

**The Cultivation Program of Application-Based Master Degree for
Electrical Engineering (085207) for
Guangxi University International Graduate Students**

I. The Discipline Introduction of the Application-Based Master Degree for Electrical Engineering

The degree is at the same level as the academic degree in electrical engineering, but different types have different emphases. The degree focuses on the engineering applications. The discipline mainly cultivates inter-disciplinary high-level application-based electrical engineering management and technical talents for industrial and mining enterprises and the engineering construction sector, especially for large and medium-sized state-owned enterprises. The degree recipients are required to have good occupation moral, to understand the development trend of the discipline of electrical engineering, to master the basic theory of the discipline and to have a solid and broad specialty knowledge, to be able to use the advanced technique and modern means to solve practical engineering problems, and to have the ability to independently undertake the task about engineering technology or project management in a realistic, serious and scientific matter.

Main research interests: 1. Power System and Its Automation; 2. High Voltage and Insulation Technology; 3. Power Electronics and Power Drive

II. The Candidates and Admission Conditions

The following conditions are required for the candidate students. He/she should:

- (1) comply with the Constitution and relevant laws of the People's Republic of China;
- (2) have the undergraduate education degree or equivalent of electrical engineering, control science and engineering or similar major, with a bachelor's degree awarded and two associate professor title above recommended;
- (3) be no more than 45 years of age;
- (4) be as good as Chinese level of HSK level 4;
- (5) have good health.

III. The Cultivating Objectives

The cultivated postgraduate students should have a good professional ethics and professionalism, and a scientific, rigorous and pragmatic study attitude and work style.

The discipline cultivates the high level applied specialized talents who master the solid basic theory and the broad professional knowledge in the field of electrical engineering, and have the ability to solve practical problems well, and can undertake professional technical or management work, along with good occupation accomplishment.

In the aspect of professional capability: The students of the master degree should master the basic theory, advanced technology and modern technical means in the field of electrical engineering. They should have the ability to be independently engaged in

the engineering design and operation, analysis and integration, research and development, management and decision making in a research interest, and they are qualified to analyze, calculate, develop, design, utilize and maintain electrical systems, equipment or devices. Meanwhile, they should have a good command of Chinese in electrical engineering, and be able to read the Chinese science and technology information and literature in this field, and carry out the necessary international academic exchanges, grasp and understand the technical status and development tendency in this field. They should also have a healthy body and good physical and psychological quality.

IV. The length of schooling and years of study

The length of schooling is 1+3 years. And the course in the first year is arranged by the International College of Education. The graduate study period in Guangxi University is 4 years.

V. The Cultivation work

In order to ensure the quality of training, the cultivation of graduate students is carried out by supervisor responsibility system, or mentor-based guidance group system. The supervisor (group) is responsible for the development of graduate student personal training program, and the guidance of the completion of the opening report, scientific research and thesis writing. The collective guidance is encouraged by organizing tutors, and it is promoted that graduate students combine their thesis topics with their own reality.

The cultivation and management for graduate students are conducted in accordance with the implementation of the relevant documents of Guangxi University, and the handling of special issues is jointly decided by Graduate College, International College of Education, and College of Electrical Engineering via investigation.

(I) The Cultivation program

In the premise to ensure the quality of teaching, the specialized courses of the graduate students can be appropriately adjusted, and the training plan is made by the instructor according to the cultivation scheduling, along with the research interest and graduate personal characteristics of the development. The personal training plan should obey the general requirements of the specialized cultivation program, but also embody the principle of educating students in accordance with their aptitude. The Graduate student cultivation scheduling must be completed within a month after the graduate student enrollment.

(II) The Curriculum and Credit Requirements

The students could study the professional courses only after one year's study of Chinese and passed the HSK 4. During the professional study period, the overall credits should be no less than 28 credits, including degree courses 15 credits (public degree courses 5 credits, professional degree courses 10 credits), non-degree courses: 7 credits, professional practice: 7 credits, academic activities: 1 credit and the choice of the thesis topic and the report : 1 credit.

