

Open FIESTA 国际开放创新教育中心

数据科学和信息技术

Master of Data science and information technology

清华大学-法国巴黎交叉科学研究院互联网创新设计双硕士学位项目

Internet + Innovation Design Program

Master program provided jointly by THSIGS and CRI

(仅适用于 2019 级学生/ for students enrolled in 2019)

一、适用学科、专业/Applicable disciplines, majors

数据科学和信息技术（互联网+创新设计方向）（交叉学科，工学门类）（学科代码 99J3）。

“互联网+创新设计”作为面向信息技术与跨学科前沿交叉领域的创新设计人才培养项目，拟录取学生方向包括：信息技术类、设计艺术类、人文与社会科学类和工程制造类等。

Data Science and Information Technology (Internet + Innovation Design) (Interdisciplinary, Engineering) (Subject Code 99J3).

The Internet + Innovation Design Master program aims to prepare graduates in information technology and interdisciplinary innovative program. Qualified students major in information technology, design art, humanities, social sciences, engineering and manufacturing, etc.

二、培养目标/ Mission

以提高研究生全球胜任力为目标，培养具有国际视野、社会关怀、自主探索精神和跨学科创新设计能力的高层次、交叉式、应用性、创新创业型专业人才；能够掌握互联网和创新设计的思维与技术，并运用其发现并创造性地解决问题；能够在相关领域从事新产品、新服务或新应用的研究、设计、开发和管理工作的，具备在新兴产业中成为高级管理人员或创业人才的潜力。

This program is dedicated to cultivate a combination of professionals with international vision, social responsibility, spirit of exploration and interdisciplinary innovation ability. In addition, This program is dedicated to develop students' ability in internet and innovation design

thinking and technology, in discovering and creatively solving problems, in becoming a senior manager or entrepreneur in a related emerging industries.

三、学习年限与学位设置/ Length of study and degree

采用全脱产的培养方式。根据《清华大学研究生学籍管理规定》要求，学习年限为两年至三年，按照以下两种方式中的一种设置。

1、全程在清华大学学习，学制两年至三年。完成各培养环节，并满足清华大学硕士学位授予要求的学生将被授予清华大学“数据科学和信息技术”专业学术型硕士学位。

2、第一学年在清华大学学习，第二学年通过遴选者到法国巴黎交叉研究院（以下简称“CRI”）和巴黎第七大学学习，第三学年回到清华大学学习，学制三年。完成各培养环节，并同时满足清华大学和巴黎第七大学硕士学位授予要求的学生，可获得清华大学与巴黎第七大学双硕士学位。只满足清华大学硕士学位授予要求的学生，则只授予清华大学硕士学位。

This is a 2 to 3 years full-time program with the following two options.

1. Studying at Tsinghua University for 2 to 3 years, students who complete the required credits and meet the Tsinghua University Master's degree requirements will be awarded a Master's degree in Precision Medicine and Public Health.

2. Studying at Tsinghua University during the first academic year, followed by studying at the Interdisciplinary Research Institute of Paris or the Seventh University of Paris during the second year, and at last, returning to Tsinghua University for the third year. Students who complete the required credits and meet the requirements for master's degrees both at Tsinghua University and Paris Seventh University will receive a double master's degree from the two universities. Students who only meet the Tsinghua University Master's degree requirements, can only be awarded a master's degree from Tsinghua University.

四、培养方式/ Training mode

“互联网+创新设计”硕士研究生项目采用前沿交叉研究与创新实践紧密结合的教育模式。实行导师负责制，根据学生的专业特长和学术志向制定个人的培养方案，并指导学位论文写作；由不同专业老师组成的跨学科导师组，共同指导学生的创新实践项目，以提升学生的跨学科协同创新的能力。

This master's degree program implements a training mode that closely integrates cutting-edge research with innovative practice, and advisor responsibility system. The advisor directs students to make their individual training plan and complete their thesis. An interdisciplinary team of instructors from different disciplines directs students to complete their innovative practice projects,

and improve their interdisciplinary collaborative innovation capabilities.

