

# (125601) 生命科学技术学院 2023 级生物医药领域工程管理 (非全日制) 硕士生培养方案

2023 Part-time Program for Master of Engineering Management

## 一、基本信息 Basic Information

院系名称 School	生命科学技术学院			适用年级 Grade	2023 级 Class		
适用专业 Major	工程管理硕士 (生物医药领域)			标准学制 Duration	2.5 年 Years		
学习形式 Study Mode	非全日制 Part time						
项目类型 Program Type	专业型 Professional						
培养层次 Program Level	硕士生 Master Student						
最低学分 Min Credit	30	最高学分 Max Credit	32.5	最低 GPA 学分 Min GPA Credit	19	最低 GPA Min GPA	2.7

## 二、学科简介 Introduction

上海交通大学生命科学技术学院由上海交通大学与中国科学院上海分院联合于 1997 年 2 月建立。二十年来, 历经从无到有、由弱攀强的发展过程。学院目前共拥有 2 个国家重点学科, 3 个上海市重点学科, 建成了具有交大特色且较为完善的现代生物学学科体系, 生物学与生物化学、分子生物学与遗传学已进入 ESI 全球前 1‰, 免疫学、植物学与动物学、微生物学、精神病学与心理学等学科进入 ESI 全球前 1%。同时学院拥有微生物代谢国家重点实验室、教育部遗传发育与精神神经疾病重点实验室、教育部代谢与发育科学国际合作联合实验室、农业部国家转基因生物分子特征验证测试中心、上海市转基因生物和食品安全专业技术服务平台等多个重点实验室和研究平台。

面向诸多生物医药领域高新技术企业对既懂生物医药技术又懂企业工程管理的中高层管理人才有迫切需求, 依托我院在生物信息、生物化工、基因工程、细胞工程等技术领域的优势和工科实力与相关生物医药领域企业的战略合作, 我院生物医药领域工程管理硕士的培

养，必将为生物医药相关企业提供一大批在企业技术创新、技术改造等方面发挥中流砥柱作用的中高层技术管理人才，为推动生物医药领域相关企业工程管理和工程技术进步做出贡献。

The School of Life Sciences and Biotechnology (SLSB) of Shanghai Jiao Tong University (SJTU) was jointly founded by SJTU and the Chinese Academy of Sciences (Shanghai Branch) in February 1997. After about 20 years of rapid development, SLSB has earned prestigious reputation and worldwide recognition in various areas of scientific research. Currently there are two national key disciplines and three Shanghai key disciplines. Biology and biochemistry and molecular biology and genetics have entered 1‰ ESI international rankings, while microbiology, animal and plant science and several subjects have entered top 1% in ESI international rankings. Meanwhile, the SLSB owns several key laboratories and research platforms such as the National Key Laboratory of Microbial Metabolism, the Key Laboratory of the Ministry of Education of Genetic Development and Mental Neurological Diseases.

In face of the urgent need of mid-to-top managers who equipped with both biomedical technology and engineering management knowledge, the SLSB has launched MEM in biomedical field. Based on the SLSB's advantage of bioinformatics, biochemical, genetic engineering and strategic cooperation with enterprises in biomedical field, our MEM programme will contribute to cultivate a good number of high-quality engineering management talents and make significant progress of engineering management and technology in related biology and medicine industry.

### **三、培养目标 Program Objective**

本学科围绕“四位一体”培养理念，主要培养在生物与医药相关行业领域：

1. 具有坚实宽广的理论基础和系统深入的专业知识；
2. 具备开展工程科学研究、新产品研发，进行工程技术创新、解决复杂工程技术问题的行业内人才；
3. 满足国家在生物与医药相关行业领域对高层次工程技术、研发和管理人才的需求。

This discipline focuses on the cultivation concept of "four in one" and aims to cultivate talents with the following characteristics:

- a. Having a sound and broad theoretical foundation and systematic and in-depth professional knowledge;

b. Being professionals who are capable of carrying out engineering scientific research, new product R&D and solving complex engineering technical problems;

c. Meeting the national demand for high-level engineering, R&D and management talents in the fields related to biology and medicine.

#### 四、培养方式及学习年限 Training Mode and Study Duration

采取非全日制培养模式。

实行弹性学习年限，基本学习年限为两年半，经申请批准后可以适当延长，最长可以延期至 5 年。

The training mode is Part-time.

Study period for graduates is flexible. The basic study period for masters in this major is 2.5 years. As a general rule, the study period can be extended, and the maximum is 5 years (suspension included).

#### 五、课程学习要求 Course Requirement

总学分要求修满 30 学分，选择 GPA 统计源的课程 $\geq 19$  学分， $GPA \geq 2.7$  方可以毕业。

各类课程和学分具体要求如下：

The courses require a minimum total credits of 30, a minimum GPA credits of 19 with a minimum GPA of 2.7 to graduate.

