

基础医学专业强基计划实验班人才培养计划 (本科阶段)

Undergraduate Program for Specialty in Basic Medical Sciences

一、培养目标

I. Program Objectives

本专业培养面向生命科学医学学科前沿和国家重大战略需求，具有远大理想、国际视野、创新思维、全面的综合素质、扎实的医学知识、较强的实践能力、较大的发展潜能，能在医药卫生领域从事基础研究与应用开发，具有顶尖医学科学家潜质的基础学科领军人才。

Facing the frontier of medical sciences and major national strategic needs, this program aims at cultivating high-ranking leading talents of medical science research in basic disciplines and the Medical Scientist in medical science for the future. Students of this specialty should possess lofty aspirations and global insight, innovative thinking and comprehensive quality, solid medical knowledge and strong practical ability, and greater development potential to can engage in basic research and application development in the field of medicine and health.

二、基本规格要求

II. Graduate Outcomes

本专业学生应具备系统扎实的现代生命科学、基础医学、临床医学等基本理论、基本知识和基本技能，具有从事医学研究和教育工作的能力，具备良好的思想道德和职业态度，为毕业后进一步深造打下坚实的基础。

毕业生应获得以下的态度、知识和技能：

Students of this specialty should master basic theory, basic knowledge and basic skills & technology of modern life science, basic medicine, clinical medicine, and medical experiment technology. Students should have the ability to be engaged in medical scientific research and education, so as to lay a firm foundation for the continued education after graduation.

Graduates should acquire the following morals, knowledge and skills:

态度要求

1. 遵纪守法。具有爱国主义和集体主义精神，愿为医学科学和教育事业发展贡献力量。
2. 树立科学的世界观、人生观和价值观，以科学方法解决生活和工作中的问题。
3. 崇尚学术，刻苦学习，勤奋工作，不断进取，追求卓越。
4. 具有严谨求实的科学研究态度，具有独立思考、批判性思维、敢于创新和独立工作的能力。
5. 具有为新知识产生、新技能发现和知识传播做出贡献的意识。
6. 具有团队协作和良性竞争意识、人际交往和与他人沟通合作的能力。
7. 树立终身学习观念，具有自主学习和终身学习能力，充分认识不断自我完善和接受继续教育的重要性。
8. 树立正确的医学伦理观念，尊重每一个人，理解其人文背景及文化价值。

Attitude Requirements

1. Abide by laws and regulations. Possess patriotism and collectivism spirit, and wish to

contribute to the development of medical science and education.

2. Establish scientific outlook on world, life and values, and solve problems in life and work with scientific methods.

3. Advocate academic learning, study hard, work hard, keep forging ahead and strive for excellence.

4. Establish scientific attitude of seeking truth from facts. Establish the mind habits of independent thinking and critical thinking; dare to think out of the box and work independently.

5. Establish the ideology of wishing to make contributions to the formation of new knowledge, to the discovery of new skills and to the spreading of knowledge.

6. Possess team spirit and interpersonal communications skills, a healthy sense of competition, as well as the capability of cooperating with others.

7. Establish the idea of studying throughout one's life and fully realize the importance of going on unceasing self-perfection and receiving continued education. Possess the ability of independent learning and lifelong learning.

8. Establish the idea of medical ethics, respect personal faith, respect every person, and have a good understanding of his humane background and cultural value.

知 识 要 求

1. 具有坚实的自然科学和人文社会科学的知识基础和方法，并能够用于指导未来的学习和医学科学研究及教育实践。

2. 熟悉细胞生物学、生物化学、分子生物学、遗传学、微生物学等医学相关学科的前沿知识。

3. 掌握生命各阶段人体正常生理和疾病状态下的分子、细胞、组织、器官和系统的形态和功能改变及其变化规律，心理状态。

4. 掌握一定的临床医学知识及常见疾病的诊断治疗和临床思维方法，了解临床医学研究的新进展和新成就。

5. 掌握基础医学的科研思维和研究方法。

6. 掌握一定的公共卫生及预防医学知识和思维方法，临床流行病学的有关知识与方法。

7. 掌握一定的基础医学实践的教学知识和技能。

8. 掌握一门外语，掌握计算机、生物信息学知识。

Knowledge Requirements

1. Grasp the basic knowledge and scientific methods of bioscience, behavior science and social science and used them for guiding study and medical practice in the future.

2. Be Familiar with the advanced knowledge of Cell Biology, biochemistry, molecular biology, genetics, microbiology and other medical related disciplines.

3. Grasp the normal structure, function and psychological condition of the human body at different stages of life. Grasp the morphological and functional changes of molecules, cells, tissues, organs and systems under normal physiological and pathological conditions.

4. Grasp certain clinical medical knowledge, diagnosis and treatment of common diseases and clinical thinking methods. Understand the new progress and achievements of clinical medical research.

5. Grasp the scientific thinking and research methods of basic medicine.

6. Grasp certain knowledge and thinking methods of public health and preventive medicine. To master the knowledge and methods of clinical epidemiology.

