises such as AiHua Group and AusiKang. The colleges "Global Faith" doctoral team has obtained over 40 core intellectual property rights for wildlife satellite tracking technology and achieved 3 internationally advanced outcomes, filling the gap in Chinas wildlife tracking technology field. They have established the largest wildlife tracking big data center in the country, which has been featured dozens of times by CCTV.

The list of off-campus cooperative enterprises and off-campus partners of this major is listed in **Appendix D-10**.

5.3.11 Teaching investment in the past five years

The teaching funds for the Electronic Information Engineering major are adequately guaranteed, with annual increases in basic business expenses for undergraduate teaching, teaching construction, student innovation and practical activities, and teaching reform projects, ensuring normal teaching activities with sufficient teaching funds. Over the past five years, the total investment in the professional teaching funds has reached 18.15 million RMB (**Appendix D-11**). Among these funds, the laboratory construction investment is 14.21 million RMB, the course construction investment is 181,154 RMB, the undergraduate innovation project investment is 61,916 RMB, and the academic competitions investment is 482,795 RMB.

6 Quality assurance measures

6.1 Quality assurance and further development

6.1.1 Internal teaching quality evaluation

Each semester, under the unified arrangement of the university, each college and each major will implement routine teaching inspections to evaluate the quality of teaching through classroom instruction, practical activities, thesis/design process, teaching order, lesson plans, examination papers, and other teaching materials. This

process aims to identify and address potential issues in teaching management. Taking the examination paper inspection as an example, at the beginning of each semester, the Academic Affairs Office of Hunan City University conducts random checks on the examination papers from the previous semester and evaluates them from three aspects: examination paper scores, paper analysis, and improvement measures, to promote the standardization of examination papers. Each semester, the college analyzes the distribution of examination scores and student performance, and provides suggestions and requirements for improving teaching quality to teachers, detailed information is provided in the "Hunan City University Full-time Ordinary Higher Education Undergraduate Course Assessment and Grade Management Measures" (**Appendix C-1**), peer evaluation and supervision are seen in **Appendix E-1**.

6.1.2 External teaching quality evaluation

The university adopts a system of feedback from student employers to listen to their opinions. In addition, the university has introduced external supervision, for example, the university has participated in the undergraduate teaching evaluation of higher education institutions initiated by the Ministry of Education of China and the excellent undergraduate course evaluation organized by the Hunan Provincial Education Commission, forming a teaching quality evaluation mechanism that combines internal and external evaluations with the participation of higher authorities, employers, teachers, and students. Here, the role of the Ministry of Education, employers, external experts, and third-party society is seen as external evaluation (See in **Appendix E-2**: "Third-party Social Evaluation Implementation Plan (Trial))"; and the power of teachers and students and the university itself is acted as internal evaluation. The practical application results show the effectiveness of this evaluation method.

6.2 Tool methods and data

6.2.1 Number of students and graduation rate

According to the average class hours stipulated by Hunan City University: the normal study period for students is 4 years, but does not exceed 6 years, students who cannot graduate within 6 years will receive a certificate of suspension or be dismissed.

Table 6-1 lists the number of students and graduates for this program from 2020 to 2024. The beginning and ending time of each spring semester and autumn semester are basically the same, thus the annual schedule is determined. The destinations of graduates from this major are shown in **Table 6-1**. **Table 6-2** provides a detailed description of the initial attempt graduation rate/initial attempt degree acquisition rate for the first three years from 2022 to 2024.

Table 6-1 Destinations of Major Graduates

The years	2020	2021	2022	2023	2024
Number of students	91	164	12 7	180	169
Number of graduating students	78	156	125	178	1 6 6
Graduate ratio	85.7%	95.1%	9 8.4%	98.9%	98.2%
Graduate employment ratio	100%	9 8.1%	9 7.6%	100%	86.7%
Proportion of graduates who continue their studies in China	11.2%	10.1%	10.4%	10.6%	14.8%
Proportion of graduates studying abroad	0%	0%	1.6%	0%	0.59%
Other graduates	0%	1.9%	2. 40%	0%	1 3.3%

Table 6-2 Initial attempt graduation rate/initial attempt degree rate, 2022-2024

	Class of 2022	Class of 2023	Class of 2024
Number of students	127	180	169
Number of first-time graduates	125	178	166
First attempt graduation rate	98.4%	98.9%	98.2%
Number of first-time degree candidates	121	175	165
First attempt to get a degree rate	96.8%	98.3%	99.4%

6.2.2 Student evaluation

Each student must earn 230 ECTS credits to graduate. Students who fail courses will be recorded. For students who fail the exams, the university will provide opportunities for retaking exams or retaking courses (See **Appendix C-1**). Students who do not complete 230 ECTS credits will not be able to obtain a degree. Sample transcripts are available in **Appendix E-3**. For students with learning difficulties, the university has established facilities and environments suitable for students with disabilities, including accessible restrooms and ramps to facilitate their learning.

