(085801)电气工程 2026 级全日制工程直博生培养方案

2026 Full-time Eng. Doctoral after Bachelor's Program for Electrical Engineering

一、基本信息 Basic Information

院系名称 School	电气工程学院 School of Electrical Engineering			**适用年级** Grade	2026 级 Class		
适用专业 Major	电气工程 Electrical Engineering			**标准学制** Duration	5年 Years		
学习形式 Study Mode	全日制 Full time						
项目类型 Program Type	专业型 Professional						
培养层次 Program Level	直博生 Doctoral after Bachelor's						
最低学分 Min Credit	28	**最高学分** Max Credit	/	**最低 GPA 学分** Min GPA Credit	16	**最低 GPA** Min GPA	2. 7

二、学科简介 Introduction

本学科始建于 1908 年，是上海交通大学历史最悠久的学科之一。1962 年起下属学科陆续获得研究生学位授予权，改革开放后相应学科均获国内首批硕士学位授予权。1999 年设立电气工程学科博士后流动站。2000 年电气工程一级学科获博士学位授予权。本一级学科下属的电力系统及其自动化，电机与电器，高电压及绝缘技术，电力电子与电力传动,电工理论与新技术五个二级学科均开设博士研究生课程，博士生在一级学科范围内选课。

本学科研究与科技创新水平不断提高，拥有“国家能源智能电网(上海)研发中心”,“国家能源海上风电技术装备研发中心”,“电力传输与功率变换控制教育部重点实验室”,“国家工科基础课程—电工电子教学基地”, “上海交通大学泛在电力物联网智能感知实验室”等重点科研与教学基地。

本学科与多所国际一流大学开展联合培养研究生项目。毕业生主要分布在电力工程设计、电气设备设计及制造、新能源等领域相关的科研院所、大学和企事业单位。

The Electrical Engineering (EE) discipline of SJTU was founded in 1908, and is one of the oldest disciplines in Shanghai Jiao Tong University. Since 1962, the discipline had been successively granted the right to confer master’s degree, and had been listed into the first group of disciplines with the right to confer master’s degree among China’s peer disciplines. A post-doctoral research station for EE was established in 1999. The EE discipline was granted the right to confer doctor’s degree in 2000. The 5 sub-disciplines of EE (including Power System and its Automation, Electric Machines and Electric Apparatus, High Voltage and Insulation Technology, Power Electronics and Electrical Drives, and Theory and New Technology of Electrical Engineering) offer doctoral courses which can be selected by PhD candidates within the scope of EE discipline.

The discipline owns top-level research centers and labs such as “State Energy Smart Grid R&D Center”, “State Energy Offshore Wind Technology and Equipment R&D Center”, “Power

Transmission Conversion and Control Key Lab of MOE", "Electric and Electronic Teaching Base of National Basic Science Courses" and "Ubiquitous Power IoT Intelligent Perception Lab".

The discipline has been carrying out joint programs for cultivating postgraduates with World First-Class Universities. The postgraduates of this discipline mainly join in universities, research institutes, enterprises or government agencies, conducting jobs of teaching, research, design or management relevant to fields such as electric power engineering design, design and manufacture of electrical equipments, and new energy resources.

三、培养目标 Program Objective

博士学位获得者应系统地掌握电气学科坚实宽广的基础理论知识，深入了解学科的进展、动向和最新发展前沿。具有独立从事科学研究的能力，并在本学科领域取得理论或实践上的创新性研究成果。能熟练阅读本专业的外文资料，具有良好的写作和国际学术交流能力。能胜任高等院校、科研院所和企事业单位等的教学、科学研究、工程技术或科技管理等工作。

The doctoral degree holders must systematically master firm and broad basic theoretical knowledge of the discipline, and understand the progress, trends and state-of-the-art development of the discipline. They must have the ability to undertake scientific research and obtain creative research results in theory or practice. They can fluently read documents of this major by one foreign language, and possess good writing ability and oral skills for academic communication. They are qualified for teaching, scientific research, engineering technology or technology management and other work in the colleges, universities, R&D institutes, enterprises, or government agencies.

