

# 机械电子工程学科(一级学科代码: 0802)学术学位 硕士研究生培养方案(留学生) (Mechanical and Electronic Engineering)

## 一 . 学科简介(Introduction)

上海大学是一所上海市属重点大学,也是一所教育部与上海市人民政府共建的国家“211工程”重点建设的大学,上海大学机械电子工程学科是国家及上海市重点学科。学科拥有教职工100余名,其中正高级职称25名,国家级人才2名,国家杰出青年基金获得者2名,博士学位以上教师占比66.7%,超过90%以上的青年教师具有留学访学背景。学科有完善的教学、科研基地条件,为人才培养、科学研究、国际合作与交流提供了基础支撑。学科拥有包括上海机器人研究所、智能装备技术上海高校重点实验室等教学科研基地。经过多年的建设与积累,学科在人才培养、科学研究、国际合作与交流、师资队伍等方面已形成一定的规模、格局与特色,致力于为“一带一路”地区及全世界培养适应智能制造产业发展需要的、具有国际视野的、复合型创新人才。

Shanghai University is a key university under the Shanghai municipal government. It is also a national "211 Project" key university jointly established by the Ministry of Education and the Shanghai Municipal Government. The mechanical and electronic engineering discipline of Shanghai University is a national and Shanghai key discipline. The discipline has more than 100 faculty members. 28 of them have senior professional titles, 2 are national talents, 2 are winners of the National Outstanding Youth Fund, 80% are teachers with doctoral degrees or above, and more than 90% of the young teachers have a background in studying abroad. The discipline has perfect teaching and research conditions, providing basic support for personnel training, scientific research, international cooperation and exchange. The discipline has teaching and research bases including Shanghai Robot Research Institute and Shanghai Key Laboratory of Intelligent Equipment Technology. After years of construction and accumulation, the discipline has formed a certain scale, pattern and characteristics in personnel training, scientific research, international cooperation and exchange, and teaching staff. It is committed to training innovative talents with international vision and compound abilities that meet the needs of the development of intelligent manufacturing industry for "the belt and the road" region and the world.

## 二 . 学位标准(Degree for Require)

见《上海大学机电工程与自动化学院研究生申请学位创新成果要求》。

See requirements for innovative achievements of graduate students in school of Mechatronic Engineering and Automation, Shanghai University.

## 三 . 培养目标(Objectives)

致力于为“一带一路”地区及全世界培养适应智能制造产业发展需要的、具有国际视野的、复合型创新人才。It is committed to training innovative talents with international vision and compound abilities that meet the needs of the development of intelligent manufacturing industry for "the belt and the road" region and the world.

## 四 . 修业年限(Duration)

本学科硕士研究生学制为2.5年,学习年限不超过6年。

Normative Study Period: 2.5 years, but no more than 6 years.

## 五 . 培养方向(Research Areas)

机械电子工程专业主要研究方向包括:

- 1、机器人技术与自动化应用工程
- 2、微机电系统
- 3、康复装备与技术研究
- 4、骨科手术装备与技术研究
- 5、机械智能设计与优化设计
- 6、机电一体化系统及其控制技术
- 7、精密测量技术与仪器
- 8、机械振动噪声分析
- 9、故障诊断技术
- 10、智能控制、检测与传感技术
- 11、海上智能运载科学与技术
- 12、人机智能技术
- 13、多刚体系统动力学
- 14、无人值守系统设计与控制

The main research areas of the mechanical and electronic engineering:

1. Robot Technology and Automation Application Engineering
2. MEMs
3. Research on Rehabilitation Equipment and Technology
4. Research on Orthopedic Surgery Equipment and Technology
5. Mechanical Intelligent Design and Optimum Design
6. Electromechanical Integration System and Its Control Technology
7. Precision Measurement Technology and Instruments
8. Mechanical Vibration Noise Analysis
9. Fault Diagnosis Technology
10. Intelligent Control, Detection and Sensing Technology
11. Marine Intelligent Transportation Science and Technology
12. Human-machine hybrid intelligent system
13. Multi-body dynamics
14. Design and control for unmanned system

And so on

## 六 .语言要求(Language Requirements)

本专业来华留学生应当能够顺利使用英语完成本学科、专业的学习和研究任务，并具备使用中文从事本专业相关工作的能力，毕业时达到汉语三级水平。

Students who come to China in this major should be able to successfully use English to complete the subject, study and research tasks, and have the ability to use Chinese to engage in the relevant work of this major, you must reach the third level of Chinese proficiency test (HSK) before graduation.

