Research Report on the Talent Demand for Electrical Engineering and Automation Majors

I. Introduction

With the rapid advancement of technology and sustained economic growth, the Electrical Engineering and Automation major, as a pivotal discipline supporting modern industrial development, is experiencing increasingly strong demand for professionals in this field. To gain a deeper understanding of the talent market demands for graduates in the Electrical Engineering and Automation major, as well as the employment prospects for students enrolled in this program at Kunming University, this survey was conducted.

II. Research Objectives

To accurately define the educational objectives of our university's Electrical Engineering and Automation program, the program has conducted multiple surveys focused on professional talent demands, with the primary objectives being:

(1) Understand the current state of relevant industry development within the program's designated region, as well as the social demands of related industries or enterprises, and clarify the scope of services provided by the program;

(2) Analyzing the job responsibilities within various employment sectors and positions, as well as the knowledge, skills, and competencies required for professionals, provides a basis for developing curricula, determining program educational objectives, and establishing talent cultivation specifications;

(3) Master the job structures and talent demands within relevant industries and enterprises; define the professional focus of the program; assess how graduates adapt to their careers and employment positions; promote reforms in teaching content and pedagogical methods; and thereby enhance the quality of talent cultivation.

III. Research Methods

1. Enterprise Visits: Conducting on-site visits to relevant enterprises in the local and surrounding areas to understand their needs regarding professionals in the field of Electrical Engineering and Automation.

2. Questionnaire Survey: Design a questionnaire survey form and utilize online questionnaires or other methods to conduct a talent demand survey among enterprises in relevant industries.

3. Labor Market Analysis: Collect and compile labor market demand data for the local and surrounding regions, and analyze the demand for professionals in the Electrical Engineering and Automation discipline.

4. Graduate Follow-up Survey: This follow-up survey involves graduates of the Electrical Engineering and Automation program at our university to assess their employment status and understand the requirements that enterprises have for their skills and competencies.

5. University Expert Interview: Conducting a discussion with faculty members of the Electrical Engineering and Automation program at our university to learn about the program's establishment, talent cultivation model, and other related aspects.

6. Industry-wide comparative analysis: By comparing this program with similar programs offered by other universities, we can identify the strengths and weaknesses of this program in talent cultivation, as well as examine trends in market demand.

IV. Research Content

(1) Employment Sector

Graduates of our university's Electrical Engineering and Automation program possess strong competitiveness in the job market, with a wide range of employment sectors and positions available to them. With ongoing technological advancements and continuous industrial upgrading, the career prospects for this major will become even more promising.

（1） power sector

Graduates can join large state-owned enterprises such as national power utilities or grid companies, where they can work in areas including the planning, design, operation, and maintenance of power systems, as well as the operation of electricity markets. With the rapid development of fields such as smart grids and new energy sources, employment prospects in this field are particularly promising.

（2） Electrical Equipment Manufacturing and Application Enterprises

Graduates may work in electrical equipment manufacturing and application enterprises—such as those within the tobacco industry, rail transit sector, smart building sector, and other similar institutions—and can engage in roles involving the production, use, and maintenance of electrical equipment; as well as the design, installation, commissioning, operation and maintenance, testing, and control of power supply and distribution systems.

（3） Electronic Information Industry

Graduates can enter fields such as the electronic information industry, telecommunications industry, and computer industry, where they can engage in the research and development, production, and testing of electronic equipment, as well as the design, development, and maintenance of information systems. With the rapid advancement of technologies such as 5G, the Internet of Things, and artificial intelligence, employment opportunities in this field continue to grow steadily.

