

华北电力大学留学生

North China Electric Power University International Student

电气工程一级学科硕士研究生培养方案

Training Program for Postgraduates in First-level Discipline of Electrical Engineering

(学科代码: 0808 授予工学硕士学位)

(Discipline Code: 0808, Degree: Master Degree of Engineering)

一、学科简介

I. Brief Introduction to the Discipline

电气工程学科始建于 20 世纪 50 年代, 1978 年获我国第一批硕士学位授予权, 1986 年获电力系统及其自动化学科博士学位授予权, 1998 年获电气工程一级学科博士学位授予权, 2001 年建立博士后流动站。2001 年起电力系统及其自动化学科被评为国家重点学科, 2008 年电气工程一级学科被批准为北京市重点学科。2011 年主要依托本学科建设的“电力科学与工程”列入国家“985 工程优势学科创新平台”, 同年立项建设“新能源电力系统”国家重点实验室, 并于 2014 年通过正式验收。2017 年教育部第四轮学科评估中, 电气工程学科被评定为 A, 并入选国家“双一流”学科建设。2022 年教育部第五轮学科评估中, 电气工程学科持续位列 A 级, 并入选第二轮国家“双一流”建设学科。2023 年重点实验室顺利通过重组, 现为“新能源电力系统”全国重点实验室。

The discipline of electrical engineering was founded in 1950s. Our school acquired the right to grant the master's degree for the first batch in China in 1978, the right to grant the doctoral degree in power system and automation in 1986 and the right to grant the doctoral degree in first-level discipline of electrical engineering in 1998, and established post-doctoral research program in 2001. Since 2001, the discipline of power system and automation in our school has been rated as a national key discipline, and the first-level discipline of electrical engineering has been approved as a key discipline in Beijing in 2008. In 2011, "Electric Power Science and Engineering", mainly relied on the construction of this discipline, was listed in the national "985 Project Innovation Platform". In the same year, a project was established to build the State Key Laboratory of "New Energy Power System", which passed formal acceptance in 2014. In the fourth round of discipline evaluation of the Ministry of Education in 2017, the discipline of electrical engineering was rated as A and was selected into the national "Double First-class" discipline construction. In the fifth round of discipline evaluation conducted by China's Ministry of Education (MOE) in 2022, the Electrical Engineering discipline has consistently remained in the A category and was selected for the second round of the national "Double First-Class" initiative. In 2023, the key laboratory successfully completed its restructuring and is now the National Key Laboratory of New Energy Power Systems.

二、培养目标

II. Training Objectives

1. 培养对中国有良好认知, 理解中国社会主流价值观, 具有相应的中文语言能力, 具备一定跨文化和全球胜任力, 在所在学科具有相当专业知识和学术能力的国际化人才。

1. Cultivate international talents who have a good understanding of China, understand the mainstream values of Chinese society, have corresponding Chinese language skills, have certain cross-cultural and global competencies, and have considerable professional knowledge and academic abilities in their disciplines.

2. 具有电气工程领域坚实的基础理论和系统的专门知识，了解本学科相关研究领域的国内外学术现状和发展方向；学术学位获得者须具有从事科学研究工作的能力，专业学位获得者须具有承担专业工作的能力。具有严谨求实的科学态度和工作作风；具备良好的科研道德；毕业后可在科研、教学、企业等单位从事研究、教学、工程技术开发和管理等工作。

2. Master solid foundation in fundamental theories and systematic specialized knowledge in the field of electrical engineering, and be familiar with the current academic status and development trends of related research areas both in China and abroad. Holders of academic degrees are expected to have the ability to carry out scientific research. They should demonstrate a rigorous and pragmatic scientific attitude and work style, and uphold good research ethics. After graduation, they may engage in research, teaching, engineering technology development, and management in research institutes, universities, enterprises, and other organizations.

3. 品德优良、身心健康，具有高度的社会责任感和工程伦理素养。

3. Good moral character, physical and mental health, with a high sense of social responsibility and engineering ethics literacy.

三、研究方向

III. Research Direction

电气工程学科主要包括电工理论与新技术、电工材料与电介质、电机系统及其控制、智能电器与电工装备、电力系统及其自动化、电力信息技术、高电压与绝缘技术、电力电子与电能变换、新能源发电与电能存储 9 个二级学科。其中，电力系统及其自动化学科为国家重点学科，电气工程一级学科为北京市重点学科。

The discipline of Electrical Engineering mainly comprises 9 secondary disciplines: electrical theory and new technologies, electrical materials and dielectrics, electrical machines and their control, intelligent apparatus and electrical equipment, power systems and their automation, power information technology, high-voltage and insulation technology, power electronics and power conversion, new energy power generation and energy storage. Among them, the power system and automation discipline is a national key discipline, and the first-level discipline of electrical engineering is a key discipline in Beijing.

