



杭州电子科技大学

本科留学生 2022 级医学信息工程专业培养方案

(英文授课)

一、培养目标（结合专业特点，确定符合本专业的国际化人才培养目标）

培养具有人文与科学素养、国际视野、工程职业道德和社会责任感，具备团队合作、对外交流、终身学习等能力，能够利用传感、控制、信息、材料等领域的先进技术，在医学信息工程等领域从事科学研究、设计开发、产品测试、项目管理等方面工作的工程技术骨干人才。

二、培养要求（本专业应该掌握的知识 and 应具备的能力）

本培养目标包括以下 3 个方面：

社会能力：具备团队合作、对外交流、终身学习等能力

专业知识：掌握数学、生物/医学、电子、计算机等基础知识，能够利用传感、控制、信息、材料等领域的先进技术。

专业能力：具备工程实践能力和专业沟通表达能力，能够利用专业知识解决医学信息工程方面的复杂工程问题。

三、主要课程（标出 8-10 门核心课程即可）

电路原理、线性电子电路、数字电路、单片机技术与应用、数字信号处理、数字图像处理、医学仪器原理及设计、C++程序设计、生物信息学、生物统计学等。

四、学制

基本学制为四年，弹性学习年限为 3~6 年。

五、授予学位（注明具体学位名称，如：理学学士、文学学士和工学学士等）

工学学士。



课程类别		修读性质	学分
通识公共(教育)课		必修	65
学科（专业）基础课		必修	11
专业课	专业必修课	必修	24
	专业选修课	选修	23
实践教学环节		必修	20
合计		143 学分	

七、教学进程计划表 （附后）

Bachelor Degree Program for International Students

I. Program Title (专业名称)

Medical Information Engineering

II. Program Description (专业介绍)

Medical Information Engineering (MIE) is the application of engineering principles and design concepts to medicine and biology for healthcare purposes (e.g. diagnostic or therapeutic). This field seeks to close the gap between engineering and medicine, combining the design and problem-solving skills of engineering with medical and biological sciences to advance health care treatment, including diagnosis, monitoring, and therapy.

III. Special Features (专业特色)

Medical Information engineers require considerable knowledge of both engineering and biology. Medical Information Engineering has only recently been emerging as its own discipline rather than a cross-disciplinary hybrid specialization of other disciplines.

The MIE programs in our university aim to develop a student with the ability of instrument engineering, medical and health industry, solving engineering needs of medical instruments and the field of biotechnology. The students are required to have the basic ability in response to these requirements (including design, implementation or service etc.), and cultivate the teamwork habits.

IV. Curriculum (8-10 core courses)

Principles of Circuit; Linear Electronic Circuits; Digital Electronic Circuits; Single-Chip Computer Technology and Application; Digital Signal Processing; Digital Image Processing; Principle & Design of the Medical Instrument; C++ Programming; Bioinformatics; Biostatistics;

V. Duration

4 years. (3-6 years flexible)

VI. Degree (B.Sc., B.A., or B.Eng., etc.)

B. Eng.

VII. Credits

Course Category		Curriculum attribute	Credits
General Basic Courses		Required	65
Basic disciplinary courses		Required	11
Specialized Courses	Specialized Required Courses	Required	24
	Specialized Elective Courses	Elective	23
Practice Courses		Required	20
Total		143 Credits	

VIII. Teaching Schedule (Attached)

Table of teaching schedule for Undergraduate students in Medical Information Engineering major
理工类 (2022 级本科留学生医学信息工程专业教学计划表) (英文授课)