五、学位学分要求/ Degree credit requirements

硕士生在学习期间，须获得学位要求学分不少于 36 学分，其中公共必修课程学分 5（国际学生不少于 4），学科专业课程不少于 20，学术与职业素养课程 1，必修环节 10。

Master's degree requires no less than 36 credits, including 5 credits of required public courses (no less than 4 credits for international students), no less than 20 credits of major course, 1 credits of the career development courses, and 10 credits of required training activities.

六、课程设置与培养环节/ Curriculum and Training

1. 公共必修课程/ Required Public Courses

A. 适用于中国大陆籍学生（5 学分） / for Chinese students (5 credits)

- 中国特色社会主义理论与实践研究 (60680012) 2 学分（考试）
- 自然辩证法概论 (60680021) 1 学分（考试）
- 硕士生英语 (64200012) 2 学分（考试）

备注：港澳台学生公共必修课学分要求按照学校有关规定执行。

B. 适用于国际学生（ ≥ 4 学分） / for international students (≥ 4 credits)

- 中国概况课/China Profile courses (00000007) 2-3 学分/credits (exam)
- 汉语 第一外语类/Chinese (0000002) 2 学分/credits (exam)

备注：国际学生公共必修课学分要求按照学校有关规定执行。

Tips: Credits of required public courses for international students are according to the relevant regulation of Tsinghua University.

2. 学科专业课程（ ≥ 20 学分）/Major Courses (≥ 20 credits)

(1) 基础理论课与专业基础课（必修）/Basic theory and foundation courses(required)

(12 学分/credits)

- 强化营 :交叉创新设计前沿/Boot-camp: Frontier in interdisciplinary design and innovation (72917012) 2 学分/credits（考查/non-exam）
- 社会创新设计/Design for Social Innovation (72917022) 2 学分/credits（考试/exam）
- 互联网思维与技术/Internet thinking and Technology

(72917032) 2 学分/credits (考试/exam)

- 产品设计与开发/Product design and development
(72917002) 2 学分/credits (考查/non-exam)
- 品牌形象战略与设计/Brand Image Strategy and Design
(70807052) 2 学分/credits (考试/exam)
- 企业组织与管理实践研究/Studies on Organization Theory and Management Practice
(80514842) 2 学分/credits (考查/non-exam)

(2) 专业课与相关的跨学科专业课 (选修) (≥ 8 学分, 至少从两个不同模块选课, 其中一个需要是信息技术类) / Major courses and Interdisciplinary courses (optional) (≥ 8 credits, at least from two different modules, one of which needs to be information technology)

A. 信息技术类课程/ Information Technology Modules

- 信息与通信技术/Information and communication technology
(82917052) 2 学分/credits (考试/exam)
- 大数据科学与应用系列讲座 /Seminar on Data and Applications
(60250131) 1 学分/credits (考查/non-exam)
- 数据可视化/Data visualization (80240683) 3 学分/credits (考查/non-exam)
- 大数据机器学习/Big Data Machine Learning (70240403) 3 学分/credits (考试/exam)
- 现代信号处理 (70250033) 3 学分/credits (考试/exam)
- 数字图像处理及应用 (80230732) 2 学分/credits (考试/exam)
- 数字图像处理实践专题 (80230832) 2 学分/credits (考试/exam)
- 计算机视觉 (70240083) 3 学分/credits (考试/exam)

B. 设计艺术类课程/ Design art module

- 跨媒体设计思维与方法/Design Thinking and Method of Cross-media
(80801932) 2 学分/credits (考试/exam)
- 设计与时尚 (62917001) 1 学分/credits (考查/non-exam)
- 视觉符号设计 (80801112) 2 学分/credits (考试/exam)
- 文化创意产业与设计 (70800951) 1 学分/credits (考试/exam)
- 传统手工技艺创新设计研究 (80800882) 2 学分/credits (考试/exam)
- 品牌形象传播与管理 (70807061) 1 学分/credits (考试/exam)

