

物理学（0702）

学科门类：理学（07） 一级学科：物理学（0702）

一、专业描述

河海大学物理学学科始于 2001 年开设的应用物理学本科专业，2007 年获批凝聚态物理二级学科硕士点，2018 年在海洋科学一级博士学科下自主设置海洋应用物理学二级博士学科点。学科结合学校水利背景，注重物理学基础理论在水利工程、水文分析、海洋过程理论模式和海洋信息处理等领域的应用，形成了光谱学与光电信息分析、凝聚态理论、微纳材料物理等三个研究方向。

本学科现有专职教师 33 人，其中教授 7 人，副教授 18 人，博士生导师 4 人，硕士生导师 20 人，具有海外经历 12 人。本学科将坚持物理基础理论和应用研究并行并重，学生毕业后主要从事物理、电子、信息等领域的科研、管理与教学工作。

二、培养目标

本学科旨在通过此硕士学位项目来培养满足下列条件的优秀人才：在物理学及相关学科等方面掌握坚实的基础理论和系统的专门知识；具备诚信的学术作风、积极的团队合作精神，具有从事科学研究工作或独立担负专门技术工作的能力；能够较为熟练地运用英语阅读本专业的有关文献资料、撰写论文、参与学术交流的能力。

三、研究方向

1. 光谱学与光电信息分析（Spectroscopy and Optoelectronic Information Analysis）
2. 凝聚态理论（Condensed Physics Theory）
3. 微纳材料物理（Physics of Micro/Nano Materials）

四、申请条件

1. 已在我国认可的海内外高校或学术机构获得本科学位者。
2. 能够用英语进行课程学习、阅读文献和进行学术写作，能够用英语进行日常交流。

五、 培养年限

学术型硕士学制为 3 年，实行弹性学制，学习年限最短不低于 2 年，最长不超过 5 年。

六、 学分要求和课程设置

硕士总学分为 28 学分，其中学位课程为 19 学分，非学位课程为 9 学分。另设教学环节。具体开设课程见附表。

Physics (0702)

Discipline: Science (07)

First-Class Discipline: Physics (0702)

1. Discipline Description

The discipline of physics in Hohai University started from 2001. It was authorized to offer Master degree in the second-class discipline condensed matter physics in 2007. In 2018, the Doctorate degree in the second-class discipline marine applied physics was set up under the first-class doctoral program of marine science. Combined with the water conservancy background of Hohai University, the discipline pays attention to the application of basic theories of physics in the fields of water conservancy engineering, hydrological analysis, theoretical model of ocean process and ocean information processing, and forms three research directions of spectroscopy and optoelectronic information analysis, condensed physics theory and physics of micro/nano materials.

Currently the discipline of Physics has 33 academic staff, among them there are 7 professors and 18 associate professors, including 4 PhD supervisors, 20 Master supervisors, and 12 with overseas experience. The discipline adhere to the basic theory of physics and applied research, and students will be mainly engaged in scientific research, management and teaching in physics, electronics, information and other fields after graduation.

2. Program Description

The program aims at cultivating the students to master command fundamental theories and systematic professional knowledge of physics and related disciplines, who have honest academic style, positive team spirit, and the ability to engage in scientific research or independently undertake specialized technical work. The program also aims at training high-level researchers who have the ability of using English to carry out scientific research and academic exchange.

3. Research Directions

- Spectroscopy and Optoelectronic Information Analysis
- Condensed Physics Theory
- Physics of Micro/Nano Materials

4. Application Requirements

- (1) You have received the bachelor degree from the domestic and overseas universities or academic institutions accredited by the Ministry of Education.
- (2) You have the ability to read and write academic papers and communicate in English.

5. Educational System and Duration

The master program is 3 years; the duration is minimum 2 years and no more than 5 years.

6. Credits and Courses

A master student must take at least 28 credits of courses, including 19 credits of required course of the degree and 9 credits of Non-required course of the degree.

物理学全英文留学硕士研究生课程设置

Courses for Master Students of Physics

课程类别 Categories	课程编号 No	课程名称 Course	学时 Hours	学分 Credit	开课学期 Term	备注 Note	
学位课程 19 学分 Required course of the degree 19 Credits	公共课程 General Courses	2015LXS01	*汉语 I Chinese Language I	32	2	秋 Fall	必修 Required Course
		2015LXS02	*汉语 II Chinese Language II	32	2	春 Spring	
		2015LXS03	*中国概况 Introduction to China	32	2	秋 Fall	
	学科基础课程 Discipline Basic Courses	2015JC03	数值分析 Numerical Analysis	48	3	秋 Fall	选修 5 学分 5 credits at least
		2015JC01	数学物理方程 Equations of Mathematical Physics	32	2	春 Spring	
		2015JC04	最优化方法 Optimization Methods	32	2	秋 Fall	
	专业基础课程 Major Basic Courses	2017LX03	凝聚态导论 Introduction to Condensed Matter Physics	32	2	秋 Fall	选修 2 学分 2 credits at least
		2017LX04	高等光学 Advanced Optics	32	2	秋 Fall	
		2017LX05	高等量子力学 Advanced Quantum Mechanics	32	2	春 Spring	
	专业课程 Major Courses	2017LX06	材料物理 Materials Physics	32	2	春 Spring	选修 6 学分 6 credits at least
		2017LX07	功能材料设计技术 Functional Material Design Technology	32	2	春 Spring	
		2017LX08	现代物理测试原理与技术 Measurement Principles and Techniques of Modern Physics	32	2	秋 Fall	
		2017LX09	激光技术与应用 Laser Techniques and Application	32	2	秋 Fall	
非学位课程 9 学分 Non-degree courses of the degree Course 9 Credits	2015LXS05	*跨学科选修 Interdisciplinary Elective	32	2		必修 Required course	
	2015LXS06	*综合素质课 Comprehensive Quality	16	1		必修 Required Course	
	2017LX10	微纳技术 Micro-Nano Technology	32	2	春 Spring	必修 Required Course	
	2017LX11	光谱学与光谱分析技术 Spectroscopy and Spectral Analysis	32	2	春 Spring		
	2015LXS07	英文科技写作 The Art of Scientific Presentation and Writing in English	32	2	春/秋 Spring/Fall		
教学环节 Academic Activities	学术活动 Seminar and Conference					必修 Required Course	
	科学研究 Scientific Research						
	文献阅读与综述 Literature Reading and Reviewing						