Attached: Curriculum and the Corresponding Credits

课程类别 Course category	课程编号 Course number	课程 (中英文) Course (Chinese and English)	课时 Class hour	学分 credit	开课时间 Start time	备注 Remarks
汉补课程 (Chinese)	1	综合汉语 A Comprehensive Chinese A	180	0	Semester 1	Pass HSK 4 before semester 2
	2	汉语口语 A Oral Chinese A	72	0	Semester 1	
	3	汉语听力 A Chinese Listening A	72	0	Semester 1	
	4	汉语写作 A Chinese Writing A	72	0	Semester 1	
	5	综合汉语 B Comprehensive Chinese B	180	0	Semester 2	
	6	汉语口语 B Oral Chinese B	72	0	Semester 2	
	7	汉语听力 B Chinese Listening B	72	0	Semester 2	
	8	汉语写作 B Chinese Writing B	72	0	Semester 2	
学位课程 (Degree Courses)	1	综合汉语 Comprehensive Chinese	54	3	Semester 3	Must Do
	2	中国概况 General Situation for China	36	2	Semester 3	
	3	数值分析 Advanced Engineering Mathematics	36	2	Semester 3	
	4	电网络理论 Electric Network Theory	36	2	Semester 3	
	5	电力系统分析	36	2	Semester 3	

		Power System Analysis				
	6	电气工程专业汉语 Chinese for Electrical Engineering	18	1	Semester 4	
非学位课程 (Non-Degree Courses)	1	现代电力电子技术 Modern Power Electronics	36	2	Semester 4	Choose 4 of the courses
	2	智能电网 Smart Grid	36	2	Semester 4	
	3	电力系统过电压 Power System Over-Voltage	36	2	Semester 4	
	4	电力系统程序设计 Programming for Power System	36	2	Semester 4	
	5	新能源发电、转换与控制 Renewable Energy Generation, Conversion and Control	36	2	Semester 4	
	6	SOPC 技术及应用 SOPC Technology and Application	36	2	Semester 4	
必修环节 (Must Do)	1	课程实践	36	2	Semester 4-5	practice
	2	综合实践	90	5	All Semester	
	3	论文选题和开题报告 Topic of thesis and Opening Report		1	Semester 5	
	4	学术报告 Academic Report		1	Semester 3-7	

Note: the graduate course grade 60 is qualified, and the corresponding credits are obtained.

(III) Required Links

1. Academic Activities (1 credit)

During the period of school in China, the academic reports and academic exchange activities are more than 5 times organized by university, college, department or engineering master training unit. Each time the academic activities, a written summary are first made by student, and a review opinion is then given and signed by the instructor to hand in office.

2. Choice of Thesis Topics and the Opening Report (1 credit)

The graduate students must read the following academic works and academic journals: IEEE Trans. on Power Systems; IEEE Proceeding C: Generation, Transmission and Distribution; IEEE Trans. on Power; Delivery IEEE; Proceeding B: Electric Power Applications; IEEE Trans. On Energy Conversion; IEEE on Power Trans. Electronics; Proceedings of the Chinese Society of Electrical Engineering; Electric Power Systems Automation; power system technology; Journal of electrical engineering; high voltage technology; China electric power; electric power automation equipment.

The choice of thesis topics should be directly derived from the actual production or definite engineering background, and also the research results have practical value. The thesis aims to solve technical problems with certain technical difficulty and workload in engineering, and meets the basic requirements of the audit.

The topics can be selected from the following aspects: technical innovation, technology research, popularization and application of technology; the research and development of new technology, new materials, new products and new equipment; the introduction, digestion, absorption and utilization of foreign advanced techniques; the projects of applied basic research; a relatively complete engineering and technical project or project management or project planning research; design and implementation of the project.

Before the degree thesis work starts, the domestic and foreign references about the subject in nearly recent 5 years must be selected and read, the number should be more than 50, of which the foreign ones should be more than 15. In the part of the literature review, the background and significance of the research, the latest achievements and development in the related aspects are described. On the basis of a knowledge of the development of the discipline, the research content, the research scheme to be adopted, key technology and difficulty of the selected program are put forward. The literature review should grasp the research topic in the development of the discipline, which is not less than 5000 words.

The topic chosen should not only have a certain theoretical depth, technical difficulty and progressiveness and workload, but also combine with the work practice of the unit, be able to solve the technical problems in engineering practice, and to meet the basic requirements of the thesis.

The opening report should include the topics source, the purpose and significance of the research; research status and analysis of the field at home and abroad; the main research contents; research plan and schedule, the research results to be expected; the necessary conditions and funds already possessed for finishing the project; difficulties

and problems to be encountered in the course of the study, the measures and solutions to be taken and the main references, etc. which is not less than 3000 words.

The report must be approved by a review group consisting of no less than 3 teachers who have qualifications of master degree supervisor, or have the title of professor, associate professor. On passing through the opening report, 1 credit can be obtained, and the thesis work can be made. The opening report should be completed before the end of the third semester.

