

# 海洋科学（0707）

学科门类：理学（07）      一级学科：海洋科学（0707）

## 一、专业描述

海洋科学是研究海洋的自然现象、性质及其变化规律，以及与开发利用海洋有关的学科体系。海洋科学的主要学科方向有：物理海洋学、海洋化学、海洋生物学与海洋生态、海洋地质和海洋技术。

河海大学的海洋科学学科可追溯至 1958 年开设的海洋工程水文专业，经过近 60 年的发展，已形成具有理工科结合特色的、完备的一级海洋科学本科、硕士、博士和博士后的人才培养体系。2005 年获物理海洋学二级博士授权点，2006 年被评为江苏省重点学科，并被列入教育部“优势学科创新平台”建设学科；2010 年获海洋科学硕士学位一级授予点；2018 年获海洋科学一级博士学位授权点。

本学科面向国家需求，充分发挥理工结合的学科优势，逐渐形成了以海岸动力过程和海洋环境安全保障为特色的学科方向，在近海海洋资源开发、环境保护和国防安全保障中发挥了重大智库和科技支撑作用。近年来拓展了学科方向，在传统的海岸海洋动力学优势学科的基础上，已逐渐形成极地海洋与全球变化、深远海工程环境、卫星遥感应用等相对优势学科，以及海洋生态与沉积环境动力学等与地方经济紧密结合的特色学科，在国内外同行中产生了较大影响，学科实力也快速提升。

## 二、培养目标

本学科旨在培养满足下列要求的高层次专门人才：追求真理、献身科学事业的敬业精神和科学道德。系统掌握海洋科学的基本理论，具有宽广和坚实的基础和基本技能，了解本学科的发展历史、现状和最新动态；具有良好的国际视野和学术交流能力。具有独立从事科学研究工作的能力并做出创造性成果，能够熟练应用英语进行学术交流，了解中国文化并初步具备汉语日常交流能力。

### 三、主要研究方向

1. 海洋动力过程
2. 海气相互作用
3. 海洋地质构造与资源
4. 海洋生物资源与生态环境

### 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硕士学位者。
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

攻读博士学位的标准学制为 4 年，实行弹性学制，学习年限最短不低于 3 年，最长不超过 6 年。

### 六、学分要求和课程设置

本专业博士留学研究生课程总学分为 15 个学分，其中学位课程为 11 个学分，非学位课程为 4 学分。另设教学环节。具体开设课程见附表。

## **Marine Science (0707)**

Discipline: Science (07)

First-Level Discipline: Marine Science (0707)

### **1. Discipline Description**

Marine science is a system of disciplines concerned with the study of properties, changes and natural phenomena of the oceans, as well as their exploitation and utilization. The main scope of Marine science involves: physical oceanography, Marine chemistry, Marine biology and ecosystem, Marine geology and Marine technology.

The discipline of marine science of Hohai University can be traced back to the major of marine engineering hydrology, which was established in 1958. After nearly 60 years of the development, it has formed a complete talent training system for undergraduate, master, doctor and postdoctoral studies in marine science (the first class in Chinese discipline system) with the features of combining science and engineering. In 2005, the subject of marine science was approved to open the doctoral program of physical oceanography. In 2006, it was awarded the key discipline of Jiangsu province, and was listed an "advantageous discipline innovation platform" by the ministry of education. In 2010, it was approved to grant the first-level qualification for master's degree in marine science. In 2018, it was approved to open the first-level doctoral program in marine science.

This discipline is geared to the needs of the state, and owns the advantages of the combination of science and technology. It had gradually formed a discipline direction focusing on processes for extracting power from coastal phenomena and marine environmental security. It is playing an important role in the thinking tank, and providing scientific and technological support in the development of offshore marine resources, environmental protection and national defense security. Expanding the research fields over the past years, on the basis of traditional advanced disciplines, coastal ocean dynamics, marine science of Hohai University has gradually formed several new

research fields, such as the polar ocean circulation and global change, deep sea engineering environment, satellite remote sensing applications, and marine ecology and marine geology. These fields are closely integrated with the local economy and have a great influence on the domestic and foreign counterparts, thus significantly increasing the research ability in marine science at Hohai University.

## **2. Program Description**

The discipline aims to develop high-level professionals who meet the following requirements: pursuit of truth, dedicated to the scientific cause with professionalism and science ethics; systematic mastery of the basic theories on marine science, with broad and solid foundations and basic skills, profound understanding of the history, current status and latest development of the discipline; good international vision and academic communication skills; competency to independently engage in scientific research and make creative achievements; proficient in applying English for academic exchanges, understanding Chinese culture, with preliminary daily communication ability in Chinese.

## **3. Research Directions**

- Ocean dynamics
- Atmosphere-ocean interactions
- Ocean tectonics and geophysics
- Marine biological resources and ecosystem

## **4. Application Requirements**

- (1) Obtaining the master degree from the domestic and overseas universities or academic institutions accredited by the Ministry of Education of China.
- (2) Solid ability to read and write academic papers and communicate in English.

## **5. Educational System and Duration**

The doctorate program is 4 years, and the duration is minimum 3 years and no more than 6 years.

## **6. Credits and Courses**

A doctoral student must take at least 15 credits of courses, including 11 credits of required course of the degree and 4 credits of non-required course of the degree. Academic activities are also required. The specific courses are shown in the attached table.

## 海洋科学全英文留校博士研究生课程设置

### **Courses for Doctoral Students of Marine Science**

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 11 学分 Required Course of the degree 11 Credits	公共 课程 General Courses	2015LXS01	汉语 I Chinese Language	32	2	秋 Fall	必修 Required Course
		2015LXS03	中国概况 Introduction to China	32	2	秋 Fall	
	基础 课程 Basic Courses		地球流体动力学 II Geophysical Fluid Dynamics II	64	4	秋、春 Fall, Spring	选修 4 学分 4 Credits At least
			海洋地质过程 Marine Geological Dynamics	48	3	秋 Fall	
			现代物理海洋学 Modern Physical Oceanography	32	2	秋 Fall	
	专业 课程 Specializ ed Courses		学科前沿专题讲座 Special Topics	16	1	春 Spring	必修 Required Course
			海气相互作用 Air-sea Interactions	32	2	秋 Fall	选修 2 学分 2 Credits
			古海洋学 Pale Oceanography	48	3	春、秋 Fall, Spring	At least
	非学位课程 4 学分 Non-required course of The degree 4 Credits		2015LXS07	英文科技写作 The Art of Scientific Presentation and Writing in English	32	2	秋、春 Fall, Spring
			气候变化 Climate Change	32	2	春 Spring	选修 2 学分 2 Credits
			跨一级学科选修博士课程 A course in other disciplines	32	2		At least
教学环节 Academic Activities	学术活动 Seminar and Conferences						必修 Required Course
	科学研究 Scientific Research						
	文献阅读与综述 Literature Reading and Reviewing						