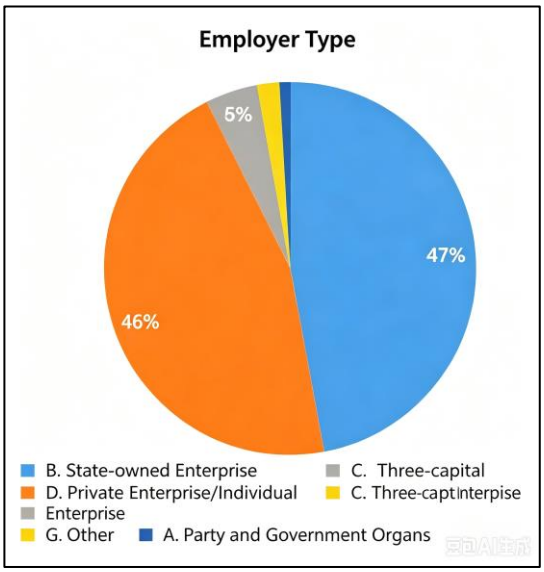
（4） manufacturing industry

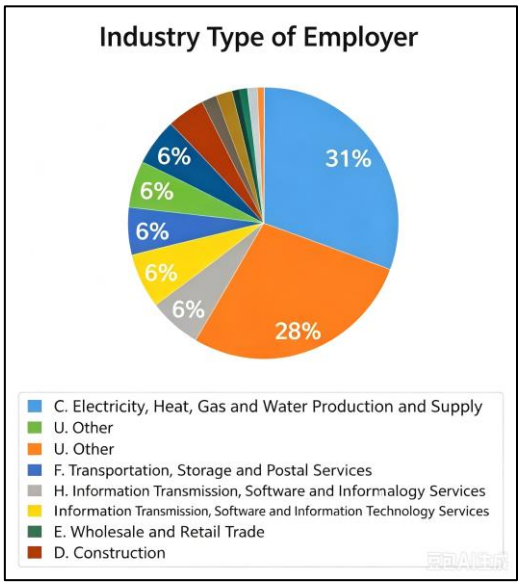
Graduates can join various manufacturing enterprises—such as those in the automotive, home appliance, and machinery sectors—to work in areas including the research and development, design, and production of motors and electrical components, as well as the commissioning and maintenance of control systems.

（5） Research institutes and universities

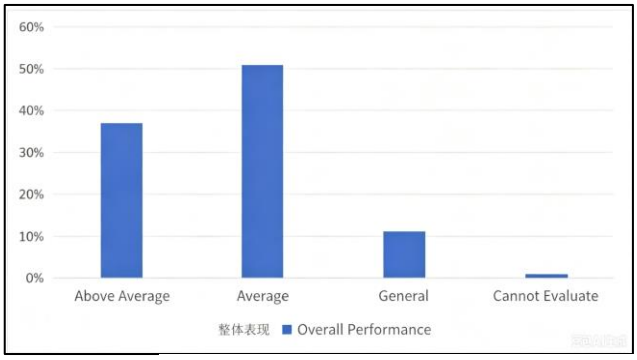
Graduates may also choose to join research institutes, universities, or other organizations to engage in research or teaching; alternatively, they may pursue further studies by obtaining a master's degree to further enhance their professional expertise and competitiveness.

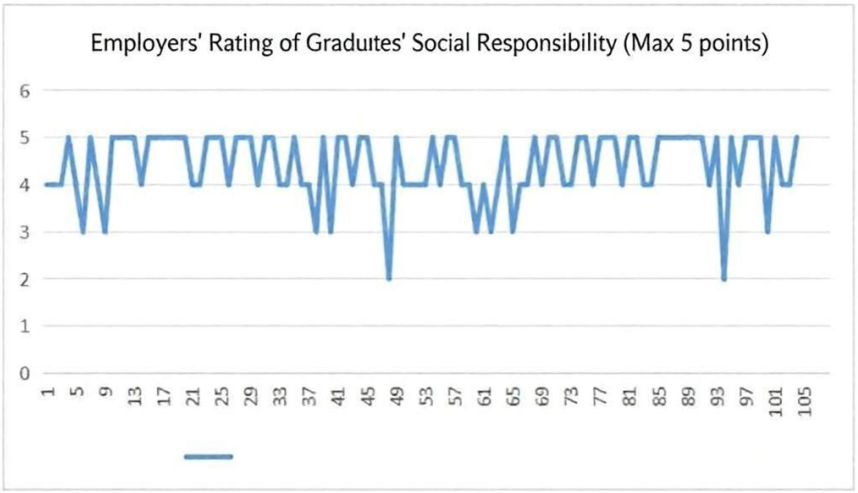
From March to June 2024, the College invited 108 employers and 183 alumni to participate in a questionnaire survey, during which they completed both the "Social Evaluation Survey of Employers at Kunming University" and the "Graduate Follow-up Surve