四、培养方式及学习年限 Training Mode and Study Duration

本项目采用全日制学习、导师制培养模式。直博生学习年限一般为 5 年，经批准可适当缩短或延长，最短不少于 4 年，最长（含休学）不得超过 7 年。

The project is full time study, and tutor training mode. The study duration for doctoral after bachelor's student is usually 5 years, with approved flexibility for appropriate shortening or extension, ranging from a minimum of 4 years to a maximum (including suspension of schooling) not exceeding 7 years.

五、课程学习要求 Course Requirement

总学分≥28，GPA 统计源硕士生课程学分≥16。总学分内，专业前沿课不低于 8 分，专业选修课不低于 3.5 学分。GPA 学分内，包含学术英语 2 学分，专业基础课（不含数学类）不低于 6 学分，数学类课程不低于 3 学分。博士生应参加至少一次国际学术会议。课程学习原则上要求在 2 年内完成。各类课程具体要求如下：

The total credits are no less than 28, and the GPA statistical source master's course credits are no less than 16. Within the total learning credits, professional frontier courses shall be no less than 8

credits and professional elective courses shall be no less than 3.5 credits. The GPA statistics source master's course credits include academic English (2 credits), professional basic courses (mathematics excluded) no less than 6 credits and mathematics courses no less than 3 credits. The PhD candidate should attend no less than 1 international conference. The courses should be completed within the first 2 academic years. The specific requirements are as follows:

课程类别 Course Type	学分要求 Min Credits	门数要求 Min Courses	GPA 学分要求 Min GPA Credit	备注 Note
公共基础课 General Courses	6			
专业基础课 Program Core Courses	9		9	
专业前沿课 Program Frontier Courses	8			
专业选修课 Program Elective Courses	3.5			
任意选修课 Elective Courses				非必需

电气工程研究生学术报告会和讨论会要求：

（1）学术报告会或讨论会，在个人培养计划中选在第二学期，全年都可以参加，入学第一年内完成。

（2）参会后需提交由电气学院举办的学术报告会记录表，博士研究生要求提交 8 场学术报告会的记录表，每场总结不少于 800 字。

（3）所有选课学生于每年夏季学期第一周周三前以班级为单位，班长按二级学科方向分好收齐后将学术报告电子版反馈到教学秘书邮箱。每位学生的文件电子版反馈命名为：二级学科方向名称+姓名+学号。

电气报告会通知见网站 https://see.sjtu.edu.cn/xshd.html

Requirements of academic symposium and seminars:

(1) Academic symposium and seminars should be selected in the 2nd semester and can be attended in the whole year. The requirement should be satisfied within the first academic year.

(2) A postgraduate should submit at least 8 reports after attending academic symposium organized by the SEE. Each report should include more than 800 words.

(3) All the postgraduates should submit the e-edition record form to their class leader before 1st Wednesday of the summer semester. Class leaders should classify the forms according to level-2 disciplines and send them to the teaching secretary.Record form naming rules: level-2 disciplines name + postgraduates name + postgraduates ID.

School academic trends: https://see.sjtu.edu.cn/xshd.html

（1）资格考试：直博生的资格考试原则上应在入学后第二学年第二学期内完成，直博生的前两年课程学习的 GPA 应≥2.7。资格考试科目要求如下：

Doctoral after Bachelor's students should finish the qualification exam in the 4th semester with GPA≥2.7 in the first two years. The qualification examination courses are as follows :

课程代码&课程名称 **Course Code and Name**	**备注** **Note**
EE7002 电力系统动态计算与建模 Power System Dynamics-Computing and Modelling EE7003H 非线性控制理论及应用 Nonlinear Control Theory and Application EE7004H 高等电力电子学 Advanced Power Electronics EE8007 电力系统分析专题 Selected Topics on Power System Analysis EE8008 高电压前沿技术专题 Topics on Cutting-Edge Technology of High-Voltage EE8009 现代电力电子变换技术专题 Special Topics on Modern Power Electronic Conversion Technologies	直博 6 选 2 Choose 2 in 6
EE7007 现代逆变技术及应用 Modern inversion technology and Application EE7008 电力电子系统建模与控制 Modelling and Control for Power Electronics System EE7009 电力系统规划 Power System Planning EE7010 运动控制系统 Motion Control System EE7011 电力系统安全分析 Power System Security Analysis EE7012 电力系统可靠性 Power System Reliability EE7013 计算机继电保护导论 Relay Protection Basing Microcomputer EE7014 现代控制理论 Modern Control Theory EE7015 电气设备在线检测与状态维修 Online Monitoring & Status Maintenance of Electric Power Equipment EE7016 工程电磁场数值计算 Numerical Computational Methods in Engineering Electromagnetic Fields EE7017 高电压数字测量技术 High Voltage Digital Measurement Technology EE7020 现代电机控制系统 Modern Motor Control System EE7022 电力系统稳态分析 Power System Steady-state Analysis	直博 16 选 3 Choose 3 in 16

