

Master Program (for International Students) in Electrical Engineering

Electrical Engineering is an engineering discipline related to the research and application of electricity, electronics, and electromagnetics. It includes electricity, electronics, circuits, control and communications. It is an indispensable key discipline in today's high tech fields. For nearly forty years, under the integrated and cross functional roles of information and communication engineering, control science and engineering, it has become one of the core disciplines in modern science and technology. UESTC conforms to the national energy development strategy and relies on the comprehensive advantages of electronic information, including the wide area measurement and control of power systems, smart grids, power electronics and power transmission, and new types of power generation and energy storage. As a special feature, it has achieved a large number of high level scientific research achievements and laid a good foundation for cultivating high caliber, multi functional, and international high end electrical engineering talents.

1.Objectives

The discipline is positioned to cultivate in the field of electrical engineering, especially in power and control, circuits and systems, power information and communications, with solid basic theory and system expertise, master of electrical engineering and computer applications high-tech talent. Master degree holders should understand the academic status and direction of development in the relevant research areas in China and abroad, have the ability to independently analyze and solve specific technical problems in the subject, have a good international perspective and international communication skills. Students would also be proficient in Chinese. With rigorous and realistic scientific attitude and style of work, courage to innovate and pioneering consciousness and good professional qualities, the students can be competent in related research, teaching, engineering technology development and management in the field of electrical engineering.

A Survey of China and Comprehensive Chinese are compulsory for international postgraduates, who are required to pass the HSK 3 or equivalent Chinese language test by graduation.

2.Orientations

- 1)Power System Analysis and Control
- 2)Power Transformation and Active Distribution Network
- 3)Advanced Transmission and Conversion Technology
- 4)Intelligent Monitoring and Diagnosis of Electrical Equipment
- 5)Motor System and Control
- 6)Power and Energy Economy

3.Duration

The duration set for master candidates is 2 years full-time. An extension can be applied for by those who cannot finish their courses in time owing to objective causes, yet altogether 4 years is the last due.

4. Progression and Requirements

The minimum sum total credits for international students of master candidates are 26. Master candidates should complete the course work of no less than a total of 24 credits (out of which at least 15 credits should be acquired from degree courses), compulsory sections of no less than 2 credits, complete the thesis (or a research report) independently, and pass the degree thesis defense.

The supervisor responsibility mechanism is adopted in the education for international master candidates. The supervisor is responsible for the student's making of personal study plan, the choice of courses, and the completion of the research report or the degree thesis. The personal study plan cannot be changed without permission of the supervisor.

During the course work, according to specifications by the discipline, the student is to pass examinations held for the degree courses and examinations or assessments held for the other optional courses. Of all the degree courses, common core courses are compulsory; at least one in core courses should be taken. Master candidates are allowed to choose 1~2 Inter-disciplinary core courses as their degree courses under supervisors' guidance, but these cannot replace the major's compulsory courses. International students of Chinese language abilities can apply to take courses given in Chinese to local full-time graduate students and acquire corresponding credits if pass.

Those who fail to meet the requirements as described above can fill up the gap by repetition or make-up in the limit of one year. Those who fail to meet the credit requirements even till the end of the due time are to be terminated.

5. Curriculum

Course Categories		Course Number	Course Name	Class Hours	Credits	Semester	Notes
Degree Courses	Common Core Course	6900005001	Comprehensive Chinese	60	2	1,2	Compulsory
		6900005004	A Survey of China	36	2	1,2	
	Major Core Course	1100016010	Numerical Analysis	48	3	1/2	At least 1 from 2
		1100016011	Stochastic Processes and Applications	48	3	1	
		0408086015	Power System Operation and Control	32	2	2	
		0408086016	Power Electronics	32	2	1	
		0808126041	Embedded Operating System and Application	32	2	2	
		1100016012	Optimization Methods and Applications	48	3	1	

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Non-degree Optional Courses	Elective Major Course	0108107073	Signal Detection and Estimation	32	2	1	
		0408027050	Reliability Design	32	2	2	
		0408087028	Renewable Energy Generation and Integration	32	2	2	
		0408087029	Electricity Market	32	2	1	
	Other Elective Course	0411117006	English Academic Writing for Graduate Students	16	1	2	
		6900005005	Chinese Reading and Writing	32	2	1/2	
Compulsory Section		6400006003	Academic Activities	0	1	1,2	Compulsory at least 5
		6900006001	Chinese Proficiency Assessment	60	0	1,2	Compulsory
		XX00025XXX	Elective Competence Development Courses	0	1	1,2	

Directions: All courses, except for the Chinese ones specified by the requirements, are totally given in English.

6. Compulsory Sections

The compulsory sections for international students of master candidates include three parts, a candidate is required to complete the following aspects:

1) Elective Competence Development Courses: through introducing the academic cutting edge knowledge, culture, arts and sports, etc, such courses are given to improve the master candidates' comprehensive competence. A candidate should take at least one course and get one credit after assessment.

2) Academic Activities: to enliven academic atmosphere and to further and broaden master candidates' scope of knowledge, one should attend at least five academic lectures within and out of UESTC, and fill in the Academic Activities Registration Form and get the official stamp upon attendance. One credit can be granted to the candidate when he/she succeeds in completing the above procedures.

