

# 核科学与技术来华留学博士研究生培养方案

## Doctoral Degree Program of Nuclear Science and Technology

### 一、适用学科 (Applicable Discipline)

学科名称: 核科学与技术

学科代码: 0827

Discipline: Nuclear Science and Technology

Discipline Code:0827

### 二、主要研究方向 (Main Research Field)

- 核安全与仿真/Nuclear Safety and Simulation
- 核动力装置性能与设备/Nuclear Power Device Performance and Device
- 核反应堆热工水力/Nuclear Reactor Thermal-hydraulic
- 核反应堆物理/Nuclear Reactor Physics
- 核燃料循环技术/Nuclear Fuel Cycle Technology
- 放射性废物处理技术/Radioactive Waste Reprocessing Technology
- 辐射应用及探测技术/Radiation Application and Detection Technology
- 辐射防护与环境保护技术/Radiation Protection and Environmental Protection Technology

### 三、培养方案 (Curriculum)

1.课程设置和学分要求 (Courses and Credits)						
课程类别 Category	课程编号 Code	课程名称 Course	学时 Hour	学分 Credit	开课学期 Semester	备注 Remark
公共必修课 General Compulsory Courses	202032020900	中国概况 Survey of China	48	3	2	必选 Compulsory
	202032020901	汉语 Chinese	64	3	1	
	202032023009	科学与工程计算 Scientific and Engineering Computing	48	2	1	
专业必修课 Professional Compulsory Courses	202011523001	高等反应堆物理 Advanced Reactor Physics	32	2	1	必选 1 门 1 course compulsory
	202011523002	热力系统动态学 Thermal Power System Dynamics	32	2	1	
	202011523003	两相流体力学 Two-phase Fluid Mechanics	32	2	1	
	202011523004	自然循环流动和传热 Natural Circulation Flow and Heat Transfer	32	2	1	

	202011523005	现代信号处理技术 Modern Signal Processing Technology	32	2	1	
	202011523006	锕系元素化学 Actinide Chemistry	32	2	1	
	202011523007	高等辐射剂量学 Advanced Radiation Dosimetry	32	2	1	
	202011523008	学科前沿专题 Discipline Frontier	8	0.5	1	必选 Compulsory
选修课 Optional Courses	202011520001	论文写作指导 Thesis/Dissertation Writing	16	1	3	选修 Optional
	202011513701	核科学与技术进展讲座 Progress of Nuclear Science and Technology	24	1.5	2	
	202032020902	汉语交际 Chinese Communication	64	3	1	
	202032020903	HSK 辅导 HSK Tutoring	48	3	2	
学分要求 Credit Requirement	应修总学分≥14.5 学分，其中课程学分≥10.5 学分，必修环节≥4 学分。 Students should achieve no less than 14.5 credits totally, including course part 10.5 credits, compulsory part 4 credits.					
其他要求 Others	<p>1. 硕士阶段没有修读“论文写作指导”课程的，一般应选其作为选修课。</p> <p>2. 毕业前中文能力应当达到《国际汉语能力标准》三级水平。</p> <p>3. 博士研究生一般用 0.5 学年完成课程学习。</p> <p>1. Those who have not taken the course of "Thesis/Dissertation Writing" in the master's degree programs are required to study it as an optional course.</p> <p>2. Before graduation, all international students are required to pass HSK band III (level) at least.</p> <p>3. All the courses should be completed normally in 0.5 academic years.</p>					
<b>2.必修环节及要求必修环节及要求 (Compulsory Parts and Requirements)</b>						
必修环节名称 Compulsory Part	学分 Credit	开课学期 Semester	考核内容或要求 Assessment Requirement		考核方式 Exam Method	备注 Remark
学术活动 Academic activities	1	5	<p>在学期间，要求至少参加 20 次学术活动，包括参加国内、国际会议并作学术报告，学术报告的内容要与所研究的课题相关，并应有书面文稿。每次学术活动要写不少于 300 词的总结，注明参加活动的时间、地点、报告人、报告题目，简述内容并阐明自己对相关问题的观点或看法，经导师审阅签字后统一报送学院，给予相应学分。学术活动及其考核在研究生学位论文答辩前完成。</p> <p>During the graduate study, students are required to participate in at least 20 academic activities, including attending domestic or international conference and deliver presentation. The presentation should be related to the dissertation work,</p>		由院系 负责考核 Assessed by the college	必选 Compulsory

<p>学术活动 Academic activities</p>	<p>1</p>	<p>5</p>	<p>and in written form. Students should fill in the activity record and write an activity summary no less than 300 words after each activity. The activity summary should mention the time, the location, the speaker and the presentation or lecture theme, and briefly introduce the contents and the student's own opinions. The activity summaries should be reviewed, and signature proved by student's supervisor before submitting to the College. The above activities and the assessments should be completed before the defense of the dissertation.</p>	<p>由院系 负责考核 Assessed by the college</p>	<p>必选 Compulsory</p>
<p>文献综述与开题报告 Literature review and thesis proposal</p>	<p>2</p>	<p>4</p>	<p>博士研究生入学后即开始阅读所从事研究方向国内外有关文献资料，总数不少于60篇，并于第3学期完成2000-4000词的文献综述报告。文献综述报告应反映国内外所从事研究方向的研究现状、发展动态和趋势、存在问题以及博士研究生本人的见解等。</p> <p>博士生开题一般应于入学2年内完成。研究生在系统的文献查阅和广泛调研的基础上，撰写开题报告。开题报告应不少于6000词。内容包括：选题的目的、依据和国内外研究进展；论文研究方案；所需的科研条件；工作量和论文工作计划；主要参考文献等。通过文献综述与开题考核者获得相应学分。相关要求按学校及学院相关文件执行。</p> <p>After entering the PhD program, graduate students should begin to read relevant domestic and foreign literatures in related field under the guidance of their supervisors. The total reviewed literature number is no less than 60. And complete a literature review report of 2000-4000 words in the 2nd semester. The literature review report should reflect the research current status and development trend of this field at home and abroad, problems of research and the student's own opinion.</p> <p>The dissertation opening report and defense (dissertation proposal) should be completed within 2 years after enrolled. Based on systematic literature review and extensive investigation, student should write a dissertation opening report (dissertation proposal) of no less than 6000 words. The</p>	<p>由开题报告 小组 负责考核 Assessed by the thesis proposal group.</p>	<p>必选 Compulsory</p>