主要研究方向：

Main research directions:

01 先进电工材料及其电磁特性

01 Advanced Electrical Engineering Materials and Electromagnetic Property

02 电能转换与高效利用

02 Conversion and Efficient Utilization of Electrical Energy

03 先进输变电技术

- 03 Advanced Transmission and Conversion Technology
- 04 电气设备智能化
- 04 Electrical Equipment Intellectualization
- 05 新能源电力系统分析与控制
- 05 Analysis and Control of New Energy Power System
- 06 新能源电力系统保护与安全
- 06 Protection and Security of New Energy Power System
- 07 综合能源系统与智能配用电
- 07 Integrated Energy System and Intelligent Distribution and Utilization of Power
- 08 能源电力经济
- 08 Energy and Electricity Economy
- 09 能源互联网（交叉学科）
- 09 Energy Internet (Interdisciplinary Research)
- 10 人工智能（交叉学科）
- 10 Artificial Intelligence (Interdisciplinary Research)
- 11 储能科学与工程（交叉学科）
- 11 Energy Storage Science and Engineering (Interdisciplinary Research)

四、培养方式

IV. Training Method

1. 硕士生的培养方式为导师负责制，导师是研究生培养第一责任人，要了解掌握研究生的具体状况，将专业教育与日常教育有机融合，既作学业导师，又作人生导师，严格要求学生遵守科学道德和学术规范。提倡按二级学科组成导师指导小组集体培养。对跨学科或交叉学科以及与有关研究部门、企业联合培养研究生时，应从相关学科及有关单位中聘请具有高级职称的有关人员进入导师指导小组协助指导。导师指导小组要负责审查研究生的文献综述与选题报告、论文中期检查以及论文预答辩等培养环节的工作完成情况。

1. The training implements supervisor responsibility system, the supervisor is the person of primary responsibility for postgraduate training. The supervisor shall understand and master the specific condition of postgraduates and organically integrate professional education with daily education both as academic mentors and life mentors. The supervisor should also strictly require students to abide by scientific ethics and academic norms. Advocate composing the supervisor steering group for collective cultivation according to the second-level disciplines. For interdisciplinary or cross-disciplinary training or training in conjunction with relevant research departments and enterprises, relevant personnel with senior professional titles shall be recruited from relevant disciplines and relevant units to assist in supervisor steering groups. The supervisor steering group is responsible to inspect the student's completion status of the literature review and thesis proposal, mid-term review and pre-defense of dissertation.

2. 导师应根据培养方案的要求，多方面了解所指导的硕士生的知识结构、学术特长、研究兴趣、

能力基础等具体情况，据此制定出研究生个人培养计划，并督促检查其实施情况。

2. The supervisor should acknowledge the knowledge structure, academic skills, research interests, and abilities of the master candidates according to the requirement of the training scheme, based on which to formulate a training plan for individual graduate student and supervise the implementation according to the plan.

3. 硕士研究生的培养采用课程学习与科学研究并重的方式。既要使硕士生掌握坚实的基础理论和系统的专业知识，又要培养研究生掌握科学研究或独立担负设计、管理等方面工作的能力。

3. The training of postgraduates adopts the way of attaching equal importance to course learning and scientific research. It is necessary to make postgraduates master solid basic theory and systematic professional knowledge and cultivate postgraduates' ability to undertake scientific research or design and management work independently.

4. 导师应指导研究生学习有关课程，指导学位论文选题，检查科学研究进展情况，帮助解决科研中的困难，适时地指导研究生撰写论文，认真审阅学位论文，切实把好研究生的培养质量关。

4. The supervisor should guide postgraduates to study relevant courses, guide the topic selection of the degree thesis, check the progress of scientific research, help them solve the difficulties in scientific research, timely guide postgraduates to write the thesis, carefully review the degree thesis, and ensure the training quality of postgraduates.

五、学制与学习年限

V. Educational System and Duration of the Program

学制 3 年，学习年限 2-4 年。

The educational system is 3 years, and the duration of the program is 2-4 years.

六、课程设置与学分要求

VI. Curriculum and Credit Requirements

硕士生的课程学习实行学分制。要求各学科硕士生应修满的学分数为：总学分应不少于 33 学分，其中学位课不少于 22 学分。中文授课留学生基础理论课、学科基础课和学科专业课等按照对应学科专业中国学生培养方案执行。具体要求如下：

The course study of postgraduates implements credit system. The required credits for postgraduates in all disciplines: no less than 33 credits in total, including no less than 22 credits for degree courses. For the international students taught in Chinese, the basic theoretical courses, basic courses of disciplines and specialized courses of disciplines shall be implemented according to the Chinese students training programs for corresponding disciplines and majors. The specific requirements are as follows:

1. 学位课（不少于 22 学分），其中：

1. Degree courses (no less than 22 credits), of which:

(1) 公共课：汉语综合(1)：4 学分；

(1) Public courses: Chinese Comprehension (1): 4 credits;

汉语综合(2)：4 学分；

Chinese Comprehension (2): 4 credits;

中国概况(英文): 2 学分。

Introduction to China (English): 2 credits.