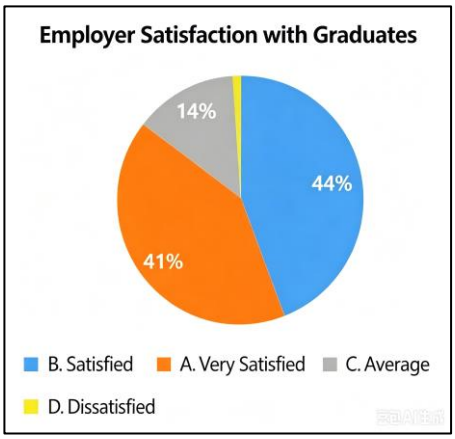


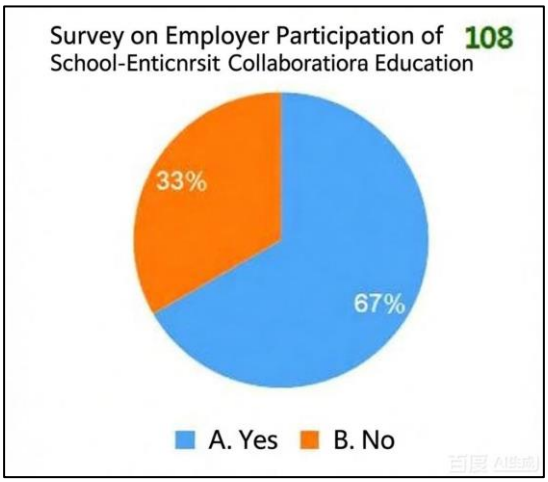


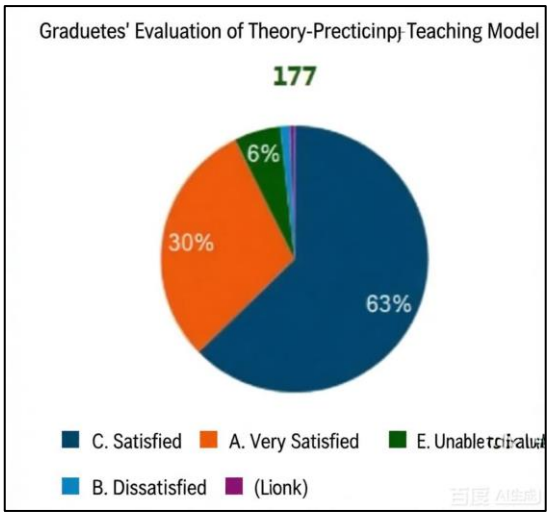
The employer's assessment of the overall erformance of the college's graduates

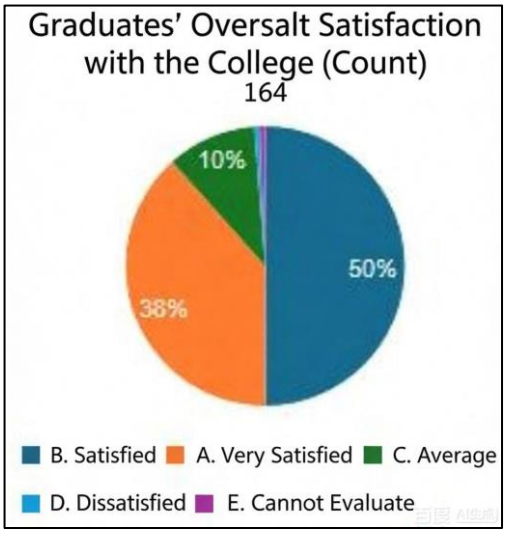


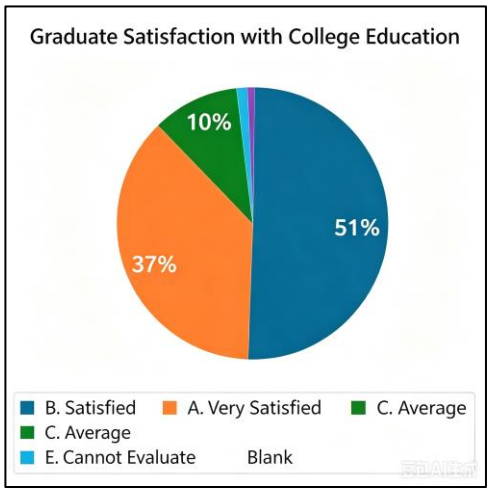


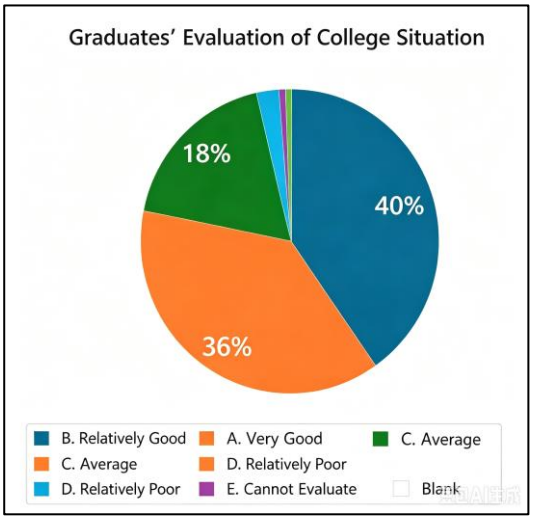

Employer Satisfaction with Graduates
14%
44%
41%
B. Satisfied
A. Very Satisfied
C. Average
D. Dissatisfied


Survey on Employer Participation of
School-Enticnrsit Collaboratiora Education
108
33%
67%
A. Yes
B. No


Graduetes' Evaluation of Theory-Precticinp Teaching Model
177
6%
30%
63%
C. Satisfied
A. Very Satisfied
B. Dissatisfied
(Lionk)


Graduates' Oversalt Satisfaction with the College (Count)
164
10%
50%
38%
B. Satisfied
A. Very Satisfied
C. Average
D. Dissatisfied
E. Cannot Evaluate


Graduate Satisfaction with College Education
10%
51%
37%
B. Satisfied
A. Very Satisfied
C. Average
C. Average
E. Cannot Evaluate
Blank