All courses and credits requirement details are as follow:

课程类别 Course Type	学分要求 Min Credits	门数要求 Min Courses	GPA 学分要求 Min GPA Credit	备注 Note
公共基础课 General Courses	6	4	6	
专业基础课 Program Core Courses	$\geq 6$	$\geq 3$	$\geq 13$	
专业前沿课 Program Frontier Courses	1	1	0	
专业选修课 Program Elective Courses	$\geq 0.5$	$\geq 1$	0	

#### 六、培养过程要求 Training Requirement

序号	过程管理	是否实施
1	资格（综合）考试	否
2	开题报告	是
3	中期考核	是
4	年度报告（论文工作考核）	是
5	预答辩	否
6	答辩	是

硕士生培养过程主要包括开题报告和中期检查。

### (1) 硕士开题报告

硕士生学位论文开题在第二学年第一学期结束前完成。基本完成培养计划中规定的课程学习并成绩合格，GPA 满足培养方案要求。专家小组至少由 3 名相关学科具有硕士研究生指导资格的专家对开题报告进行论证。首次学位论文开题未通过的，可在下一学期再次申请开题；两次论文开题均未通过的，由开题报告专家组作出应予退学处理建议。

### (2) 硕士生中期检查

完成培养计划中规定的全部课程学习并成绩合格；GPA 不低于 2.7；学位论文开题已通过。

中期检查应在学位论文送审前 3 个月进行，主要包括：研究生课程学习完成情况、论文工作进展情况、个人总结、导师评价以及考核小组面试评审等。专家小组由 3 名以上相关学科具有硕士研究生指导资格的专家组成的专家组对学生报告进行答辩评审。中期检查的结果按“通过”或“不通过”记载。中期检查不通过的硕士研究生，应给予警告，并要求其给出改进措施，上报给所在院系。经整改可于下一学期再次进行中期检查，2 次中期检查不通过者，由专家组作出应予退学处理建议。

The training process for masters generally include two parts, thesis proposal and mid-term examination.

#### (1) Masters' Thesis Proposal

Masters' thesis proposal should be finished by the end of the first semester of the second academic year after completing the courses stipulated in the training plan with qualified results, and GPA meets the requirements of the training program. The assessment committee shall have at least three experts from related disciplines who have the qualification to instruct graduates to assess the proposal report. Those who fail to pass the thesis proposal for the first time can apply again in the next semester. However, for those who fail twice, the expert group shall suggest them to drop out of school.

#### (2) Masters' Mid-term Examination

Masters' mid-term examination should be carried out three months before the thesis is submitted when students complete and pass all the courses stipulated in the training plan with a minimum GPA of 2.7 and pass the thesis proposal. The contents of the mid-term examination include: completion of the courses, progress of the thesis, personal summary, supervisor's evaluation and the interview and assessment of the expert group, etc. The assessment committee shall be composed of at least three experts from related disciplines who have the supervision qualification for master students to conduct defense and evaluation of the students' performance. The results of the mid-term examination are recorded as "pass" or "fail". Students who do not pass the mid-term examination should be given a warning and required to give improvement measures, and reported to the school. After modification, mid-term examination can be carried out again in the next semester. Those who fail to pass the mid-term examination twice will be advised to drop out of school.

## 七、学术成果

依据生命科学技术学院〔2021 内〕14 号-关于印发《上海交通大学生命科学技术学院硕士生无论文毕业质控细则》的通知要求, 我院取消申请硕士学位须发表学术论文的要求。同时, 为了促进学术创新, 严格硕士培养过程环节质量控制。

In accordance with the requirements of the *Quality Control Rules for the Graduation of Masters without Publication, SLSB, SJTU* (Notice No. 14 of School of Life Science and Technology [2021], SLSB has cancelled the requirement of publishing academic papers before applying for master's degree. At the same time, in order to promote academic innovation, quality of the training process is strictly controlled.