6.2.3 Test score evaluation and continuous statistics

Teachers are required to submit students' examination results and course teaching analysis after each course examination and propose feasible suggestions for continuous improvement based on the analysis results to enhance teaching quality and student learning results. If students fail the course examination, a dedicated academic advisor will be assigned to supervise and guide their course studies. **Table 6-3** shows the pass rates for the 13 core courses in the Electronic Information Engineering in 2024.

Table 6-3 The pass rate of 13 core courses in Electronic Information Engineering in 2024

NO.	Area of competence	Course code	Course title	Credit	Class hour	Type	Pass rate
1	Engineering fundamentals	9061313211	Circuit analysis	3.5	64	examination	95.7%
2	Engineering fundamentals	9061313051	Signals and Systems	4	72	examination	79.2%
3	Engineering fundamentals	9061313241	Digital electronic technology	3.5	64	examination	89.4%
4	Engineering fundamentals	9062313021	Communication Fundamentals	3	48	examination	86.2%
5	Engineering fundamentals	9063313081	Data structure	4	80	examination	91.9%

6	Mathematical fundamentals	9061112041	Function of complex variables	3	48	examination	92.8%
7	Mathematical fundamentals	9063112041	Discrete mathematics	3	48	examine	96.2%
8	Engineering application	9061313081	Digital signal processing	3	48	examination	82.3%
9	Engineering application	9061312050	Electronic measurement and sensor technology	2	40	examine	92.4%
10	Self-development	9061324030	Embedded principles and technology	3	48	examine	92.5%
11	Self-development	9061324020	FPGA principles and applications	2.5	48	examine	9 9.3%
12	Self-development	9061312010	Electronic integrated design	2.0	40	examine	100%
13	Self-development	9061324070	Robot development	2.5	48	examine	97.5%

6.2.4 Students evaluation of teaching quality

Student teaching quality evaluation is an important component of the teaching evaluation system. Each student must submit a teacher teaching quality evaluation form before selecting courses each semester, otherwise they will not be able to select courses. The teaching suggestions listed in the evaluation form will be analyzed and used to improve teaching methods. Student evaluations of teachers are also used to assess teaching effectiveness and are linked to teacher's job performance. The students' evaluation interface is shown in **Figure 6.1**. The evaluation results of peer, supervisory,

and student evaluations in the past three years are shown in **Appendix E-1**, and the implementation plan for third-party social evaluations is shown in **Appendix E-2**.

Figure 6.1 Evaluation Interface for students

7. Quality assurance and transparency

7.1 Course module description

The college provides a comprehensive and efficient personal management system for department heads, faculty, and students, aiming to promote interconnectivity in work scheduling, processing, modification, and information dissemination. This system offers a wide range of targeted functional modules based on different user roles. Faculty, students, and college administrators can achieve smooth communication and feedback through the system. This interactive mechanism ensures the effective transmission of opinions from all parties, promoting information flow and decision optimization within the university.

For teachers, the system not only supports timetable inquiries and student list views but also allows teachers to record students' grades manage graduation thesis/designs and has practical functions such as class scheduling. These tools greatly simplify daily teaching management work helping teachers focus more on improving educational quality. Student users can query their own schedules and grades through

the system and participate in the management of graduation thesis/designs. Such design not only facilitates students to timely understand their learning status but also provides strong support for their academic planning.

Users can easily access the personal management system through the "Portal Entry" in the top navigation bar of the homepage of the official website of the college. The interface of the official website is shown in **Figure 7.1**. The portal login interface is shown in **Figure 7.2**.

Figure 7.1 College website interface

Figure 7.2 Portal login interface

The portal login interface design is intuitive and a model of user-friendly service. On the unified identity authentication platform users need to input accurate account

numbers and passwords (student accounts are their student ID numbers while teacher accounts are staff numbers) and complete SMS verification to ensure account security. In addition, the system also supports a more convenient and secure QR code login option, further enhancing the user experience.