C. 智能制造类课程/ Intelligent manufacturing module

- 现代 CAD 方法与技术/Modern CAD Methodology and Technology
(72917052) 2 学分/credits (考查/non-exam)

- 精密加工及特种加工 (80120862) 2 学分/credits (考试/exam)
- 机器人与仿生学 (80120662) 2 学分/credits (考试/exam)
- 先进制造技术 (90130032) 2 学分/credits (考试/exam)

D. 管理类课程/ Management module

- 创业启蒙 (60510042) 2 学分/credits (考查/non-exam)
- 创新创业与创客创投概论 (66000011) 1 学分/credits (考查/non-exam)
- 组织理论与管理 (70590722) 2 学分/credits (考试/exam)
- 数据思维与行为 (60700052) 2 学分/credits (考试/exam)
- 社会工作能力与创新领导力 (80700172) 2 学分/credits (考试/exam)

E. 导师组指定的其他研究生课程/ Other professional courses designated by the mentor (0000003)

除以上课程之外，学生还可在导师指导下，在清华大学国际研究生院开设的所有课程中进行选择。

Tips: In addition to the above courses, the instructor can also guide students to choose other courses offered by THSIGS.

3、学术与职业素养课程 (1 学分) /Career Development Course(1 credit)

- 职业伦理/professional Ethics (62910031) 1 学分/credits (考查/non-exam)

4、必修环节 (交叉创新实践) (10 学分) /Required Training Activities (10 credits)

(1) 文献综述与选题报告/ Literature Review and Thesis Proposal

1 学分/credits (考查/non-exam)

(2) 学术活动/ Academic Activities

1 学分/credits (考查/non-exam)

(3) 交叉创新实践/Interdisciplinary innovation practice (8 学分/credits)

- 交叉创新实践 I: 方法与理论/Interdisciplinary innovation practice: method and theory (新开课/new) 4 学分/credits (考查/non-exam)
- 交叉创新实践 II: 产品与应用/Interdisciplinary innovation practice: products and applications (新开课/new) 4 学分/credits (考查/non-exam)

学生须组成跨专业小组，至少完成两个具有跨学科交叉特色并具有学术创新价值的创新实践项目。每个项目周期大约 6 个月，项目成果可以是产品、论文、专利或商业计划书等不同形式。每一个项目过程中，学生需提交立项报告和结题报告。不同学科的教师组成

跨专业导师组，对学生进行专业辅导和实践指导。中心将组织跨学科评审小组，对学生的创新实践项目进行结题答辩，并给予成绩评定。

经 CRI 遴选到法国学习的学生，可以用在法国完成的交叉创新实践项目参加立项、结题和成绩评定。如果学生需要在 CRI 之外的海外院校或研究机构进行学习和创新实践，经过审批者，也可以用在海外开展的创新实践项目参加立项、结题和成绩评定。在海外开展的交叉创新实践项目的立项和结题可通过现场或远程的方式完成。

Students must form an interdisciplinary team to complete at least two innovative practice projects which are interdisciplinary and academic innovation value. Each project period of about six months, the project results may be products, papers, patents or business plan ,etc. During each project, students are required to submit project proposal and final result presentation report. An interdisciplinary team of instructors from different disciplines directs students to complete their innovative practice projects. Open FIESTA will organize an interdisciplinary team of experts to evaluate and score students' innovative projects.

Upon approval, students can complete interdisciplinary innovation projects at CRI or other overseas institutions or research institutions. Students can complete overseas interdisciplinary innovation project proposal reports and final results presentation report by remote video.