Graduates' Evaluation of College Situation
18%
40%
36%
B. Relatively Good
A. Very Good
C. Average
C. Average
D. Relatively Poor
D. Relatively Poor
E. Cannot Evaluate
Blank

Employers' Comments on College Talent Training Revision：

1. Focus on theories supplemented by practical operation.
2. Keep pace with social reality. Align teaching with current enterprise recruitment demands, adopt integrated theoretical and practical teaching, and cultivate skills required by employers.
3. Obtain certificates matching majors. Increase investment in training equipment and enrich practical training courses.
4. Make full use of employees with professional strengths, motivate their internal initiative and improve work efficiency. Continue to improve students' comprehensive quality.
5. Strengthen cooperation with enterprises to provide job opportunities and boost employment.
6. Enterprises hope the college can organize special enterprise recruitment seminars to help students understand enterprises in advance and reduce unfamiliarity with corporate employment. Students lack clear personal development orientation.
7. Add practical knowledge about workplace norms such as social insurance.
8. Practical courses should be closely connected with real business scenarios.
9. Organize more practical activities to improve employability.
10. Provide multi-channel employment guidance adjusted to market demands, and launch various activities to facilitate enterprise recruitment.
11. Strengthen employment guidance. Encourage students to take internships to identify career positioning, confirm development directions and seek suitable jobs.
12. We suggest continuing to enroll students majoring in Safety Engineering. Thank you.
13. Improve students' self-learning ability and their understanding and judgment of the current employment situation. Strengthen training on professional courses; students' professional knowledge foundation is rather weak!
14. We hope students avoid having high aspirations but limited capabilities. They should act according to their abilities. A stable job is a good choice; do not be overly picky, or they may end up with nothing.
15. No comments. Carry out targeted recommendation and organize more special recruitment fairs for enterprises. Cultivate students' diversified employment concepts, resilience, courage to embrace challenges and proactive learning attitude. Enable students to participate in internships and practical training related to their career planning. Students lack stability, and communication difficulty is high during recruitment.
16. Integrate theory with practice.

In recent years, the main employers for graduates include: Yunnan Electric Power Grid Co., Ltd., Datang Yunnan Power Generation Co., Ltd., Yunnan Transmission and Substation Engineering Co., Ltd., Huadian (Yunnan) New Energy Power Generation Co., Ltd., Yunnan Huadian Kunming Power Generation Co., Ltd., China Railway Kunming Group Co., Ltd., Yunjing Nanjing Rail Transit Investment and Construction Co., Ltd., Yunnan Wenshan Electric Power Co., Ltd., Yunnan Energy Investment Weixin Energy Co., Ltd., etc.

(2) Job Responsibilities and Requirements

A survey of various employers hiring graduates revealed that different enterprises have distinct approaches to job role design, with slight variations in job responsibilities; however, for graduates majoring in Electrical Engineering and Automation at the undergraduate level, these roles can be broadly categorized into positions such as Senior Electrician, Automation System Engineer, Electrical Control System Engineer, and Electrical Engineering Project Engineer—roles that share essentially identical or similar typical job responsibilities. The specific job responsibilities for these roles are presented in Table 1.

Table 1: Job Responsibilities of Employing Enterp- rises

Order number	Employment position	Position statement
1	Senior Technical Professionals	Responsible for the operation management and maintenance of both high-and low-voltage power distribution systems to ensure the normal operation of these systems and the proper maintenance of associated equipment; also responsible for the operation management and maintenance of electrical control systems to guarantee their smooth functioning.
2	Electric control Systems Engineer	Responsible for the design, operation, and technical maintenance of AC/DC motion control systems; responsible for formulating safe operating procedures and inspection standards for electrical operating equipment; responsible for developing plans for technical upgrades and technical implementation projects for power drive systems as well as equipment maintenance schedules, organizing their execution, and completing the archiving of design and construction documentation; and responsible for resolving technical challenges encountered during the operation of power drive systems.
3	Electrical engineering Project Engineering Personnel	Responsible for the design of power engineering projects, construction management, quantity takeoff and cost estimation; construction progress planning and management; preparation of project construction schedules; calculation of engineering quantities, preparation of bill of quantities quotations, determination of main material costs; compilation of sub-project measure item lists and detailed breakdowns of statutory fees; as well as the consolidation of overall project costs.
4	Industrial Automation Systems Engineering Professionals	Responsible for the operation, management, and maintenance of automatic control systems; formulating safe operating procedures for automation system equipment as well as point inspection standards for DCS and PLC equipment; developing technical upgrade and technical implementation plans for automatic control systems and maintenance plans for automation equipment, organizing their implementation, and completing the archiving of design and construction documentation; analyzing and resolving faults or technical challenges that arise during the operation of automatic control systems.

