Department of Microbiology

			BSc(General) Major Microbiology										
Level	**Sem**	**Disciplinary Major Mandatory**	**DSE Electives**	**Minor**				**OE**	**VC/SEC**	**AEC, VEC, IKS**	**OJT, FP, CEP, CC, RP**	**Total**	**Exit Credit**	**Final Total Credits**
				Physics	**Chemistry**	**Botany**	**Zoology**							
4.5	**I**	4 Cr T Microbial world and Principles of Microbiology(4c) 2 Cr P :Practical based on DSC						2 Cr (P): Microbiology in day to day life	2 Cr (P): Microscopy and Special staining techniqes	2 Cr T:English Oral and written communication 2 Cr T :EVS 2 Cr T : IKS		**22**		**22**
4.5	**II**	4 Cr T Microbial biochemistry and growth 2 Cr P Practical based on Microbial biochemistry and growth		2Cr-T: Calibration Techniques/ Instrumentation for agriculture	2 Cr-T: Fundamental Biochemistry	2Cr-T:Understanding Phytodiversity	2 Cr-T: Food, Nutrition and Health	2 Cr (P):Human health and diseases	2 Cr (P) Isolation and cultivation of microorganism	2 Cr T: Spoken English		**22**		**22**
Cumulative		**12**		**2**				**8**	**8**	**10**	**4**	**44**	**4**	**48**
Certificate on Exit + 4 credit Bridge Course														
5	**III**	4 Cr T Bacterial genetics and Physiology 4 Cr Pr : Practicals based on Bacterial genetics and Physiology		2Cr-T: Basic Telecommunication 2Cr-P:Fun with Mechanics	4Cr-T:Chemistry of life	2Cr-T:Botany for Entrepreneurs 2Cr-P:Botany for Entrepreneurs	2 Cr-T: Applied Zoology 2Cr-P: Applied Zoology	2 Cr Pr Microbiology for farming (Micobes in agriculture)	2 Cr Pr : Isolation and identification of bacteria	2 Cr T :AEC 3 Marathi / Hindi (2)	2 Cr Pr : Micro (FP)	**22**		**22**
5	**IV**	4 Cr T Environmental and agricultural Microbiology 4 Cr Pr Environmental and agricultural Microbiology		2Cr-T:Fiber Optic Communication 2Cr-P:Basic Optics	4Cr-T:Chemistry of Materials	2Cr-T:Field Botany 2Cr-P:Field Botany	2Cr-T:Toxicology 2Cr-P:Toxicology	2 Cr Pr : Production of Micobial pharmaceuticals	2 Cr Pr : SEC: Fermentation technology 2 Cr Pr VEC: Production of Neutraceuticals	AEC 4 English Creative Writing (2)	2 Cr Pr: Water and Agricultural Microbiology (CEP)	**22**		**22**
Cumulative		**28**		**10**	10	10	10	**12**	**12**	**14**	**12**	**118**	**4**	**122**

Department of Microbiology

			BSc(General) Major Microbiology											
Level	**Sem**	**Disciplinary Major Mandatory**	**DSE Electives**	**Minor**				**OE**	**VC/SEC**	**AEC, VEC, IKS**	**OJT, FP, CEP, CC, RP**	**Total**	**Exit Credit**	**Final Total Credits**
				Physics	**Chemistry**	**Botany**	**Zoology**							
Diploma on Exit + 4 credits of NSQF and Internship														
5.5	**V**	4 Cr T Medical Microbiology 4 Cr T :Enzymology 2 Cr Pr based on medical Microbiology and Enzymology	2 Cr T : Microbial biotechnology 2 Cr Pr : Practicals based on Microbial biotechnology	2Cr-T:Lasers and its Applications 2Cr-P: Optoelectronics/ Photonics	2Cr-P:Laboratory Safety 2Cr-T:IPR and Chemoinformatics		2Cr-T: Biodiversity, Conservation and sustainable development 2Cr-P: Biodiversity, Conservation and sustainable development				2 Cr Pr Microbiology Lab III	**22**		**22**
5.5	**VI**	4 Cr T: Immunology 4 Cr T: Genetics 4 Cr Pr: Practicals based on Immunology and genetics (2C)	2 Cr T Food Microbiology 2 Cr Pr Practicals on Food microbiology OR 2 Cr T Marine Microbiology 2 Cr Pr Practicals on Marine Microbiology	2Cr-T:Acoustics 2Cr-P:Radiation Physics	2Cr-T:Instrumental methods of analysis 2Cr-P: Analytical Chemistry Practical Course		2Cr-T:Environmental Monitoring and Management 2Cr-P:Environmental Monitoring and Management				OJT (4)	**22**		**22**
Cumulative		**48**	**8**	**18**	**18**	18	18	**12**	**14**	**14**	**18**	**132**		**136**
Award of Degree														

Department of Microbiology

			BSc(General) Major Microbiology										
Level	**Sem**	**Disciplinary Major Mandatory**	**DSE Electives**	**Minor**				**OE**	**VC/SEC**	**AEC, VEC, IKS**	**OJT, FP, CEP, CC, RP**	**Total**	**Exit Credit**	**Final Total Credits**
				Physics	**Chemistry**	**Botany**	**Zoology**							
6	**VII**	4 Cr (T) : Microbial systematics 4 Cr (T) :Quantitative Biology 4 Cr (T) Biochemistry and Metabolism 4 Cr (P) Practicals based on Microbial systematics ,Biochemistry and Metabolism	2 Cr (T) Bioremediation and biomass utilization 2 Cr (P) Practical based on Bioremediation and biomass utilization - OR 2 Cr (T) Fungal Systematics and Extremophiles 2 Cr (P) Practical on Fungal Systematics and Extremophiles	2Cr-T+2Cr-P: Research Methodology									**22**		**22**

Department of Microbiology

			BSc(General) Major Microbiology										
Level	**Sem**	**Disciplinary Major Mandatory**	**DSE Electives**	**Minor**				**OE**	**VC/SEC**	**AEC, VEC, IKS**	**OJT, FP, CEP, CC, RP**	**Total**	**Exit Credit**	**Final Total Credits**
				Physics	**Chemistry**	**Botany**	**Zoology**							
6	**VIII**	4 Cr (T) Instrumentation and Molecular biophysics- 4 Cr (T) Molecular Biology 4 Cr (T) Cell organization and biochemistry- 2 Cr (P) Practicals based on Molecular Biology, Molecular biophysics and Cell organization and biochemistry	2 Cr (T)(P) : Microbial communication, Membrane transport and signal transduction- 2 Cr(P) Practical based on Microbial communication, Membrane transport and signal transduction -									**22**		**22**
Cumulative		**76**	**16**	**22**				**12**	**14**	**14**	**22**	**176**		**184**