EE7023 电能质量 Power Quality EE7024 自适应控制 Adaptive Control Theory EE7025 电力系统暂态稳定 Power System Transient Stability	
EE7027 等离子体物理导论 Introduction to Magnetic Fusion Energy EE7028 磁约束聚变能源概论 Introduction to Magnetic Fusion Energy EE8020 计算等离子体物理 Computational Plasma Physics	未来能源方向

（2）开题报告：博士生学位论文开题工作应该在通过资格考试后，直博生一般应该在资格考试结束后一年内完成。

Doctoral after Bachelor's dissertation proposal should be started after passing the qualification exam and finished within one year after the qualification exam.

（3）年度报告：博士生在完成学位论文开题报告后按自然年进行年度考核。论文开题通过满六个月以上者应参加年度考核。

After doctoral students complete their dissertation proposal, annual evaluations are conducted on a calendar year basis. Those whose dissertation proposals have been approved for over six months must participate in the annual evaluation.

（4）全日制工程博士要求在读期间在合作单位业界导师指导下从事科研工作 1 年以上。完成后在第三学年结束前递交《上海交通大学全日制工程博士研究生工程实践总结报告》，由校企导师组出具考核评定意见、院系组织公开考核答辩。应在第三学年结束前完成工程实践课程并通过考核。考核结果为“通过”或“不通过”，由院系教务在必修环节录入《工程实践 I》、《工程实践 II》的课程成绩。

Eng.D is required to engage in scientific research work for more than one year under guided by instructors in the industry of the cooperative units during study period. After the engineering practice completed, the students, before the 3rd academic year end, are supposed to submit the summary report on the practical activities of the Doctor of Engineering of Shanghai Jiao Tong University. The reports will be proceeded through grading assessment from both collage and corporate instructors and open dissertation organized by department. Engineering practice courses must be completed and assessed by the end of the 3rd academic year. The final result will be recorded as "Pass" or "Fail" of “Engineering Practice I & II” course score.

（5）学位论文盲审分数必须满足：总分“良好”及以上、且子项得分不超过一个“一般”，方可答辩。

The grade of the double-blind review must meet: The average grade is “Good” or above, and no more than one “Average” in sub-item, before the final defence.

电气博士生培养过程管理细则请见以下链接。

Please refer to the following link for the detailed regulations on the management of doctoral student training.

https://see.sjtu.edu.cn/yjs_bszn/564.html

七、学术成果要求 Requirement on Academic Achievements

- 创新性成果满足如下任一条件即可：

(a)发表学科认定的 JCR 二区以上 SCI 期刊 1 篇（详见附件 2），且在核心期刊发表中文论文 1 篇；

(b)发表 SCI 期刊 1 篇，且在《中国电机工程学报》、《电工技术学报》、《电力系统自动化》、《高电压技术》、《电网技术》五种期刊上发表论文 1 篇；

(c)发表 SCI 期刊 2 篇；

申请人获国家级科技成果三大奖（一等奖排名前 9、二等奖排名前 7）、获省部级科技成果一等奖（排名前 5），可等同一篇论文（至多等同一篇且不可等同条件(a)与(b)中 SCI 期刊论文）

* 备注（论文认定规则）：

- 学术成果必须在就读博士期间完成，在就读博士期间发表（或录用），博士生在硕士生期间发表的论文不计入其博士生学习阶段的论文发表数；
- 申请人应为第一作者或共同第一作者，第一作者单位须为上海交通大学；
- 必须与学位论文内容相关；
- 论文不属于本学科 SCI 期刊负面清单范畴（详见附件 1）；