(3) Job-specific Professional Competence Requirements

Based on a clear definition of job responsibilities, the required professional competencies for each position are summarized in Table 2:

Table 2: Occupational Competency Requirements for Empl- oyment Positions

Order number	Post	Job-specific Competency Requir-ements
1	Senior Technical Posit- ions	Possess fundamental knowledge in electrical and electronic engineering, as well as power supply and distribution for industrial facilities; possess basic skills in the installation, commissioning, operation, and maintenance of automation equipment; master the safety operating procedures and point inspection standards for electrical equipment; be able to interpret electrical drawings and proficiently use various electrical tools and instruments; possess PLC program analysis capabilities and HMI operation skills; master the input/output characteristics of motors and frequency converters; possess the ability to diagnose common faults in motors, frequency converters, and PLC systems; understand the structure and working principles of production equipment; and master the knowledge regarding how key process parameters in production affect both the equipment and the final product.
	Electrical Control System Engineering Position	Possess knowledge in electrical and electronic technology, electromagnetic field theory, motor theory, automatic control, electrical control technology, motion control technology, and computer science; demonstrate proficiency in the safe operating procedures and point inspection standards for electrical control equipment and power drive systems; possess fundamental capabilities in the design, installation, commissioning, operation managem-ent, and maintenance of electrical automation systems; understand the operational characteristics of power drive systems; possess the ability to analyze and diagnose faults in electrical control systems; and have an understanding of the structure and working principles of production systems and their associated equipment;

2		Master the relevant analytical and judgment methods for assessing the impact of production system process parameters on the system, equipment, and products; possess the capability to perform technical analysis of electrical control systems and to implement technical upgrades.
3	Electrical Engineer- ing Project Positions	Possess knowledge in electrical and electronic engineering, power systems, high- voltage electrical equipment, automatic control, and computer science; demonstr- ate proficiency in national standards for power engineering projects, installation specifications for electrical equipment, safe operating procedures for power system operation, as well as design methods and skills for power engineering projects; possess fundamental capabilities in the design, construction, equipment installati- on, commissioning, system operation management, fault analysis, and detection of power engineering projects; understand the structure and operational characterist- ics of high-voltage electrical equipment, and possess the ability to diagnose common faults in power supply and distribution systems; understand the theoretical foundations of key electrical parameters during system operation and automatic regulation mechanisms; and possess the innovative capability to perform technical analyses of power systems and implement technical upgrades.
4	Industrial Automat- ion Systems Engin-eering Position	Possess knowledge in electrical and electronic engineering, automatic control, computer science, and related fields; be familiar with the safety operating procedures and inspection standards for electrical equipment; be able to perform correct operations such as the installation, commissioning, operation, and maintenance of automated equipme- nt; be capable of correctly analyzing PLC programs and understanding how to operate the host computer; be able to reasonably analyze and diagnose common faults in PLC systems; be able to understand the structure and working principles of production equipment; possess knowledge regarding how key process parameters in production affect both the equipment and the final product; and be able to conduct accurate technical analyses of automatic control systems as well as implement appropriate technical upgrades.

V. Research Analysis

(1) Analysis of Professional Service Scope

Based on the actual economic demands of Yunnan Province—particularly in Kunming and its surrounding areas—this major primarily prepares students for careers in power companies, grid operators, power plants, and other organizations engaged in power system design, commissioning, maintenance, and management. Furthermore, with the rapid development of new energy sources, fields such as power electronics and battery energy storage have also become highly sought-after career paths within this major.

(II) Analysis of Professional Job Responsibilities

The typical job responsibilities for Senior Electrician, Automation System Engineer, Electrical Control System Engineer, and Electrical Engineering Project Engineer are shown in Table 3.

Table 3: Analysis Table of Knowledge, Competence, and Quality Requirements for Professional Positions

Corresponding Posi- tion	Task Domain	Position statement
Senior Tec- hnical Prof- essionals	Installation and Maintenanc e of Common Electr- ical Control Ci- rcuits	l. Use of commonly used electrical instruments and tools
		2. Electrical Control System Design
		3. A/D and D/A circuit design, testing, and maintenance
		4. Design, testing, and maintenance of power supply module circuits
		5. Design of contactor and relay control circuits, fault detection, and maintenance
		6. Design of photoelectric switches and push-button switch circuits, as well as fault detection
		7. Design, assembly, testing, and maintenance of distribution panels
		8. Switchgear cabinet design, assembly, testing, and maintena-nce
Electrical engineering Project Eng- ineering Per- sonnel	Design, Operation, and Maintenance of Power Engineering Systems	9. Design, Operation, and Maintenance of High-Voltage Power Transformation and Distribution Systems
		l0. Design, Operation, and Maintenance of Low-Voltage Power Distribution Systems
		l1. Power engineering project design, cost estimation, and construction management
		l2. Operating Procedures and Production Management Rules for Power Systems
		l3. Design, Operation, and Maintenance of Relay Protection Systems
		l4. Power System Security Measures
Electrical Control Dep- artment Constructio n En- gineering Perso- nnel	Design of PLC- based and other control systems, operational ma- nagement, fault analysis, and sy- stem maintenance	15. Programming and Debugging of Electrical and PLC Control Systems
		l6. Reading and Analysis of Electrical and PLC Control System Programs
		l7. Operation and Management of Electrical and PLC Control Systems
		l8. Fault analysis and system maintenance for large and medium-sized electrical or PLC control systems
		l9. Electrical system safety production and operational management; production planning; maintenance planning; technical upgrade planning, etc.
Automat-	Industrial Autom-	20. Operation and Management of Production Line Equip-ment
		2l. Operation, Maintenance, and Management of Production Line Control Systems
		22. Fault Analysis and Maintenance of Control Circuits and Equipm-ent

