

Progressive Education Society's

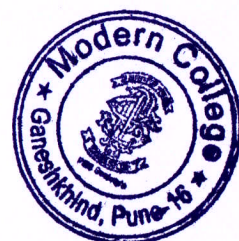
Modern College of Arts, Science and Commerce (Autonomous)

Ganeshkhind, Pune 411016

www.moderncollegegk.org

Structure of the M. Sc. Microbiology Course

Choice Based Credit System



PES Modern college of Arts, Science and Commerce, Ganeshkhind, Pune- 16

Department of Microbiology

Course Outline for M. Sc. Microbiology

Semester I

Course Type	Course Code	Course Name	Credit
Core Compulsory Theory Papers	22-MBCT-111	Microbial Systematics	4
	22-MBCT-112	Quantitative Biology	4
	22-MBCT-113	Biochemistry and Metabolism	4
Core Compulsory Practical paper	22-MBCP-114	Biochemical Techniques (Practical based on compulsory theory credits)	4
Choice Based Optional Papers	22-MBET-115	Fungal Systematics and Extremophiles	2
	22-MBEP-115	Practicals Based on Fungal Systematics and Extremophiles	2
	OR		
	22-MBET-116	Bioremediation and Biomass Utilization	2
	22-MBEP-116	Practicals Based on Bioremediation and Biomass Utilization	2
	OR		
	22-MBET-117	Nitrogen Metabolism, respiration and Photosynthesis	2
	22-MBEP-117	Practicals based on Nitrogen Metabolism, respiration and Photosynthesis	2

Semester II

Course Type	Course Code	Course Name	Credit
Core Compulsory Theory Papers	22-MBCT-121	Instrumentation and Molecular Biophysics	4
	22-MBCT-122	Molecular Biology	4
	22-MBCT-123	Cell organization and Biochemistry	4
Core Compulsory Practical paper	22-MBCP-124	Molecular biology, enzymology and instrumentation Techniques (Practical based on compulsory theory credits)	4
Choice Based Optional Papers	22-MBET-125	Bioinformatics and Bio-nanotechnology	2
	22-MBEP-125	Practicals based on Bioinformatics and Bio-nanotechnology	2
	OR		
	22-MBET-126	Molecular Biology tools and applications	2
	22-MBEP-126	Practical based on Molecular Biology tools and applications	2
	OR		
	22-MBET-127	Microbial communication, Membrane transport and signal transduction	2
	22-MBEP-127	Practicals Based on Microbial communication, Membrane transport and signal transduction	2

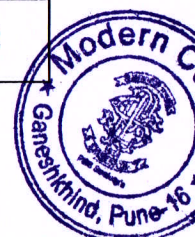


Semester III

Course Type	Course Code	Course Name	Credit
Core Compulsory Theory Papers	23-MBCT-231	Immunology	4
	23-MBCT-232	Molecular Biology	4
	23-MBCT-233	Clinical Microbiology	4
Core Compulsory Practical paper	23-MBCP-234	Practicals Based on Compulsory theory credits	4
Choice Based Optional Papers	23-MBET-235	Cell Culture techniques	2
	23-MBEP-235	Practicals Based on Cell Culture techniques	2
	OR		
	23-MBET-236	Experimental Design and Quantitative approaches for Biologist	2
	23-MBEP-236	Practicals based on Experimental Design and Quantitative approaches for Biologist	2
	OR		
	23-MBET-237	Microbial Virus Technology	2
	23-MBEP-237	Practicals Based on Microbial Virus Technology	2

Semester IV

Course Type	Course Code	Course Name	Credit
Core Compulsory Theory Papers	23-MBCT-241	Pharmaceutical Microbiology	4
	23-MBCT-242	Microbial Technology	4
Core Compulsory Practical paper	23-MBCP-243	Dissertation	4
Any TWO Choice Based Optional Papers	23-MBET-244	Quality Assurance and Validation in Pharmaceutical Industry and Development of Anti-infectives	2
	23-MBEP-244	Practicals based on quality assurance and validation in pharmaceutical industry and development of Anti-infectives	2
	OR		
	23-MBET-245	Advances in Microbial Technology	2
	23-MBEP-245	Practicals based on Advances in Microbial Technology	2
	OR		
	23-MBET-246	Industrial Waste Water Treatment and Industrial Production of vaccines	2
	23-MBEP-246	Practicals based on Industrial Waste Water Treatment and Industrial Production of vaccines	2
	OR		
	23-MBET-247	Bioethics, Biosafety, Quality control and Quality Assurance	2
	23-MBEP-247	Practicals based on Bioethics, Biosafety, Quality control and Quality Assurance	2

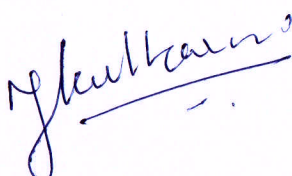


Extra credit Courses for M. Sc.

With Reference to circulars by Savitribai Phule Pune University, extra credit courses viz. Cyber security courses of 4 credits, Human Rights Education programme of 2 credits (Ref: BCUD/76, Ref: BCUD/77, Dated 18-03-2015), Introduction to constitution of 2 credits (Ref: Circular No. 344/2020), have been incorporated in the syllabi of Post Graduate courses.

Regular students can take extra credit courses from their own department or from other departments. The extra credit courses opted and specified by the students and grades obtained for these courses will be noted on their grade sheets.

Course Code	Course Name
22-192	Cyber security Module-I
22-292	Cyber security Module-II
22-191	Human Rights Module-I
22-291	Human Rights Module-II
23-392	Cyber security Module-III
23-492	Cyber security Module-IV
23-394	Skill Development Module-I
23-494	Skill Development Module-II
23-395	Introduction to Constitution


HEAD
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