- 在满足博士学位学术成果要求基础上，学术成果及学位论文应在答辩前三个月完成。

- 补充附件：附件 1（SCI 期刊负面清单列表）；附件 2（学科认可的 JCR 二区及以上 SCI 期刊列表）

✓ Qualification for PhD Degree if any of the following requirements is satisfied:

(a) One SCI-indexed Journal Paper published in zone two or above in JCR and enlisted by the Department Degree Committee (see attachment 2) , and one Chinese language paper published in a core journal;

(b) One SCI-indexed Journal Paper, plus one EI-indexed Journal Paper published in top Chinese Journals including <Proceedings of The Chinese Society for Electrical Engineering>, <Transactions of China Electrotechnical Society>, <Automation of Electric Power Systems>, <High Voltage Engineering>, <Power System Technology>;

(c) Two SCI-indexed Journal Papers.

If an applicant has won the National Science and Technology Achievement Award (First Prize with ranking within top 9, or Second Prize with ranking within top 7), or the First Prize of

Provincial/Ministerial Science and Technology Achievement Award (with ranking within top 5), the prize will be deemed as one equivalent Journal Paper (at most one Chinese Journal Paper in term (b) or one SCI-indexed Journal Paper in term (c) can be replaced).

- Note：
  - The Published Achievement must be done during the Ph.D. study, the publication during Master degree study cannot be counted as the Ph.D. achievement.
  - The applicant should be the first author or joint first author, and the affiliation of the first author must be Shanghai Jiao Tong University.
  - The content in the Publication must be relevant to the thesis.
  - The publications on the SCI blacklist of the Department (see Attachment 1) will not be recognized.
- On the basis of satisfying the Academic Achievements requirement, the thesis and academic achievements must be completed 3 months before the defence.
- Attachments： Attachment 1 (SCI blacklist); Attachment 2 (zone two and above in JCR, SCI journal)

八、学位论文 Thesis/dissertation work

1、选题与综述的要求；

博士学位论文应对所研究的课题在基本理论、计算方法、测试技术、工艺制造等某一方面有新的见解，在学术上有重要的理论意义或现实意义。

2、规范性要求；

学位论文的内容，除理论分析外，还应包括实验验证或计算机软件开发，并有对应的论文、科技奖励、专利、标准等成果佐证。论文推理严密，材料翔实，数据可靠，表达准确，层次分明，图表规范，完成了开题报告的主题内容，满足系统性、创新性和完整性的要求。学位论文的初稿，应在答辩前三个月完成，并提交导师审阅通过后，才可按《上海交通大学研究生学位论文答辩及学位申请工作细则》的规定申请评审和答辩。

3、成果创新性要求

在科学理论、专门技术或研究方法上有创新，并取得新的进展，达到电气工程学科国内领先或国际先进水平。

1. Topic selection and review requirements;

A doctoral dissertation shall present new insights on basic theories, calculation methods, test technology, crafting and others of the topic, and academically have theoretical or realistic significance.

2. Normative requirements;

The dissertation shall include experimental verification or computer software development in addition to theoretical analysis, along with proof of publications, patents, awards, standards etc. The dissertation is characterized by exact reasoning, detailed materials, reliable data, accurate expression, clear structure and standard charts. The dissertation should complete the main content in the doctoral research proposal and meet the requirements of systematicness, innovation and integrity. The doctoral student shall finish the draft of the dissertation 3 months before the defence, submit to his/her supervisor for review and permission. Afterwards, the defence can be applied according to the Detailed Rules for Dissertation Defense and Degree Application of Postgraduates of Shanghai Jiao Tong University.

3. Innovation requirements

A doctoral student shall make innovations in scientific theories, expertise or research methods, make new progress and reach domestic or international advanced level of the discipline of electrical engineering.

九、课程设置 Courses

详见下页 Please refer to the next page.

