

GC University Hyderabad

BS MICROBIOLOGY PROGRAM

Vision

To be the premier hub for microbiological excellence, fostering innovat5ion 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.

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S. No	Category U O	Cr. Hrs.
1.	General Education Couvses I C R	30
2.	O B Major Courses I O L	84
3.	G Y Interdisciplinary/Allied Courses E R	12
4.	Field Experiment (Intermation) R A	03
5.	Capstone	03
6.	Total	132

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Year	Semester	Category	Course Title	Credi	it Hours	Marks
				Theory	Practical	
	er	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
	lest	Major	Fundamentals of Microbiology-I	0	1	100
	em	Interdisciplinary	Zoology-I (Protozoology)	2	0	100
	First Semester	Interdisciplinary	Zoology-I (Protozoology)	0	1	100
		General	Application of Information and communication technologies (ICT)	2	0	100
闰		General	Application of Information and communication technologies (ICT)	0	1	100
			Total	1	18	1000
R		General	English-II Expository Writing	3	0	100
YEAR ONE	ester	General	Islamic studies or Religious Education/Ethics	2	0	100
	em	General	Quantitative Reasoning-I	3	0	100
	g p	Interdisciplinary	Biochemistry	2	0	100
	Second Semester	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
			Total		18	800
	nird Semester	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
	Š	Major	General Immunology	0	1	100
0	Thire	Interdisciplinary	Zoology-II (Epidemiology of Parasitic disease)	2	0	100
YEAR TWO		Interdisciplinary	Zoology-II (Epidemiology of Parasitic disease)	0	1	100
YEA		Major	Environmental Microbiology & Public Health	2	0	100
		Major	Environmental Microbiology & Public Health	0	1	100
			Total		19	1000
	Fourth Semester	General	Social sciences	2	0	100
		General	Entrepreneurship	2	0	100
		General	Arts and Humanities Soil Microbiology	3	0	100
	em	Major Major	Soil Microbiology Soil Microbiology	0	1	100
	h S	Major Major	Microbial Taxonomy	3	0	100
	ırt]	Major	Microbial Taxonomy	0	1	100
	For	Interdisciplinary	Zoology-III (Histology)	2	0	100
		Interdisciplinary	Zoology-III (Histology)	0	1	100
			Total	_	17	900