(2) 基础理论课: 4 学分;

(2) Basic theoretical courses: 4 credits;

(3) 学科基础课: 不少于 4 学分;

(3) Basic courses of disciplines: No less than 4 credits;

(4) 学科专业课: 不少于 4 学分。

(4) Specialized courses of disciplines: No less than 4 credits.

2. 必修课程与必修环节 (8 学分), 其中:

2. Compulsory courses and required links (8 credits), of which:

(1) 研究生科学道德与学术规范: 1 学分;

(1) Scientific Ethics and Academic Norms for Postgraduates: 1 credit;

(2) 专题课程/研讨课程: 1 学分

(2) Program Course/Seminar Course: 1 credit.

专题课程/研讨课程结合本领域学术前沿和研究生学位论文的选题进行设置。课程可采用教师讲授与研究生研讨相结合的方法进行学习。专题课程在研究生学位论文阶段完成。

Program course/seminar course should be set up in combination with the academic frontiers in this field and the topic of master dissertation. The courses can be conducted by the combination of professor teaching with postgraduate discussion. The program course should be completed in the process of master dissertation.

(3) 实践环节: 1 学分

(3) Practice Links: 1 credit.

实践环节包括实验教学、专业生产实践以及教学实践等。在第二、第三学期, 学院及导师应安排研究生参加实践, 如参与指导课程设计、毕业设计、实习、实验、辅导答疑、课堂讨论等教学环节; 或结合科研课题到生产单位参加调研或项目研发等实践工作; 或依托本学科重点实验室、实践教学基地等开设具有特定主题的系列实验课或以实验为主的专题课; 或参与学科应用技术相关的硬件、软件设计或系统设计; 或在本学科重点实验室、实践教学基地等进行工程设计、实验设备安装调试或协助实验室教师指导本科生完成实验教学等实验工作。总工作量应达到 80 学时或 10 个工作日。

The practice links include experimental teaching, professional production practice and teaching practice, etc. In the second and third semesters, the college and supervisors should arrange postgraduates to participate in practice. For example, guide curriculum design, graduation design, practice, experiment, supervise and answer questions, and participate in classroom discussion and other teaching links; or participate in practical work such as research or project research and development in the production unit in combination with scientific research tasks, or rely on the key laboratory of the discipline, practical teaching bases, etc., to set up a series of experimental courses with specific topics or special courses based on experiments; or participate

in the hardware, software design or system design related to the applied technology of the discipline; or carry out engineering design, installation and debugging of experimental equipment in the key laboratory and practical teaching bases of the discipline, or assist laboratory teachers to guide undergraduates to complete experimental teaching and other experimental work. The total workload should reach 80 class hours or 10 working days.

(4) 学术活动：1 学分，要求硕士生至少参加 6 次学术报告；

(4) Academic Activities: 1 credit, postgraduates are required to participate in at least 6 academic reports;

(5) 文献综述与开题报告：1 学分；

(5) Literature Review and Thesis Proposal: 1 credit;

(6) 论文中期检查：1 学分。

(6) Mid-term Review of the Thesis: 1 credit.

(7) 国情教育（理论）1 学分：以专题讲座的形式开展，包括中国法律法规、学校校规校纪、学分及毕业、奖学金及费用缴纳、在校（华）生活、国际学生社团等六个方面。所有学生均须按时参加学习，考核合格者获得相应学分，未参加或考核不合格者，需来年重修。

(7) Orientation 1 credit: Conducted in the form of thematic lectures, this course covers six aspects: Chinese laws and regulations; school rules and regulations; credits and graduation requirements; scholarships and tuition payments; campus life; and international student clubs. All students are required to attend the course on time. Those who pass the assessment will receive the corresponding credits; those who do not attend or fail the assessment must retake the course the following year.

(8) 国情教育（实践）1 学分：主要包括教育活动、研学活动、学术活动、文体活动、实习实践等五部分。学生按要求报名成功且参加活动后，填写《国际教育学院来华留学生国情教育实践环节培养手册》，经学院相关负责教师确认（盖章）后，可获得相应学分。

(8) Education on National Conditions of China 1 credit: This course primarily consists of five components: educational activities, study tours, academic activities, cultural and sports activities, and internships/practical training. After successfully registering and participating in the activities as required, students must complete the 《Brochure of Education on National Conditions of China》. Upon confirmation (with an official stamp) by the relevant teacher of the school, students will be awarded the corresponding credits.