7. Master certain teaching knowledge and skills of basic medical practice.

8. Master a foreign language and master the knowledge of computer and bioinformatics.

技能要求

1. 具有较强的医学科科研能力，掌握基本的实验设计方法和形态学、机能学、分子生物学、实验动物学等各种实验技能以及仪器应用，具有较强的动手能力。能熟练阅读、分析实验数据和研究成果及其科学意义。

2. 具有基础医学基本的教学能力，熟悉现代常用的教学方法，熟练掌握教学中常用的现代媒体信息技术。

3. 具有利用各种信息资源和信息技术进行自主学习与研究的能力。具备较强的信息获取、分析、应用和管理能力。

4. 具有良好的中英文表达及沟通能力。中文写作文字流畅、语法正确、符合逻辑和表达习惯。具有较强的英文听、说、读、写能力，能熟练阅读和翻译英文专业文献，具备较强的英文写作能力和进行国际学术交流的能力。

Skills Requirements

1. Possess certain medical research ability and relatively strong practical ability; master fundamental experiment design methods and various experimental skills of morphology, function, molecular biology, experimental zoology and so on, and instrumentation. Capable of reading and analyzing experimental data, research results and their scientific significance in a proficient manner.

2. Possess basic teaching ability with regard to basic medicine and master modern education technology as well as common teaching methods.

3. Possess the ability of making use of various kinds of information resources and information technology to keep on study and research independently. Possess the preliminary ability of information acquisition, analysis, application and management.

4. Possess excellent language expression and communication skills with sound ability to listen, speak, read and write in Chinese and English. Chinese writing should be fluent, grammatically correct, logical and expressive. Capable of reading and translating English Professional Literature as well as carrying out international academic communication.

三、培养特色

III. Program Highlights

将人文、信息、计算机、生物学知识与基础医学、临床医学知识相结合，培养基础扎实，多学科交叉背景，综合素质全面，具有创新能力的复合型人才。

配备最顶尖的师资、科研条件，全程实行导师制、小班化、个性化、国际化培养，“一生一方案”，以创新课题为载体，全面推进“三早”，将创新创业教育贯穿人才培养全过程。培养未来的顶尖医学科学家和未来引领者，以一流的国际竞争力进入世界一流大学或国内顶尖高校、科研院所。

This program integrates the knowledge of humanities, information and computer science with that of biology, basic medicine and clinical medicine so as to cultivate the Medical Scientist and leaders in medical science for the future.

The program aims at cultivating students a solid professional knowledge base and a multi-disciplinary background of science, improving students' comprehensive quality and cultivating compound talents with innovative ability. Equipped with the best teachers and the best conditions for scientific research, small classes, personalized and internationalized training will be implemented throughout the process. This class implements the training program of "one plan for a student". Taking the innovative subject as the carrier, we should comprehensively promote the "Three Early Projects", run the innovative entrepreneurship education through the whole process of talent

training. In the future, Graduates will enter the world's first-class universities or top universities in China with first-class international competitiveness.

四、主干学科

IV. Main Disciplines

生物科学 Biological Science、基础医学 Basic Medical Sciences、临床医学 Clinical Medicine

五、学制与学位

V. Program Length and Degree

学制：基本学制为 5 年

Duration: 5 years

授予学位：医学学士

Degrees Conferred: Bachelor of Medicine

六、学时与学分

VI. Credits Hours and Units for 5-year Training

完成学业最低课内学分（含课程体系与集中性实践教学环节）要求：209 学分。其中，专业基础课程、专业核心课程学分不允许用其他课程学分冲抵和替代。

Minimum Credits of Curricular (Comprising course system and intensified internship practical training): 209 credits. Major-related basic courses and core courses cannot be covered using credits from other courses in the program.

完成学业最低课外学分要求：8 学分

Minimum Extracurricular Credits: 8 credits

1. 课程体系学时与学分

Course Credits Hours and Units

课程类别		课程性质	学时	学分	占课程体系学分比例 (%)
素质教育通识课程		必修	636	33.0	15.8
		选修	64	4.0	1.9
学科基础课程	学科大类基础课程	必修	704	41.5	19.9
		选修	32	2.0	0.9
	学科专业基础课程	必修	500	30.0	14.3
		选修	64	4.0	1.9
专业课程	专业核心课程	必修	1188	58.0	27.8
		选修	96	6.0	2.9
集中性实践教学环节		必修	61w	30.5	14.6
合计			3284+61w	209	100.0
其中，总实验（实践）学时及占比			2208	60	48.5

Course Type		Required/Elective	Hours	Credits	Percentage(%)
Essential-qualities-oriented Education General Courses		Required	636	33.0	15.8
		Elective	64	4.0	1.9
Discipline-related Courses	Discipline-related General Courses	Required	704	41.5	19.9
		Elective	32	2.0	0.9
	Basic Sub-disciplinary Courses	Required	500	30.0	14.3
		Elective	64	4.0	1.9
Major-specific Courses	Major-specific Core Courses	Required	1188	58.0	27.8
		Elective	96	6.0	2.9
Internship & Practical Training		Required	61w	30.5	14.6
Total			3284+61w	209	100
Practicum Credits			2208	60	48.5

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2. 集中性实践教学环节周数与学分

Practicum Credits

实践教学环节名称	课程性质	周数	学分	占实践教学环节学分比例 (%)
军事训练	必修	2	1.0	2.8
入学教育	必修	1	0.5	1.4
毕业教育	必修	1	0.5	1.4
毕业考试	必修	1	0.5	1.4
临床实习	必修	12	6.0	28.1
早期接触科研	必修	4	2.0	8.5
科学研究创新训练	必修	4	2.0	5.7
毕业设计(论文)	必修	36	18.0	50.7
合计		61	30.5	100

Internship & Practical Training	Required/Elective	Weeks	Credits	Percentage (%)
Military Training	Required	2	1.0	2.8
Admission Education	Required	1	0.5	1.4
Graduation Education	Required	1	0.5	1.4
Graduation Examination	Required	1	0.5	1.4
Clinical Intern	Required	12	6.0	28.1
Early Contact Scientific Research	Required	4	2.0	8.5
Scientific Research Innovation Training	Required	4	2.0	5.7
Undergraduate Thesis	Required	36	18.0	50.7
Total		61	30.5	100

3. 课外学分

Extracurricular Credits

序号	名称	要 求	课外学分	
1*	早期接触临床教育	第 2 学年暑假参加 2 周医疗单位的护理工作, 提交实践总结及单位证明, 经考核合格者	1.0	
2*	预防战略实习	第 3 学年课外及节假日实习时间累计达到 2 周(72 学时)以上者, 提交实习论文, 评审合格者	1.0	
3*	思政课社会实践	完成 64 学时, 提交调查报告, 取得成绩	2.0	
4*	国际交流	参与与生物医学学科相关的海外知名高校学术夏令营、暑期学校等 2 周及以上, 获得结业证书	1.0	
		参加国内外举办的国际学术会议, 有海报展示或做会议报告	1.0-2.0	
5*	劳动教育	完成学时, 取得学分	2.0	
6*	竞赛	校级	获一等奖者	3.0
			获二等奖者	2.0
			获三等奖者	1.0
		省级	获一等奖者	4.0
			获二等奖者	3.0
			获三等奖者	2.0
全国	获一等奖者	6.0		
	获二等奖者	4.0		
	获三等奖者	3.0		
7	社会实践活动	提交社会调查报告, 通过答辩者	2.0	

续表

序号	名称	要 求		课外学分
7	社会实践活动	个人被校团委或团省委评为社会实践活动积极分子者；集体被校团委或团省委评为优秀社会实践队者		1.0-2.0
8	英语及计算机考试	全国大学英语六级考试	考试成绩达到学校要求者	2.0
		托福考试	达 90 分以上者	3.0
		雅思考试	达 6.5 分以上者	3.0
		GRE 考试	达 300 分以上者	3.0
		全国计算机等级考试	获二级以上证书者	2.0
		全国计算机软件资格、水平考试	获程序员证书者 获高级程序员证书者 获系统分析员证书者	2.0 3.0 4.0
9	论文	在国内外正式期刊上发表论文	每篇论文	2.0-3.0
10	专利	正式获得专利公开号	每项前两名	2.0-3.0
11	学术活动	每参加 5 次同济医学论坛或其他学术讲座，上交学术讲座记录表，并选取其中感兴趣的一次讲座写成书面报告，通过学院认证者		1.0
12	科研	在科研课题组参加科研实践，通过答辩，提交课题研究报告	每项 (视参与科研项目、创新实践项目的时间、科研能力、科研成果)	1.0
		完成院级大学生创新创业训练项目		1.0
		完成校级、省级大学生创新创业训练项目		2.0
		完成国家级大学生创新创业训练项目		3.0
13	科普	参与校内外各类科普推广活动	每次	0.5
		国内外正式期刊上发表科普类文章	每篇论文	1.0

注 1. 参加校体育运动会获第一名、第二名者与校级一等奖等同，获第三名至第五名者与校级二等奖等同，获第六至第八名者与校级三等奖等同。

2. *标注的项目为必须完成的项目。

No.	Items	Requirements	Credits	
1*	Early Patient Contact	Doing health care or nursing work in a medical unit for 2 weeks in summer of the 2nd academic year, submit a working summary and a unit certificate, being examined and approved	1.0	
2*	Preventive Medicine Practice	Doing practice in a medical unit or community health center for 2 weeks (or 72 hrs) in all outside class or in holidays during the 3rd academic year and submitting a practice report, being assessed and approved	1.0	
3*	Ideological and political course Social Practice	Submit a report and obtain a passing score	2.0	
4*	International Exchange	Taking Part in academic summer camp or Summer School in famous overseas universities related to biomedical discipline for 2 weeks or more, and getting the graduation certificate;	1.0	
		Taking Part in international academic conference held at home and abroad, with poster display or make conference report.	1.0	
5*	Labor Education	Fulfilling all hours and obtain credits	2.0	
6*	Competitions	University Level	Win first prize	3.0
			Win second prize	2.0
			Win third prize	1.0
		Provincial Level	Win first prize	4.0
			Win second prize	3.0
			Win third prize	2.0

continue

No.	Items	Requirements	Credits	
6*	Competitions	National Level	Win first prize 6.0	
			Win second prize 4.0	
			Win third prize 3.0	
7	Social Practice	Submitting a report and passing the oral defense	2.0	
		Individuals awarded “Active Participant” / Teams awarded “Excellent Performance” by HUST or Hubei Youth League Committee	2.0	
8	Examination in English and Computer	CET-6	Students whose Band-6 exam scores accord our requirements	2.0
		TOEFL	90 Points or Higher	3.0
		IELTS	6.5 Points or Higher	3.0
		GRE	300 Points or Higher	3.0
		National Computer Rank Examination	Win certificate of Band-3 or higher	2.0
		National Computer Software Qualification	Win certificate of programmer	2.0
			Win certificate of Advanced programmer	3.0
Win certificate of System Analyst	4.0			
9	Academic Paper	Published in national-level journals	Each paper	2.0-3.0
10	Patent	Officially obtained patent publication number	Each program	2.0-3.0
11	Academic activities	Participate in the Learned Lecture organized by school for 5 times; submit lecture records and submit report for one lecture; obtain proof of school		1.0
12	Scientific Research	Participated in scientific research practice and passed the defense		1.0
		Innovation and entrepreneurship training program of school	Each item (Depending on both the time spent in and ability demonstrated in scientific research project)	1.0
		Innovation and entrepreneurship training program of university/province		2.0
		Innovation and entrepreneurship training program of nation		3.0
13	Popularization of Science	Engaged in the scientific popularization	Each program	0.5
		Published popular science articles in national-level journals	Each paper	1.0

Notes: 1. In HUST Sports Meeting, the first and the second prize, the third to the fifth prize, and the sixth prize to the eighth prize are deemed respectively the first prize, the second prize and the third prize of university level.

2. “*” shows that the item and requirements must be completed by every student.

七、主要课程及创新（创业）课程

VII. Main Courses and Innovation (Entrepreneurship) Courses

(一) 主要课程 Main Courses

系统解剖学 Human Anatomy、人体组织学 Human Histology、病原生物学 (一) Pathogen Biology I、病原生物学 (二) Pathogen Biology II、医学免疫学 Medical Immunology、生物化学与分子生物学 Biochemistry and Molecular Biology、生理学 Physiology、病理学 Pathology、病理生理学 Pathophysiology、药理学 Pharmacology、诊断学 Diagnostics、内科学 Internal Medicine、外科学 Surgery、妇产科学 Gynaecology and Obstetrics、儿科学 Pediatrics、细胞与遗传学基础与进展 Foundation and Progress of Cell and Genetics

(二) 创新(创业)课程 Innovation (Entrepreneurship) Courses

创新意识启迪课程 Innovative Awareness Enlightenment Course : 基础医学导论 Introduction to Basic Medical Sciences ; 早期接触科研 1 Lab Rotation I at Early Stage、早期接触科研 2 Lab Rotation II at Early Stage

创新能力培养课程 Innovative Ability Training Course : 机能实验 1 Functional Experiments (1)、机能实验 2 Functional Experiments (2)、生物化学与分子生物学实验技术 Experimental Technique in Medical Biochemistry and molecular Biology、医学免疫学实验技术 Experimental Technique in Medical Immunology 医学研究规范与技能 Medical Research Safety and Skills、医学科研设计与科技写作 Medical Experiment Design and Scientific Writing

创新实践训练课程 Innovative Practice Training Course : 医学科研思维训练与实践 1、2、3、4 Medical Research Thinking Training and Scientific Research Practice I、II、III、IV

八、主要实践教学环节(含专业实验)

VIII. Practicum Module (experiments Included)

临床实习 Clinical Intern (内科学实习 Internal Medicine Internship, 外科学实习 Surgery Internship, 妇产科学实习 Gynaecology and Obstetrics Internship, 儿科学实习 Pediatrics Internship)、毕业设计(论文) Undergraduate Thesis、科学研究创新训练 Scientific Research Innovation Training、早期接触科研 1 Lab Rotation I at Early Stage、早期接触科研 2 Lab Rotation II at Early Stage

九、教学进程计划表

IX. Course Schedule

院(系): 同济医学院

专业: 基础医学(强基班)

School(Department): Tongji Medical College

Specialty: Basic Medical Sciences

课程类别 course type	课程性质 required/ elective	课程代码 course code	课程名称 course name	学时 hrs	学分 crs	其中 Including				设置学期 semester
						大课 lecture	小课 tutorial	实验/ 实践 exp/prac	课外 extra	
Essential-qualities-oriented Education General Courses 素质教育通识课程	必修 Required	MAX0022	思想道德与法治 Morals, Ethics and Fundamentals of Law	40	2.5	32			8	1
	必修 Required	MAX0042	中国近现代史纲要 Survey of Modern Chinese History	40	2.5	32			8	2
	必修 Required	MAX0013	马克思主义基本原理 Introduction to Basic Principles of Marxism	40	2.5	32			8	1
	必修 Required	MAX0072	习近平新时代中国特色社会主义思想概论 Xi Jinping Thought on Socialism with Chinese Characteristics for a New Era	48	3.0	32		8	8	1
	必修 Required	MAX0063	毛泽东思想和中国特色社会主义理论体系概论 General Introduction to Mao Zedong Thought and Socialist Theory with Chinese Characteristics	48	3.0	32			16	2
	必修 Required	MAX0032	形势与政策 Situation and Policy	48	1.5	18			30	5-7

续表

课程类别 course type	课程性质 required/ elective	课程代码 course code	课程名称 course name	学时 hrs	学分 crs	其中 Including				设置学期 semester
						大课 lecture	小课 tutorial	实验/ 实践 exp/prac	课外 extra	
Essential-qualities-oriented Education General Courses 素质教育通识课程	必修 Required	RMWZ0002	军事理论 Military Theory	36	2.0	32			4	1
	必修 Required	CHI0001	中国语文 Chinese	32	2.0	22			10	2
	必修 Required	SFL0001	综合英语 (一) Comprehensive English I	56	3.5		56			1
	必修 Required	SFL0011	综合英语 (二) Comprehensive English II	56	3.5		56			2
	必修 Required	NCC0051	计算机及程序设计基础 (Python) Fundamentals of Computer Programming (Python)	48	3.0			8		2
	必修 Required	PHE0002	大学体育 (一) Physical Education I	60	1.5			60		1-2
	必修 Required	PHE0012	大学体育 (二) Physical Education II	60	1.5			60		3-4
	必修 Required	PHE0022	大学体育 (三) Physical Education III	24	1.0			24		5-6
	选修 Elective		人文社科类选修课程 (含美育教育类课程 2.0 学分) Electives in Humanities and Social Science (including 2.0 credits for aesthetic education courses)	64	4.0	64				1-2
Discipline-Related General Courses 学科基础课程·学科大类基础	必修 Required	MAT0511	微积分 (二) Calculus II	80	5.0	80				1
	必修 Required	MAT0591	概率论与数理统计 Mathematical Statistics	40	2.5	40				2
	必修 Required	PHY0541	大学物理 (四) Physics IV	64	4.0	64				2
	必修 Required	PHY0551	物理实验 (一) Physics Experiments I	32	1.0			32		2
	必修 Required	CHE0711	基础化学 (二) Fundamental Chemistry II	88	5.5	50		38		1
	必修 Required	CHE0821	有机化学 (一) Organic Chemistry I	96	6.0	52		44		2
	必修 Required	BMS0981	基础医学导论 Introduction to Basic Medical Sciences	24	1.5	24				1
	必修 Required	BMS0131	细胞与遗传学基础与进展 Foundation and Progress of Cell and Genetics	48	2.5	24		24		6
	必修 Required	BMS0151	脑科学基础与进展 Foundation and Progress of Brain Science	32	2.0	32				6
	必修 Required	BMS0171	肿瘤学基础与进展 Foundation and Progress of Oncology	48	2.5	32	4	12		6

续表

课程类别 course type	课程性质 required/ elective	课程代码 course code	课程名称 course name	学时 hrs	学分 crs	其中 Including				设置学期 semester
						大课 lecture	小课 tutorial	实验/ 实践 exp/prac	课外 extra	
学科基础课程·学科大类基础 Discipline-related General Courses	必修 Required	BMS0892	生物信息学 Bioinformatics	32	2.0	16		16		8
	必修 Required	BMS0021	智能医学 Intelligent Medicine	24	1.5	24				8
	必修 Required	BMS0791	医学发育生物学 Medical Developmental Biology	32	2.0	20		12		4
	必修 Required	PUH0582	医学统计学 Medical Statistics	64	3.5	42		22		3
	选修 Elective		医学学科大类基础选修课程 Electives in Medical Basis	32	2.0	32				3-4
学科基础课程·学科专业基础 Basic Sub-disciplinary Courses	必修 Required	SFL0201	医学英语基础 Elementary Medical English	32	2.0	32				3
	必修 Required	CHE0523	分析化学 Analytical Chemistry	60	3.0	36		24		3
	必修 Required	PUH0604	预防医学 Preventive Medicine	32	2.0	32				4
	必修 Required	PUH0592	医学心理学 Medical Psychology	24	1.5	24				4
	必修 Required	PUH0512	临床流行病学 Clinical Epidemiology	48	2.5	36		12		6
	必修 Required	CLS0642	诊断学 Diagnostics	56	3.5	50		6		4
	必修 Required	CLS0681	内科学 Internal Medicine	72	4.5	66		6		5
	必修 Required	CLS0582	外科学 Surgery	48	3.0	40		8		5
	必修 Required	CLS0691	妇产科学 Gynaecology and Obstetrics	32	2.0	28		4		6
	必修 Required	CLS0701	儿科学 Pediatrics	32	2.0	28		4		6
	必修 Required	CLS2021	传染病学 Lemology (Infectious Diseases)	32	2.0	28		4		6
	必修 Required	CLS2271	神经及精神病学 Neurology and Psychiatry	32	2.0	27			5	6
选修 Elective		专业基础选修课程 Electives in Basic Special Science	64	4.0	64				5-6	
专业课程·专业核心 Major-specific Core Courses	必修 Required	BMS2091	医学科研思维训练与实践 1 Medical Research Thinking Training and Scientific Research Practice I	24	1.5	4	4	16		5
	必修 Required	BMS2101	医学科研思维训练与实践 2 Medical Research Thinking Training and Scientific Research Practice II	24	1.5	4	4	16		6
	必修 Required	BMS2111	医学科研思维训练与实践 3 Medical Research Thinking Training and Scientific Research Practice III	24	1.5	4	4	16		7

续表

课程类别 course type	课程性质 required/ elective	课程代码 course code	课程名称 course name	学时 hrs	学分 crs	其中 Including				设置学期 semester
						大课 lecture	小课 tutorial	实验/ 实践 exp/prac	课外 extra	
必修 Required		BMS2121	医学科研思维训练与实践 4 Medical Research Thinking Training and Scientific Research Practice IV	40	1.5	4	4	32		8
必修 Required		BMS0001	教育教学能力训练与实践 Educational Teaching Ability Training and Practice	80	3.0	16		24	40	8
必修 Required		BMS0514	系统解剖学 Systematic Anatomy	96	4.5	48		48		3
必修 Required		BMS0081	人体组织学 Human Histology	56	3.0	32		24		3
必修 Required		BMS0597	生物化学与分子生物学 Biochemistry & Molecular Biology	88	5.5	88				3
必修 Required		BMS0041	生理学 Physiology	88	5.5	74	12		2	4
必修 Required		BMS0121	病原生物学 (一) Pathogen Biology I	48	2.0	18		30		4
必修 Required		BMS0961	病原生物学 (二) Pathogen Biology II	72	3.5	48		24		4
必修 Required		BMS0805	医学免疫学 Medical Immunology	48	3.0	48				4
必修 Required		BMS0051	病理学 Pathology	92	4.5	50		42		5
必修 Required		BMS0531	病理生理学 Pathophysiology	56	3.5	48	6		2	5
必修 Required		BMS0583	药理学 Pharmacology	56	3.5	48	8			5
必修 Required		BMS0671	机能实验 1 Functional Experiments I	32	1.0			32		4
必修 Required		BMS0682	机能实验 2 Functional Experiments II	72	2.0			72		5
必修 Required		BMS2011	生物化学与分子生物学实验技术 Experimental Technique in Medical Biochemistry and molecular Biology	80	2.5			80		3
必修 Required		BMS2021	医学免疫学实验技术 Experimental Technique in Medical Immunology	48	1.5			48		4
必修 Required		BMS0161	医学研究规范与技能 Medical Research Safety and Skills	32	1.5	20		12		3
必修 Required		BMS0141	医学科研设计与科技写作 Medical Experimental Design and Scientific Writing	32	2.0	32				8
选修 Elective			专业选修课程 Electives in Special Science	96	6.0	96				5-8

专业课程·专业核心
Major-specific Core Courses

续表

课程类别 course type	课程性质 required/ elective	课程代码 course code	课程名称 course name	学时 hrs	学分 crs	其中 Including				设置学期 semester
						大课 lecture	小课 tutorial	实验/ 实践 exp/prac	课外 extra	
实践环节 Practical Training Items	必修 Required	RMWZ3511	军事训练 Military Education	2w	1.0			2w		1
	必修 Required	CLF3801	入学教育 Admission Education	1w	0.5			1w		1
	必修 Required	CLF3511	毕业教育 Graduation Education	1w	0.5			1w		10
	必修 Required	CLF3521	毕业考试 Graduation Examination	1w	0.5			1w		10
	必修 Required	CLF3721	内科学实习 Internal Medicine Internship	4w	2.0			4w		7
	必修 Required	CLF3761	外科学实习 Surgery Internship	4w	2.0			4w		7
	必修 Required	CLF3614	妇产科学实习 Gynaecology and Obstetrics Internship	2w	1.0			2w		7
	必修 Required	CLF3584	儿科学实习 Pediatrics Internship	2w	1.0			2w		7
	必修 Required	BMS0101	早期接触科研 1 Lab rotation at early stage I	2w	1.0			2w		3
	必修 Required	BMS0111	早期接触科研 2 Lab Rotation at early stage II	2w	1.0			2w		4
	必修 Required	BMS3611	科学研究创新训练 Scientific Research Innovation Training	4w	2.0			4w		8
	必修 Required	BMS3532	毕业设计（论文） Undergraduate Thesis	36 w	18.0			36w		9-10

十、说明

X. Directions

要在课程教学中把马克思主义立场观点方法的教育与科学精神的培养结合起来，提高学生正确认识问题、分析问题和解决问题的能力。要注重科学思维方法的训练和科学伦理的教育，培养学生探索未知、追求真理、勇攀科学高峰的责任感和使命感。要在课程教学中注重加强职业道德教育，教育引导學生始终把维护人民群众生命安全和身体健康放在首位，尊重生命。培养学生精益求精的精神，激发学生科技报国的家国情怀和使命担当。

各门课程精选和更新教学内容，小组讨论式、参与式教学法，强化基本理论、基本知识和基本技能的训练，加强自学能力、实践能力、外语及计算机应用能力和初步科学研究能力的培养，注重理论与实践的贯通，加强职业道德和医学伦理学教育，牢固树立预防为主观念，加强文、理知识，提高心理素质，拓宽学生的专业面和知识面，注重人际交往能力的培养，增强社会适应性，提高学生的整体素质。

1. 教学内容分课内和课外教学，课内教学包括大课、小课（讨论课、案例教学等）、课间实习等；课外教学主要是指学生通过自主学习、社会实践等形式学习教学大纲要求的教学内容（不包括学生复习）。

2. 外语教学：各门课程应安排 10% 的学时进行专业外语教学，平均每学时至少介绍和反复应用 10 个常用专业外语词汇。每学期至少有 1~2 门课程使用外文教材，采用外语教学。

3. 科研能力训练：科研能力训练贯穿于各个教学环节中，在基础课教学阶段，参加课外科研活动或专业实践活动；专业教学阶段，结合专业知识进行以科研活动为主要内容的科研训练，还应结合假期社会实践活动开展科研性质的社会调查研究。学生选修科研素养和学术道德类选修课程和参加各类学术讲座；聆听科研报告和学术讲座并撰写学习笔记计算课外学分等。提倡在本科期间发表 1 篇独立第一作者中文或 SCI 论文。医学科研思维训练与实践以科学问题+PBL 即 RBL 形式进行。

4. 按选课的有关规定，选课可跨院系、跨专业、跨学年或学期选课。围绕重大疾病研究和生物医学科学前沿问题，开设若干门不同发展方向的限定选修课，以开拓学生的学术视野。

5. 临床实习按临床常见病、多发病、疑难病的研究进展比较多的临床科室进行重点实习。

6. 选修课程的开设是为了加强学生的个性培养，拓宽知识面，学生可根据自己的兴趣、爱好、学习进程自由选择，且完成相应课程类别所要求的选修课程学分。

7. 课外学分除学生应完成的项目外，前 9 学期尚未修满者，第 10 学期可用选修课学分替换。

8. 第五学年为本科与研究生培养衔接阶段，学生在本科阶段及衔接阶段可以选修研究生课程并计算为研究生培养的学分。

9. 阶段（硕博阶段）培养：按学校研究生管理部门的相关规定及基础医学院硕博连读培养方案执行。

10. 实行动态进出管理：学业考核未达到强基计划培养要求的，按照培养方案规定，退出强基计划。

Combine the education of Marxist standpoint, viewpoint, and method with the cultivation of scientific spirit in the course teaching to improve students' ability to understand, analyse, and solve problems correctly. Pay attention to the training of scientific thinking methods and the education of scientific ethics and cultivate students' sense of responsibility and mission to explore the unknown, pursue the truth and climb the scientific peak bravely. Pay attention to strengthening professional ethics education in the course teaching, and guide students to maintain people's life safety and health in the first place and respect life. Cultivate students' striving for perfection and stimulate students' feelings of home and country and their mission to serve the country through science and technology.

Every course should carefully select and renew teaching content and improve teaching methods; strengthen the training of basic theory, basic knowledge and basic skills; enhance the cultivation of self-study ability, practice ability, foreign language and computer application ability, and preliminary ability in scientific research; pay attention to an early contact with clinic, the infiltration between basis and clinic and the concept of prevention first; lay stress on the imparting of knowledge of liberal arts and science, broaden students' range of specialty and knowledge; improve psychological quality and medical ethics; pay attention to interpersonal communication and promote social adaptation.

1. Teaching content is passed on both in class and outside class. Forms of in-class teaching consist of big class, small class (discussion, case analysis, etc.), experiments, extern, intern and so on; outside-class teaching indicates that students learn the teaching content of the syllabus by way of automatic study outside class, social practice and other forms (not including students' regular reviewing of their lessons).

2. Specialized foreign language teaching offers at least 10% of the class hour of foreign language studying for every courses. At least 10 common specialized foreign vocabularies should be introduced and used repeatedly within every class hours. At least 1 to 2 courses adopt foreign language

textbooks or foreign language teaching in every semester.

3. Research ability training: Ability training for scientific research should be carried out through all links in the teaching process. Students studying with remaining strength are encouraged to take part in research activities outside class. In conjunction with preventive medicine social practice (community practice) and holiday social practice, training in research work can be carried out. Furthermore, social investigations with a quality of scientific research can be conducted in combination with holiday social practice. Students are advised to attain the following goals:

- a, take elective courses featuring scientific research and academic ethics;
- b, attend various academic reports and lectures;
- c, write learning notes will be recorded in extracurricular credits;
- d, publish one single first author paper in Chinese or SCI during the stage of undergraduate.

4. According to the regulations concerned with course selection, courses can be selected in a way of intercollege, interdisciplinary, cross-academic year or cross-semester. Focusing on major disease research and cutting-edge issues in biomedical science, a number of limited elective courses in different development directions are offered to broaden students' academic horizons.

5. Clinical practice: focus on clinical departments with more research progress according to clinical common diseases, frequently-occurring diseases, and difficult disease.

6. The purpose of offering elective courses is to strengthen the students' individual character development and broaden their range of knowledge. Students can select any of them according to their interest, need and course schedule and finish the selective corresponding credits that required for every courses.

7. Outside-class credits: If students have finished the fixed items haven't completed all the rest up to the 9th semester, the missing credits can be made up by those of elective course in the 10th semester.

8. The fifth academic year is the transition period between undergraduate and graduate. Students may take the postgraduate courses whose credits will be counted for the postgraduate training.

9. Training in the X stage : Implement according to master-doctor consecutive education program of the School of Basic Medicine.

10. Carry out dynamic in-and-out Management: If the academic assessment fails to meet the training requirements of this program, withdraw from this program.

【基础医学专业的本研转段专业范围包括基础医学、化学、生物学、公共卫生与预防医学、药学、中西医结合基础、生物医学工程。】

十一、基准学期进程安排表

第一学期							第二学期						
课程	课内			课外	总学时	学分	课程	课内			课外	总学时	学分
	大课	小课	实验					大课	小课	实验			
思想道德与法治	32			8	40	2.5	中国近现代史纲要	32			8	40	2.5
马克思主义基本原理	32			8	40	2.5	毛泽东思想和中国特色社会主义理论体系概论	32			16	48	3.0
习近平新时代中国特色社会主义思想概论	32		8	8	48	3.0	计算机及程序设计基础 (Python)	40		8		48	3.0
综合英语 (一)	56				56	3.5	综合英语 (二)	56				56	3.5
微积分 (二)	80				80	5.0	概率论与数理统计	40				40	2.5
基础化学 (三)	50		38		88	5.5	大学物理 (四)	64				64	4.0
基础医学导论	24				24	1.5	物理实验 (一)			32		32	1.0
大学体育 (一)			30		30	0.75	大学体育 (二)			30		30	0.75
军事理论	32			4	36	2.0	有机化学 (一)	52		44		96	6.0
入学教育	1w				1w	0.5	中国语文	22			10	32	2.0
军事训练	2w				2w	1.0							
合计	338/3w		76	28	442/3w	27.75	合计	338		114	34	486	28.25
总计	414/3w			28	442/3w	27.75	总计	452			34	486	28.25
选修课程 2 学分					474/3w	29.75	选修课程 2 学分					518	30.25
第三学期							第四学期						
课程	课内			课外	总学时	学分	课程	课内			课外	总学时	学分
	大课	小课	实验					大课	小课	实验			
医学英语基础	32				32	2.0	医学发育生物学	20		12		32	2.0
系统解剖学	48		48		96	4.5	生理学	74	12		2	88	5.5
人体组织学	32		24		56	3.0	机能实验 1			32		32	1.0
生物化学与分子生物学	88				88	5.5	医学免疫学	48				48	3.0
生物化学与分子生物学实验技术			80		80	2.5	医学免疫学实验技术			48		48	1.5
分析化学	36		24		60	3.0	病原生物学 (一)	18		30		48	2.0
医学研究规范与技能	20		12		32	1.5	病原生物学 (二)	48		24		72	3.5
医学统计学	42	22			64	3.5	诊断学	50		6		56	3.5
大学体育 (二)			30		30	0.75	预防医学	32				32	2.0
早期接触科研 1			2w		2w	1.0	医学心理学	24				24	1.5
							大学体育 (二)			30		30	0.75
							早期接触科研 2			2w		2w	1.0
合计	298	22	218/2w		538/2w	27.25	合计	264	12	176/2w	2	454/2w	23.75
总计	538/2w				538/2w	27.25	总计	452/2w			2	454/2w	23.75
选修课程 0 学分					538/2w	27.25	选修课程 0 学分					470/2w	23.75

华中科技大学 2023 级本科专业培养计划

第五学期							第六学期						
课 程	课 内			课 外	总 学 时	学 分	课 程	课 内			课 外	总 学 时	学 分
	大 课	小 课	实 验					大 课	小 课	实 验			
病理学	50		42		92	4.5	细胞与遗传学基础与进展	24		24		48	2.5
病理生理学	48	6		2	56	3.5	脑科学基础与进展	32				32	2.0
药理学	48	8			56	3.5	肿瘤学基础与进展	32	4	12		48	2.5
机能实验 2			72		72	2.0	临床流行病学	36		12		48	2.5
内科学	66		6		72	4.5	妇产科学	28			4	32	2.0
外科学	40		8		48	3.0	儿科学	28			4	32	2.0
大学体育(三)			12		12	0.5	传染病学	28			4	32	2.0
医学科研思维训练与实践 1	4	4	16		24	1.5	神经及精神病学	27			5	32	2.0
							大学体育(三)			12		12	0.5
							医学科研思维训练与实践 2	4	4	16		24	1.5
合 计	256	18	156	2	432	23.0	合 计	239	8	76	17	340	19.5
总 计	430			2	432	23.0	总 计	323			17	340	19.5
选修课程 0 学分					432	23.0	选修课程 2 学分					372	21.5
第七学期							第八学期						
课 程	课 内			课 外	总 学 时	学 分	课 程	课 内			课 外	总 学 时	学 分
	大 课	小 课	实 验					大 课	小 课	实 验			
内科实习			4w		4w	2.0	生物信息学	16		16		32	2.0
外科实习			4w		4w	2.0	智能医学	24				24	1.5
妇产科实习			2w		2w	1.0	医学科研设计与科技写作	32				32	2.0
儿科实习			2w		2w	1.0	科学研究创新训练			4w		4w	2.0
形势与政策	18			30	48	1.5	教育教学能力训练与实践	16		24	40	80	3.0
医学科研思维训练与实践 3	4	4	16		24	1.5	医学科研思维训练与实践 4	4	4	32		40	1.5
合 计	22	4	16/12w	30	72/12w	9.0	合 计	92	4	72/4w	40	208/4w	12.0
总 计	42/12w			30	72/12w	9.0	总 计	168/4 w			40	208/4w	12.0
选修课程 4 学分					136/12w	13.0	选修课程 6 学分					304/4w	18.0
第九学期							第十学期						
课 程	课 内			课 外	总 学 时	学 分	课 程	课 内			课 外	总 学 时	学 分
	大 课	小 课	实 验					大 课	小 课	实 验			
毕业设计(论文)			20w		20w	10.0	毕业设计(论文)			16w		16w	8.0
							毕业教育	1w				1w	0.5
							毕业考试	1w				1w	0.5
合 计			20w		20w	10.0	合 计	2w		16w		18w	9.0
总 计					20w	10.0	总 计	18w				18w	9.0
选修课程 0 学分					20w	10.0	选修课程 0 学分					18w	9.0

注：形势与政策：5-7 学期；X 阶段（硕博阶段）培养按学校研究生管理部门的相关规定及基础医学院硕博连读培养方案执行。