	G	Course No	Course Title	Credit Hours		
Year	Semester			Theory	Practical	Marks
		Major	Research Methodology	3	0	100
		Major	Microbial Anatomy and Physiology	2	0	100
		Major	Microbial Anatomy and Physiology	0	1	100
	Fifth Semester	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
EE		Major	Mycology	2	0	100
		Major	Mycology	0	1	100
			Total		15	900
		Course No	Course Title		t Hours	Marks
<u>R</u>				Theory	Practical	
YEAR THREE		Major	Diagnostic Chemistry for Microbial Diseases	2	0	100
YE,	çe r	Major	Diagnostic Chemistry for Microbial Diseases	0	1	100
	Sixth Semester	Major	Cell Biology-II	2	0	100
	Sen	Major	Cell Biology-II	0	1	100
	th S	Major	Bacterial Genetics	2	0	100
	Six	Major	Bacterial Genetics	0	1	100
	0.2	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
			m 1			4000
			Total		15 	1000
		Course No	Total Course Title	Credi	t Hours	1000 Marks
			Course Title	Credi Theory	t Hours Practical	Marks
		Major	Course Title Clinical Parasitology	Credi Theory	t Hours Practical	Marks
		Major Major	Course Title Clinical Parasitology Clinical Parasitology	Credi Theory 2 0	t Hours Practical 0 1	Marks 100 100
	ster	Major Major Major	Course Title Clinical Parasitology Clinical Parasitology Food and Dairy Microbiology	Theory 2 0 2	t Hours Practical	Marks 100 100 100
	mester	Major Major Major Major	Course Title Clinical Parasitology Clinical Parasitology Food and Dairy Microbiology Food and Dairy Microbiology	Credical Theory 2 0 2 0	t Hours Practical 0 1 0 1	100 100 100 100
	Semester	Major Major Major Major Major	Course Title Clinical Parasitology Clinical Parasitology Food and Dairy Microbiology Food and Dairy Microbiology Pharmaceutical Microbiology	Theory 2 0 2	t Hours Practical 0 1 0	Marks 100 100 100
	eventh Semester	Major Major Major Major Major Major Field	Course Title Clinical Parasitology Clinical Parasitology Food and Dairy Microbiology Food and Dairy Microbiology	Credi Theory 2 0 2 0 2 0 2 0 2	t Hours Practical 0 1 0 1 0	Marks 100 100 100 100 100 100
	Seventh Semester	Major Major Major Major Major Major	Course Title Clinical Parasitology Clinical Parasitology Food and Dairy Microbiology Food and Dairy Microbiology Pharmaceutical Microbiology Pharmaceutical Microbiology	Credi Theory 2 0 2 0 2 0 2 0 0	t Hours Practical 0 1 0 1 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Marks 100 100 100 100 100 100 100
	Seventh Semester	Major Major Major Major Major Major Major Field Experience	Course Title Clinical Parasitology Clinical Parasitology Food and Dairy Microbiology Food and Dairy Microbiology Pharmaceutical Microbiology Pharmaceutical Microbiology Field Experience / Internship	Credi Theory 2 0 2 0 2 0 3	t Hours Practical 0 1 0 1 0 1 0 1 0 0	Marks 100 100 100 100 100 100 100 100
UR	Seventh Semester	Major Major Major Major Major Major Major Field Experience Major	Course Title Clinical Parasitology Clinical Parasitology Food and Dairy Microbiology Food and Dairy Microbiology Pharmaceutical Microbiology Pharmaceutical Microbiology Field Experience / Internship Cell & Tissue Culture Technology	Credi Theory 2 0 2 0 2 0 3 2 0	t Hours Practical 0 1 0 1 0 1 0 1 0 0 0 1	Marks 100 100 100 100 100 100 100 100 100
FOUR	Seventh Semester	Major Major Major Major Major Major Major Field Experience Major Major	Course Title Clinical Parasitology Clinical Parasitology Food and Dairy Microbiology Food and Dairy Microbiology Pharmaceutical Microbiology Pharmaceutical Microbiology Field Experience / Internship Cell & Tissue Culture Technology Cell & Tissue Culture Technology Total	Credi Theory 2 0 2 0 2 0 3 2 0	t Hours Practical 0 1 0 1 0 1 0 1 0 1 0 1 1 1 1 1 1 1 1	Marks 100 100 100 100 100 100 100 100 100 900
AR FOUR	Seventh Semester	Major Major Major Major Major Major Major Field Experience Major	Course Title Clinical Parasitology Clinical Parasitology Food and Dairy Microbiology Food and Dairy Microbiology Pharmaceutical Microbiology Pharmaceutical Microbiology Field Experience / Internship Cell & Tissue Culture Technology Cell & Tissue Culture Technology	Credi Theory 2 0 2 0 2 0 3 2 0	t Hours Practical 0 1 0 1 0 1 0 1 0 1 1 1 1 1 1 1 1 1	Marks 100 100 100 100 100 100 100 100 100 1
ZEAR FOUR	Seventh Semester	Major Major Major Major Major Major Major Field Experience Major Major	Course Title Clinical Parasitology Clinical Parasitology Food and Dairy Microbiology Food and Dairy Microbiology Pharmaceutical Microbiology Pharmaceutical Microbiology Field Experience / Internship Cell & Tissue Culture Technology Cell & Tissue Culture Technology Total	Creditation Creditation	t Hours Practical 0 1 0 1 0 1 0 1 0 1 1 0 1 1 0 1 t Hours	Marks 100 100 100 100 100 100 100 100 100 900
YEAR FOUR	Seventh Semester	Major Major Major Major Major Major Major Field Experience Major Major Course No	Course Title Clinical Parasitology Clinical Parasitology Food and Dairy Microbiology Food and Dairy Microbiology Pharmaceutical Microbiology Pharmaceutical Microbiology Pharmaceutical Microbiology Field Experience / Internship Cell & Tissue Culture Technology Cell & Tissue Culture Technology Total Course Title Nano-Biotechnology Nano-Biotechnology	Creditation Creditation	t Hours Practical 0 1 0 1 0 1 0 1 1 1 1 1 1	Marks 100 100 100 100 100 100 100 100 100 Marks