For users who may encounter login difficulties, the page specifically provides a "Forgot Password" feature, detailing the steps to recover account information ensuring that every user can smoothly resolve account access issues. This series of thoughtful designs not only demonstrates attention to user needs but also showcases the commitment to providing efficient, secure, and convenient online services.

7.1.1 Teacher personal management system

The following is the interface that the teacher sees after logging in successfully (see **Figure 7.3**).

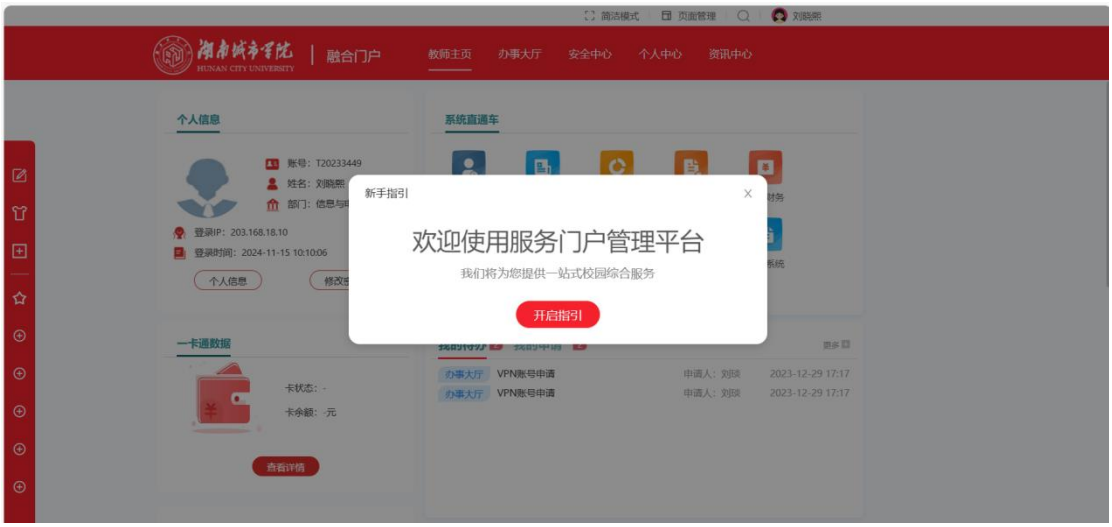

Figure 7.3 New user guide interface

The first thing that catches the eye is a carefully designed new finger guide function, which undoubtedly greatly facilitates the first-time user. After completing the novice guide, the teacher will enter the main interface (see **Figure 7.4**).

Figure 7.4 Personal interface for teachers

The "System Express" function located in the center of the interface provides a one-click shortcut to several important modules including the Academic Affairs System and Practical Teaching. Through the Academic Affairs System, teachers can not only query various teaching-related data and information but also perform a series of operations and management tasks; in the Practical Teaching module, it is convenient to handle matters related to graduation thesis/design, greatly simplifying the workflow and improving work efficiency, fully demonstrating the colleges relentless pursuit of enhancing teaching quality and service levels. The Academic Affairs System interface is shown in **Figure 7.5** and the Practical Teaching interface and Graduation Comprehensive Training Management System in **Figure 7.6** and **Figure 7.7** respectively.