3) Chinese Proficiency Assessment: The Ministry of Education requires the Chinese language ability of international graduates' to reach the level 3 based on the International Chinese Proficiency Standards at the time of graduation. Master's/doctoral students are required to undergo a Chinese assessment level 3 during their stay at the university, and those who meet the requirements are eligible to apply for their graduation defense. Chinese Proficiency Assessment is accredited by School of International Education.

7. Degree Thesis

All degree thesis problems shall refer to UESTC Regulations for Postgraduate Degree Conferring.

电气工程 来华留学硕士培养方案

电气工程是一门关于电力、电子和电磁的研究与应用的工程学科，其涵盖的领域包括电力、电子、电路、控制和通信，是当今高新技术领域中不可或缺的关键学科。近四十年来在信息与通信工程、控制科学与工程等学科的综合、交叉作用下，已经成为现代科学技术领域的核心学科之一。我校顺应国家能源发展战略，依托学校在电子信息领域综合优势，以电力系统广域测量与控制、智能电网、电力电子与电力传动、新型发电与储能等领域的研究为特色，取得了一大批高水平的科研成果，为培养宽口径、复合型、国际化的高端电气工程人才奠定了很好的基础。

1.培养目标

本学科定位于培养在电气工程领域，特别是电力与控制、电路与系统、电力信息与通信等方面，具备坚实的基础理论和系统的专业知识，掌握电气工程和计算机应用等专业技术的高端人才。硕士学位获得者应了解本学科有关研究领域国内外的学术现状和发展方向，具备独立分析和解决本学科的专门技术问题的能力，熟练掌握汉语，具备较好的国际化视野和国际交流能力，具有严谨求实的科学态度和工作作风、勇于创新的开拓意识和良好的职业素养，能胜任电气工程领域相关的科研、教学、工程技术开发及管理工作。

本学科硕士学位获得者应必修中国概况和综合汉语等课程，毕业时须通过《国际汉语能力标准》三级水平考试或通过同等难度的汉语水平考试。

2.研究方向

1. 电力系统分析与控制
2. 电力变换与主动配电网
3. 先进输变电技术
4. 电气设备智能监测与诊断
5. 电机系统与控制
6. 电力能源经济

3.培养方式与学习年限

攻读硕士学位者，学习年限为两年。若因客观原因不能按时完成学业者，可申请适当延长学习年限，但最长学习年限不超过四年。

4.学分与课程学习基本要求

总学分要求不低于 26 学分，课程总学分不低于 24 学分，其中学位课不低于 15 学分；必修环节不低于 2 学分。开展学位论文工作，撰写一篇学位论文，通过答辩。

留学研究生培养实行导师负责制。导师负责指导研究生制定个人培养计划、选课、开展研究报告或学位论文工作。

课程学习期间，应通过本专业规定的学位课程考试，以及其他选修课程的考试或考查。学位课中，公共基础课为必修课，基础课至少选修 1 门。允许在导师指导下跨学科选修 1~2 门学位课作为

本学科的学位课，但不可替代必修课。有汉语基础者，可申请选修面向国内全日制研究生用中文讲授的专业课程，通过者获得相应学分。

未达到上述要求者，可以在一年内补修或重修有关课程，在规定期限内仍没有达到学分要求者，将被终止学业。

5.课程设置

课程类别		课程编号	课程名称	学时	学分	开课学期	备注
学位课	公共基础课	6900005001	综合汉语	60	2	1,2	必修
		6900005004	中国概况	36	2	1,2	
	专业基础课	1100016010	数值分析	48	3	1/2	必须选 1-2 门
		1100016011	随机过程及应用	48	3	1	
		0408086015	电力系统运行与控制	32	2	2	
		0408086016	电力电子技术	32	2	1	
		0808126041	嵌入式操作系统及应用	32	2	2	
		1100016012	最优化理论与应用	48	3	1	
非学位课	专业选修课	0108107073	信号检测与估计	32	2	1	
		0408027050	可靠性设计	32	2	2	
		0408087028	新能源发电与并网	32	2	2	
		0408087029	电力市场	32	2	1	
	其他选修课	0411117006	研究生论文写作基础(留学生)	16	1	2	
		6900005005	汉语阅读与写作	32	2	1/2	
必修环节		6400006003	学术活动	0	1	1,2	必修 不少于 5 次
		6900006001	汉语水平测评	60	0	1,2	必修
		XX00025XXX	素质教育公选课	0	1	1,2	

说明：除规定的汉语课程以外，其他课程均采用英语授课。

6.必修环节

来华留学硕士研究生必修环节包含三大部分，要求留学研究生分别完成以下内容：

1) 素质教育公选课：以介绍学术前沿知识、中外文化、艺术和体育等为主，加强来华留学研究生综合素质教育，可选修一门，考核通过后获 1 个学分。

2) 学术活动：为进一步活跃学术气氛并拓宽来华留学研究生的知识面，硕士研究生在校期间须参加 5 次以上校内外学术报告会，填写学术活动登记表，加盖举办学术活动单位的公章，报所在学院研究生科备案，全部完成后获得 1 个学分。

3) 汉语水平测评：教育部要求留学研究生在毕业时中文能力应至少达到《国际汉语能力标准》三级水平。留学硕士/博士研究生在校期间须接受汉语三级水平测评，达到要求者方可申请毕业论文答辩。由国际教育学院进行水平认定。

7.学位论文

学位论文工作按照《电子科技大学研究生学位授予实施细则》的规定执行。