

安全科学与工程留学研究生培养方案(2019级及以前适用)

Postgraduate Programs for International Students Majoring in

Safety Science and Engineering

(for students enrolled in 2019 and before)

(学科代码: 0837)

(Subject code: 0837)

一、培养目标

I. Program Objectives

本学科培养具有坚实系统的火灾及其相关公共安全基础理论知识、较强的解决实际问题的能力、了解安全科学与工程专业发展的前沿和动态、从事安全科学与工程领域的研究、教学、设计、管理的高级人才。

This discipline cultivates senior talents with solid and systematic knowledge of the basic theory of fire and its related public safety, strong ability to solve practical problems, understanding the frontier and trends of the development of safety science and engineering, and engage themselves in research, teaching, design, and management.

二、主要研究方向

II. Main research fields

1. 火灾动力学演化

Fire Dynamics Evolution

2. 火灾过程模拟仿真与虚拟现实

Fire Process Simulation and Virtual Reality

3. 安全评估与性能设计

Safety Assessment and Performance Design

4. 火灾扑救优化控制理论

Optimal Control Theory of Fire Fighting

5. 火灾探测原理与技术

Principle and technology of Fire Detection

6. 智能化安全技术

Intelligent Security Technology

7. 新型阻燃材料科学与技术

Science and Technology of New Flame-Retardant Materials

8. 公共安全及应急管理

Public Safety and Emergency Management

三、学制及学分

III. Program duration and credit points

在符合研究生院有关规定的前提下：

On the premise of meeting the relevant regulations of Graduate School:

1. 硕士研究生学制为 2-3 年。在申请硕士学位前，必须取得总学分不少于 35 学分。其中专业基础课不少于 11 学分，专业课 12-14 学分（其中至少选修一门跨学科课程）。公共必修课类型及学分要求按照国际学院有关规定执行，具体要求请参照附件。

1.The study duration of Master's Programs is 2-3 years. A total of no

less than 35 credit points must be obtained before applying for a master's degree. Among them, no less than 11 credit points for specialized basic courses and 12-14 credit points for specialized courses are compulsory (including at least one interdisciplinary course). Types and credit point requirements of public compulsory courses shall be in accordance with relevant regulations of International College. Please refer to the attachment for specific requirements.

2. 博士研究生学制为 3—4 年。在申请博士学位前，必须取得总学分不少于 10 学分。博士层次专业课程不少于 4 学分，开题报告 2 学分。公共必修课类型及学分要求按照国际学院有关规定执行，具体要求请参照附件。

2.The study duration of Doctoral Programs is 3-4 years. Before applying for a doctoral degree, a total of no less than 10 credit points, including no less than 4 credit points for doctoral specialized courses and 2 credit points for research proposal must be obtained. Types and credit point requirements of public compulsory courses shall be in accordance with relevant regulations of International College. Please refer to the attachment for specific requirements.

四、课程设置

IV. Curriculum

公共必修课按照国际学院的统一要求，学科基础课和专业课如下所列。

The public compulsory courses shall follow the requirements of International College, basic courses and specialized courses are listed below.

专业基础课：20 学分

Specialized Basic Courses: 20 credit points

课程代码 Code	课程名称 Name	学分 Credit points	备注 Note
SE15201★	火灾学 2★ Fire Science II	3	
SE15208	火羽流理论 Theory of Fire plume	2	
SE15204a★	火灾化学★ Fire Chemistry	3	
SE15209a	阻燃原理及其技术 Flame Retardant Principle and Technology	3	
SE15206a	火灾风险评估及性能化设计 Fire Risk Assessment and Performance-based Fire Protection Design	3	
SE15227a	流动及燃烧的模型与工程应用软件 Flow and Combustion Models and Engineering Applications	3	
SE15207	现代安全监控技术 Modern Safety Monitoring Technology	3	

专业课：23 学分

Specialized Courses: 23 credit points

课程代码 Code	课程名称 Name	学分 Credit points	备注 Note
SE15211	热自燃理论及其应用 Thermal Spontaneous Combustion Theory and Its Application	2	
SE15223	灭火技术原理及应用 Principle and Application of Fire Extinguishing Technology	3	
SE15215	火灾信号检测与处理 Fire Signal Detection and Processing	3	
E15224	食品安全学 Food Safety	2	
SE15222	危险化学品安全概论 Introduction to the Safety of Hazardous Chemicals	2	
SE15226	火灾安全工程技术前沿（特殊场所火灾 防治：船舶、地铁、隧道、矿井、空间 站、石油化工、油库油罐、古建筑等） Frontier of Fire Safety Engineering Technology (Fire Prevention and Control in Special Places: Ships, Subways, Tunnels, Mines, Space Stations, Petrochemical Industry, Oil Depots,	2	