3. 非学位选修课

3. Non-degree optional courses

学生可根据本人情况，选修研究生课程目录中其他学科的专业基础课、专业课，使总学分不少于 33 学分。

Postgraduates can take specialized basic courses and specialized courses of other disciplines in the catalogue of postgraduate optional courses according to their own situation, and the total credits should not be less than 33 credits.

学士阶段非本学科的硕士生应补修由导师指定的若干本学科学士阶段主干课程。补修课程不计入总学分。

Postgraduates who are not in their own disciplines at the bachelor stage should take several major courses of bachelor stage of the disciplines designated by their supervisors. Supplementary courses are not included in the total credit.

具体课程设置见附表。

For the specific curriculum, please refer to the Schedule.

七、科学研究与学位论文要求

VII. Requirements for Scientific Research and Degree Thesis

科学研究与学位论文工作是研究生培养的重要组成部分，是培养硕士研究生独立思考、勇于创新的精神和从事科学研究或担负专门技术工作能力的重要手段。硕士研究生应在导师指导下独立完成硕士学位论文工作。

Scientific research and degree thesis are important parts of postgraduate training, and important ways to cultivate postgraduates' independent thinking, innovative spirit and the ability to undertake scientific research or specialized technical work. Postgraduates should independently complete the master dissertation under the guidance of their supervisors.

1.文献综述与开题报告

1. Literature review and thesis proposal

硕士生入学后应在导师指导下，查阅文献资料，了解学科现状和动态，尽早确定课题方向，完成论文选题。学位论文的选题一般应结合本学科的研究方向和科研项目，鼓励面向国民经济和社会发展的需求选择应用型课题。确定学位论文工作的内容和工作量时应全面考虑硕士研究生的知识结构、工作能力和培养年限等。硕士开题由研究所统一组织，一般要求在第二学期末完成，开题时间距离答辩日期一般不少于1学年。

After the enrollment, postgraduates should consult the literature, understand the current situation and trends of the discipline, determine the research direction as soon as possible, and complete the topic selection of the thesis under the guidance of their supervisors. The topic selection of degree thesis should generally be combined with the research direction and scientific research projects of the discipline and the selection of applied topics meeting the needs of national economic and social development are encouraged. When determining the content and workload of degree thesis work, the supervisor should fully consider the knowledge structure, work abilities and training duration of postgraduates. The thesis proposal is uniformly organized by the Institute. It is generally required to be completed at the end of the second semester and at least one academic year before the thesis defense.

对文献综述与开题报告工作的具体要求见《华北电力大学学术学位硕士研究生必修环节实施细则》。

For the specific requirements of literature review and thesis proposal, please refer to the Detailed Rules for the Implementation of Required Links for Postgraduates with Academic Degrees in North China Electric Power University.

2.论文中期检查

2. Mid-term review of the thesis

论文中期检查一般在第四学期末完成，其中申请 2 年毕业的研究生要求在第四学期的前三周完成。中期检查由研究所负责组织，考核小组由 3-5 人组成，负责对研究生的论文工作内容、主要进展、存在的问题、论文按时完成的可能性等进行全方位的考查。对学位论文工作中期检查的具体要求见《华北电力大学学术学位硕士研究生必修环节实施细则》。

The mid-term review of the thesis is usually completed at the end of the fourth semester, and postgraduates applying for graduation after two-year study are required to complete it in the first three weeks of the fourth semester. The mid-term review is organized by the Institute, and the assessment team is composed of 3-5 people, responsible for the omni-directional examination of the content, main progress, existing problems and the possibility of completing the thesis on time. For the specific requirements for the mid-term review of degree thesis work, please refer to the Detailed Rules for the Implementation of Required Links for Postgraduates with Academic Degrees in North China Electric Power University.

3.科研成果要求

3. Requirements for scientific research achievements

研究生在申请学位论文答辩前，应以第一作者身份撰写并发表本专业学术论文 1 篇及以上，或者学生为第二作者、其导师必须是第一作者。论文须在正式刊物上公开发表，或在国内外学术会议（须 EI 检索）发表，论文页数不少于 4 页，且华北电力大学为第一署名单位。

Before applying for the defense of master dissertation, the postgraduate shall publish at least one academic paper in the relevant discipline as the first author, or if the student is listed as the second author, the student's supervisor must be the first author. The paper shall be formally published in a peer-reviewed journal, or it shall be published by a domestic/international academic conference indexed by EI Compendex. The paper shall be no less than four pages, with North China Electric Power University as the first affiliated institution.

4.学位论文要求

4. Degree thesis requirements

硕士学位论文是硕士生科学研究工作的全面总结，是描述其研究成果、反映其研究水平的重要学术文献资料，是申请和授予硕士学位的基本依据。学位论文撰写是硕士生培养过程的基本训练之一，必须按照规范认真执行，具体要求见《华北电力大学学术硕士学位论文撰写规范及范例》。

Master dissertation is a comprehensive summary of postgraduates' scientific research work, is an important academic literature that describes their research results and reflects their research level, and is the basis for applying for and awarding master's degrees. Degree thesis writing is one of the basic training in the training process of postgraduates, which must be carried out conscientiously in accordance with the norms. For specific requirements, please refer to Norms and Examples for the Master Dissertation Writing of North China Electric Power University.