## 八、学位论文 Thesis/dissertation work

### 1. 规范性要求

硕士学位论文撰写格式按照《上海交通大学博硕士学位论文撰写要求》，学位论文答辩与学位申请按照《上海交通大学关于申请授予硕士学位的规定》执行。硕士学位论文要选择有理论价值的课题，对所研究的课题有新的见解或新的成果，对本学科发展或社会进步有一定意义，并能表明作者在本门学科上掌握了坚实的基础理论和系统的专门知识，具有从事科学工作或独立担负专门技术工作的能力。在论文题目确定后，用于论文工作的时间一般不应少于一年半。

## 2. 质量要求

学位论文要求实验设计合理，技术路线清晰，数据准确可信，文字流畅，书写规范，讨论深入，内容有一定的创新性，达到在核心期刊以上发表的水平。在第四学期中期由学院学位委员会和导师组成检查组对学位论文进行的情况作一次中期检查。

### 1. Normative requirements

The format of master's thesis shall be in accordance with the *Requirements for Writing Master's Thesis of Shanghai Jiao Tong University*, and the thesis defense and degree application shall be in accordance with the Regulations on Applying for Master's Degree of Shanghai Jiao Tong University. The topic should be of theoretical value and should have new insights or new achievements on the research. It should have certain significance on discipline development and social progress, and can show that the writer has mastered the solid specialized knowledge and systematic basic theory and is capable of engaging in work or expertise work independently. After the topic of the thesis is determined, at least one and a half years should be spent to complete it.

### 2. Quality requirements

The thesis should have reasonable experimental design, clear technical route, accurate and credible data, fluent text, standard writing, in-depth discussion, innovative content, and reach the level of publication in core journals. In the middle of the fourth semester, an inspection team composed of the Degree Committee and supervisors will make a mid-term review on the thesis.

## 九、课程设置 Courses

课程类别 Category	课程代码 Course Code	课程名称 Course Name		学分 Credit	授课语言 Language*	开课学期 Semester	是否必修? Compusory?	可以 计算 GPA	必须 计算 GPA	备注 Note
		中文 Chinese	English 英文							
公共基础课 General Courses	FL6001	学术英语	English for Academic Purposes	2	英文 in English	春 秋 季 Spring/Fall	是 Yes	是 Yes	是 Yes	
	GE6001	学术写作、规范与伦理	Scientific Writing, Integrity and Ethics	1	中文 Chinese	春 秋 季 Spring/Fall	是 Yes	是 Yes	是 Yes	
	MARX6001	新时代中国特色社会主义理论与实践	Theory and Practice of Socialism with Chinese Characteristics in the New Era	2	中文 Chinese	春 秋 季 Spring/Fall	是 Yes	是 Yes	是 Yes	
	MARX6003	自然辩证法概	Introduction to Dialectics of Nature	1	中文 Chinese	春 秋 季 Spring/Fall	是 Yes	是 Yes	是 Yes	
专业基础课 Program Core Courses	MEM6005	质量与可靠性管理	Quality and Reliability Management	2	中文 Chinese	春 秋 季 Spring/Fall	是 Yes	是 Yes	否 No	
	MEM6002	工程管理导论	Introduction to Engineering Management	2	中文 Chinese	春 秋 季 Spring/Fall	是 Yes	是 Yes	否 No	
	MEM6003	工程经济学	Engineering Economics	2	中文 Chinese	春季 Spring	是 Yes	是 Yes	否 No	
	MEM6006	工程信息管理	Engineering Information Management	2	中文 Chinese	春 秋 季 Spring/Fall	是 Yes	是 Yes	否 No	
	MEM6601	基因工程与合成生物学	Genetic Engineering and Synthetic Biology	2	中文 Chinese	春 秋 季 Spring/Fall	否 No	是 Yes	否 No	
	MEM6603	生物医药	Biomedicines	3	中文 Chinese	春 秋 季 Spring/Fall	否 No	是 Yes	否 No	

	MEM6604	生物制品	Biological Products	2	中文 Chinese	春 秋 季 Spring/Fall	否 No	是 Yes	否 No	
	MEM6605	生物医药研究与开发的伦理	Ethics of Biomedical Research and Development	2	中文 Chinese	春 秋 季 Spring/Fall	否 No	是 Yes	否 No	
	BIO8002	生命安全	Biosafety	2	中文 Chinese	秋季 Fall	否 No	是 Yes	否 No	
专业前沿课 Program Frontier Courses	GE6011	学术报告会	Academic Lectures	1	中文 Chinese	春 秋 季 Spring/Fall	是 Yes	否 No	否 No	
专业选修课 Program Elective Courses	BIOE6303	生物工程技术经济分析	Engineering Economic Analysis in Biotechnology	1	中文 Chinese	秋季 Fall	否 No	否 No	否 No	
	BIOE8401	微生物资源与环境工程前沿	Frontiers in Microbial Resources and Environmental Engineering	3	中文 Chinese	秋季 Fall	否 No	否 No	否 No	
	BIOE8501	生物技术企业实践与调研	Practice and Investigation in Biotechnology Enterprises	2	中文 Chinese	春 秋 季 Spring/Fall	否 No	否 No	否 No	
	GE6003	实验室安全教育	Laboratory Safety Education	0.5	中文 Chinese	春 秋 季 Spring/Fall	是 Yes	否 No	否 No	