数学（0701）

学科门类：理学（07）一级学科：数学（0701）

一、专业描述

河海大学数学一级学科硕士点于 2005 年设立，招收留学硕士研究生至今已有十多年的历史。本学科点下设基础数学（070101）、计算数学（070102）、应用数学（070104）、运筹学与控制论（070105）四个二级学科点。现有在职教师 65 人，其中，教授 5 人，副教授 29 人，现有博士生指导教师 2 人，硕士生指导教师 18 人。研究方向主要包括偏微分方程及其应用、非线性泛函分析及其应用、常微分方程与动力系统、科学与工程计算、图像处理与反问题、数据分析与机器学习、密码学与网络安全、随机神经网络等等。

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：能够独立进行原创的科学研究，以此促进本学科知识的发展；掌握扎实的专业知识和高水平的可迁移技能，即具有能够将所学知识运用于解决各种实际工作问题的能力，包括思维能力和创造能力、交流和表达能力以及组织管理和计划能力；能够回馈社会，促进社会、经济与文化的发展。

三、 研究方向

1. 基础数学（Pure Mathematics）

2. 计算数学（Computational Mathematics）

3. 应用数学（Applied Mathematics）

4. 运筹学与控制论（Operational Research and Control Theory）

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 18 学分，非学位课程为 10 学分。

Mathematics (0701)

Discipline: Science（07

First-Class Discipline:Mathematics（0701）

1. Discipline Description

The mathematical discipline of Hohai University was authorized to confer Master degrees in four sub-disciplines within mathematics in 2005, including Pure Mathematics (070101), Computational Mathematics (070102), Applied Mathematics (070104), Operational Research and Control Theory (070105). Currently the discipline of Mathematics has 65 academic staff, among them there are 5 professors and 29 associate professors, including 2 PhD supervisors and 18 Master supervisors. Their research interests include but not limited to partial differential equation and its application, nonlinear functional analysis and its application, ordinary differential equations and dynamical systems, scientific and engineering computing, picture processing and inverse problem, data analysis and machine learning, cryptography and network security, random neural network, etc.

2. Program Description

The research degree program aims to provide advanced education to nurture people who can:

(1) contribute to the advancement of knowledge through independent and original research;

(2) demonstrate specialist subject knowledge and a high level of transferable skills, including analytical, communication and leadership skills;

(3) enhance economic, social and cultural development.

3. Research Directions

- Pure Mathematics;
- Computational Mathematics;
- Applied Mathematics;
- Operational Research and Control Theory.

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 18 credits of required course of the degree and 10 credits of Non-required course of the degree.

数学全英文留学硕士研究生课程设置

Courses for Master Students of Mathematics

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 18 学分 Required course of the degree 18 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	必修 Required Course
		2015JC01	数学物理方程 Equations of Mathematical Physics	32	2	春 Spring	
	专业基础课程 Major Basic Courses	2015JC02	应用数学 Applied Mathematics	64	4	春 Spring	必修 Required Course
	专业课程 Major Courses	2015JC04	最优化方法 Optimization Methods	32	2	秋 Fall	必修 Required Course
		2017LX01	傅里叶分析,小波及其应用 Fourier Analysis, Wavelets, and Applications	32	2	春 Spring	选修 Optional Course
		2017LX02	计算几何 Computational Geometry	32	2	春 Spring	选修 Optional Course
非学位课程 10 学分 Non-degree courses of the degree Course 10 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
		2015LC03	有限单元法 Finite Element Method	48	3	秋 Fall	必修 Required Course
		2015LC02	高等计算力学 Advanced Computational Mechanics	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	