5.学位论文评审与答辩

5. Review and defense of degree thesis

学校集中进行硕士研究生论文的评审与答辩工作。研究生在论文工作完成后，须向所在院系提

交论文答辩申请，相关部门要对研究生的答辩资格进行审查，审查通过方可进入论文评审与答辩程序。未通过答辩资格审查的硕士生不得进行论文答辩。

The review and defense of master dissertation shall be conducted in an intensive manner. Postgraduates should submit the application for thesis defense to their departments after the completion of the thesis work, and the relevant departments shall examine the postgraduates' defense qualification and they are allowed to enter the thesis review and defense procedure only after they pass the examination. Postgraduates who fail to pass the examination of their qualification for defense shall not defense to their theses.

硕士学位论文的评审与答辩按照《华北电力大学研究生学位论文评阅、答辩及学术复核管理规定》（校发〔2025〕22号）等相关规定进行。正常毕业和提前毕业的研究生论文答辩时间一般安排在6月，延期毕业的研究生论文答辩时间一般安排在12月。

The review and defense of master's theses shall be conducted in accordance with the Regulations on the Management of Graduate Thesis Review, Defense, and Academic Review of North China Electric Power University (Document No. 22 [2025] of NCEPU) and other relevant regulations. In general, thesis defenses for students graduating on schedule or ahead of schedule are arranged in June, while those for students with deferred graduation are generally arranged in December.

八、提前毕业条件

VIII. Conditions for Early Graduation

提前毕业的硕士生学习年限为2年，提前毕业需满足以下条件：

The duration of program for postgraduates who graduate ahead of schedule is 2 years. Applications for early graduation must meet the following conditions:

1. 大学英语六级成绩达到425分及以上，或雅思成绩达到6.5分及以上，或托福成绩达到90分及以上；其他学位课程平均成绩达到80分及以上，并且中期检查结论为优秀。

1. A College English Test Band 6 (CET-6) score of 425 or above, or an IELTS score of 6.5 or above, or a TOEFL score of 90 or above; an average grade of 80 or above in other degree courses; and an excellent evaluation in the mid-term assessment.

2. 申请答辩时，硕士生须取得下列能够反映其学位论文核心成果的成果之一：

2. At the time of applying for the thesis defense, the master's student must obtain one of the following outcomes that reflects the core results of their degree thesis:

1) 其学位论文相关成果获得省部级二等奖及以上科研奖励，或获得经《电气与电子工程学院科研奖励认证目录（2026版）》认定的同等层级社会力量科技奖励1项。硕士生本人须在获奖证书、获奖公示或正式批准文件中列为完成人之一，且获奖项目完成单位包括华北电力大学；

1) The outcomes related to the degree thesis have won at least one second-class or higher scientific research award at the provincial/ministerial level, or one social science and technology award of an equivalent level as recognized by the Catalogue for Certification of Scientific Research Awards of the School of Electrical and Electronic Engineering (2026 Edition). The master's student must be listed as one of the contributors in the award certificate, award announcement, or official approval document, and North China Electric Power University must be included among the institutions completing the awarded project.

2) 以第一作者（导师必须是作者之一）或第二作者（导师必须是第一作者），在本学科顶级期刊上（见《电气工程学科（领域）顶级学术期刊目录（2026 版）》）公开发表（网络见刊或提供录用证明需导师签字）反映学位论文核心成果的学术论文 1 篇，且第一署名单位必须是华北电力大学。

2) One academic paper reflecting the core results of the degree thesis has been publicly published in a top-tier journal of the discipline (see the Catalogue of Top Academic Journals in Electrical Engineering Discipline (Field) (2026 Edition)), with the student as the first author (the supervisor must be one of the authors) or the second author (the supervisor must be the first author). Online-first publication or an official acceptance letter signed by the supervisor is acceptable, and the first listed affiliation must be North China Electric Power University.

3. 申请提前毕业的硕士研究生，需由本人填写并提交申请表，申请表应注明符合的条件，并提供证明材料，必须征得导师签字同意。

3. Master's students applying for early graduation must complete and submit an application form. The form should specify the eligibility criteria met by the applicant and be accompanied by supporting materials. The application must also bear the supervisor's signature of approval.

4. 申请提前毕业的硕士研究生，硕士论文送审阶段 3 份论文匿名评阅，评阅结果要求全部为 A 或 B，且 A 不少于 1 个。

4. For master's students applying for early graduation, at the thesis review stage, the review results of both submitted copies of the master's thesis must be rated A or B, with at least one rated A.