课程类别 Category	课程代码 Course Code	课程名称 Course Name		学分 Credit	授课语言 Language*	开课学期 Semester	是否必修? Compulsory	可以计算 GPA	必须计算 GPA	备注 Note
		中文 Chinese	English 英文							
公共基础课 General Courses	FL6001	学术英语	Academic English	2	英文 in English	春季 Spring	是 Yes	是 Yes	是 Yes	
	GE6001	学术写作、规范与伦理	Scientific Writing, Integrity and Ethics	1	中文 in Chinese	春秋季 Spring Fall	是 Yes	否 No	否 No	优先选择 031 电气系开设的教学班
	MARX7006	习近平著作选读	Selected Readings from the Works of Xi Jinping	2	中文 in Chinese	秋季 Fall	是 Yes	是 Yes	否 No	
	MARX6008	马克思主义与当代科技	Marxism and Contemporary Science and Technology	1	中文 in Chinese	秋季 Fall	是 Yes	是 Yes	是 Yes	
专业基础课 Program Core Courses	EE7002	电力系统动态计算与建模	Power System Dynamics-Computing and Modelling	3	英文 in English	春季 Spring	否 No	是 Yes	否 No	
	EE7003H	非线性控制理论及应用	Nonlinear Control Theory and Applications	2	中文 in Chinese	秋季 Fall	否 No	是 Yes	否 No	
	EE7001	博士生电气技术试验	Electrical Lab for Doctoral Students	1	中文 in Chinese	秋季 Fall	否 No	是 Yes	否 No	
	EE7008	电力电子系统建模与控制	Modelling and Control for Power Electronics System	2	英文 in English	秋季 Fall	否 No	是 Yes	否 No	
	EE7007	现代逆变技术及应用	Modern inversion technology and Application	2	中文 in Chinese	春季 Spring	否 No	是 Yes	否 No	
	EE7004H	高等电力电子学	Advanced Power Electronics	3	中文 in Chinese	秋季 Fall	否 No	否 No	否 No	
	EE7009	电力系统规划	Power System Planning	2	中文 in Chinese	春季 Spring	否 No	是 Yes	否 No	

	EE7010	运动控制系统	Motion Control System	2	中 文 in Chinese	秋季 Fall	否 No	是 Yes	否 No	
	EE7011	电力系统安全分析	Power System Security Analysis	2	中 文 in Chinese	春 季 Spring	否 No	是 Yes	否 No	
	EE7012	电力系统可靠性	Reliability of Power Systems	2	中 文 in Chinese	春 季 Spring	否 No	是 Yes	否 No	
	EE7013	计算机继电保护导论	Introduction to Computer Relaying Protection	2	中 文 in Chinese	春 季 Spring	否 No	是 Yes	否 No	
	EE7014	现代控制理论	Modern Control Theory	3	中 文 in Chinese	秋季 Fall	否 No	是 Yes	否 No	AI+课程
	EE7015	电气设备在线检测与状态维修	Online Monitoring & Status Maintenance of Electric Power Equipment	3	中 文 in Chinese	秋季 Fall	否 No	是 Yes	否 No	
	EE7016	工程电磁场数值计算	Numerical Techniques in Electromagnetics	2	中 文 in Chinese	春 季 Spring	否 No	是 Yes	否 No	
	EE7017	高电压数字测量技术	High Voltage Digital Measurement Technology	3	中 文 in Chinese	春 季 Spring	否 No	是 Yes	否 No	
	EE7020	现代电机控制系统	Modern Motor Control System	3	中 文 in Chinese	秋季 Fall	否 No	是 Yes	否 No	
	EE7022	电力系统稳态分析	power system static state analysis	3	中 文 in Chinese	春 季 Spring	否 No	是 Yes	否 No	
	EE7023	电能质量	Quality of Power Supply	2	中 文 in Chinese	秋季 Fall	否 No	是 Yes	否 No	
	EE7025	电力系统暂态稳定	Transient Stability of Power Systems	2	中 文 in Chinese	秋季 Fall	否 No	是 Yes	否 No	AI+课程
	EE7027	等离子体物理导论	Introduction to Magnetic Fusion Energy	2	英 文 in English	秋季 Fall	否 No	否 No	否 No	未来能源方向
	EE7028	磁约束聚变能源概论	Introduction to Magnetic Fusion Energy	2	中 文 in Chinese	秋季 Fall	否 No	否 No	否 No	未来能源方向