课程类别 Course category	课程性质 Curriculum attribute	课程代码 Course Code	课程名称 Course name	课程英文名称 Course English name	学分 Credit	总学时 Total hours	讲授 Teaching	课程实践 Curriculum practice	实验 Experiment	课内上机 Class compute	课外上机 Outside	开课学期 Semester	开课学院 School	考核方式 Assessment methods	起始周 Starting week	备注 Remarks
通识公共课 General Basic Courses	通识必修 Required	A11016*G	汉语1	Chinese 1	6.0	96	96					1	外国语学院 School of Foreign	Y	01-16	
		A070224G	高等数学G1	Higher Mathematics G1	5.0	80	80					1	理学院 School of Science	Y	01-16	
		A110193G	跨文化交际	Intercultural Communication	2.0	32	32					1	外国语学院 School of Foreign	Y	01-16	
		A070202G	线性代数	Linear Algebra	3.0	48	48					1	理学院 School of Science	Y	01-16	
		A11017*G	汉语2	Chinese 2	6.0	96	96					2	外国语学院 School of Foreign	Y	01-16	
		A170054G	始业教育	Orientation Education	1.0	16	16					1	国际教育学院 School of Education	C	01-08	
		A110453G	中国发展模式	China's development Model	2.0	32	32					4	外国语学院 School of Foreign	Y	01-16	
		A110451G	中国概况1	Survey of China 1	2.0	32	32					2	外国语学院 School of Foreign	Y	01-16	
		A110452G	中国概况2	Survey of China 2	2.0	32	32					3	外国语学院 School of Foreign	Y	01-16	
		A070225G	高等数学G2	Higher Mathematics G2	5.0	80	80					2	理学院 School of Science	Y	01-16	
		A070349G	大学物理1	College Physics I	3.0	48	48					2	理学院 School of Science	Y	01-16	
		A050101G	C语言程序设计	Programming for C Language	4.0	80	48			32	32	2	计算机学院 School of Computer	Y	01-16	
		A11018*G	汉语3	Chinese 3	6.0	96	96					3	外国语学院 School of Foreign	Y	01-16	
		A070330G	大学物理2	College Physics2	3.0	48	48					3	理学院 School of Science	Y	01-16	
		A110153G	汉语4 (初级)	Chinese 4 (primary)	4.0	64	64					4	外国语学院 School of Foreign	Y	01-16	
学科基础课 Basic disciplinary Courses	学科必修 Required	A070214G	概率论与数理统计	Probability Theory and Mathematical Statistics	3.0	48	48					4	理学院 School of Science	Y	01-16	
		A11043*G	汉语5	Chinese 5	4.0	64	64					5	外国语学院 School of Foreign	Y	01-16	
		A11044*G	汉语6	Chinese 6	4.0	64	64					6	外国语学院 School of Foreign	Y	01-16	
		A040091G	数字电路	Digital Electronic Circuits	3.0	48	42		6			3	电子工程学院 School of Electronics	Y	01-16	
		A040208G	线性电子电路	Linear Electronic Circuits	3.0	48	48					4	电子工程学院 School of Electronics	Y	01-16	
		A040104G	电路原理	Principles of Circuit	3.0	48	48					3	电子工程学院 School of Electronics	Y	01-16	
		A190254G	工程识图	Engineering drawing	2.0	32	29			3		2	自动化学院 School of	Y	01-16	