<p>文献综述与开题报告 Literature review and thesis proposal</p>	2	4	<p>content includes the purpose, background and domestic and foreign research progress of the selected topic; research plan; the required scientific research conditions; the workload and the dissertation work plan, and the main references.</p> <p>The credits shall be given after passing the inspection. The relevant requirements shall be implemented in accordance with the relevant documents of the University and the College.</p>	<p>由开题报告小组负责考核 Assessed by the thesis proposal group.</p>	<p>必选 Compulsory</p>
<p>中期检查 Process assessment</p>	1	6	<p>中期检查在开题后1年内完成。检查以答辩方式进行，博士生须对学位论文进展情况进行小结。根据学位论文选题和进度安排，说明已取得的阶段性成果、目前存在的问题或预期可能遇到的问题，下一步的工作计划和研究内容等。检查小组对博士生论文工作计划完成情况等内容给予评价。中期检查合格给予相应学分</p> <p>The mid-term examination shall be completed within one year after the dissertation opening, in the form of student's presentation and defense. Students should summarize the progress of their dissertation study. According to the topic selection of the dissertation and research schedule, students should present the results achieved during the first stage, the existing problems or the problems expected to be encountered, the work plan and research content of the next stage. The inspection team evaluates the completion of the dissertation research work. Credits will be given for those who pass the inspection.</p>	<p>由中期检查小组负责考核 Assessed by process assessment group</p>	<p>必选 Compulsory</p>

### 3.学位论文要求 (Degree Thesis Requirements)

对学位论文的学术道德、学术水平、创新性成果、论文撰写、预答辩以及答辩等方面的具体要求:

**The degree thesis requirements with the contents of academic ethics, academic level, creative outcome, thesis/dissertation writing, pre-defense and final defense of graduation:**

**学术道德:** 研究生在发表学术论文和学位论文的有关工作中, 应严格按照《哈尔滨工程大学研究生学术道德规范管理办法》要求, 恪守学术道德, 维护科学诚信。学位论文进行不端检测, 合格方可进行后续评审等工作。

研究生导师在研究生培养过程中需对研究生进行学术道德教育和学术规范训练, 并做出明确要求。研究生应参加学校、学院组织的学术道德和学术规范讲座, 同时撰写学习报告或心得体会, 可作为一次学术活动总结。

研究生在读期间要注重培养和提高自身学术道德修养, 遵守学术研究的基本规范, 自觉抵制学术不端行为。在发表学术论文、撰写学位论文等过程中, 严禁出现抄袭、剽窃、篡改、捏造实验数据、一稿多投等违反学术道德的行为。

**学术水平:** 课题对学术发展、经济建设或社会进步有较高的理论意义或现实意义。论文内容应能反映作者已掌握本学科坚实宽广的基础理论和系统深入的专门知识, 有独立从事科学研究工作和领导科研团队开展科学研究和技术工作的能力。论文应具备较高的学术价值和充足的工作量。

具体要求参照学校和学院的相关规定。

**创新性成果:** 研究课题有较强的理论或实践创新性。所发表的与学位论文相关的学术论文及取得的其他创新性成果的数量和水平满足学校、学院相关文件要求。

**论文撰写:** 学位论文撰写的要求按学校及学院相关文件执行。

**论文预答辩和答辩:** 学位论文预答辩和答辩的要求按学校及学院相关文件执行。

**Academic Ethics:** In publishing academic papers and dissertation, the graduate students should strictly abide by the requirements of the “Harbin Engineering University administrative measures for the academic ethics of graduate students”, maintain scientific integrity. The degree dissertation should take the improper examination, only if the examination is good, the follow-up dissertation review can be carried on.

In the process of postgraduate training, the supervisors need to carry out academic ethics education and academic norm training, and make clear requirements. Graduate students should attend lectures organized by HEU or CNST on academic ethics and academic norms, and write a study report or experience summary, which can be a summary of an academic activity.

Graduate students should pay attention to the training and improvement of their own academic ethics during their study, abide by the basic norms of academic research, consciously resist academic misconduct. In the process of publishing academic papers or writing degree dissertation, it is strictly forbidden to plagiarize, tamper with, falsify experimental data, submit more than one manuscript, etc. .

**Academic Level:** The research project has higher theoretical or practical significance for academic development, economic construction or social progress. The content of the dissertation should reflect that the author has mastered the solid and broad fundamental theory and systematic and in-depth expertise of his discipline, and has the ability to conduct scientific research independently and to lead a scientific research team to carry out research and technical work. The dissertation should have high academic value and sufficient workload.

**Creative Outcome:** The research project has a strong theoretical or practical innovation. The number and level of published academic papers and other innovative achievements related to degree dissertation meet the requirements of relevant regulations of the University and the College.

**Thesis/Dissertation Writing:** The dissertation writing shall be implemented in accordance with the relevant regulations of the University and the College.

**Pre-defense and Defense:** The pre-defense and defense of graduate degree dissertation shall be implemented in accordance with the relevant regulations of the University and the College.