课程编号：1713000590

课程名称：电磁学

学分/学时：3.5/56

先修课程：力学、高等数学

适用专业：应用物理学

课程性质：必修

教 材：赵凯华、陈熙谋 编著. 电磁学（第三版）. 高等教育出版社，2011

主要参考书 ：

钟锡华 编著. 电磁学通论（第一版）. 北京大学出版社，2014

钟锡华、汤卫东 编著. 电磁学解题指导（第一版）. 北京大学出版社，2012

内容简介：

《电磁学》是高等学校物理类专业本科生必修的一门专业基础课，电磁学是研究电磁现象的规律以及物质的电学和磁学性质的科学，是物理学重要的分支学科，也是物理专业一门十分重要的基础理论课程。电磁学的基本理论渗透在自然科学和工程技术的各个领域，人们对物质结构和性质的认识，对光的本质的研究等，都是以电磁相互作用为基础的。课程内容包括静电场、静电场中的导体与电介质、稳恒电流、稳恒磁场、磁介质、电磁感应以及电磁场与电磁波几部分。通过本课程的学习，学生能够了解电磁学的基本理论和研究方法、电磁学的发展历史与动态以及电磁学在工程技术中的应用，能够分析和解决一定的电磁学理论或实际问题，为后继课程奠定必要的基础。

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Course Description

College of Science

Course Code: 1713000590

Course Name: Electromagnetic

Credit/Hours: 3.5/56

Textbooks: Zhao Kaihua, Chen Ximou. Electromagnetics. Higher Education Press, 2011

Reference Books:

Zhong Xihua. A General Course in Electromagnetism. Peking University Press, 2014

Zhong Xihua, Tang Weidong. Problem-Solving Guide for Electromagnetics. Peking University Press, 2012

Course Description: Electromagnetics is a compulsory basic course for the students majoring in physics in the university. Electromagnetics is an important branch subject of physics and a basic theoretical course of physical specialty, focusing on the laws of the electromagnetic phenomena and the electric and magnetic characteristic of the matter. The fundamental theories are involved in each field of the natural science and the engineering technology. Both the knowledge about the structure and the nature of the mass and the research on the nature of the light are based on the electromagnetic interactions. The main content of the course involves the electrostatic field in the vacuum, the conductor and the dielectric in the electrostatic field, steady current, the magnetic field of the steady current, the magnetic medium, the electromagnetic induction, electromagnetic field and the electromagnetic wave. The course will enable the students to understand the fundamental theories and research method of electromagnetism, to learn the history of development and the application in engineering technology of the subject and to be capable of analyzing and solving some theoretical or practical problems, which is essential for learning the successive courses.