	MATH6012	应用泛函分析	Applied Functional Analysis	3	中英文并行开班 in both Chinese & English	春季 Spring	是 Yes	是 Yes	否 No	最少 1 门，最低 3 分
	MATH6004	计算方法	Numerical Analysis	3	中英文并行开班 in both Chinese & English	春秋季 Spring Fall	是 Yes	是 Yes	否 No	
	MATH6005	矩阵理论	Matrix Theory	3	中英文并行开班 in both Chinese & English	春秋季 Spring Fall	是 Yes	是 Yes	否 No	
	MATH6015	最优化方法	Optimization Method	3	中英文并行开班 in both Chinese & English	春秋季 Spring Fall	是 Yes	是 Yes	否 No	
专业前沿课 Program Frontier Courses	MATH8005	现代数学专题-分析类：动力系统	Special Topics in Modern Mathematics-Analysis：Dynamic System	0.5	中文 in Chinese	秋季 Fall	是 Yes	否 No	否 No	公共前沿选修课 至少 1 学分
	MATH8006	现代数学专题-分析类：偏微分方程	Special Topics in Modern Mathematics-Analysis：Partial Differential Equations	0.5	中文 in Chinese	秋季 Fall	是 Yes	否 No	否 No	
	MATH8007	现代数学专题-分析类：傅里叶分析、复分析、小波分析	Special Topics in Modern Mathematics-Analysis：Fourier Analysis, Complex Analysis，Wavelet Analysis	0.5	中文 in Chinese	秋季 Fall	是 Yes	否 No	否 No	
	MATH8008	现代数学专题-分析类：摄动理论	Special Topics in Modern Mathematics-Analysis：Perturbation Theory	0.5	中文 in Chinese	秋季 Fall	是 Yes	否 No	否 No	
	MATH8009	现代数学专题-离散类：网络科学	Special Topics in Modern Mathematics-Discrete Mathematics：Network Science	0.5	中文 in Chinese	秋季 Fall	是 Yes	否 No	否 No	
	MATH8010	现代数学专题-离散	Special Topics in Modern	0.5	中文 in	秋季 Fall	是 Yes	否 No	否 No	

		类：现代组合技术与算法	Mathematics-Discrete Mathematics: Combinatorial Technique and Algorithms		Chinese					
	MATH8011	现代数学专题-离散类：组合设计与纠错码	Special Topics in Modern Mathematics-Discrete Mathematics: Combinatorial Design and Code Theory	0.5	中文 in Chinese	秋季 Fall	是 Yes	否 No	否 No	
	MATH8012	现代数学专题-离散类：代数与密码	Special Topics in Modern Mathematics-Discrete Mathematics: Algebra and Cryptography	0.5	中文 in Chinese	秋季 Fall	是 Yes	否 No	否 No	
	PHY8107	现代物理与天文专题（交叉类）：非线性物理	Topics in Modern Physics and Astronomy (Interdisciplinary)：Nonlinear Physics	0.5	中文 in Chinese	秋季 Fall	是 Yes	否 No	否 No	
	STAT8001	现代数学专题-随机类：高等随机过程	Special Topics in Modern Mathematics-Stochastic: Advanced Stochastic Process	0.5	中文 in Chinese	秋季 Fall	是 Yes	否 No	否 No	
	STAT8002	现代数学专题-随机类：随机矩阵	Special Topics in Modern Mathematics-Stochastic: Random Matrix	0.5	中文 in Chinese	秋季 Fall	是 Yes	否 No	否 No	
	STAT8003	现代数学专题-随机类：现代统计	Special Topics in Modern Mathematics-Stochastic: Modern Statistics	0.5	中文 in Chinese	秋季 Fall	是 Yes	否 No	否 No	
	STAT8004	现代数学专题-随机类：随机优化	Special Topics in Modern Mathematics-Stochastic: Stochastic Optimization	0.5	中文 in Chinese	秋季 Fall	是 Yes	否 No	否 No	
	ASTR8304	现代物理与天文专题（天文类）：大规模数值模拟	Topics in Modern Physics and Astronomy (Astronomy) ：Numerical Simulations	0.5	中文 in Chinese	春季 Spring	是 Yes	否 No	否 No	
	CHEM9104	化学前沿专题：新能源化学	Frontier Topics in Chemistry: New Energy Chemistry	1	中文 in Chinese	春季 Spring	是 Yes	否 No	否 No	
	MATH8001	现代数学专题-计算类：差分方法	Special Topics in Modern Mathematics-Computational Mathematics ： Difference	0.5	中文 in Chinese	春季 Spring	是 Yes	否 No	否 No	

