

生物医学工程专业辅修培养方案

Minor Program of Biomedical Engineering

一、培养目标 Objectives

本辅修专业面向未来医疗健康领域需求，秉承“宽口径、厚基础、有特色、重个性、强能力、求创新”的培养理念，培养具有思想政治品德良好、专业知识和能力过硬、综合素质全面的生物医学工程领域创新型人才。

To meet the needs of the future healthcare field, we adhere to the educational concept of “broad caliber, thick foundation, distinctive features, emphasized individuality, strong ability, and innovation seeking”. Students are nurtured to be innovative talents in the field of biomedical engineering with good ideological and political qualities, excellent professional knowledge and skills, and comprehensive overall quality.

二、培养要求 Requirement

本专业的毕业生应具备较深厚的数理基础、较高外语水平和计算机水平等公共基础知识以及生物学、医学、工程学、材料学、医疗等学科的基本理论和基础知识，并受到科学实验研究能力、工程设计能力、新产品开发能力和生产过程组织管理能力等方面的良好训练，毕业后具备从事生物医学工程研究和开发的基本素质和基本技能。

Graduates are expected to master general solid knowledge in mathematics, physics, foreign language and computer science; master comprehensive professional knowledge in biology, medicine, engineering, material science, medical devices; master strong capabilities in scientific research, engineering design, product development and processing management. Graduates have solid and comprehensive skills in the research and development in biomedical engineering areas.

三、学分要求 Credits Requirements

选本专业为辅修专业的学生，在获得主修专业毕业证书的基础上，完成辅

修专业培养方案规定的 31 学分核心课程，并符合《西南交通大学本科生辅修专业修读及辅修学位授予管理办法》的规定，可申请西南交通大学辅修专业证书。

Students who choose the minor program have completed the 31-credits core courses stipulated in the minor program, and meet the requirements of the "Regulations for Undergraduate Minor Professional Study and Degree Awarding at Southwest Jiaotong University" can apply for a minor professional certificate from Southwest Jiaotong University upon obtaining the bachelor's degree certificate in their major.

四、课程设置 Course Programs

课程类型 Course Type	课程名称 Course Name	课程性质 Nature of Course	学分 Credits	开课学期 Semester	开课学院 School	备注 Notes
学科基础课程 15 学分 Discipline Foundational Courses 15 Credits	有机化学基础 Fundamentals of Organic Chemistry	必修 Compulsory	3	第 2 学期 Semester 2	医学院 College of Medicine	
	物理化学 A Physical Chemistry A	必修 Compulsory	3	第 3 学期 Semester 3	医学院 College of Medicine	
	生物医学基础 Fundamentals of Biomedical Sciences	必修 Compulsory	3	第 1 学期 Semester 1	医学院 College of Medicine	
	材料科学基础 B Materials Science Basics B	必修 Compulsory	3	第 4 学期 Semester 4	医学院 College of Medicine	
	生物医学工程基础 Fundamentals of Biomedical Engineering	必修 Compulsory	3	第 4 学期 Semester 4	医学院 College of Medicine	
专业基础课 10 学分 Professional Courses 10 Credits	细胞生物学与分子生物学 Cell and Molecular Biology	限修 Distributive Elective	2	第 4 学期 Semester 4	医学院 College of Medicine	
	生物医学传感器与检测技术 Biosensors and Detection Technologies	限修 Distributive Elective	2	第 6 学期 Semester 6	医学院 College of Medicine	
	生物材料表面工程 (双语) Biomaterials Surface Engineering (Bilingual Teaching)	限修 Distributive Elective	2	第 7 学期 Semester 7	医学院 College of Medicine	

	生物医用材料 Biomedical Materials	限修 Distributional Elective	2	第 7 学期 Semester 7	医学院 College of Medicine	
	医疗仪器与诊断技术 Medical Devices and Diagnostic Technologies	限修 Distributional Elective	2	第 7 学期 Semester 7	医学院 College of Medicine	
专业核心课 6 学分 Specialized Core Course 6 Credits	医疗器械及设计 Medical Devices Design	必修 Compulsory	2	第 6 学期 Semester 6	医学院 College of Medicine	
	医疗器械生物学评价 Biological Evaluation of Medical Devices	必修 Compulsory	2	第 6 学期 Semester 6	医学院 College of Medicine	
	现代材料分析技术 (双语) Modern Materials Analysis Techniques (Bilingual Teaching)	必修 Compulsory	2	第 7 学期 Semester 7	医学院 College of Medicine	
总学分 Total Credits			31 Credits			