ion Systems Engineer	ation Production Line Design and Operation & Mai- ntenance	23. Design, manufacturing, and commissioning of automated production lines
		25. Component Selection and Quality Inspection
		26. PCB design, fabrication, and debugging
		27. Development and integration of automation systems and electronic systems
		28. Full-system commissioning
		29. Technological Innovation and New Product Development

(3) Job Competency Analysis

With advancements in technology and the increasing level of production automation, electrical engineers require a diverse set of competencies; beyond their professional practical skills, modern professions place greater emphasis on professionalism, teamwork abilities, self-directed learning capabilities, and creativity. Simultaneously, the growing degree of production system automation has led to a continuous rise in the technical sophistication required; consequently, professional positions now impose higher demands on graduates—those candidates must master new knowledge, technologies, and processes, as well as possess strong adaptability and expansion capabilities. Table 4 summarizes the findings from surveys conducted with the human resources departments and front-line management personnel of multiple enterprises.

Table 4: Analysis Table of Enterprise Requirements for the Basic Competencies of Graduates in Electrical Engineering

Skill Category		**Competency Level Requirements**		
		Important	**Same as**	**Unimportance**
Professional ability	Ability of practice	70%	30%	0
	Process optimization	40%	40%	20%
	Quality and Safety Awareness	90%	10%	0
	Rationalization proposal	30%	70%	0
	Economic Awareness	40%	60%	0
Methodological Competence	Steps for Developing a Work Plan	40%	50%	10%
	Approaches for Solving Practical Problems	70%	30%	0
	Methods for independently learning new technolo- gies	70%	30%	0
	Method for evaluating work results	40%	50%	10%
Social Skills	Professional dedication	100%	0	0
	Interpersonal interaction	40%	60%	0
	Professional ethics	90%	10%	0
	Environmental consciousness	60%	40%	0
	Cooperative Participation Awareness	90%	10%	0
	Criticism and Self-Criticism	40%	40%	10%

	Honesty and tru-stworthin ess	100%	0	0
	Language and written expression	30%	50%	20%

VI. Suggestions for enterprise research regarding the cultivation of professional talents

(1) Professional Educational Objectives

This program aims to cultivate professionals who meet the demands of economic and social development, with well-rounded development in moral, intellectual, physical, aesthetic, and labor education; possessing a sound personality, strong humanistic literacy and engineering professional ethics, certain scientific research capabilities, a strong sense of social responsibility, and good physical and mental health; enabling them to analyze, evaluate, and synthesize complex problems within the fields of power systems and industrial automation based on natural science and engineering knowledge; and equipping them with robust practical skills and innovative capabilities.

Graduates will possess new awareness and a strong spirit of teamwork; they will be engineering and technical professionals in the field of power systems and industrial automation who demonstrate organizational and managerial skills, effective communication and writing abilities, lifelong learning capabilities, and a broad international perspective. Graduates will be able to engage in engineering design, system operation, project management, and other related roles within electrical engineering and related disciplines. Over approximately five years, graduates are expected to achieve the following objectives:

Objective 1: To be able to adapt to the development of modern electrical engineering and automation technology; to master fundamental mathematical and physical knowledge, basic engineering principles, and specialized knowledge in electrical engineering science; and to address key technical challenges encountered in system design, system analysis, system operation, product research and application, project implementation and management, as well as teaching and research activities within the field of electrical engineering and related disciplines—by employing analytical and evaluative skills to propose solutions and effectively implement them to resolve complex engineering problems;

Objective 2: To keep abreast of the latest developments in both domestic and international research frontiers within Electrical Engineering and Automation or other newly emerging fields, and to apply these advancements to engineering practice; to develop engineering innovation capabilities; and to proficiently utilize modern tools to engage in engineering practice within this field. Objective 3: To possess values aligned with sustainable development and a strong sense of social responsibility; to understand and adhere to professional ethics and standards in engineering practice or research and development; to comprehensively consider various non-technical factors such as society, law, and environment; and to effectively apply engineering principles to design efficient, integrated engineering solutions;

Objective 4: In their professional careers and professional activities, engineering and technical professionals shall fulfill and assume their social responsibilities; proactively enhance and demonstrate strong humanistic and social science literacy as well as professional ethics; possess excellent interpersonal communication and teamwork skills; and be capable of independently or through teamwork implementing complex engineering projects;

Objective 5: Possess a global mindset and international perspective; demonstrate foresight regarding industry trends; be able to proactively adapt to constantly evolving domestic and international conditions and environments; and possess self-directed learning and lifelong learning capabilities.