## 七 .课程设置与学分要求(Curriculum and Credit Requirement)

研究生的学习实行学分制，根据课程设置，应修满不少于43学分，其中公共课7学分，专业基础课和专业选修课不少于30学时，创新创业课不低于2学分，学术规范与写作课不低于2 学分，学术研讨课2学分。

The credit system shall be implemented for graduate students' study. According to the curriculum, they shall take not less than 43 credits, including 7 credits for public courses, 30credits for professional basic courses and professional elective courses, 2 credits for innovation and entrepreneurship courses, 2 credits for academic norms and writing courses , and 2 credits for academic seminar courses.

## 八 .培养计划制定(Development of Training Plan)

攻读硕士学位的研究生入学后，应在导师指导下按照本学科当年度培养方案的要求制订培养计划，在入学后1个月内，登录研究生管理系统，输入培养计划，同时，打印的纸质版培养计划报各学位评定分委员会审核批准后，由学院留存备案。凡列入培养计划的课程必须修读合格方可进行答辩。

After the admission, postgraduate students studying for master's degree shall formulate a training plan according to the requirements of the discipline's current annual training plan under the guidance of their tutors. Within one month after the admission, they shall log into the postgraduate management system and fill in the training plan. At the same time, the printed paper-based training plan shall be submitted to each degree evaluation sub-committee for examination and approval, and shall be kept for the record by the college. All courses included in the training plan must be qualified before they have a defense.

## 九 .必修环节 (Compulsory courses)

为不断提高研究生研究的科学性和有效性,发挥研究生培养过程中的筛选作用,研究生必须要进行课程考核、中期考核,在学位论文答辩前要进行预答辩。

In order to improve the scientificity and effectiveness of postgraduate research and play the screening role in the process of postgraduate training, graduate students must carry out course assessment, mid-term assessment, and pre defense before dissertation defense.

### 1. 课程考核

学习成绩低于60分为不及格,不及格的课程必须重修;课程考试及格但低于75分也可向所在培养单位申请重修。重修由研究生本人在每学期开学一周内申请。原成绩与重修成绩均如实记载在成绩单中,课程成绩按最后一次修读的成绩计。未在培养计划中出现的课程不计入总学分,平均成绩为计入总学分的课程成绩的平均分。

为保证硕士生论文工作质量,硕士生课程学习原则上要求在第一学年内结束,且应至少取得43个学分。

### 1. Course assessment

If the score is lower than 60, it will be regarded as failing, and the failed course must be taken again; if the course passes the examination but the score is lower than 75, you can apply to the training unit where you are. The application for retake should be made within one week of each semester. The original score and the reexamination result are recorded in the transcript, and the course score is calculated according to the score of the last study. Courses not included in the training plan are not included in the total credit, and the average score is the average score of the course score included in the total credit.

In order to ensure the quality of master's thesis work, master's course learning is required to be completed within the first academic year in principle, and at least 43 credits should be obtained.

