



UNIVERSITY OF JAMMU

(NAAC ACCREDITED 'A' GRADE' UNIVERSITY)
Baba Sahib Ambedkar Road, Jammu-180006 (J&K)

Academic Section

Email: academicsectionju14@gmail.com

NOTIFICATION (23/April/Adp./13)

It is hereby notified for the information of all concerned that the Vice-Chancellor, in anticipation of the approval of the Academic Council, is pleased to authorize the adoption of the Syllabi and Courses of Studies in the subject of **Biotechnology** for Semester IIIrd and IVth of **Four Year Under Graduate Programme (FYUGP)** under the **Choice Based Credit System** as per NEP-2020 (as given in the annexure) for the examinations to be held in the years as per the details given below:

Subject	Semester	For the examinations to be held in the year
Biotechnology	Semester-III Semester-IV	December 2023, 2024 and 2025 May 2024, 2025 and 2026

The Syllabi of the courses is also available on the University website: www.jammuuniversity.ac.in.

Sd/-

DEAN ACADEMIC AFFAIRS

No. F. Acd/II/23/1674-1699

Dated: 04/5/23

Copy for information and necessary action to:

1. Dean Faculty of Science
2. HOD/Convener, Board of Studies Biotechnology
3. Sr. P.A. to the Controller of Examinations
4. All members of the Board of Studies
5. C.A. to the Controller of Examinations
6. Director, Computer Centre, University of Jammu
7. Deputy Registrar/Asst. Registrar (Conf. /Exams. UG. Exam. Non.Prof)
- ✓ 8. Incharge University Website for necessary action please

Sumitashamo
Deputy Registrar (Academic) 4/5/23

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3/5/23

UNIVERSITY OF JAMMU

**SYLLABI AND COURSE OF STUDY IN
BIOTECHNOLOGY**

**For the Examination to be held in Year 2023, 2024, 2025,
2026**

BIOTECHNOLOGY COURSE

**UG SEMESTER III & IV
UNDER NEP-2020**

UNIVERSITY OF JAMMU
SYLLABI AND COURSES OF STUDY IN BIOTECHNOLOGY
For the examination to be held in 2023, 2024 and 2025
UG SEMESTER-III
UNDER NEP-2020

S. No	Course type	Course No.	Course Title	Credits	Marks				Total Marks
					Theory		Practical/Tutorial		
1.	Major	UMJBTT-301	General Microbiology	4 (3+1)	Mid Semester: 15 Marks	End exam: 60 marks	Assessment: 10 marks	Exam: 15 Marks	100
2.	Major	UMJBTT-302	Cell Biology and Genetics	4 (3+1)	Mid Semester: 15 Marks	End exam: 60 marks	Assessment: 10 marks	Exam: 15 Marks	100
3.	Minor	UMIBTT-303	Basic Microbiology	4 (3+1)	Mid Semester: 15 Marks	End Semester Exam: 60 Marks	Assessment: 10 marks	Exam: 15 Marks	100
4.	Multidisciplinary	UMDBTT-304	Biotechnology for Human Welfare	3+0	Mid Semester: 15 Marks	End Semester Exam: 60 Marks	NA	NA	75
5.	SEC	USEBTT-305	Basic Molecular Diagnostics	2 (1+1)	Mid Semester: 5 Marks	End Semester Exam: 20 Marks	Assessment: 10 marks	Exam: 15 Marks	50

University of Jammu
Syllabi of Biotechnology for FYUP under CBCS as per NEP-2020
Semester – III
(Examination to be held in December 2023, 2024, 2025)
MAJOR COURSE

Course Code: UMJBTT-301
Course Title: General Microbiology
Credits: 4 (3Theory+1Practical)
Total No. of Lectures: Theory: 45 hours
Practical: 30 hours
Maximum Marks: 100
Theory: 75
Practical: 25
Duration of Examination: 3 hours

Objectives and Expected Learning Outcomes

The course provides an introduction to the fundamentals of microbiology concepts such as history and development; microscopy; classification of microbes like bacteria, viruses, fungus, algae. After successfully completing this course, the students will be able to understand the microbial structures; life cycle and their patho-mechanisms. Course will also provide the information about the application of microbes for improving human health.

Unit 1: Bacteriology

Prokaryotic classification and diversity; structure & function of prokaryotic cell membrane, flagella, pili and capsule; bacterial reproduction; transformation, transduction and conjugation; bacterial growth and kinetics; factors affecting bacterial growth, control of bacterial growth.
Archeae: diversity, structure and function; halophiles, methanophiles and hyperthermophiles.

Unit 2: Mycology

Introduction to mycology; fungi: distribution, morphology, cell structure, reproduction and life cycle; fungal classification, lower fungi and higher fungi; economic importance of fungi.
Lichens: distribution, morphology, cell structure and life cycle; economic importance of lichens.

Unit 3: Phycology

Introduction to phycology; algae: distribution, cellular and subcellular structure, classification; algal nutrition; algal reproduction and life cycle; algal ecology; algal biotechnology; economic importance of algae in agriculture, environment, industry, medicine and food.

Unit 4: Virology

Viruses: discovery, nomenclature and classification, morphology and structure, capsid, envelop, viral genome; viral multiplication and transmission. Distinctive properties and cultivation of viruses, viroids and prions. Viruses infecting bacteria, plant and animals.

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