(2) Professional Education Specifications

Based on the above data statistics and analysis, the following points can be summarized:

1、 Emphasis is placed on overall competence, specifically humanistic literacy and professional competence. Among the survey options regarding "What are the basic requirements for talent," most recruiting enterprises selected the items "professional dedication," "teamwork," and "solid fundamental electrical skills."

2、 Emphasis is placed on specialized expertise—specifically, professional skills such as computer application technology, electronic circuit system design, software programming, PLC applications, and advanced electrical engineering skills.

3、 Emphasis is placed on practical skills; based on research and analysis of employers, companies prefer to hire experienced professionals but are relatively disappointed with fresh graduates. Whether recruited talents can be effectively utilized by the company depends crucially on whether they have a thorough understanding of the company's production processes and possess strong practical skills.

4、 Strong teamwork skills are required, as all production processes within the enterprise rely on collaborative efforts, which necessitates a high level of team spirit.

The company places great emphasis on candidates' teamwork skills, adaptability, and communication abilities when recruiting personnel.

In summary, the preliminary professional training specifications are presented in Table 5.

Table 5: Professional Talent Training Specifications Table

Class		**Ask**
Knowledge	General Knowl-edge	Building upon a solid foundation in basic mathematics and foreign language proficiency relevant to the major, this program aims to equip students with mastery of fundamental professional knowledge—including circuits, analog electronics, digital electronics, control theory, and motor theory—as well as engineering professional competencies and specialized knowledge covering power engineering, electrical control technology, measurement technol- ogy, computer control technology, microcontrollers, and industrial automation technology.
Ability	Specialty Ability	Capable of undertaking tasks such as electrical control system design, operational management, equipment and system maintenance, and project construction management for power systems, electrical equipment manufacturing, and related industries.
	Method Ability	To cultivate students' self-directed learning skills, analytical and application skills, sustainable development capabilities, self-management skills, and innovation capabilities.
	Social Skills	Possesses a strong team spirit and collaborative mindset; demonstrates sound psychological resilience, the ability to overcome challenges, and unwavering perseverance; possesses strong oral and written communication skills as well as interpersonal communication abilities; is proficient in using computers to access information and facilitates effective communication; and has basic foreign language communication skills.
Quality	Basic quality	Ideological and Moral Quality: Possess a correct political orientation and firm political beliefs; abide by laws and regulations, demonstrate civility and politeness, and uphold honesty and trustworthiness. Scientific and Cultural Quality: Possess scientific cognitive concepts and methods, as well as a work style characterized by seeking truth from facts and courage in practice; exhibit self-improvement, self-reliance, and self-respect; possess sound values and high cultural literacy. Physical and Psychological Quality: Have realistic life goals and personal development objectives, be able to view reality correctly and actively adapt to the actual environment; maintain healthy interpersonal relationships and team spirit; meet the national physical health standards for college students.

The company places great emphasis on candidates' teamwork skills, adaptability, and communication abilities when recruiting personnel.

	Professio-nal Comp-etencies	Professional Ethics: To enhance students' integrity, professional dedication, sense of responsibility, fairness and impartiality, self-discipline, and adherence to principles; Professional Conduct: To strictly implement relevant standards, work procedures and specifications, process documents, and safety operating procedures for electrical operations and electrical control systems; to acquire new knowledge and skills, to embrace practical application, and to pursue exploration and innovation; to make informed career choices and secure employment; to respect superiors and peers; to foster unity and mutual assistance; to demonstrate perseverance and hard work; to show a strong commitment to the collective; to maintain neat attire; and to adhere to civilized workplace practices.

(3) Professional Curriculum Design

To enhance students' developmental potential, the program should appropriately design courses in humanistic literacy and professional competence, such as strengthening courses in mathematics, foreign languages, and career guidance; and to foster corporate loyalty and a strong spirit of teamwork.

Career guidance, interpersonal communication, and professional role experience are key components; regarding practical skills, on-campus training, social practice, professional internships, and post-based internships serve as essential safeguards. Based on the survey findings, a curriculum system has been established, divided into two categories: career competency courses and career expansion courses. The content of the original curriculum system—specifically the foundational professional courses, specialized elective courses, and internship/training courses—should be optimized by integrating relevant subjects such as electrical engineering and electronics, electric machines and magnetic fields, microcomputer principles and single-chip microcontrollers, power systems series of professional courses, power electronics and speed control systems, as well as computer control technology and industrial automation technology. This integration will result in the establishment of three curriculum modules: foundational professional courses, specialized direction courses, and professional elective courses, thereby meeting the fundamental theoretical and skill development requirements for Electrical Control Engineers, Electrical Engineering Project Engineers, and Automation System Engineers.

