



Re-accredited by NAAC with 'A' Grade with CGPA 3.62/4
Recognised by UGC as "College with Potential for Excellence"
Conferred "College with "STAR STATUS" by DBT, Government of India.
Centre for Research Capacity Building under UGC-STRIDE

Date: 12-08-2021

NOTIFICATION

Sub: Syllabus of **M.Sc. Biotechnology** Under Choice Based Credit System.

- Ref: 1. Decision of the Academic Council meeting held on 19-06-2021 vide Agenda No: 11(2021-22)
2. Office Notification dated 12-08-2021

Pursuant to the above, the Syllabus of **M.Sc. Biotechnology** under Choice Based Credit System which was approved by the Academic Council at its meeting held on 19-06-2021 is hereby notified for implementation with effect from the academic year **2021-22**.

PRINCIPAL

REGISTRAR

To:

1. The Chairman/Dean/HOD.
2. The Registrar
3. Library
4. PG Office

**DEPARTMENT OF PG STUDIES AND RESEARCH IN
BIOTECHNOLOGY CHOICE BASED CREDIT
SYSTEM (CBCS)**

Scheme and Syllabus for M.Sc. Biotechnology 2021-22 FIRST SEMESTER

Course Code	Course Title	Teaching hours per week	Credits	Duration of exam In hours	Marks		Total
					Internal Assessment	End sem. Exam	
HARD CORE COURSES – THEORY							
PH 501.1	Biochemistry and Metabolism	4	4	3	30	70	100
PH 502.1	Microbiology	4	4	3	30	70	100
PH 503.1	Cell and Molecular Biology	4	4	3	30	70	100
HARD CORE COURSES- PRACTICAL							
PH 504.1 P	Biochemistry and Metabolism	4	2	4	15	35	50
PH 505.1 P	Microbiology	4	2	4	15	35	50
PH 506.1 P	Cell and Molecular Biology	4	2	4	15	35	50
SOFT CORE COURSES – THEORY (CHOOSE ANY ONE)							
PS 507.1	Molecular and Human Genetics	3	3	3	30	70	100
PS 508.1	Immunology						
PS 509.1	Developmental Biology						
SOFT CORE COURSES PRACTICAL							
PS 510.1 P	Molecular and Human Genetics	4	2	4	15	35	50
PS 511.1 P	Immunology						
PS 512.1 P	Developmental Biology						
Total			23				600

SECOND SEMESTER

Course Code	Course Title	Teaching hours per week	Credits	Duration of exam In hours	Marks		Total
					Internal Assessment	End sem. Exam	
HARD CORE COURSES – THEORY							
PH 501.2	Genetic Engineering	4	4	3	30	70	100
PH 502.2	Enzymology	4	4	3	30	70	100
HARD CORE COURSES- PRACTICAL							
PH 503.2 P	Genetic Engineering	4	2	4	15	35	50
PH 504.2 P	Enzymology	4	2	4	15	35	50
SOFT CORE COURSES – THEORY (CHOOSE ANY TWO)							
PS 505.2	Research Methodology, Ethics and Scientific Communication	3	3	3	30	70	100
PS 506.2	Analytical Techniques in Biotechnology	3	3	3	30	70	100
PS 507.2	Multiomics						
PS 508.2	Biosafety and Bioethics						
SOFT CORE COURSES PRACTICAL							
PS 509.2 P	Research Methodology, Ethics and Scientific Communication	4	2	4	15	35	50
PS 510.2 P	Analytical Techniques in Biotechnology	4	2	4	15	35	50
PS 511.2 P	Multiomics						
PS 512.2 P	Biosafety and Bioethics						
OPEN ELECTIVES							
PO 513.2	Quality Assurance and Quality Control in Product Development	3	3	3	30	70	100
PO 514.2	Recent Trends in Biotechnology						
Total			25				700

THIRD SEMESTER

Course Code	Course Title	Teaching hours per week	Credits	Duration of exam In hours	Marks		Total
					Internal Assessment	End sem. Exam	
HARD CORE COURSES – THEORY							
PH 501.3	Animal Biotechnology	4	4	3	30	70	100
PH 502.3	Plant Biotechnology	4	4	3	30	70	100
HARD CORE COURSES- PRACTICAL							
PH 503.3 P	Animal Biotechnology	4	2	4	15	35	50
PH 504.3 P	Plant Biotechnology	4	2	4	15	35	50
SOFT CORE COURSES – THEORY (CHOOSE ANY TWO)							
PS 505.3	Industrial Biotechnology	3	3	3	30	70	100
PS 506.3	Environmental Biotechnology	3	3	3	30	70	100
PS 507.3	Plant Breeding and Seed Technology						
PS 508.3	Marine Biotechnology						
SOFT CORE COURSES PRACTICAL							
PS 509.3 P	Industrial Biotechnology	4	2	4	15	35	50
PS 510.3 P	Environmental Biotechnology	4	2	4	15	35	50
PS 511.3 P	Plant Breeding and Seed Technology						
PS 512.3 P	Marine Biotechnology						
OPEN ELECTIVES							
PO 513.3	Clinical Drug Development and IPR	3	3	3	30	70	100
PO 514.3	Bioremediation techniques						
Total			25				700

FOURTH SEMESTER

Course Code	Course Title	Teaching hours per week	Credits	Duration of exam In hours	Marks		Total
					Internal Assessment	End sem. Exam	
HARD CORE COURSES – THEORY							
PH 501.4	Food Biotechnology	4	4	3	30	70	100
PH 502.4	Molecular Diagnostics and Immunotechniques	4	4	3	30	70	100
PH 503.4	Project Dissertation/ Internship Report and Viva Voce	8	4	Dissertation and Viva Voce	30	70	100
HARD CORE COURSES- PRACTICAL							
PH 504.4 P	Food Biotechnology	4	2	4	15	35	50
PH 505.4 P	Molecular Diagnostics and Immunotechniques	4	2	4	15	35	50
SOFT CORE COURSES – THEORY (CHOOSE ANY ONE)							
PS 506.4	Clinical Research, IPR and Patents	3	3	3	30	70	100
PS 507.4	Stem Cell Technology and Regenerative Medicine						
PS 508.4	Bio-entrepreneurship						
Total			19				500

Total Marks = 2500 and Total credits = 92

Semester	Hard core courses			Soft core courses			Open Electives	Project	Total
	No of courses	Credits	Total	No of courses	Credits	Total	Credits	Credits	
I	3T+3P	12+6	18	1T+1P	3+2	5	-	-	23
II	2T+2P	8+4	12	2T+2P	6+4	10	3	-	25
III	2T+2P	8+4	12	2T+2P	6+4	10	3	-	25
IV	2T+2P	8+4	12	1T	3	3	-	4*	19
Total			52+4 = 60.87 %			30 = 32.61 %	6 = 6.52%		92

*** Project considered as hard core**