



Progressive Education Society's
Modern College of Arts, Science and Commerce (Autonomous)
Ganeshkhind, Pune - 16

Course Structure for M.Sc (Microbiology) NEP

Name of the Board: Department of Microbiology (PG- M.Sc-I)

Class	Sem	Course Type	Course Code	Course Name	Theory/ Practical	No. of Credits	No. of Hours	CIE Marks	ESE Marks	Total Marks
M.Sc-I	I	Major DSC	MIC51101	Microbial Systematics	Theory	02	30L	20	30	50
		Major DSC	MIC51102	Quantitative Biology	Theory	04	60L	40	60	100
		Major DSC	MIC51103	Biochemistry and Metabolism	Theory	04	60L	40	60	100
		Major DSC	MIC51104	Biochemical Techniques	Practical	04	30P	40	60	100
		Major elective	MIC51205	Bioremediation and Biomass Utilization	Theory	02	30L	20	30	50
		Major elective	MIC51206	Practical Based on Bioremediation and Biomass Utilization	Practical	02	15P	20	30	50



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		RM	MIC51307	Research Methodology	Theory	04	60L	40	60	100
		Semester I				No. of credits : 22		Total CIE marks 220	Total ESE marks 330	Total marks 550
M.Sc-I	II	Major DSC	MIC52101	Instrumentation and Molecular Biophysics	Theory	02	30L	20	30	50
		Major DSC	MIC52102	Molecular Biology	Theory	04	60L	40	60	100
		Major DSC	MIC52103	Cell Organization and Biochemistry	Theory	04	60L	40	60	100
		Major DSC	MIC52104	Practicals based on Instrumentation and molecular Biophysics, Molecular biology, Cell organization and Biochemistry	Practical	04	30P	40	60	100
		Major elective	MIC52205	Microbial communication, Membrane transport and signal transduction	Theory	02	30L	20	30	50



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		Major elective	MIC52206	Practicals Based on Microbial communication, Membrane transport and signal transduction	Practical	02	15P	20	30	50
		OJT/FP	MIC52307	On job training	Practical	04	30P	40	60	100
		Semester II				No. of credits: 22		Total CIE marks 220	Total ESE marks 330	Total marks 550



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Course Structure for NEP

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M.Sc-II	III	Mandatory Major	MIC63101	Advanced Immunology	Theory	04	60L	40	60	100
		Mandatory Major	MIC63102	OMICS and transgenic plants and animals	Theory	04	60L	40	60	100
		Mandatory Major	MIC63103	Clinical Microbiology	Theory	02	30L	20	30	50
		Mandatory Major	MIC63104	Practical based on Advanced Immunology, OMICS and transgenic plants and animals and Clinical Microbiology	Practical	04	30P	40	60	100
		Major Elective	MIC63205	Industrial Waste Water Treatment and Industrial Production of vaccines	Theory	02	30L	20	30	50
		Major Elective	MIC63206	Practical based on Industrial Waste Water Treatment and Industrial Production of vaccines	Practical	02	15P	20	30	50
		RP	MIC63307	Research project	Practical	04	30P	40	60	100
		Semester III				No. of credits: 22		Total CIE marks 220	Total ESE marks 330	Total marks 550



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M.Sc- II	IV	Mandatory Major	MIC64101	Pharmaceutical Microbiology	Theory	04	60L	40	60	100
		Mandatory Major	MIC64102	Microbial Technology	Theory	04	60L	40	60	100
		Mandatory Major	MIC64103	Practical based on pharmaceutical microbiology and microbial technology	Practical	04	30P	40	60	100
		Major Elective	MIC64204	Bioinformatics	Theory	02	30L	20	30	50
		Major Elective	MIC64205	Practicals based on bioinformatics	Practical	02	15P	20	30	50
		RP	MIC64306	Research project	Practical	06	45P	60	90	150
		Semester IV				No. of credits: 22		Total CIE marks 220	Total ESE marks 330	Total marks 550