Stakeholder Evaluation and Labour Market Demand Analysis

This document contains programme accreditation evaluation, employment market demand analysis, and graduate/employer evaluation results.

1.2 Evaluation and Demand

1.2.1 Programme Accreditation

The programme passed the Qualified Assessment of Undergraduate Teaching Work in Regular Higher Education Institutions by the Ministry of Education in 2012, the Audit Assessment of Undergraduate Teaching Work by the Ministry of Education in 2018, and successfully passed the new round of Undergraduate Education and Teaching Audit Assessment by the Ministry of Education in 2024. Its educational quality, teaching system and education effectiveness have all been officially recognised.

1.2.2 Employment Market Demand

The Electrical Engineering and Automation programme is a core engineering discipline supporting the development of the modern industrial system and new energy industry, with a long-term strong demand for talents in the industry. With the in-depth implementation of the national 'Dual Carbon' strategy, emerging industries such as wind power, photovoltaics, energy storage, smart grids and new energy vehicles are developing rapidly, making electrical engineering talents the core supporting force for energy transformation and industrial upgrading. Yunnan Province is committed to building up the 'Green Energy' and a national clean energy industry base, focusing on industrial clusters such as green silicon materials, new energy batteries and smart power equipment, leading to a continuously expanding gap for high-quality applied electrical engineering talents in the region.

At present, the domestic power equipment industry is rapidly upgrading towards intelligence, high-end and integration. Multiple fields such as intelligent manufacturing, rail transit, smart cities and new energy support continue to expand employment options for electrical engineering talents. According to industry statistics, the talent gap in electrical engineering-related fields nationwide exceeds 500,000 during the 14th Five-Year Plan period. Compound engineering talents with knowledge in integration of strong and weak current, coordination of software and hardware, and outstanding practical ability are particularly in short supply, with significant employment advantages in the market.

Meanwhile, as a pivot for South and Southeast Asia, Yunnan has seen accelerating international cooperation and cross-border project layout of local enterprises. The demand for electrical engineering talents with solid engineering practice capabilities continues to rise in fields such as overseas power engineering construction, cross-border grid operation and maintenance, and new energy project cooperation, providing broad space for the talent cultivation and employment development of this programme. The demonstration of industry talent demand, industrial research data and post demand analysis is detailed in Annex B-3 Talent Demand and Industry Research Analysis Report.

1.2.3 Graduate and Employer Evaluation

The programme has long carried out graduate follow-up surveys and employer return visits, and distributed questionnaires (sample questionnaires are shown in Annex B-12 Graduate Questionnaire (Enterprise Sample)). The results show that the talent training scheme and curriculum system of the programme are highly aligned with industry development trends and core job demands, and the curriculum is closely focused on mainstream directions such as smart grid, electrical automation and new energy application. Graduates have solid professional foundations, excellent practical skills, high job recruitment efficiency and strong professional adaptability. The average employment rate of graduates in the past three years has reached 97.56%. They are mainly employed by counterpart units such as China Southern Power Grid, Yunnan Power Grid, mainstream power generation enterprises in the province and electrical equipment manufacturing enterprises, and the professional employment matching rate has always remained at a high level.

Employer feedback data shows that more than 95% of cooperative enterprises give excellent evaluations to the overall quality of graduates of the programme. They highly recognise graduates' professional foundation, hands-on practical ability, problem-solving ability and innovation awareness, and generally evaluate graduates with 'solid foundation, excellent practical skills, dedicated and pragmatic, and strong sense of responsibility'. Graduates have performed excellently in positions such as power system operation and maintenance, electrical equipment commissioning, automatic control system operation and intelligent building electrical engineering. Many graduates have grown into technical backbones and reserve management talents of enterprises.

Current students have solid professional foundation, outstanding engineering practice ability, correct learning attitude and positive teamwork awareness, with a fine academic style and remarkable education effectiveness. The 2025 graduates have a high recognition of the training quality of their alma mater and the programme, and a strong willingness to recommend the programme, which fully demonstrates the good educational reputation and social recognition of the programme.

The employer satisfaction survey and analysis report on graduates of the Electrical Engineering and Automation programme is detailed in Annex H-4 Employer Satisfaction Survey and Analysis Report. Graduate employment statistics are shown in Annex H-6 Employment Statistics of the 2025 Electrical Engineering Graduates. Social evaluations

and outstanding typical cases of graduates are presented in Annex H-5 Outstanding Graduate Cases of the School of Mechanical and Electrical Engineering. The long-term development follow-up survey results of the past three graduate cohorts are detailed in Annex H-3 2023-2025 Graduate Follow-up Survey Report.