

机械工程（0802）

学科门类：工学（08）一级学科：机械工程（0802）

一、专业描述

河海大学机械学科创建于 1986 年，1990 年获“机电控制及自动化”硕士点，1996 年列为水利部重点学科，1994 年、1996 年和 2003 年依次获“机械设计理论”、“材料加工工程”和“机械制造及其自动化”硕士点，2005 年设立“机械工程”一级学科硕士点。现有博士生导师 5 名、教授 15 名。

本学科围绕“水利特色，学科融合”建设目标，紧密跟踪与引领学科发展动态，在疏浚技术与装备、机械设计理论、水利抗洪抢险机械、水工金属结构、水工构筑物探测与修复、新能源利用技术的理论与应用研究、计算机辅助设计与制造及水下机器人技术等方面进行了大量的研究，形成了独具特色的研究方向。

二、培养目标

掌握机械工程学科扎实的基础理论知识、系统的专门知识和技能方法，对本学科的国内外现状和发展趋势、前沿领域具有系统深入的了解；具有从事本学科的科学研究的或担负专门技术工作的能力，能比较熟练使用外语阅读、撰写科技论文和进行学术交流。

三、研究方向

1. 机电系统设计与机器人技术 (Design of Mechatronic System and Robotics)
2. 疏浚技术与设备(Dredging Technology and Equipment)
3. CAD/CAPP/CAM/CAE 系统集成技术研究与开发 (CAD/CAPP/CAM/CAE System-integrated Technology and Development)

4. 机械结构与有限元分析(Mechanical Structure Design and Finite Element Analysis)

5. 数字化制造先进技术(Advanced Technology of Digital Manufacturing)

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

攻读学术型硕士学制为 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

本专业硕士生研究生课程总学分为 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。

Mechanical Engineering(0802)

Discipline: Engineering (08)

First-Class Discipline: Mechanical Engineering (0802)

1. Discipline Description

The Mechanical discipline of Hohai University was founded in 1986 and it started offering M.E. degree in “Mechanical and Electrical Control and Automation” from 1990. Mechanical Engineering was recognized as a key discipline of the Ministry of Water Resources (MWR) in 1996. The M.E. degrees in “Mechanical Design and Theory”, “Material Processing Engineering” and “Mechanical and Electrical Control and Automation” were offered in 1994, 1996 and 2003 respectively. And the first-level M.E. degree in “Mechanical Engineering” was approved in 2005. Now there are 5 PhDsupervisors and 15 professors under this discipline.

To achieve the goal of “Water Feature, Discipline Integration”, this discipline closely follows and leads the development trends of subject, and several researches, including the Dredging Technique and Equipment, Mechanical Design and Theory, Water Machinery for Flood-fighting and Emergency Rescues, Hydraulic Metal Structure, Hydraulic Structure Detection and Repair, the Theory and Application of New Energy Technology, Computer Aided Design and Underwater Robot Technology, are conducted. Some unique research directions have been established.

2. Program Description

The objectives are to train the students with the capabilities in:

- Mastering the solid fundamental theories andknowledge of Mechanical Engineering discipline and the systemic specialized knowledge and skills.
- Understanding the domestic and abroad developments and frontiers in this discipline in deep and conducting scientific researches and specialized technologies.
- Reading, writing academic papers and communicating with English fluently.

3. Research Directions

- Design of Mechatronic System and Robotics
- Dredging Technology and Equipment
- CAD/CAPP/CAM/CAE System-integrated Technology and Development
- Mechanical Structure Design and Finite Element Analysis

- Advanced Technology of Digital Manufacturing

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. The detail course list is attached as follows:

机械工程全英文留学硕士研究生课程设置

Courses for Master Students of Mechanical Engineering

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 course of the degree 19 学分 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	必修 Required Course
		2015JC04	最优化方法 Optimization Methods	32	2	秋 fall	
	专业基础 课程 Major BasicCourses	2017JD01	数字化制造技术与方法 Digital manufacturing technology and the method	32	2	春 spring	必修 Required Course
		2015JD02	机械设计工程学 Mechanical Design Engineering	32	2	春 spring	
	专业课程 Major Courses	2015JD03	现代测试技术与应用 Technology and Application of Modern Measurement	32	2	春 spring	必修 Required Course
2015JD04		计算机辅助设计与制造 CAD/CAM	32	2	秋 fall		
非学位课程 9 学分 Non-required course of the degree 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		
		2017JD02	疏浚技术与设备 Dredging technology and Equipment	32	2	秋 fall	选修 4 学分 4 Credits at least
		2015JD06	人机工程学 Ergonomics	32	2	春 spring	
		2015JD01	弹性力学与有限单元法 Elasticity and Finite Element Method	32	2	秋 fall	
		2015JD08	两相流动 Two-Phase Flow	32	2	春 spring	
		2017JD03	材料加工工程 Materials Processing Engineering	32	2	秋 fall	
		2017JD04	机械结构设计与有限元分 析 Mechanical Structure Design and Finite Element Analysis	32	2	春 spring	
		2017JD05	机电控制与机器人技术 Mechatronics and Robotics	32	2	春 spring	
		2015LXS07	英文科技写作 The Art of Scientific Presentation and Writing in English	32	2	春 spring	
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						