			Method							
	MATH8002	现代数学专题-计算类：有限元方法	Special Topics in Modern Mathematics-Computational Mathematics： Finite Element Method	0.5	中文 in Chinese	春季 Spring	是 Yes	否 No	否 No	
	MATH8003	现代数学专题-计算类：谱方法	Special Topics in Modern Mathematics-Computational Mathematics：Spectral Method	0.5	中文 in Chinese	春季 Spring	是 Yes	否 No	否 No	
	MATH8004	现代数学专题-计算类：最优化	Special Topics in Modern Mathematics-Computational Mathematics：Optimization	0.5	中文 in Chinese	春季 Spring	是 Yes	否 No	否 No	
	PHY8312	现代物理与天文专题（量子类)：量子计算与量子模拟	Topics in Modern Physics and Astronomy （ Quantum ）： Quantum Computation and Quantum Simulation	0.5	中文 in Chinese	春季 Spring	是 Yes	否 No	否 No	
	EE8002	现代电力系统运行优化理论与应用	Theory and Application of Optimization in Modern Power System Operation	2	英文 in English	秋季 Fall	否 No	是 Yes	否 No	
	EE8005	电机专题	Topics on Electric Machine	2	中文 in Chinese	秋季 Fall	否 No	是 Yes	否 No	
	EE8007	电力系统分析专题	Selected Topics on Power System Analysis	3	中文 in Chinese	秋季 Fall	否 No	是 Yes	否 No	
	EE8010	电力系统电磁兼容	EMC in Electric Power Systems	3	英文 in English	秋季 Fall	否 No	是 Yes	否 No	
	EE8001	新能源电力变换与并网技术	New Energy Power Conversion and Grid Connection Technology	2	中文 in Chinese	春季 Spring	否 No	是 Yes	否 No	
	EE8003	可再生能源发电系统	Renewable Energy System for Electric Power Generation	2	中文 in Chinese	春季 Spring	否 No	是 Yes	否 No	
	EE8004	超导材料与应用技术	Applied Science of Superconductivity	2	英文 in English	春季 Spring	否 No	是 Yes	否 No	
	EE8008	高电压前沿技术专题	Topics on Cutting-Edge	3	中文 in	春季	否 No	是	否 No	

			Technology of High-Voltage		Chinese	Spring		Yes		
	EE8009	现代电力电子变换技术专题	Special Topics on Modern Power Electronic Conversion Technologies	2	英文 in English	春季 Spring	否 No	是 Yes	否 No	
	EE8012	电力大数据基础	Basis of Big Data Analytics for Smart Grid	2	中文 in Chinese	春季 Spring	否 No	是 Yes	否 No	
	EE8016	智能充电网络与移动储能：前沿与应用	Intelligent Charging Networks and Mobile Energy Storage: Frontiers and Applications	2	中文 in Chinese	秋季 Fall	否 No	是 Yes	否 No	
	EE8017	数智化电力装备前沿技术	Cutting-edge Technology in Digital and Intelligent Power Equipment	2	中文 in Chinese	春季 Spring	否 No	是 Yes	否 No	AI+课程
	EE8018	低碳能源技术应用及前沿	The Application and Frontiers of Low-Carbon Energy Technologies	2	中文 in Chinese	春季 Spring	否 No	是 Yes	否 No	
	EE8019	直流配电网前沿技术与仿真实践	Advanced Technology and Simulation Practice of DC Distribution Network	3	中文 in Chinese	春季 Spring	否 No	是 Yes	否 No	
	EE8020	计算等离子体物理	Computational Plasma Physics	2	中文 in Chinese	秋季 Fall	否 No	否 No	否 No	未来能源方向
	EE8021	新型电力系统前沿技术与应用	Advanced Technology and Application of New Power Systems	2	中文 in Chinese	秋季 Fall	否 No	否 No	否 No	
	GE9003	工程实践 I	Engineering Practice I	1	中文 in Chinese	春 秋 季 Spring Fall	是 Yes	否 No	否 No	
	GE9004	工程实践 II	Engineering Practice II	1	中文 in Chinese	春 秋 季 Spring Fall	是 Yes	否 No	否 No	
	GE6012	学术报告与研讨会	Academic Seminars	2	中文 in Chinese	春季 Spring	是 Yes	否 No	否 No	必修课，具体修读要求第一学年第一学期结束时邮件通知