七、学位论文/ Thesis

申请硕士学位的论文应突出前沿性、交叉性与创新性，注意交叉创新实践项目与学位论文工作之间的有机结合。学位论文应如实反映硕士生导师指导下独立完成的研究工作，表明作者在相关及交叉学科领域掌握了系统的专业知识，并具有从事学术研究和独立开展项目实践的能力，写出不少于 30000 字的学术论文。

硕士生应按照清华大学学位论文撰写和评审的有关规定和要求完成学位论文的选题、中期和答辩等环节，由跨学科专家组成答辩委员会对论文进行评审。

对学位论文相关创新成果的要求，参见本学科（项目）适用于 2019 级研究生的创新成果要求。

All IID students are required to complete a thesis, which should focus on frontier, interdisciplinary and innovative subjects, the interdisciplinary innovation projects are encouraged to contribute to the thesis. The students' theses should truly reflect their independent research work, their professional knowledge and practical ability in the relevant interdisciplinary. The number of words in the thesis is not less than 30,000.

According to the regulations of Tsinghua University, all students must complete the thesis proposal defense and thesis defense. A committee of experts from both inside and outside Tsinghua will attend the defense and evaluate the thesis to determine if it meets the degree requirements. Please refer to the attachment of Innovative Outcome Requirements for the thesis.

Attachment

清华大学深圳国际研究生院国际开放创新教育中心

数据科学和信息技术（互联网+创新设计方向）

研究生申请学位创新成果基本要求

(经清华大学学位评定委员会 2019 年第**次全体会议审议通过)

Open FIESTA — Data science and information technology — IID

Master's Degree requirements for innovative outcome

Reviewed and approved at the **th plenary meeting of the Tsinghua University Degree Evaluation

Committee in 2019

根据《清华大学关于完善学术评价制度的若干意见》（清委发〔2019〕11号），特制定申请本学科（项目）学位创新成果要求如下：

This master's degree requirements for innovative outcome is according to "Several Opinions of Tsinghua University on Improving Academic Evaluation System" ([2019] No. 11):

一、适用范围

本要求适用于以下学科/专业类别/项目研究生申请博士或硕士学位：

数据科学和信息技术（互联网+创新设计方向）学术型硕士学位

This requirement applies to the students of following disciplines / majors / programs to apply for doctoral or master's degree:

Master of Data science and information technology (Internet + Innovation Design)

二、创新成果的主要形式和认定标准

学生申请学位创新成果的形式为已接收或发表的 SCI、SSCI、EI、AHCI、CSSCI 检索或中文核心期刊论文、学术会议论文，已公开或授权的发明或实用新型专利和软件著作权。

要求成果内容需与本学科或学位论文相关；我校需为第一署名（完成）单位；学生需为第一作者（完成人）或导师为第一作者（完成人），学生为第二作者（完成人）（SCI检索论文可放宽至排名第二位且与排名第一位同等贡献的学生）。

This innovative outcome should either be an SCI, SSCI, EI, AHCI, CSSCI or Chinese core journal papers, conference papers, published or licensed invention patents and software copyrights that have been accepted or published.

The content of this innovative outcome should be related to Precision Medicine and Public Health (BIO³ Life Technology) or the thesis; Tsinghua University must be the first ownership; the student must be the first author, or the advisor is the first author, the student is the second author (SCI papers can be the second author who contributes the same as the first author).

三、申请硕士学位的创新成果基本要求/Details of Master's degree requirements for innovative outcome

申请学术型硕士学位，应满足以下条件之一：

You must provide one of the following outcomes when applying for master's degree:

1. 已接收或发表的 SCI、SSCI、EI、AHCI、CSSCI 检索或中文核心期刊学术论文（全文）；

Received or published SCI, EI, AHCI, CSSCI or Chinese core journal academic papers (full text);

2. 已发表或被录用的学术会议论文（全文）；

Published or accepted conference papers (full text);

3. 已提交专利申请并获得受理通知书的发明或实用新型专利；

Patented Invention (paten certificate or patent acceptance letter);

4. 已注册的软件著作权。

Registered software copyright (certificate).

四、创新成果审核办法/Review method of Innovative outcome

具体流程：由学生本人填写《清华大学 Open FIESTA 申请硕士学位创新成果审批表》，经导师签字后在学位论文预答辩会前一周提交至中心教务处。由中心组织专家评定小组对提交的创新成果讨论审议。

Process: Students shall complete the “Approval Form for the Innovative outcomes of Open FIESTA”, which will be submitted to the Center's Academic Affairs Office a week before the pre-thesis defence. Open FIESTA will organize experts conference to discuss and review the submitted innovative outcomes.