### 2. 学位论文开题报告与中期考核

#### 1) 开题报告

硕士研究生的开题报告,一般应在课程学习结束,取得规定学分后进行,通常在第4学期(即第2学年第1学期)完成。为保证硕士生有1年的时间从事学位论文研究工作,硕士生的开题报告(审查通过)至论文答辩时间不少于1年。

(1) 在开题报告之前,硕士研究生应修满培养计划规定的学分,递交1篇文献阅读专题报告或学术讨论会小结报告;

(2) 论文选题:论文的选题应与本专业的前沿研究相关或来自与本专业有关的国民经济中的科学技术问题;

(3) 开题报告的要求:硕士研究生在第2学年第1学期末以前完成5000字以上的开题报告,内容包括文献综述、选题意义、研究内容、难点与特点、预期成果和可能的创新点等部分,引用文献不少于30篇;

(4) 开题报告的评审:硕士生开题报告必须以学术报告会形式公开进行,实施学位论

文学科集中开题制度。本学科内研究生的学位论文集中开题工作由学科学位论文开题小组负责组织。学位论文开题小组成员一般不少于3人，要求副高级及以上职称，实行导师回避制度。开题报告评审小组听取开题报告并进行评审并对考核结果进行排序，评审通过后方可开题。开题报告为公开性报告，并在第2学年第1学期末完成。硕士学位论文开题报告及学位论文的内容应参照《上海大学硕士研究生论文工作的有关规定》执行，对于未通过者必须在2个月内重作开题报告。仍未通过者，则按《上海大学研究生培养过程质量监督与管理办法（上大研[2019]8号）》处理。

## 2. Dissertation opening report and mid-term assessment

### 1) Dissertation opening report

The opening report of master's degree students should be carried out at the end of the course and after obtaining the required credits. It is usually completed in the fourth semester (i.e. the first semester of the second academic year). In order to ensure that the postgraduates have one year to engage in dissertation research, the time from the opening report (examination and approval) to the thesis defense shall not be less than one year.

(1) Before the opening report, postgraduates should complete the credit required by the training plan and submit a special report on literature reading or summary report of academic seminar;

(2) Topic selection: the topic selection of the thesis should be related to the frontier research of the major or from the scientific and technological issues in the national economy related to the major;

(3) Requirements of the opening report: the master's students shall complete the opening report with more than 5000 words before the end of the first semester of the second academic year, including literature review, significance of topic selection, research content, difficulties and characteristics, expected results and possible innovation points, with no less than 30 references cited;

(4) Evaluation of opening report: the opening report of master's degree thesis must be carried out publicly in the form of academic conference, and the centralized topic opening system of dissertation discipline shall be implemented. The thesis opening group of the discipline is responsible for organizing the centralized proposal of Graduate Dissertations in this discipline. Generally, there are no less than 5 members in the dissertation assessment group, including no less than 2 experts outside the school. The title of deputy senior or above is required, and the tutor avoidance system is implemented. The opening report review group listens to the opening report and reviews it, and sorts the assessment results. The project can be opened only after the evaluation is passed. The opening report is a public report and will be completed at the end of the first semester of the second academic year. The contents of the opening report and Dissertation of the master's degree thesis shall refer to the relevant provisions on the work of master's thesis of Shanghai University. For those who fail to pass the assessment, the opening report must be made again within 2 months. Those who fail to pass the assessment shall be dealt with in accordance with the measures for quality supervision and management of graduate training process of Shanghai University (SDY [2019] No. 8).

### 2) 学位论文中期检查

在第2学年第2学期末，对论文的进展情况进行阶段报告和中期考核，以保证按进度进行。评审不合格的，将给予警告，半年后再次进行中期检查，连续两次不合格的，将取消其撰写学位论文资格。

## 2) Mid-term examination of Dissertation

At the end of the second semester of the second academic year, the progress of the paper will be reported and mid-term assessment will be carried out to ensure the progress. Those who fail to pass the evaluation will be given a warning, and the mid-term assessment will be conducted again after half a year. Those who fail to pass the evaluation twice in a row will be disqualified from writing dissertation.