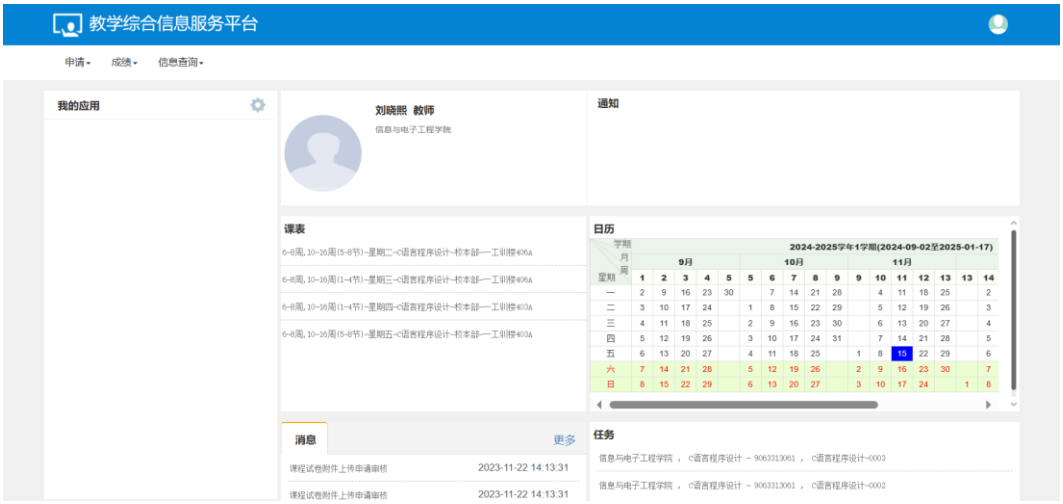

Figure 7.5 The academic system interface

Figure 7.6 Practical teaching interface

Figure 7.7 Graduation Comprehensive Training Management System

7.1.2 Student personal management system

The following is the interface that students see after logging in successfully (as shown in **Figure 7.8**). The personal interface is designed with great humanization, aiming to provide each student with a convenient and efficient service experience. This interface is mainly divided into two modules: the Personal Service Window and the

System Express Window. Through these two carefully designed windows, not only is the interaction between students and the university strengthened, but it also significantly enhances student satisfaction and campus quality of life.

The Personal Service Window integrates a series of functions closely related to individual students, such as examination information (See **Figure 7.9**), grade inquiry (See **Figure 7.10**), academic status inquiry (See **Figure 7.11**), etc., aiming to enable students to easily manage their learning lives and stay updated on their academic progress. The System Express Window focuses more on providing a rapid channel for accessing university resources and services, such as the Academic Affairs System (See **Figure 7.12**) and the Practical Teaching System (See **Figure 7.13**), enabling students to quickly obtain the information they need or complete specific operations, significantly improving efficiency and the convenience of campus life.