	Ancient Buildings, etc.)		
SE15228	化学品安全性分析原理 Principles of Chemical Safety Analysis	3	
SE15229	安全工程材料制备与应用基础 Foundation of Preparation and Application of Safety Engineering Materials	3	
SE15230	能源火灾安全理论及方法学 Energy Fire Safety Theory and Methodology	3	
SE15231	安全文化学 Safety Culturology	3	

博士课程基础课：4 学分

Doctoral Basic Courses: 4 credit points

课程代码 Code	课程名称 Name	学分 Credit points	备注 Note
SE16201	公共安全学 Public Safety	2	
SE16202	湍流反应流数值模拟若干新方法 New Methods for Numerical Simulation of Turbulent Reactive Flow	3	

五. 科研能力要求

V. Requirements for scientific research ability

按照研究生院有关规定同时满足《火灾科学国家重点实验室学位申请细则》。

The student's research ability shall meet both Graduate School's regulations and the *Degree Application Rules of State Key Laboratory of Fire Science*.

六. 学位论文要求

VI. Dissertation requirements

按照研究生院有关规定。

In accordance with the relevant regulations of Graduate School.

七. 其它

VII. Other information

本方案适用于 2019 级以前的“安全科学与工程”学术学位研究生培养

This program applies to the cultivation of academic degree students of "Safety Science and Engineering" prior to the class of 2019 (included) .

附件

Appendix

留学生公共必修课类型及学分要求

Types and credit requirements of public compulsory courses for international students

2018 年秋季学期及之前入学的攻读硕士和博士学位的留学研究生的公共必修课为汉语和中国概况课程，其中 CAS-WAS 奖学金（包括 CAS-WAS “一带一路” 奖学金）：《综合汉语》4 学分；《汉语听说》2 学分；《中国概况》4 学分，共 10 学分，每门 75 分及格。其他奖学金（包括 CSC 奖学金、USTC 奖学金）：《基础汉语》2 学分；《中国概况》4 学分，共 6 学分，每门 75 分及格。

Chinese language and China Panorama courses are the public compulsory courses for international graduate students for master's or doctoral degrees who were enrolled in the autumn semester of 2018 and before. For the CAS-WAS scholarship recipients (including CAS-WAS "Belt and Road" scholarship recipients), the credit settings are as follows: *Comprehensive Chinese* (4 Credit Points); *Chinese Listening and Speaking* (2 Credit Points); *China Panorama* (4 Credit Points), 10 Credit Points in total, 75 or more (≥ 75) for each pass. For other scholarship recipients (including CSC scholarship recipients and USTC scholarship recipients), the credit settings are as follows: *Basic*

Chinese (2 Credit Points); *China Panorama* (4 Credit Points), 6 Credit Points in total, 75 or more (≥ 75) for each pass

2019 年秋季学期及之后入学的攻读硕士和博士学位的留学研究生的公共必修课是汉语和中国概况课程，由国际学院在每年秋季学期集中开设，并负责课程管理。根据国际研究生录取时确定的专业教学语言，公共必修课设置如下：

Chinese language and China Panorama are the public compulsory courses for international graduate students studying for master's or doctoral degrees who were enrolled in the autumn semester of 2019 and after. The courses are offered and administrated by International College in the autumn semester each year. According to their major's teaching language chosen by international graduate students, the public compulsory courses settings are as follows:

1) 以中文为专业教学语言的留学研究生，公共必修课包括：《高级汉语》，4 学分；《中国概况》，4 学分；共计 8 学分，原则上应在入学后第一学期完成。毕业时汉语水平应达到 HSK 五级，并取得相应证书。

1) For international graduate students who choose Chinese as their major's teaching language, the public compulsory courses include:

Advanced Chinese (4 Credit Points); *China Panorama* (4 Credit Points). A total of 8 Credit Points should be obtained in the first

semester after admission in principle. Upon graduation, students should attain HSK Level-5 and obtain its certificate.

2) 以英语为专业教学语言的国际研究生，公共必修课包括：《综合汉语》，2 学分；《汉语听说》，2 学分；《中国概况》，4 学分；共计 8 学分，原则上应在入学后第一学期完成，毕业时汉语水平应达到 HSK 三级，并取得相应证书。

2) For international graduate students who choose English as their major's teaching language, the public compulsory courses include:

Comprehensive Chinese (2 Credit Points); Chinese Listening and Speaking (2 Credit Points); China Panorama (4 Credit Points). A total of 8 Credit Points should be obtained in the first semester after admission in principle. Upon graduation, students should attain HSK Level-3 and obtain its certificate.