专业选修课 Program Elective Courses	EE9002	多物理场耦合与有限元分析	Multiphysics and FEM analysis	2	英文 in English	秋季 Fall	否 No	是 Yes	否 No	
	EE9003	电力电子技术在电力系统中的应用	Power Electronics and Application in Power System	2	中文 in Chinese	秋季 Fall	否 No	是 Yes	否 No	
	EE9004	超高压输电线继电保护	Relaying Protection for Extro-high Voltage Transmission Lines	2	中文 in Chinese	秋季 Fall	否 No	是 Yes	否 No	
	EE9007	灵活交流输电技术实验	The Experimentations of FACTS	2	英文 in English	秋季 Fall	否 No	是 Yes	否 No	
	EE9011	电力传动调速控制综合实验	Comprehensive Experiment of Electric Drive Speed Regulation and Control	2	中文 in Chinese	秋季 Fall	否 No	是 Yes	否 No	
	EE9016	电子系统综合设计	Integrated Design of Electronic System	2	中文 in Chinese	秋季 Fall	否 No	是 Yes	否 No	
	EE9017	电力装置及器件的电子保护技术	Electronic Protection Technology of Power Equipment and Power Device	2	中文 in Chinese	秋季 Fall	否 No	是 Yes	否 No	
	EE9005	电力系统面向对象建模技术	Object-Oriented Modeling Technology for Power Systems	2	中文 in Chinese	春季 Spring	否 No	是 Yes	否 No	
	EE9006	数学在电力系统中的应用	Mathematics Applied in Power Systems	2	中文 in Chinese	春季 Spring	否 No	是 Yes	否 No	
	EE9008	电力市场导论	Introduction to Power Market	2	中文 in Chinese	春季 Spring	否 No	是 Yes	否 No	
	EE9009	现代电源技术	Modern Power Source Technique	2	英文 in English	春季 Spring	否 No	是 Yes	否 No	
	EE9014	电力系统数字仿真软件应用	Power Systems Digital Simulation - Software Application	3	中文 in Chinese	春季 Spring	否 No	是 Yes	否 No	
	EE9015	电站综合自动化系统	Distribution Automation System	2	中文 in Chinese	春季 Spring	否 No	是 Yes	否 No	

	EE9018	电动汽车驱动技术	Motor Drive Technologies in Electric Vehicles	2	中文 in Chinese	秋季 Fall	否 No	是 Yes	否 No	
	GE6003	实验室安全教育	Laboratory Safety Education	0.5	中文 in Chinese	秋季 Fall	是 Yes	否 No	否 No	
	KE6002	研究生公共体育	Physical Education	0	中文 in Chinese	春季 Spring	是 Yes	否 No	否 No	
	GE6008	人工智能基础与实践	Artificial Intelligence：Principles and Practice	2	中文 in Chinese	春秋季 Spring Fall	否 No	否 No	否 No	人工智能素养课，选修
	GE6010	人工智能方法与场景化实践	Artificial Intelligence: From Algorithms to Practise	2	中文 in Chinese	春秋季 Spring Fall	否 No	否 No	否 No	
	GE6021	AI 创客工坊：从智能体到创业新大陆	AI Innovation Hub: Journey from GenAI Agents to Startup Frontiers	1	中文 in Chinese	春季 Spring	否 No	否 No	否 No	
	GE6022	人工智能交互技术	The practice course of artificial intelligence interactive technology	2	中文 in Chinese	春季 Spring	否 No	否 No	否 No	
任意选修课 Elective Courses										