Figure 7.8 Personal Interface for students

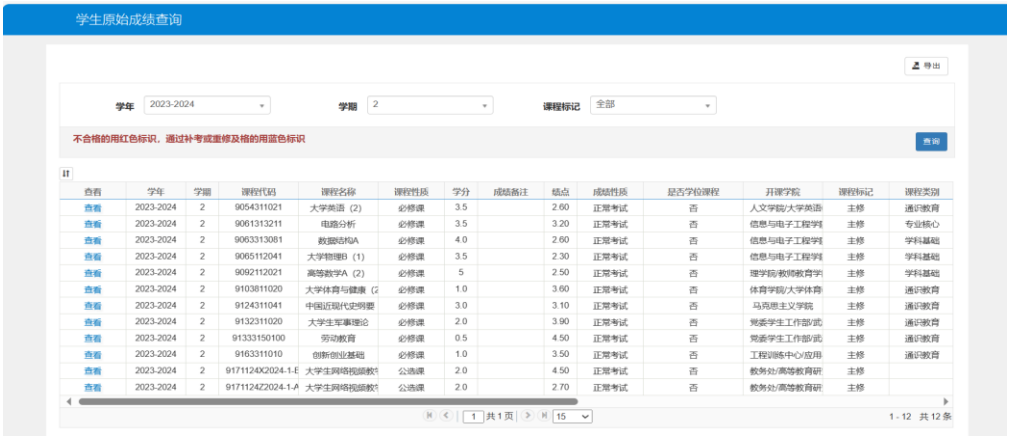

Figure 7.9 Test Information Inquiry Interface for students

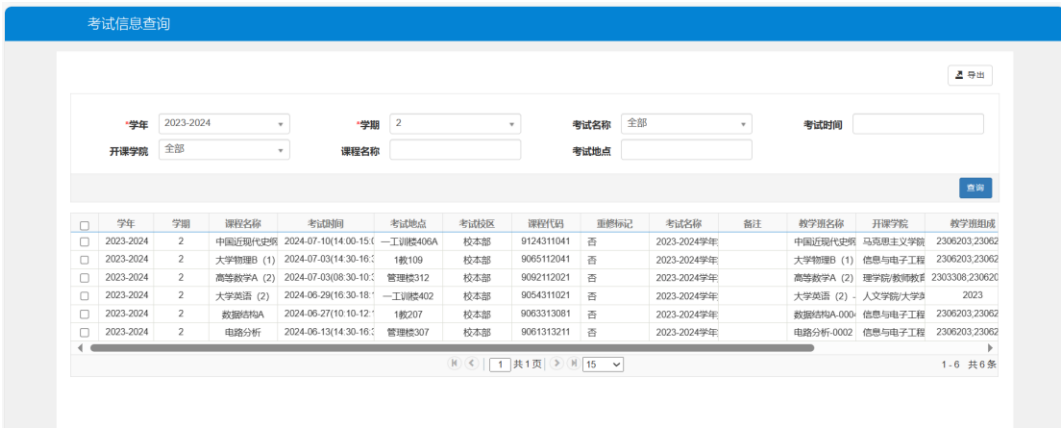

Figure 7.10 Score query interface for students

Figure 7.11 Academic Information Inquiry Interface for students

Figure 7.12 Academic System Interface for students

Figure 7.13 Practice teaching interface for students

7.2 Relevant regulations

7.2.1 Teaching evaluation system

In terms of teaching, the college strictly follows the "Implementation Opinions on Further Strengthening Teaching Management Team Building of Hunan City University" (see **Appendix F-1**) to conduct qualification reviews for course instructors. Course instructors must prepare course content according to the basic norms of lesson plans and teaching materials. The college manages and evaluates the teaching process in accordance with relevant regulations including the "Guidelines for Classroom Teaching Behavior of Hunan City University", the "Regulations on the Implementation of Student Teaching Information Officers System of Hunan City University", the "Procedures for the Work of Special Committees for Teaching Guidance of Hunan City University", the "Recognition and Handling Measures for Teaching Accidents and Negligence of Hunan City University", the "Classroom Observation Management Measures of Hunan City University", the "Calculation and Management Measures for Teaching Workload of Hunan City University", and the "Implementation Measures for Evaluation and Continuous Improvement of Undergraduate Teaching Quality of Hunan City University (Trial)", refer to **Appendix F-1**.

The Academic Affairs Office of Hunan City University regularly conducts teaching evaluations for each course to understand the basic performance of teachers in various aspects of the teaching process, including student evaluations, peer evaluations,

and supervisory evaluations (i.e. tripartite evaluations) for each course. The results of the tripartite evaluation of teaching will be collected and organized by the academic affairs office of the college, and feedback will be provided to relevant departments and course teachers. In addition, teachers and administrators can query the student evaluation, supervision evaluation, and peer evaluation results of each course through the college's teaching management system. Please refer to **Appendix F-2** for a sample of the results of the third-party evaluation.

7.2.2 Student admission assessment

Since 2020, the admission score line of Hunan City University has consistently been higher than the standard for the first-tier universities in the National College Entrance Examination (college entrance examination). For detailed information and admission records over the past five years, please refer to **Appendix F-3**. The university of Information and Electronic Engineering strictly adheres to the relevant regulations stipulated by the Ministry of Education of the Peoples Republic of China, the Hunan Provincial Department of Education, and the Hunan Provincial Education Examination Institute in its recruitment and admission work, and has established a dedicated recruitment leadership group to oversee all recruitment matters comprehensively. For detailed information on the regulations for Hunan City University’s recruitment and admission work, the implementation details of recruitment publicity and supervision, the rules for recruitment examination work, and the system of conflict interest avoidance, please refer to **Appendix A-8 to A-10**.

7.2.3 Further development and continuous improvement

To meet the demands of the job market and technological development, College of Information and Electronic Engineering of Hunan City University places great emphasis on the continuous development of its programs. The college continuously explores innovations and has introduced a series of supporting management systems to adapt to the rapidly changing industry needs. For this purpose, Hunan City University has established a specialized graduate tracking information system aimed at collecting and analyzing feedback from graduates to understand their performance and

development in the workplace. Additionally, the college holds annual alumni seminars during its anniversary celebrations to create a platform for communication and interaction with graduates, promoting the continuous improvement of the curriculum and enhancing teaching quality.

Considering the language barriers that some international students or non-native Chinese students may encounter during their studies, the university of Information and Electronic Engineering will further enhance the bilingual teaching capabilities of professional teachers, increase the number of bilingual courses, and strengthen Chinese language training for international students to help them adapt to the campus life and learning environment of Hunan City University as soon as possible, ensuring that every student can receive a high-quality educational experience.

7.3 Supplementary information on diploma and qualifications

Appendix F-4 shows a sample of the graduation certificate and bachelor degree certificate for students graduating from the Electronic Information Engineering program at Hunan City University, and all certificates must be stamped with the official seal of Hunan City University and signed by the president to take effect. **Appendix F-5** depicts a supplementary diploma sample; a sample of the student academic transcript has described in **Appendix E-3**.