MAHATMA GANDHI UNIVERSITY, KERALA

Abstract

Bachelor of Science (Honours) Bioinformatics - Third Semester - Modifications to the Course Content and Mode of Assessment - Approved - Orders Issued.

ACA 16

No. 4657/ACA 16/2025/MGU Priyadarsini Hills,Dated: 22.05.2025

Read:-1. U.O.No.5797/AC A16/2024/MGU, dated.27.06.2024.

2. Minutes of the meeting of the Expert Committee on Bioinformatics (UG).

3. Orders of the Vice Chancellor under Section 10(17), Chapter III of the Mahatma Gandhi University Act 1985, dated. 15.05.2025.

ORDER

The syllabi of various Honours Under Graduate Programmes coming under The MGU-UGP (Honours) Regulations, 2024, have been approved vide paper read as (1) above and published on the website of the University.

The Expert Committee on Bioinformatics (UG), discussed the need to modify the Course Description, Hours, Course Outcome Number Mapping, in the Course Content and Mode of Assessment of the course **MG3MDCBIF200**: Bioinformatics Frontiers. And also pointed out the need to modify the Course Outcome Number Mapping in the Course Content of the Course **MG3DSEBIF201**: Linux and C Mastery, in the Third Semester syllabus of Bachelor of Science (Honours) Bioinformatics programme and has submitted recommendations vide paper read as (2) above.

(Recommendations are attached as Annexure)

Considering the urgency, sanction has been accorded by the Vice Chancellor, in exercise of the powers of the Academic Council vested upon him under Section 10(17), Chapter III of the Mahatma Gandhi University Act 1985, vide paper read as (3) above, to approve the said recommendations.

Hence, the Course Description, Hours, Course Outcome Number Mapping, in the Course Content and Mode of Assessment of the said courses in the Third semester syllabus of Bachelor of Science (Honours) Bioinformatics programme stands modified to this extent.

Orders are issued accordingly.

MANOJ G

ASSISTANT REGISTRAR III

(ACADEMIC)

For REGISTRAR

Copy To

1. PS TO VC
2. PA to Registrar/CE
3. Convenor, Expert Committee, English (UG)
4. JR 2 (Admin)/DR 2, AR 3 (Academic)
5. JR/DR/AR (Exam)
6. Tabulation/Academic Sections concerned
7. AC C1/AC C2 Sections
8. IT Cell 3/OQPM1 Sections
9. PRO/IQAC/Records Sections
10. Stock File/File Copy

File No. 29185/AC A16-3 /2025/AC A16

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Section Officer

Annexure

Semester III

Course Name: LINUX AND C MASTERY
Course Code: MG3DSEBIF201

COURSE CONTENT
Content for Classroom Transaction (Units)

Module	Units	Course Description (Modified)	Hrs. (Modified)	CO No. (Modified)	Page No.
3	**3**	**Shell Programming**			42
	3.1	Conditional statements in shell scripting: if, if…else, elif, nested if	15	8	
	3.2	Bash case statements		8,9	
	3.3	Loops in shell scripting		8	
	3.4	Error handling and debugging		8	
	3.5	Shell scripting best practices		8,9	

Course Name: BIOINFORMATICS FRONTIERS
Course Code: MG3MDCBIF200

COURSE CONTENT
Content for Classroom Transaction (Units)

Module	Units		Course Description (Modified)	Hrs. (Modified)	CO No. (Modified)	Page No.
1	**1**		**Foundations of Bioinformatics and Genomics**			49
	1.1		Overview of biological databases: GenBank, UniProt, PDB)	12	1	
	1.2		Sequence alignment algorithms: pairwise and multiple: BLAST and ClustalW		2	
	Existing	Modified			2	
	1.4	1.3	Phylogenetics analysis, Use of PHYLIP.			
	1.5	1.4	Introduction to genomics: Genome sequencing techniques: Next-Generation		3	

		Sequencing (NGS).			49
	Existing	Deleted			
	1.5				
	1.6				
	1.7				
	1.8				
2	**2**	**Transcriptomics and Proteomics**			
	2.1	Transcriptomics: Basics of gene expression analysis.	8	4	
	2.2	Proteomics: Understanding the dynamic nature of the proteome.		3	
	2.3	Protein prediction tools.		4	
	2.4	Deleted			
3	**3**	**CADD and Immunoinformatics**			
	3.1	Overview of drug discovery stages.	10	5	
	3.2	Molecular Docking.		5	50
	3.3	Introduction to Immunoinformatics.		5	
	3.4	Computational approaches to predict epitopes.		5	
4	**4**	**Personalized Medicine, Pharmacogenomics and other trends**			
	4.1	Introduction to Personalized Medicine: Definition and principles. Role of genetics and genomics in personalized medicine.	15	6	
	4.2	Basics of pharmacogenomics.		6	
	4.3	Overview of AI and machine learning applications in bioinformatics. AI and Machine Learning in Drug Discovery.		7	
	4.4	Approaches to Bioinformatics through Systems and Synthetic Biology.		8	
	4.5	Deleted			
	4.6				
	4.7				

MODE OF ASSESSMENT

A.Continuous Comprehensive Assessment (CCA) **Theory** Max:Marks: 25	Page No.
Test papers/Assignments/Seminars	50

B. End Semester Evaluation(ESE) **Theory** Max: Marks : 50			51
Type of Questions	**Number of Questions to be Answered**	**Marks**	
Short answers	5 out of 7	5 x 2 = 10 marks	
Short essay	4 out of 6	4 x 5 = 20 marks	
Long essay	2 out of 4	2 x 10 = 20 marks	