5. 申请提前毕业的硕士研究生必须参加学院组织的公开答辩。

5. Master's students applying for early graduation must participate in a public thesis defense organized by the school.

电气工程一级学科硕士研究生（留学生）课程设置表
Schedule: Curriculum for Master's student (International Students) in First-level Discipline of Electrical Engineering

类别 Category		课程名称 Course name	学时 Class hour	学分 Credit	考核方式 Assessment mode	开课学期 Semester of the course	备注 Remarks
学位课(不少于22学分) Degree courses (no less than 22 credits)	公共课 (10学分) Public courses (10 credits)	汉语综合(1) Chinese Comprehension (1)	64	4.0	考试 Exam	1	
		中国概况(英文) Introduction to China (English)	32	2.0	考试 Exam	1	
		汉语综合(2) Chinese Comprehension (2)	64	4.0	考试 Exam	2	
	基础理论课 (4学分) Basic theoretical courses (4 credits)	矩阵论 Matrix Theory	32	2.0	考试 Exam	1	
		数值分析 Numerical Analysis	32	2.0	考试 Exam	1	
	学科基础课 (不少于4学分) Basic courses of disciplines (No less than 4 credits)	电网络理论 Electric Network Theory	32	2.0	考试 Exam	1	
		现代电力电子技术 Modern Power Electronic Technique	32	2.0	考试 Exam	1	
		电力系统运行与控制 Operation and Control of Power System	32	2.0	考试 Exam	1	
	学科专业课 (不少于4学分) Specialized courses of disciplines (No less than 4 credits)	电力系统稳定与控制 Power System Stability and Control	32	2.0	考试 Exam	2	
		高压直流输电技术 HVDC Transmission Technology	32	2.0	考试 Exam	2	
		电气设备智能感知与诊断 Intelligent Perception and Diagnosis of Electrical Equipment	32	2.0	考试 Exam	2	
非学位课 Non-degree courses	必修课程与必修环节 (8学分) Compulsory courses and required links (8 credits)	研究生科学道德与学术规范 Scientific Ethics and Academic Norms of Postgraduates		1.0	考查 Review of performance	1	
		电气工程新技术专题课程/研讨课程 Program Course / Seminar Course on New Technology of Electrical Engineering		1.0	考查 Review of performance	2	
		实践环节 (实验、实践) Practice Links (Experiment, Practice)		1.0	考查 Review of performance		
		学术活动 (报告、讲座6次) Academic Activities (6 Reports and Lectures)		1.0	考查 Review of performance		
		文献综述与选题报告 Literature Review and Thesis Proposal		1.0	考查 Review of performance	2	

		论文中期检查 Mid-term Review of the Thesis		1.0	考查 Review of performance	4	
		国情教育（理论） Orientation		1.0	考试 Exam	1	
		国情教育（实践） Education on National Conditions of China		1.0	考查 Review of performance		
	选修课 Optional courses	可选修研究生课程目录中其他学科的专业基础课、专业课，使总学分不少于33学分。 Postgraduates can take specialized basic courses and specialized courses of other disciplines in the catalogue of postgraduate optional courses, and the total credits should not be less than 33 credits.					

