



GC University Hyderabad

BS MICROBIOLOGY PROGRAM

Vision

To be the premier hub for microbiological excellence, fostering innovation and scientific discovery while producing graduates who shape the future of microbiology for the betterment of society.

Mission

Empowering future microbiologists with comprehensive knowledge, a passion for exploration, and a strong sense of social responsibility. Through rigorous education, research, and ethical values, the department aims to prepare graduates to address global challenges, engage in pioneering research, and lead in academia, industry, and public service.

Goals:

1. **Excellence in Education:** To strive for continuous improvement in curriculum, teaching methodologies, and resources to ensure a world-class microbiological education.
2. **Innovation and Discovery:** To foster a culture of innovation and scientific discovery by encouraging research, critical thinking, and problem-solving among students and faculty.
3. **Graduate Empowerment:** To equip graduates with comprehensive knowledge, research skills, ethical values that enable them to excel in microbiology and make meaningful contributions to society.
4. **Global Impact:** To inspire students to address pressing global challenges through microbiological research and actively participate in sustainable practices and public service.
5. **Collaboration:** To promote collaboration and interdisciplinary approaches among students and faculty within the university and with external partners.
6. **Leadership Development:** To prepare students to assume leadership roles in academia, industry, and public service by becoming influential voices in microbiology.
7. **Ethical Consciousness:** To instill a deep appreciation for ethical values and responsible conduct in microbiological research and application.
8. **Community Engagement:** To engage with the community to share microbiological knowledge and raise awareness of the field's significance in everyday life.

S. No	Category	Cr. Hrs.
1.	General Education Courses	30
2.	Major Courses	84
3.	Interdisciplinary/Allied Courses	12
4.	Field Experiment (Internship)	03
5.	Capstone	03
6.	Total	132

Year	Semester	Category	Course Title	Credit Hours		Marks	
				Theory	Practical		
YEAR ONE	First Semester	General	Functional English	3	0	100	
		General	Ideology and Constitution of Pakistan	2	0	100	
		General	Natural Sciences	2	0	100	
		General	Natural Sciences	0	1	100	
		Major	Fundamentals of Microbiology-I	3	0	100	
		Major	Fundamentals of Microbiology-I	0	1	100	
		Interdisciplinary	Zoology-I (Protozoology)	2	0	100	
		Interdisciplinary	Zoology-I (Protozoology)	0	1	100	
		General	Application of Information and communication technologies (ICT)	2	0	100	
		General	Application of Information and communication technologies (ICT)	0	1	100	
		Total		18		1000	
	Second Semester	General	English-II Expository Writing	3	0	100	
		General	Islamic studies or Religious Education/Ethics	2	0	100	
		General	Quantitative Reasoning-I	3	0	100	
		Interdisciplinary	Biochemistry	2	0	100	
		Interdisciplinary	Biochemistry	0	1	100	
		Major	Fundamentals of Microbiology-I	3	0	100	
		Major	Fundamentals of Microbiology-I	0	1	100	
Major	Biosafety And Risk Management	3	0	100			
YEAR TWO	Third Semester		Total		18	800	
		General	Quantitative Reasoning-II	3	0	100	
		General	Civics and community engagement	2	0	100	
		Major	Introduction to Medical Microbiology	3	0	100	
		Major	Introduction to Medical Microbiology	0	1	100	
		Major	General Immunology	3	0	100	
		Major	General Immunology	0	1	100	
		Interdisciplinary	Zoology-II (Epidemiology of Parasitic disease)	2	0	100	
		Interdisciplinary	Zoology-II (Epidemiology of Parasitic disease)	0	1	100	
		Major	Environmental Microbiology & Public Health	2	0	100	
	Major	Environmental Microbiology & Public Health	0	1	100		
	Fourth Semester		Total		19		1000
		General	Social sciences	2	0	100	
		General	Entrepreneurship	2	0	100	
		General	Arts and Humanities	2	0	100	
		Major	Soil Microbiology	3	0	100	
		Major	Soil Microbiology	0	1	100	
		Major	Microbial Taxonomy	3	0	100	
Major		Microbial Taxonomy	0	1	100		
Interdisciplinary		Zoology-III (Histology)	2	0	100		
Interdisciplinary		Zoology-III (Histology)	0	1	100		
	Total		17		900		

Year	Semester	Course No	Course Title	Credit Hours		Marks	
				Theory	Practical		
YEAR THREE	Fifth Semester	Major	Research Methodology	3	0	100	
		Major	Microbial Anatomy and Physiology	2	0	100	
		Major	Microbial Anatomy and Physiology	0	1	100	
		Major	Cell Biology-I	2	0	100	
		Major	Cell Biology-I	0	1	100	
		Major	General Virology	2	0	100	
		Major	General Virology	0	1	100	
		Major	Mycology	2	0	100	
		Major	Mycology	0	1	100	
				Total		15	900
	Sixth Semester		Course No	Course Title	Credit Hours		Marks
					Theory	Practical	
		Major	Diagnostic Chemistry for Microbial Diseases	2	0	100	
		Major	Diagnostic Chemistry for Microbial Diseases	0	1	100	
		Major	Cell Biology-II	2	0	100	
		Major	Cell Biology-II	0	1	100	
		Major	Bacterial Genetics	2	0	100	
		Major	Bacterial Genetics	0	1	100	
		Major	Epidemiology, Public health and bioethics	2	0	100	
		Major	Epidemiology, Public health and bioethics	0	1	100	
Major		Applied Microbial Technology	2	0	100		
Major		Applied Microbial Technology	0	1	100		
			Total		15	1000	
YEAR FOUR	Seventh Semester	Course No	Course Title	Credit Hours		Marks	
				Theory	Practical		
		Major	Clinical Parasitology	2	0	100	
		Major	Clinical Parasitology	0	1	100	
		Major	Food and Dairy Microbiology	2	0	100	
		Major	Food and Dairy Microbiology	0	1	100	
		Major	Pharmaceutical Microbiology	2	0	100	
		Major	Pharmaceutical Microbiology	0	1	100	
		Field Experience	Field Experience / Internship	3	0	100	
		Major	Cell & Tissue Culture Technology	2	0	100	
	Major	Cell & Tissue Culture Technology	0	1	100		
			Total		15	900	
	Eighth Semester		Course No	Course Title	Credit Hours		Marks
					Theory	Practical	
		Major	Nano-Biotechnology	2	0	100	
		Major	Nano-Biotechnology	0	1	100	
		Major	Molecular Mechanism of Anti-Microbial Agent	2	0	100	
		Major	Molecular Mechanism of Anti-Microbial Agent	0	1	100	
		Major	Microbial Enzyme Technology	2	0	100	
		Major	Microbial Enzyme Technology	0	1	100	
Major		Industrial Microbiology	2	0	100		
Major		Industrial Microbiology	0	1	100		
		Capstone Project	3	0	100		
		Total		15	900		