"Dissemination of Education for Knowledge, Science and Culture"
-Shikshanmaharshi Dr. Bapuji Salunkhe

### Shri Swami Vivekanand Shikshan Sanstha's

# Vivekanand College, Kolhapur (Empowered Autonomous)

# **Department of Microbiology**

### Content with Focus on Employability, Entrepreneurship, Skill Development

### Academic Year 2022-23 and 2023-24

Sr. No.	Name of the Course	Course Code	Year of Introduction	Content with focus on employability	Content with focus on entrepreneurship	Content with focus on skill development
		M.Sc.	Microbiology (I	Newly Introduced from 202	2-23)	
1.	Taxonomy and Microbial Diversity	CC- 2400	2022-23			Classify newly discovered organism
2.	Virology	CC- 2401	2022-23	Explain therapy and prophylaxis of viral diseases	-	-
3.	Genetics and Molecular Biology	CC- 2402	2022-23	Know basic and advanced techniques used in molecular genetics	- -	-
4.	Immunology	CC- 2403	2022-23	Describe Cancer immunology and treatment and prevention of cancer	-	Narrate various serodiagnostic techniques of diseases



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5.	Techniques in	CC-2406	2022-23	-	Understand	Understand
	Microbiology			,	various traditional	different
			•		and advanced	applications of the
	. ,		* .		techniques used in	techniques in the
					life science	research work
					laboratory	
6.	Microbial	CC-2407	2022-23	Understand		Understand basic
	Physiology,			mechanisms of		concepts and some
	Biochemistry and			macromolecules		recent
	Metabolism	=		degradation		
						developments in
		2		the market water to		biochemistry
7.	Medical	CC-2408	2022-23	Understand various	Understand	, -
	Microbiology	,		bacterial, fungal, and	medical	
	,	2		viral diseases in humans	applications of microbial	-
					metabolites	
8.	Microbial Ecology	CC-2409	2022-23	Understand the effect of	Know interactions	Know control of
0.	Wherobian Leology	CC 2107	2022 20	environmental factors	of microbes with	
				on the microbial life	other microbes and	pest with biological
,	,		ş .	of the incrobial inc	other living	way
					systems like plants	-
		*			and animals.	
				,	and animals.	
				,		
9.	Genetics and	DSC20MIC11	2023-24			Know basic and
	Molecular Biology	•	3 2	- · · · · · · · · · · · · · · · · · · ·	, + 3,	advanced
						techniques used in
			*	•		molecular genetics
				· •		molecular genetics



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Immunology	DSC20MIC12	2023-24	Describe Cancer		Narrate various
	¥		immunology and		serodiagnostic
			treatment and		techniques of
•		•	prevention of cancer		diseases.
Taxonomy and	DSE20MIC11	2023-24	Describe various		Classify newly
Microbial diversity			characteristics of	_	discovered
			different types of	_	organism
	* * * * * * * * * * * * * * * * * * * *		microorganisms		•
Virology	DSE20MIC12	2023-24	Explain therapy and	7	Describe the
			prophylaxis of viral		methods of
			diseases		destruction of
					viruses
Biomolecules	DSE20MIC13	2023-24	Know functions of		Understand
			macromolecules of cell		regulation of
9					different metabolic
					pathways
Research	RMD20MIC11	2023-24	Understand	Understand	
Methodology	·	-	fundamentals of	bioinformatics and	, · · · · · · · · · · - · · · · · · · ·
	8	*	research methodology	its applications	
Techniques in	DSC20MIC21	2023-24	Explain the working		Understand
Microbiology		, -	and mechanism of the		different
		v **	techniques used in the	-	applications of the
			life science research	-	techniques in the
	Taxonomy and Microbial diversity  Virology  Biomolecules  Research Methodology  Techniques in	Taxonomy and Microbial diversity  Virology  DSE20MIC12  Biomolecules  DSE20MIC13  Research RMD20MIC11  Methodology  Techniques in  DSC20MIC21	Taxonomy and Microbial diversity  DSE20MIC11 2023-24  Virology DSE20MIC12 2023-24  Biomolecules DSE20MIC13 2023-24  Research Methodology RMD20MIC11 2023-24  Techniques in DSC20MIC21 2023-24	immunology and treatment and prevention of cancer  Taxonomy and Microbial diversity  DSE20MIC11 2023-24 Describe various characteristics of different types of microorganisms  Virology DSE20MIC12 2023-24 Explain therapy and prophylaxis of viral diseases  Biomolecules DSE20MIC13 2023-24 Know functions of macromolecules of cell  Research Methodology RMD20MIC11 2023-24 Understand fundamentals of research methodology  Techniques in Microbiology DSC20MIC21 2023-24 Explain the working and mechanism of the techniques used in the	immunology and treatment and prevention of cancer  Taxonomy and Microbial diversity  DSE20MIC11 2023-24 Describe various characteristics of different types of microorganisms  Virology DSE20MIC12 2023-24 Explain therapy and prophylaxis of viral diseases  Biomolecules DSE20MIC13 2023-24 Know functions of macromolecules of cell  Research Methodology RMD20MIC11 2023-24 Understand fundamentals of research methodology  Techniques in Microbiology DSC20MIC21 2023-24 Explain the working and mechanism of the techniques used in the