电气工程学科（领域）顶级学术期刊目录（2026 版）

序号	期刊名称	刊物类别	学科方向
1	IEEE Journal of Emerging and Selected Topics in Power Electronics	SCI 期刊	电气工程
2	IEEE Transactions on Applied Superconductivity	SCI 期刊	电气工程
3	IEEE Transactions on Automatic Control	SCI 期刊	电气工程
4	IEEE Transactions on Circuit and Systems	SCI 期刊	电气工程
5	IEEE Transactions on Dielectrics and Electrical Insulation	SCI 期刊	电气工程
6	IEEE Transactions on Electromagnetic Compatibility	SCI 期刊	电气工程
7	IEEE Transactions on Energy Conversion	SCI 期刊	电气工程
8	IEEE Transactions on Fuzzy Systems	SCI 期刊	电气工程
9	IEEE Transactions on Industrial Electronics	SCI 期刊	电气工程
10	IEEE Transactions on Industry Applications	SCI 期刊	电气工程
11	IEEE Transactions on Instrumentation and Measurement	SCI 期刊	电气工程
12	IEEE Transactions on Magnetics	SCI 期刊	电气工程
13	IEEE Transactions on Plasma Science	SCI 期刊	电气工程
14	IEEE Transactions on Power Delivery	SCI 期刊	电气工程
15	IEEE Transactions on Power Electronics	SCI 期刊	电气工程
16	IEEE Transactions on Power Systems	SCI 期刊	电气工程
17	IEEE Transactions on Smart Grid	SCI 期刊	电气工程
18	IEEE Transactions on Sustainable Energy	SCI 期刊	电气工程
19	IET Electric Power Applications	SCI 期刊	电气工程
20	IET Generation Transmission & Distribution	SCI 期刊	电气工程
21	IET Power Electronics	SCI 期刊	电气工程
22	IET Renewable Power Generation	SCI 期刊	电气工程
23	IET Science Measurement & Technology	SCI 期刊	电气工程
24	International Journal of Electrical Power & Energy Systems	SCI 期刊	电气工程
25	Proceedings of the IEEE	SCI 期刊	电气工程
26	Superconductor Science & Technology	SCI 期刊	电气工程
27	CSEE Journal of Power and Energy Systems	SCI 期刊（国内）	电气工程
28	High Voltage	SCI 期刊（国内）	电气工程
29	Journal of Modern Power Systems and Clean Energy	SCI 期刊（国内）	电气工程
30	Science China-Technological Sciences	SCI 期刊（国内）	电气工程
31	中国电机工程学报	一级学会学报	电气工程
32	电工技术学报	一级学会学报	电气工程
33	Advances in Optics and Photonics	SCI 期刊	电气信息
34	IEEE Antennas and Wireless Propagation Letters	SCI 期刊	电气信息
35	IEEE Communications Letters	SCI 期刊	电气信息
36	IEEE Internet of Things Journal	SCI 期刊	电气信息
37	IEEE Journal of Selected Topics in Signal Processing	SCI 期刊	电气信息
38	IEEE Journal on Selected Areas in Communications	SCI 期刊	电气信息
39	IEEE Transactions on Antennas and Propagation	SCI 期刊	电气信息
40	IEEE Transactions on Circuits and Systems for Video Technology	SCI 期刊	电气信息

41	IEEE Transactions on Cloud Computing	SCI 期刊	电气信息
42	IEEE Transactions on Cognitive Communications and Networking	SCI 期刊	电气信息
43	IEEE Transactions on Communications	SCI 期刊	电气信息
44	IEEE Transactions on Emerging Topics in Computing	SCI 期刊	电气信息
45	IEEE Transactions on Image Processing	SCI 期刊	电气信息
46	IEEE Transactions on Information Theory	SCI 期刊	电气信息
47	IEEE Transactions on Multimedia	SCI 期刊	电气信息
48	IEEE Transactions on Mobile Computing	SCI 期刊	电气信息
49	IEEE Transactions on Medical Imaging	SCI 期刊	电气信息
50	IEEE Transactions on Microwave Theory and Techniques	SCI 期刊	电气信息
51	IEEE/ACM Transactions on Networking	SCI 期刊	电气信息
52	IEEE Transactions on Network and Service Management	SCI 期刊	电气信息
53	IEEE Transactions on Neural Networks and Learning Systems	SCI 期刊	电气信息
54	IEEE Transactions on Network Science and Engineering	SCI 期刊	电气信息
55	IEEE Transactions on Signal Processing	SCI 期刊	电气信息
56	IEEE Transactions on Vehicular Technology	SCI 期刊	电气信息
57	IEEE Transactions on Wireless Communications	SCI 期刊	电气信息
58	IEEE Wireless Communications Letters	SCI 期刊	电气信息
59	IET Communications	SCI 期刊	电气信息
60	IET Microwaves Antennas & Propagation	SCI 期刊	电气信息
61	Journal of Lightwave Technology	SCI 期刊	电气信息
62	Optica	SCI 期刊	电气信息
63	Optics and Laser in Engineering	SCI 期刊	电气信息
64	Plasma Sources Science & Technology	SCI 期刊	电气信息
65	China Communications	SCI 期刊（国内）	电气信息
66	Chinese Physics Letters	SCI 期刊（国内）	电气信息
67	Chinese Journal of Electronics	SCI 期刊（国内）	电气信息
68	Science China-Information Sciences	SCI 期刊（国内）	电气信息
69	Journal of Computer Science and Technology	SCI 期刊（国内）	电气信息
70	中国科学：信息科学	国内顶级期刊	电气信息
71	通信学报	一级学会学报	电气信息
72	电子学报（中英）	一级学会学报	电气信息
73	光学学报	一级学会学报	电气信息
74	计算机学报	一级学会学报	电气信息
75	软件学报	一级学会学报	电气信息
76	IEEE Transactions on Green Communications and Networking	SCI 期刊	电气信息
77	ACS Applied Materials & Interfaces	SCI 期刊	交叉学科
78	Advanced Materials	SCI 期刊	交叉学科
79	Applied Energy	SCI 期刊	交叉学科
80	Applied Physics Letters	SCI 期刊	交叉学科
81	Applied Surface Science	SCI 期刊	交叉学科
82	Automatica	SCI 期刊	交叉学科
83	Composites Part B-Engineering	SCI 期刊	交叉学科