### 3. 学位论文预答辩

预答辩的必要条件是必须同时满足以下三点: (1) 完成学位论文; (2) 满足学位标准; (3) 指导教师同意进行预答辩。

预答辩由本学科学位论文预答辩委员会组织并实施集中预答辩制度。学位论文预答辩委员会成员一般不少于3人, 其中校外专家不少于1人, 要求副高级及以上职称, 同行评议专家不超过半数, 答辩委员会主席一般由校外专家担任, 实行导师回避制度。本学科对参加集中预答辩研究生的考核结果进行排序, 对各环节考核未达到要求的研究生给予学业警告, 延期、分流淘汰或淘汰。

### 3. Thesis pre-defense

The necessary conditions for the pre defense are as follows: (1) to complete the dissertation; (2) to meet the degree standards; (3) the tutor's agreement to the pre defense.

The pre defense is organized and implemented by the pre Defense Committee of the academic dissertation of the discipline. Generally, the members of the dissertation pre Defense Committee shall not be less than 3, including no less than 1 off campus expert, who shall have a deputy senior title or above, and no more than half of the peer review experts. The chairman of the defense committee shall generally be the off campus expert, and the tutor avoidance system shall be implemented. In this discipline, the assessment results of graduate students who participate in the centralized pre defense are sorted, and those who fail to meet the requirements in each link are given academic warning, postponed, diversion eliminated or eliminated.

## 十 . 科学研究与学位论文 (Research and Dissertation)

根据学校、学院的相关规定, 对研究生的培养过程, 对培养质量不达标学生实行分流淘汰管理制度。具体措施为: 研究生在正式进入学位论文工作前必须要进行中期考核, 中期考核一般在第二学年冬季学期前结束。中期考核实行分流淘汰制, 考核的排名结果提交研究生院备案。具体按照《上海大学研究生中期考核及分流淘汰管理办法(试行)》予以执行。

According to the relevant regulations of schools and colleges, the training process for postgraduates will be implemented, and the students who fail to meet the quality standards will be subject to a shunt and elimination management system. The specific measures are: the graduate students must conduct the mid-term assessment before they officially enter the dissertation work, and the mid-term assessment generally ends before the winter semester of the second academic year. The mid-term assessment implements a shunt and elimination procedure, and the ranking results of the assessment are submitted to the graduate school for record. It will be implemented in accordance with the "Administrative Measures for the Mid-term Assessment and Distributary Elimination of Shanghai University (Trial)".

学位论文正式答辩前必须进行预答辩, 预答辩通过后, 按国家学位条例有关规定进行评审和答辩。申请硕士学位时, 至少发表(含录用)1篇与学位论文相关的EI/SCI源刊论文; 或至少发表1篇与学位论文相关的重要国际会议论文并已被EI检索; 或至少发表(含录用)1篇与学位论文相关的本领域中文核心期刊(符合上海大学所列核心期刊目录), 以及1项国家发明专利申请(有正式申请号); 专著(字数不少于10万字, 排序前二); 鉴定验收的省部级(排序前五)或国家级(排序前十)科研成果。所有论文和专利要求申请者为

第一作者/发明人或除申请人导师外排名第一，且第一署名单位为上海大学。

Before the dissertation is formally defended, it must be pre-answered. After the pre-answer is passed, it will be reviewed and defended according to the relevant provisions of the National Degree Regulations. The students major in Mechatronic Engineering are required to obtain anyone of the following research result: ①At least one Ei/Sci source journal paper related to the degree thesis shall be published (including accepted paper) ; ②At least one important international conference paper related to the dissertation has been published and retrieved by EI; ③Publishing one Chinese core journal paper and one patent ; ④ Monograph (no less than 100000 words, ranking the first two) ; ⑤Provincial and ministerial (top five) or national (top ten) scientific research achievements identified. all papers and patent claims is the first author / inventor or ranks first in addition to the applicant's tutor, and the first signatory is Shanghai University.

研究生要求每周至少完成60-70学时的科研工作，具体考察形式由授课教师或者研究生导师安排。鼓励研究生同学参加相关的学术论坛和报告，以及有益的社会调查等工作。

Graduate students are required to participate in the professional teaching practice, including the guidance of undergraduate experiment, marking the lab reports and homework to complete at least 60-70 hours of work. The practice process will be reviewed by the teachers in charge of teaching or supervisor. The graduate students are also required to attend related seminars and experts forum, and if possible, to participate in social investigation and research or technology promotion.