主责人员：项目首席教授

The main person in charge: Chief professor of Internet + Innovation Design

具体要求:

1. 填报已发表的 SCI 或 EI 检索学术期刊论文格式为: 作者, 论文题目, 期刊名称, 发表年份, 卷(期), 页码(编号)。SCI 或 EI 索引号, IF 值。同时需提交 pdf 版论文原文为附件;

Fill in the published SCI or EI paper format: author, paper title, journal name, publication year, volume page number. SCI or EI index number, IF value. At the same time, the pdf version of the original paper must be submitted as an attachment;

2. 填报已接收的 SCI 或 EI 检索学术期刊论文格式为: 作者, 论文题目, 期刊名称。已接收, SCI 或 EI 检索, IF 值。同时需提交 pdf 版论文原文和论文接收函为附件;

Fill in the accepted SCI or EI paper format: author, paper title, journal name. Received, SCI or EI retrieved, IF value. At the same time, it is necessary to submit the pdf version of the original paper and the acceptance letter of the paper as an attachment;

3. 填报已发表或接收的会议论文格式为: 作者, 论文题目, 会议名称, 会议所在城市, 会议所在国家, 会议时间。同时需提交 pdf 版论文原文和论文接收函为附件。大会获奖论文可提供相应证明文件为附件;

Fill in the format of the conference papers that have been published or received: author, paper title, conference title, city where the conference is held, country where the conference is held, and conference time. At the same time, one must submit the pdf version of the original paper and the acceptance letter of the paper as an attachment. The winning papers of the conference can be provided with the corresponding supporting documents as attachments;

4. 填报发明或实用新型专利格式为: 申请者, 专利题名, 专利国别, 专利文献号(公开号) [P], 专利类型, 公告或公开日期[引用日期]。对于已公开未授权的专利, 需同时提交专利申请书和相关证明文件为附件;

Fill in the format of the invention patent is: applicant, patent title, patent country, patent document number (publication number) [P], patent type, announcement or publication date [reference date]. For invention patents that have been published but not authorized, it is necessary to submit the patent application and related supporting documents as attachments at the same time;

5. 填报软件著作权格式为: 著作权人, 软件名称, 证书号, 登记时间。同时需提交计算机软件著作权登记证书复印件为附件。

Fill in the software copyright format: copyright owner, software name, certificate number, registration time. At the same time, a copy of the computer software copyright registration certificate must be submitted as an attachment.

表决方式: 中心将组织专家评定小组对学生提交的创新成果申请进行集中讨论审议。评定小组由不少于 5 位相关学科教师组成, 其中高级职称教师人数不少于 2/3。同意票数

不少于评定小组总人数的 2/3 视为该成果达标。

Voting method: Open FIESTA will organize an expert assessment team to discuss and review the application for innovative outcomes submitted by students. The assessment team consists of no less than 5 experts in related disciplines, in which no less than 2/3 have senior title. The innovative outcome being evaluated as meeting the requirements needs no less than 2/3 of the experts voted in favor.

五、附则/Supplementary

- 1、本文件自通过之日起生效, 适用于 2019 级 (含) 以后入学的研究生。

This document take effect from the date of adoption , it is effective for the graduate students enrolled in and after the year of 2019 .

- 2、2018 级 (含) 以前入学的在校研究生, 可执行入学当年有关要求或本要求。

Students who have enrolled in and before the year of 2018 should refer to the requirements for the year of enrollment or this requirement.

- 3、在本文生效之前已经毕业、结业但未获得学位的研究生, 根据规定可申请学位的, 在申请学位时执行入学当年有关要求。

Students who have graduated or graduated without a degree, should refer to the relevant requirements for the year of enrollment when applying for a degree.

- 4、本文件解释权归校交叉学科学位工作委员会。

The Interdisciplinary Degree Working Committee of Tsinghua University has the right to interpret this document.