84	Composites Science and Technology	SCI 期刊	交叉学科
85	Composite Structure	SCI 期刊	交叉学科
86	Computer Methods in Applied Mechanics and Engineering	SCI 期刊	交叉学科
87	Energy	SCI 期刊	交叉学科
88	Energy and Buildings	SCI 期刊	交叉学科
89	Energy Conversion and Management	SCI 期刊	交叉学科
90	Energy Policy	SCI 期刊	交叉学科
91	IEEE Transactions on Components Packaging and Manufacturing Technology	SCI 期刊	交叉学科
92	IEEE Transactions on Electron Devices	SCI 期刊	交叉学科
93	IEEE Transactions on Industrial Informatics	SCI 期刊	交叉学科
94	IEEE Transactions on Intelligent Transportation Systems	SCI 期刊	交叉学科
95	IEEE Transactions on Pattern Analysis and Machine Intelligence	SCI 期刊	交叉学科
96	IEEE Transactions on Systems Man Cybernetics-Systems	SCI 期刊	交叉学科
97	IEEE Transactions on Transportation Electrification	SCI 期刊	交叉学科
98	Journal of Cleaner Production	SCI 期刊	交叉学科
99	Journal of Physics D-Applied Physics	SCI 期刊	交叉学科
100	Microelectronics Reliability	SCI 期刊	交叉学科
101	Nanoscale	SCI 期刊	交叉学科
102	Nature 或 Science 及其子刊	SCI 期刊	交叉学科
103	Physics of Plasmas	SCI 期刊	交叉学科
104	Renewable & Sustainable Energy Reviews	SCI 期刊	交叉学科
105	Renewable Energy	SCI 期刊	交叉学科
106	Solar Energy	SCI 期刊	交叉学科
107	Journal of Materials Chemistry A	SCI 期刊	交叉学科
108	Chinese Physics B	SCI 期刊（国内）	交叉学科
109	经济研究	经济学顶刊	交叉学科
110	物理学报	一级学会学报	交叉学科
111	自动化学报（中英）	一级学会学报	交叉学科
112	Defence Technology	SCI 期刊	交叉学科
113	Journal of Energy Storage	SCI 期刊	交叉学科
114	Engineering Applications of Artificial Intelligence	SCI 期刊	交叉学科
备注：1.要求所有期刊论文篇幅不少于4 页（含4 页）； 2.顶级期刊仅限于上述电气工程、电气信息、交叉学科三个学科方向的 114 本期刊； 3.不满足上述要求的期刊论文在学位申请时一律不予考虑。			

附录 1

电气与电子工程学院科研奖励认证目录（2026版）

序号	奖励名称	设奖单位	奖励种类	奖励等级
1	中国仪器仪表学会科学技术奖	中国仪器仪表学会	技术发明奖、科技进步奖	一等奖、二等奖
2	中国电工技术学会科学技术奖	中国电工技术学会	技术发明奖、科技进步奖	一等奖、二等奖
3	中国电力科学技术奖	中国电机工程学会	自然科学奖、技术发明奖、科学技术进步奖	一等奖、二等奖
4	中国机械工业科学技术奖	中国机械工业联合会、中国机械工程学会	技术发明奖、科技进步奖	一等奖、二等奖
5	中国电子学会科学技术奖	中国电子学会	自然科学类、技术发明类、科学技术进步类	一等奖、二等奖
6	中国通信学会科学技术奖	中国通信学会	自然科学奖、技术发明奖、科学技术进步奖	一等奖、二等奖
7	环境保护科学技术奖	中国环境科学学会	自然科学奖、技术发明奖、科技进步奖	一等奖、二等奖
8	中国计算机学会科学技术奖	中国计算机学会	自然科学奖、技术发明奖、科技进步奖	一等奖、二等奖
9	中国材料研究学会科学技术奖	中国材料研究学会	基础研究奖、技术发明奖、科技进步奖	一等奖、二等奖
10	吴文俊人工智能科学技术奖	中国人工智能学会	自然科学奖、技术发明奖、科技进步奖	一等奖、二等奖
11	中国可再生能源学会科学技术奖	中国可再生能源学会	技术发明奖、科技进步奖	一等奖、二等奖
12	中国自动化学会科学技术奖	中国自动化学会	自然科学奖、技术发明奖、科技进步奖	一等奖、二等奖
13	电力创新奖	中国电力企业联合会	电力创新奖	特等奖
14	中国指挥与控制学会科学技术奖	中国指挥与控制学会	科技进步奖	一等奖、二等奖
15	中国兵工学会科学技术奖	中国兵工学会	科学技术奖	一等奖、二等奖
16	中国电源学会科学技术奖	中国电源学会	技术发明奖、科技进步奖	一等奖、二等奖
注：本目录所列奖励中，一等奖（含特等奖）、二等奖分别按省部级一等奖、二等奖认定；其中“电力创新奖”仅认定特等奖。				