对硕士学位论文答辩申请工作，应严格按照我国学位授予实施办法、上海大学研究生院相关管理与规定，经过校外评审和学校学位委员会审议通过。

The application for the respondent of the master thesis including the reviewing and defense should be strictly in accordance with the requirements of the "Interim Implementation Measures of the Regulations Concerning Academic Degrees of the People's Republic of China", as well as adopted by the Academic Degrees Committee of the degree-granting work rules and other related documents and regulations.

留学硕士研究生，可以用汉语或英语撰写学位论文和进行论文答辩。使用非汉语接受学历教育的留学硕士研究生，学位论文摘要应当用汉语撰写。留学硕士研究生的学位论文答辩必须在我校进行。

Both Chinese and English can be used in write dissertations and thesis defense. Graduate students who have received academic degrees using non-Chinese should translate the abstract of the thesis from English to Chinese. The thesis defense must be carried out in Shanghai University.

本专业毕业生达到上海大学硕士学位要求者，将获得工学硕士学位证书。

Graduates who meet the requirements of SHU will receive the degree (Master of Engineering) from Shanghai University.

若本方案与当年研究生培养手册规定不一致，则按当年研究生培养手册执行。

If the plan is inconsistent with the provisions of the graduate training manual of the current year, the graduate training manual of the current year shall prevail.

## 十一 . 培养方式(Training Methods)

全日制

附表. 课程设置与必修环节

## 课程设置与必修环节

类别	课程编号	课程名称 (Course Name)	学时	学分	开课学期	备注
公共平台课	公共平台课作为学校面向全校开设的公共课程, 学生可在导师指导下选择公共平台课程列入培养计划, 课程学分计入总学分					
公共课	0CS000027	公共体育(Public Physical Education)	20	1.0	01	必修
	0LY000001	中国概况(General Situation of China)	60	3.0	03	必修 Compulsory
	0LY000002	综合汉语B(Comprehensive Chinese B)	60	3.0	02	必修 Compulsory
专业基础课	3XSL09128	微机电系统(英文)(Micro-Electro-Mechanical System)	40	4.0	02	必修
专业选修课	3XSL09119	智能机器人建模与分析(Modeling and analyzing of intelligent robot)	40	4.0	02	
	3XSL09120	程序设计与工程应用(Program design and engineering application)	40	4.0	02	
	3XSL09122	Modern control theory(Modern control theory)	40	4.0	02	
	3XSL09124	智能结构与主动控制(英文)(Smart Structures and Active Control)	40	4.0	02	
	3XSL09125	机器人技术应用(英文)(Robotics Technology and Application)	40	4.0	03	
	3XSL09126	现代光学测试技术(英文)(Modern optical measurement technology)	40	4.0	01	
	3XSL09127	机器视觉与图像处理(英文)(Machine Vision and Image Processing)	40	4.0	02	
	3XSL09129	微纳米系统工程(Micro nano systems engineering)	40	4.0	03	
学术规范与写作课	7XSL09101	专业英语与写作(Professional English and Writing)	20	2.0	02	必修
创新创业课	4XSL09101	创新方法学(Innovation Methodology)	20	2.0	01	必修 Compulsory
学术研讨课	6XSL00001	学术研讨课(Academic Seminars)	20	2.0	02	必修 Compulsory
跨专业或学院选修课	学生可根据自身情况在导师指导下跨专业、学院选取非本专业课程列入培养计划, 课程学分计入总学分。					
补修课	根据学生具体情况由导师指定选修本科生主干课2-3门(不计入总学分)					
必修环节	课程考核				03	须通过考核后方可进入下一环节
	论文开题				04	
	中期考核				05	
	论文预答辩				08	
	论文答辩				08	

学位委员会主席签字:

学院盖章: