

Undergraduate Program for Specialty in Basic Medical Sciences

Program Objectives

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.

Graduate Outcomes

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:

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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.

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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 medicaao

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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.

Program Highlights

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.

· Main Disciplines

Biological Science

Basic Medical Sciences

Clinical Medicine

· Program Length and Degree

5

Duration: 5 years

Degrees Conferred: Bachelor of Medicine

· Credits Hours and Units for 5-year Training

209

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.

8

Minimum Extracurricular Credits: 8 credits

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Course Credits Hours and Units

		636	33.0	15.8
		64	4.0	1.9
		704	41.5	19.9
		32	2.0	0.9
		500	30.0	14.3
		64	4.0	1.9
		1188	58.0	27.8
		96	6.0	2.9
		61w	30.5	14.6
		3284+61w	209	100.0
		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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Practicum Credits

		2	1.0	2.8
		1	0.5	1.4
		1	0.5	1.4
		1	0.5	1.4
		12	6.0	28.1
		4	2.0	8.5
		4	2.0	5.7
		36	18.0	50.7
		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

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Extracurricular Credits

1*		2	2	1.0
2*		3	2 (72)	1.0
3*		64		2.0
4*			2	1.0
				1.0-2.0
5*				2.0
6*				3.0
				2.0
				1.0
				4.0
				3.0
				2.0
				6.0
				4.0
				3.0
7				2.0

7			1.0-2.0
8			2.0
		90	3.0
		6.5	3.0
	GRE	300	3.0
			2.0
			2.0
			3.0
			4.0
9			2.0 3.0
10			2.0-3.0
11		5	1.0
12			1.0
			1.0
			2.0
			3.0
13			0.5
			1.0

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; Taking Part in international academic conference held at home and abroad, with poster display or make conference report.	1.0 1.0
5*	Labor Education	Fulfilling all hours and obtain credits	2.0
6*	Competitions	University Level Win first prize Win second prize Win third prize Provincial Level Win first prize Win second prize Win third prize	3.0 2.0 1.0 4.0 3.0 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	Each item (Depending on both the time spent in and ability demonstrated in scientific research project)	1.0
		Innovation and entrepreneurship training program of school		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.

· Main Courses and Innovation Entrepreneurship Courses

Main Courses

Human Anatomy Human Histology Pathogen
Biology Pathogen Biology Medical Immunology
Biochemistry and Molecular Biology Physiology Pathology
Pathophysiology Pharmacology Diagnostics Internal Medicine
Surgery Gynaecology and Obstetrics Pediatrics
Foundation and Progress of Cell and Genetics

Innovation (Entrepreneurship) Courses			
Innovative Awareness Enlightenment Course		Introduction	
to Basic Medical Sciences		1 Lab Rotation	at Early Stage
Rotation	at Early Stage		
Innovative Ability Training Course		1Functional Experiments	
(1)	2 Functional Experiments (2)		Experimental
Technique in Medical Biochemistry and molecular Biology			Experimental
Technique in Medical Immunology		Medical Research Safety and Skills	
Medical Experiment Design and Scientific Writing			
Innovative Practice Training Course			1 2 3
4 Medical Research Thinking Training and Scientific Research Practice			

Practicum Module experiments Included

Clinical Intern	Internal Medicine Internship	Surgery
Internship	Gynaecology and Obstetrics Internship	Pediatrics
Internship)	Undergraduate Thesis	Scientific Research
Innovation Training	1 Lab Rotation	at Early Stage
Rotation	at Early Stage	

Course Schedule

School/Department) Tongji Medical College				Specialty Basic Medical Sciences						
course type	required/ elective	course code	course name	hrs	crs	Including				semester
						lecture	tutorial	exp/prac	extra	
Essential-qualities-oriented Education General Courses	Required	MAX0022	Morals, Ethics and Fundamentals of Law	40	2.5	32			8	1
	Required	MAX0042	Survey of Modern Chinese History	40	2.5	32			8	2
	Required	MAX0013	Introduction to Basic Principles of Marxism	40	2.5	32			8	1
	Required	MAX0072	Xi Jinping Thought on Socialism with Chinese Characteristics for a New Era	48	3.0	32		8	8	1
	Required	MAX0063	General Introduction to Mao Zedong Thought and Socialist Theory with Chinese Characteristics	48	3.0	32			16	2
	Required	MAX0032	Situation and Policy	48	1.5	18			30	5-7

course type	required/ elective	course code	course name	hrs	crs	Including				semester
						lecture	tutorial	exp/prac	extra	
Essential-qualities-oriented Education General Courses	Required	RMWZ0002	Military Theory	36	2.0	32			4	1
	Required	CHI0001	Chinese	32	2.0	22			10	2
	Required	SFL0001	Comprehensive English	56	3.5		56			1
	Required	SFL0011	Comprehensive English	56	3.5		56			2
	Required	NCC0051	Python Fundamentals of Computer Programming (Python)	48	3.0	40		8		2
	Required	PHE0002	Physical Education	60	1.5			60		1-2
	Required	PHE0012	Physical Education	60	1.5			60		3-4
	Required	PHE0022	Physical Education	24	1.0			24		5-6
	Elective		2.0 Electives in Humanities and Social Science (including 2.0 credits for aesthetic education courses)	64	4.0	64				1-2
Discipline-Related General Courses	Required	MAT0511	Calculus	80	5.0	80				1
	Required	MAT0591	Mathematical Statistics	40	2.5	40				2
	Required	PHY0541	Physics	64	4.0	64				2
	Required	PHY0551	Physics Experiments	32	1.0			32		2
	Required	CHE0711	Fundamental Chemistry	88	5.5	50		38		1
	Required	CHE0821	Organic Chemistry	96	6.0	52		44		2
		BMS0981		24	1.5	24				1
	Required	BMS0131	Foundation and Progress of Cell and Genetics	48	2.5	24		24		6
			Science							
	Required	BMS0171	Foundation and Progress of Oncology	48	2.5	32	4	12		6

course type	required/ elective	course code	course name	hrs	crs	Including				semester
						lecture	tutorial	exp/prac	extra	
Discipline-related General Courses	Required	BMS0892								

course type	required/ elective	course code	course name	hrs	crs	Including				semester
						lecture	tutorial	exp/prac	extra	
Major-specific Core Courses	Required	BMS2121	Medical Research Thinking Training and Scientific Research Practice	40	1.5	4	4	32		8
	Required	BMS0001	Educational Teaching Ability Training and Practice	80	3.0	16		24	40	8
	Required	BMS0514	Systematic Anatomy	96	4.5	48		48		3
	Required	BMS0081	Human Histology	56	3.0	32		24		3
	Required	BMS0597	Biochemistry & Molecular Biology	88	5.5	88				3
	Required	BMS0041	Physiology	88	5.5	74	12		2	4
	Required	BMS0121	Pathogen Biology	48	2.0	18		30		4
	Required	BMS0961	Pathogen Biology	72	3.5	48		24		4
	Required	BMS0805	Medical Immunology	48	3.0	48				4
	Required	BMS0051	Pathology	92	4.5	50		42		5
	Required	BMS0531	Pathophysiology	56	3.5	48	6		2	5
	Required	BMS0583	Pharmacology	56	3.5	48	8			5
	Required	BMS0671	Functional Experiments	32	1.0			32		4
	Required	BMS0682	Functional Experiments	72	2.0			72		5
	Required	BMS2011	Experimental Technique in Medical Biochemistry and molecular Biology	80	2.5			80		3
	Required	BMS2021	Experimental Technique in Medical Immunology	48	1.5			48		4
	Required	BMS0161	Medical Research Safety and Skills	32	1.5	20		12		3
	Required	BMS0141	Medical Experimental Design and Scientific Writing	32	2.0	32				8
	Elective		Electives in Special Science	96	6.0	96				5-8

course type	required/ elective	course code	course name	hrs	crs	Including				semester
						lecture	tutorial	exp/prac	extra	
Practical Training Items	Required	RMWZ3511	Military Education	2w	1.0			2w		1
	Required	CLF3801	Admission Education	1w	0.5			1w		1
	Required	CLF3511	Graduation Education	1w	0.5			1w		10
	Required	CLF3521	Graduation Examination	1w	0.5			1w		10
	Required	CLF3721	Internal Medicine Internship	4w	2.0			4w		7
	Required	CLF3761	Surgery Internship	4w	2.0			4w		7
	Required	CLF3614	Gynaecology and Obstetrics Internship	2w	1.0			2w		7
	Required	CLF3584	Pediatrics Internship	2w	1.0			2w		7
	Required	BMS0101	1 Lab rotation at early stage	2w	1.0			2w		3
	Required	BMS0111	2 Lab Rotation at early stage	2w	1.0			2w		4
	Required	BMS3611	Scientific Research Innovation Training	4w	2.0			4w		8
	Required	BMS3532	Undergraduate Thesis	36 w	18.0			36w		9-10

Directions

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2.	10%	1	2
10			
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1	SCI		+PBL RBL
4.			
5.			
6.			
7.		9	10
8.			
9.			
10.			

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, interdiscip

	32			8	40	2.5	Python	32			8	40	2.5
	32			8	40	2.5		32			16	48	3.0
	32		8	8	48	3.0		40		8		48	3.0
	56				56	3.5		56				56	3.5
	80				80	5.0		40				40	2.5
	50		38		88	5.5		64				64	4.0
	24				24	1.5				32		32	1.0
			30		30	0.75				30		30	0.75
	32			4	36	2.0		52		44		96	6.0
	1w				1w	0.5		22			10	32	2.0
	2w				2w	1.0							
	338/ 3w		76	28	442/ 3w	27.75		338		114	34	486	28.25
		414/ 3w		28	442/ 3w	27.75			452		34	486	28.25
2					474/ 3w	29.75	2					518	30.25
1	32				32	2.0	1 () 2	20		12		32	2.0
	48		48		96	4.5		74	12		2	88	5.5
	32		24		56	3.0				32		32	1.0
	88				88	5.5		48				48	3.0
			80		80	2.5				48		48	1.5
	36		24		60	3.0		18		30		48	2.0
	20		12		32	1.5		48		24		72	3.5
	42	22			64	3.5		50		6		56	3.5
			30		30	0.75		32				32	2.0
			2w		2w	1.0		24				24	1.5
												30	0.75
										2w	1.0		
	298	22	218/ 2w		538/ 2w	27.25		264	12	176 / 2w	2	454 / 2w	23.75
		538/2w			538/ 2w	27.25			452/2w		2	454/ 2w	23.75
0					538/ 2w	27.25	0					470/ 2w	23.75

华中科技大学 2023 级本科专业培养计划

2 () 1	50		42	2	92	4.5	() 2	24		24	4	48	2.5	
	48	6			56	3.5		32				32	2.0	
	48	8			56	3.5		32	4	12		48	2.5	
			72		72	2.0		36		12		48	2.5	
	66		6		72	4.5		28				4	32	2.0
	40		8		48	3.0		28				4	32	2.0
			12		12	0.5		28				4	32	2.0
	4	4	16		24	1.5		27				5	32	2.0
										12		12	0.5	
								4	4	16		24	1.5	
	256	18	156	2	432	23.0		239	8	76	17	340	19.5	
	430			2	432	23.0		323			17	340	19.5	
0				432	23.0	2						372	21.5	
			4w		4w	2.0		16		16		32	2.0	
			4w		4w	2.0		24				24	1.5	
2w				2w	1.0	32					32	2.0		