

电气工程前沿导论课程教学大纲					
课程基本信息 (Course Information)					
课程代码 (Course Code)	EE4323	学时 (Credit Hours)	32	学分 (Credits)	2.0
课程名称 (Course Name)	(中文)电气工程前沿导论				
	(英文)Introduction to Advanced Electrical Engineering				
课程性质 (Course Type)	公共选修课				
授课对象 (Target Audience)	本科4年级学生				
授课语言 (Language of Instruction)	中文				
开课院系 (School)	电子信息与电气工程学院				
先修课程 (Prerequisite)		后续课程 (post)			
课程负责人 (Instructor)	刘东	课程网址 (Course Webpage)			
课程简介 (中文) (Description)	<p>本课程是电子信息与电气工程学院相关专业的专业选修课程之一，课程涉及电气工程领域前沿技术，注重内容的前瞻性和引导性，突出电力系统、电机系统、高压与绝缘、电力电子、极端条件下的电工技术等新型技术研究，同时涉及电磁场与电网络、电磁兼容、电工新材料、电磁测量等基础性研究内容，以及新材料、新器件以及与生物、信息等其他交叉学科所衍生出的新理论、新技术研究的内容，以引导为主，注重学生自主学习、问题导向的项目研究和实现等综合能力的培养。</p> <p>课程通过电气工程前沿技术和热点方向的学习，引导学生对兴趣点进行文献挖掘，在教师的指导下，进行项目选题、方案设计、课题研究与课题实现，项目需紧跟行业前沿并具有可行性，以此来提高学生的专业综合能力和创新能力。</p> <p>课程采用的课堂教学和项目研究相结合的教学模式，依托专业科研实验室，结合课堂指导教学以及大作业来进行综合教学。课堂教学主要讲述电气工程领域前沿技术综述及典型相关案例，之后同学进行文献检索并在教师的指导下进行选题和方案设计。教师针对课题新颖性和可行性进行评估，判定课题可行之后进行项目研究和实现、系统调试和效果演示等具体过程，最终完成具有特定应用的项目或研究内容。依托专业实验室科研前沿成果和教师，将先进的技术引入到专业教学中来，培养学生结合行业前沿和热点提出问题、分析问题及解决问题的能力，激发学生的创新意愿。</p>				
课程简介 (英文) (Description)	<p>This course is one of the professional elective courses of related majors in the School of Electronic Information and Electrical Engineering. It involves the cutting-edge technology in the field of electrical engineering, lays emphasis on the forward-looking and guiding content, and highlights the research of new technologies such as power system, motor system, high voltage and insulation, power electronics, and electrical technology under extreme conditions. At the same time, it involves electromagnetic field and electrical network, electromagnetic compatibility, new materials for electrical engineering, electromagnetic measurement and other basic research contents. As well as new materials, new devices and new theories and new technologies derived from other interdisciplinary subjects such as biology and information, the course focuses on guidance and pays attention to the cultivation of students' independent learning, problem-oriented project research and implementation and other comprehensive abilities.</p> <p>Through the study of electrical engineering cutting-edge technology and hot direction, this course guides students to do literature mining on interest points. Under the guidance of teachers, students carry out project selection, design, research and implementation. The projects need to keep up with the forefront of the industry and be feasible to improve students' professional comprehensive and innovation ability</p> <p>The course adopts the teaching mode of combining classroom teaching and project research, relying on professional research laboratories, combined with classroom instruction and project to carry out comprehensive teaching. Classroom teaching mainly introduces the overview of cutting-edge technologies and typical relevant cases in the field of electrical engineering. After that, students conduct literature retrieval and carry out topic selection and scheme design under the guidance of teachers. The teacher evaluates the project's novelty and feasibility, then the students carry out specific processes such as project research and implementation, system debugging and effect demonstration, and finally completes the project or research content with specific applications. Relying on the cutting-edge achievements and teachers of professional laboratories, we will introduce advanced technology into professional teaching, cultivate students' ability to propose, analyze and solve problems in combination with the forefront and hotspots of the industry, and stimulate students' willingness to innovate.</p>				
课程目标与内容 (Course objectives and contents)					