YEAR FOUR		Major Major Major Major Major Major Major Field Experience Major Major Course No	Course Title Clinical Parasitology Clinical Parasitology Food and Dairy Microbiology Food and Dairy Microbiology Pharmaceutical Microbiology Pharmaceutical Microbiology Pharmaceutical Microbiology Field Experience / Internship Cell & Tissue Culture Technology Cell & Tissue Culture Technology Total Course Title Nano-Biotechnology Nano-Biotechnology Molecular Mechanism of Anti-Microbial Agent	Creditation Creditation	t Hours Practical 0 1 0 1 0 1 0 1 1 t Hours Practical 0	Marks 100 100 100 100 100 100 100 100 100 Marks 100
YEAR FOUR		Major Major Major Major Major Major Major Major Field Experience Major	Course Title Clinical Parasitology Clinical Parasitology Food and Dairy Microbiology Food and Dairy Microbiology Pharmaceutical Microbiology Pharmaceutical Microbiology Pharmaceutical Microbiology Field Experience / Internship Cell & Tissue Culture Technology Cell & Tissue Culture Technology Total Course Title Nano-Biotechnology Nano-Biotechnology Molecular Mechanism of Anti-Microbial Agent Molecular Mechanism of Anti-Microbial Agent	Credi Theory 2 0 2 0 2 0 3 2 0 Credi Theory 2 0 Credi 0 0	t Hours Practical 0 1 0 1 0 1 0 1 0 1 1 0 1 1 5 t Hours Practical 0 1	Marks 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100
YEAR FOUR		Major Major Major Major Major Major Major Major Field Experience Major	Course Title Clinical Parasitology Clinical Parasitology Food and Dairy Microbiology Food and Dairy Microbiology Pharmaceutical Microbiology Pharmaceutical Microbiology Pharmaceutical Microbiology Field Experience / Internship Cell & Tissue Culture Technology Cell & Tissue Culture Technology Total Course Title Nano-Biotechnology Nano-Biotechnology Molecular Mechanism of Anti-Microbial Agent Molecular Mechanism of Anti-Microbial Agent Microbial Enzyme Technology	Credi Theory 2 0 2 0 2 0 3 2 0 Credi Theory 2 0 2 0 2 0 2 0 2	t Hours Practical 0 1 0 1 0 1 0 1 0 1 1 0 1 1 5 t Hours Practical 0 1 0 1 0	Marks 100 100 100 100 100 100 100 100 100 1
YEAR FOUR		Major Major Major Major Major Major Major Major Field Experience Major Major Major Major Major Major Major Major Major Major Major	Course Title Clinical Parasitology Clinical Parasitology Food and Dairy Microbiology Food and Dairy Microbiology Pharmaceutical Microbiology Pharmaceutical Microbiology Pharmaceutical Microbiology Field Experience / Internship Cell & Tissue Culture Technology Cell & Tissue Culture Technology Total Course Title Nano-Biotechnology Nano-Biotechnology Molecular Mechanism of Anti-Microbial Agent Molecular Mechanism of Anti-Microbial Agent Microbial Enzyme Technology Microbial Enzyme Technology	Credit Theory 2	t Hours Practical 0 1 0 1 0 1 0 1 0 1 1 0 1 1	Marks 100 100 100 100 100 100 100 100 100 1
YEAR FOUR		Major Major Major Major Major Major Major Major Major Field Experience Major	Course Title Clinical Parasitology Clinical Parasitology Food and Dairy Microbiology Food and Dairy Microbiology Pharmaceutical Microbiology Pharmaceutical Microbiology Pharmaceutical Microbiology Field Experience / Internship Cell & Tissue Culture Technology Cell & Tissue Culture Technology Total Course Title Nano-Biotechnology Nano-Biotechnology Molecular Mechanism of Anti-Microbial Agent Molecular Mechanism of Anti-Microbial Agent Microbial Enzyme Technology Industrial Microbiology Industrial Microbiology Industrial Microbiology Industrial Microbiology Clinical Parasitology Pharmaceutical Microbiology Anti-Microbial Enzyme Technology Industrial Microbiology Industrial Microbiology	Credit Theory 2	t Hours Practical 0 1 0 1 0 1 0 1 0 1 1 0 1 1	Marks 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100
YEAR FOUR	Eighth Semester	Major Major Major Major Major Major Major Major Major Field Experience Major Capstone	Course Title Clinical Parasitology Clinical Parasitology Food and Dairy Microbiology Food and Dairy Microbiology Pharmaceutical Microbiology Pharmaceutical Microbiology Pharmaceutical Microbiology Field Experience / Internship Cell & Tissue Culture Technology Cell & Tissue Culture Technology Total Course Title Nano-Biotechnology Nano-Biotechnology Molecular Mechanism of Anti-Microbial Agent Molecular Mechanism of Anti-Microbial Agent Microbial Enzyme Technology Industrial Microbiology Industrial Microbiology Industrial Microbiology Industrial Microbiology	Credit Theory 2	t Hours Practical 0 1 0 1 0 1 0 1 0 1 0 1 1 0 1 1 5 t Hours Practical 0 1 0 1 0 1 1 0 1 1 0 1 1 0 1 1 0 1 1 0 1 0 1 1 0 1 0 1	Marks 100 100 100 100 100 100 100 100 100 1
YEAR FOUR		Major Major Major Major Major Major Major Major Major Field Experience Major	Course Title Clinical Parasitology Clinical Parasitology Food and Dairy Microbiology Food and Dairy Microbiology Pharmaceutical Microbiology Pharmaceutical Microbiology Pharmaceutical Microbiology Field Experience / Internship Cell & Tissue Culture Technology Cell & Tissue Culture Technology Total Course Title Nano-Biotechnology Nano-Biotechnology Molecular Mechanism of Anti-Microbial Agent Molecular Mechanism of Anti-Microbial Agent Microbial Enzyme Technology Industrial Microbiology Industrial Microbiology Industrial Microbiology Industrial Microbiology Clinical Parasitology Pharmaceutical Microbiology Anti-Microbial Enzyme Technology Industrial Microbiology Industrial Microbiology	Credi Theory 2 0 2 0 2 0 3 2 0 Credi Theory 2 0 2 0 2 0 2 0 3 3 3 3 3 4 4 6 7 7 8 7 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	t Hours Practical 0 1 0 1 0 1 0 1 0 1 1 0 1 1	Marks 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100 100