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	:					research work
16.	Microbial Physiology, Biochemistry and Metabolism	DSC20MIC22	2023-24	- -	Know biosynthesis of macromolecules	Explain basic concepts and some recent developments in biochemistry
17.	Medical Microbiology	DSE20MIC21	2023-24	Understand mechanisms of disease development	-	Explainmedical applications of microbial metabolites
18.	Microbial Ecology	DSE20MIC22	2023-24	Explain interactions of microbes with other microbes and other living systems like plants and animals		Know control of pest with biological way
19.	Microbial Biotechnology	DSE20MIC23	2023-24	Explain production of various microbial products through gene engineering	Narrate various applications of microbial biotechnology in agriculture	Know various applications of microbial biotechnology in food and pharmaceutical industry
20.	Biostatistics, Bioinformatics And Scientific Writing	CC-2412	2023-24			Construct scientific documents, present and publish



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					-	research papers,
	• -	· · · · · · · · · · · · · · · · · · ·				acknowledge legal
						aspects of scientific
						authorship .
2	I. Enzymology And	CC-2413	2023-24		Narrate various	
	Enzyme				applications of	-
	Technology				enzymes	
	0.	00044	2022 24		Produce vitamins,	fermentation
22		CC-2414	2023-24		organic acids,	economics and
	Technology				beverages and	patents
		-			vaccines	pateria
					vaccines	
23	. Quality Control	CC-2415	2023-24	Explain good		Describe various
23	1 -	CC-2410	2020 22	microbiological		techniques of
	Microbiology I			laboratory techniques		microbial control
					7	
24	. Food And Dairy	CC-2418	2023-24	Explain role of enzymes	Prepare various	
	Microbiology			in food processing,	Indian and western	-
				various applications of	fermented foods	-
		*	-	enzymes, and laws		
			-	regarding food safety	•	
25	Industrial Waste	CC-2419	2023-24	Write Microbiology and		Explain biological
20	Management			biochemistry of	_	methods of
	Mariagement			wastewater treatment	-	industrial waste
					Explain various	Explain basic tools
26	. Recombinant DNA	CC-2420	2023-24		applications of	of recombinant
	Technology		_	<b>-</b>	DNA technology	DNA technology
	* .		э.		DINA technology	· ·
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27.	Quality Control	CC-2421	2023-24	Explain quality	Explain cleanrooms	
	Microbiology II	•	·	management systems in	classification,	
	, where store gy			pharmaceutical	contamination,	
			*.	products	testing and	
		ŧ.		F	microbiological	
			a a		environmental	
			- 1		monitoring	
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