3. Professional Practice (7 credits)

During the period of the study, the professional practice training must be ensured of not less than half a year, which can be centralized practice and segmented practice, or course practice and comprehensive practice. The students must take part in one or two of technical innovation project, technical transformation project, project design or construction practice in college or the related practice bases. After the completion of the practice training, the project technical identifications or technical reports of project are written out by the students, and comments are written out by instructors who guide the practice training.

The college provides the practical conditions to be carried out. By absorbing the social resources, establishing various forms of practice base, and reforming and innovating practice teaching mode, the application-based international master students are jointly cultivated to promote the close contact of postgraduate cultivation and the actual demand of the employing institution, and actively explore the interactive mechanism of talent cultivation.

The practice of international application-based graduate students can be divided into two parts: curriculum practice and comprehensive practice.

(1) Curriculum Practice: they are conducted at the National Electrical Engineering Experimental Teaching Demonstration Center, and major courses experiments and training of scientific research skills are completed. A total of 2 credits can be awarded

(2) Comprehensive Practice: they are performed at the bases of the outside school practice, or the various engineering center and research center, such as provincial key laboratory (Guangxi Electric Power System optimization and Energy-Saving Technology Laboratory), provincial engineering & technology research center (Guangxi Engineering & Technology Research Center for Lightning Protection of Electric Power Transmission and Distribution Network), key laboratory of provincial colleges and universities (Guangxi Electric Power Security and New Energy Conversion Control Laboratory), and under the co-guidance of the instructors in and outside Guangxi university. The major professional practice and comprehensive application ability training are implemented. It qualifies 5 credits.

The two processes are necessary processes to cultivate international master students. The graduate students must hand in the practice plan, and write out practice summary report. The management and quality evaluation of the practice will be carried out in the whole process of the practice link to ensure the quality of practice teaching.

Schedule: in the period of Guangxi University

Content: technical innovation; technical transformation; the project design; the construction of the project.

Assessment method: The work reports are written by the graduate students, and comments are written by the instructors, finally, verification is made by the college in terms of the cultivation plans.

VI. Dissertation

(I) The Principle of Choosing Thesis Topic

The topic should be derived from practical engineering or have clear engineering background. It can be a new technique, new technology, new equipment, new materials, a new product research and development. The contents of the theses can be: engineering design and research, technological research or technical transformation scheme, software engineering or software development, project management etc. The theses should have certain technical requirements and workload, and certain theorization, progressiveness, practicability; and can embody the ability of the author to comprehensively utilize scientific theory, methods and techniques to solve engineering problems.

For the guidance of the masters, the implementation of the double tutorial system is encouraged. One of the instructors is from the training unit; another mentor is from the enterprise and the relevant experts in the field. And a steering group can be also established according to the student research interests.

The work must be independently completed under the guidance of the instructor, and the research and writing of the theses should not be less than one year, and the number of words is more than 25000 words.

(II) The topic selection and time

The preparatory work should be started as soon as possible, and under the guidance of supervisors, the relevant literature is systematically referred to, an investigation and research are made. The thesis report and thesis work plan must be handed in at the end of the fifth semester examination. On passing through the report, the theses work can be started.

(III) The Audit, Evaluation and Defense

The working time should not be less than 1 years. The theses are independently completed by graduate students in Chinese or English under the guidance of the instructor. In the study period, after the students have completed postgraduate training plan and obtain the required credits, completed the required links, passed through the mid-term examination, completed the thesis writing, they can apply for the defense of the theses for the master degree. The college is responsible for the examination of the theses. The focus of the audit is the ability to comprehensively use scientific theory, methods and techniques to solve engineering problems; the technical difficulty and workload; new ideas, new methods and new technology to solve engineering problems, and the advancement and practicability of new technique, new technology and new design; the situation of creating economic benefits and social benefits and the number of words of the theses.

In addition to the teacher writing detailed review opinions, there should be 2 reviewing experts examining the theses in electrical engineering field or similar field. Before the defense, the graduate degree theses are necessary to accept replication ratio examination, and the examined results will be acted as the basis for determining if the

theses can be taken part in the defense. According with conditions of the defense, 5 experts associated with the field are hired by the instructor to form a theses defense committee;the qualified personnel shall be approved by college degree subcommittee.

For the graduates who apply for graduation (not applying for a degree), they may write a thesis and take part in the thesis defense.

VII.Degree Awarding

After the students have completed the required credits and passed the thesis defense, and also an overall examination has been made by the degree committee of the unit, anengineering master's degree will be awarded;meanwhile,theresponding master's degree certificate is issued by Guangxi University.