课程类别 Course category	课程性质 Curriculum attribute	课程代码 Course Code	课程名称 Course name	课程英文名称 Course English name	学分 Credit	总学时 Total hours	讲授 Teaching	课程实践 Curriculum practice	实验 Experiment	课内上机 Class compute	课外上机 Outside	开课 学期 Semester	开课学院 School	考核方式 Assessment methods	起始周 Starting week	备注 Remarks
专业必修 Required		A190005G	人体解剖与生理学	Human Anatomy and Physiology	3.0	48	48					1	自动化学院 School of Automation	Y	01-16	
		A190184G	数字信号处理	Digital Signal Processing	3.0	48	42		6	6		4	自动化学院 School of Automation	Y	01-16	
		A190182G	微机原理与接口技术	Principles of Microcomputer and Interface Technology	3.0	48	40		8			5	自动化学院 School of Automation	Y	01-16	
		A190438G	医学仪器原理及设计	Principle & Design of the Medical Instrument	3.0	48	26		6	16		5	自动化学院 School of Automation	Y	01-16	
		A190441G	生物信息学	Bioinformatics	3.0	48	36			12	12	5	自动化学院 School of Automation	Y	01-16	
		A190179G	测试技术与传感器	Testing Technology and Sensors	3.0	48	42		6			4	自动化学院 School of Automation	Y	01-16	
		A190115G	生物统计学	Biostatistics	2.0	32	32					5	自动化学院 School of Automation	Y	01-16	
		A190246G	数字图像处理	Digital Image Processing	2.0	32	24			8	16	5	自动化学院 School of Automation	Y	01-16	
		A190042G	C++程序设计	C++ Programming	2.0	32	24			8	16	3	自动化学院 School of Automation	Y	01-16	
		B190246G	计算机网络与通信	Computer Network and Communication	2.0	32	26			6	10	5	自动化学院 School of Automation	Y	01-16	
		B190218G	软件技术基础	Fundamentals of Software Technology	3.0	48	36			12	18	3	自动化学院 School of Automation	Y	01-16	
		B190185G	生物医学工程概论	Introduction to Biomedical Engineering	2.0	32	22		10			1	自动化学院 School of Automation	Y	01-16	
		B190420G	生物化学	Biochemistry	3.0	48	48					3	自动化学院 School of Automation	Y	01-16	
		B190343G	生物材料科学	Biological Materials	3.0	48	40		8			5	自动化学院 School of Automation	Y	01-16	
专业选修 Elective		B190430G	组织工程学	Tissue Engineering	2.0	32	32					6	自动化学院 School of Automation	Y	01-16	
		B190176G	数据库原理及应用	Principles and Application of Database	2.0	32	32					6	自动化学院 School of Automation	Y	01-16	
		B190337G	临床医学与工程	Clinical Medicine and Engineering	2.0	32	32					6	自动化学院 School of Automation	Y	01-16	
		B060461G	文献检索与利用	Search & Utilization of Literature	2.0	32	32					7	自动化学院 School of Automation	Y	01-16	
		B190409G	专业英语(生物医学工程)	Professional English (Biomedical)	2.0	32	32					6	自动化学院 School of Automation	Y	01-16	
		S071805G	大学物理实验A1	Experiments in College Physics A1	1.0	32			32			2	理学院 School of Science	Y	01-16	
		S071806G	大学物理实验A2	Experiments in College Physics A2	1.0	32			32			3	理学院 School of Science	Y	01-16	
		A170055G	综合社会实践		2.0	4周						4	国际教育学院 school of	C	短学期	

实践环节

课程类别 Course category	课程性质 Curriculum attribute	课程代码 Course Code	课程名称 Course name	课程英文名称 Course English name	学分 Credit	总学时 Total hours	讲授 Teaching	课程实践 Curriculum practice	实验 Experim ent	课内上 机 Class compute	课外上 机 Outside	开课 学期 Semester	开课学院 School	考核方式 Assessment methods	起始周 Starting week	备注 Remarks
Practice Courses	实践必修 Required	S190414G	人体解剖与生理学 实验	Experiments for Human Anatomy and Physiology	1.0	32						2	自动化学院 School of Automatic	C	01-16	
		S190077G	医学仪器课程设计	Medical Instrument Design	2.0	2周						6	自动化学院 School of Automatic	C	01-16	
		S190447G	生物医学工程系统 实训	Practice for Biomedical Engineering System	5.0	5周						7	自动化学院 School of Automatic	C	01-16	
		S190048G	毕业实习与论文	Pre-graduation Practice & Thesis	8.0	16周						8	自动化学院 School of Automatic	C	01-16	
各学期学分分配(课内教学及实践环节) Each semester in Credit allocation (in class teaching and practice)					1	2	3	4	5	6	7	8				
					22.0	24.0	25.0	20.0	20.0	14.0	7.0	8.0				
总学分Total Credits					143											
注：考核方式中，X代表“学校组织”，Y代表“学院组织”，C代表“考查”。																
Note: In terms of the assessment methods, "X" means a formal examination organized by the related university, "Y" means a formal examination organized by the related school, and "C" means an informal test organized by the instructing professor of the Course.																

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