信息与通信工程（0810）

学科门类：工学（08）一级学科：信息与通信工程（0810）

一、专业描述

河海大学“信息与通信工程”学科源于我校基础理论及电子学工程系的无线电设计与制造专业（1960-1962）。1998 年获批“通信与信息系统”二级学科硕士点，2003 年获批“信号与信息处理”二级学科硕士点， 2005 年和 2011 年分别获批“信息与通信工程”一级学科硕士点和一级学科博士点。2008 年通信工程专业获批江苏省精品专业，2010 年评为国家特色专业。

学科围绕“信息获取与处理、通信传输、领域应用”信息链，以行业重大需求为导向，在信息获取与处理、遥感与遥测、通信网与专用通信系统、多维信号处理、雷达探测与信号处理等几个方向形成了与国际研究前沿/热点接轨、与工程应用技术紧密结合的鲜明特色。本一级学科现有教授 13 名，博导 11 名, 其中海外取得博士学位占专任教师总人数的 31.1%， 45 岁以下中青年教师具有海外留学经历的比例为 100%。学科还拥有江苏省海洋监测设备与数据处理工程中心和江苏省水灾害监控与决策支持系统工程中心。研究生就业单位有机关事业单位、高校和科研机构、大中型 IT 企业等。

二、培养目标

在本门学科上掌握坚实的基础理论和系统的专门知识;具有从事科学研究工作或独立担负专门技术工作的能力。

三、研究方向

1. 信号与信息处理(Signal and Information Processing)

2. 通信与信息系统(Communication and Information System)

3. 遥测与信息网络(Telemetering and Information Network)

4. 微波技术与应用（Microwave Technology and Its application）

5. 智能信息系统 (Intelligent Information System)

6. 移动通信系统 (Mobile Telecommunications System)

7. 物联网技术与应用 (Internet of things and its Application)

8. 人工智能与大数据（Artificial Intelligence and Big Data）

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

本专业硕士留学研究生课程总学分为28学分，其中学位课程为18学分，非学位课程为 10 学分。另设教学环节。具体开设课程见附表。

Information and Communication Engineering（0810）

Discipline：Engineering（08）

First-Class Discipline: Information and Communication Engineering（0810）

1. Discipline Description

The discipline of Information and Communication Engineering of Hohai University derives its origin from the discipline of Radio Design and Manufacture in the department of Electronic (1960-1962). It is approved as the secondary master discipline in 2003, followed by the approval of the first-class master and doctoral disciplines in 2005 and 2011 respectively. Furthermore it was also authorized as elite program of Jiangsu Province and national specialty in 2008 and 2010.

The discipline embraces the information processing chain from signal gathering and processing, communication/transmission and application in various domains. Leaded by the industrial major demands, the discipline forms a close integration with industry and international track in hot research areas including signal gathering and processing, remote sensing, communication system, multivariate signal processing, radar detection and signal processing. The first-class discipline currently has 13 professors, 11 PhD supervisors and 31.1% faculties with overseas doctoral degrees. All faculties under 45 have overseas experiences. The discipline also has Ocean Monitoring Equipment and Data Processing centre of Jiangsu Province and Flooding Monitoring and Decision Support System Engineering Center of Jiangsu Province. Graduates mostly begin careers in governments, universities/scientific research institutions and medium and large IT enterprises.

2. Program Description

a) Capacity of both fundamental theories and systematic in-depth expertise knowledge in above discipline

b) Capability of conducting scientific research and technical work independently

3. Research Directions

- Signal and Information Processing
- Communication and Information System

- Telemetering and Information Network
- Microwave Technology and Its application
- Intelligent Information System
- Mobile Telecommunications System
- Internet of things and its Application
- Artificial Intelligence and Big Data

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.

信息与通信工程全英文留学硕士研究生课程设置

Courses for Master Students of Information and Communication 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 19 学分 Required course of the degree course 19 Credits	公共课程 General Courses	2015LXS01	*汉语Ⅰ Chinese Language Ⅰ	32	2	秋 fall	必修 RequiredCourse
		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	2015JC08	矩阵论 Matrix Theory	48	3	秋 fall	
		2015JC04	最优化方法 Optimization Methods	32	2	秋 fall	
	专业基础课程 Major BasicCourses	2015CZ01	信息论与编码 Information Theory and Coding (Bilingual)	32	2	秋 fall	选修 4 学分 4 Credits at least
		2017JX01	通信网理论基础 Fundamentals of Communication Networks	32	2	秋 fall	
		2015JX03	现代数字信号处理 Modern Digital Signal Processing	32	2	秋 fall	
	专业课程 Major Courses	2015CZ02	现代通信技术 Modern Communication Technology	32	2	春 spring	选修 4 学分 4 Credits at least
		2015JX04	数字通信 Digital Communication	32	2	春 spring	
		2015CZ03	传感器网络技术 Sensor Networks Technology	32	2	春 spring	
		2015JX02	视频图像处理 Video Image Processing	32	2	秋 fall	
		2017CZ01	移动通信 Mobile Telecommunications	32	2	秋 fall	
		2017CZ02	智能计算 Intelligent Computing	32	2	秋 fall	
		2017CZ03	仿生视觉信息处理 Bionic Visual Information Processing	32	2	春 spring	
		2017JX02	信息论与编码 Information Theory and Coding	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 机器学习 Machine Learning ---------- **或（or）** ---------- 分布式计算 Distributed Computing ---------- **或（or）** ---------- 数据管理技术 Data Management Technology	32	2		必修 RequiredCourse
		2015LXS06	*综合素质课 Comprehensive Quality	16	1	春 spring	

	2015LXS07	科技论文写作 Academic Paper Writing	32	2	春 spring	
	2015JC26	计算机辅助设计 Computer-Aided Design	32	2	春 spring	选修 4 学分 4 Credits at least
	2017CZ04	图像处理与分析 Image Processing and Analysis	32	2	春 spring	
	2017CZ05	Matlab 编程 Matlab Programming	32	2	春 spring	
	2015JC25	程序设计方法 Method of Programming	32	2	秋 fall	
	2017CZ06	集成电路设计 IC manufacturing	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					