MAHATMA GANDHI UNIVERSITY, KERALA

Abstract

Bachelor of Science (Honours) Botany and Biotechnology (Double Major) - Fourth Semester - Modifications to the Course Outcomes, Course Content and Mode of Assessment - Approved - Orders Issued.

ACA 16

No. 392/ACA 16/2026/MGU Priyadarsini Hills,Dated: 13.01.2026

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

2. Minutes of the combined meeting of the Expert Committees on Biotechnology (UG) and Botany (UG).

3. Orders of the Vice Chancellor under Section 10(17), Chapter III of the Mahatma Gandhi University Act 1985, dated.10.01.2026

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 Committees on Biotechnology (UG) and Botany (UG), discussed the need to modify the Course Outcomes, Course Content and Mode of Assessment of DSC/SEC/VAC type courses, to include Programme Title in the detailed syllabus page of SEC/VAC type courses and to rectify the typographical error in Suggested Readings of the VAC type course, in the Fourth Semester syllabus of the Bachelor of Science (Honours) Botany and Biotechnology (Double Major) 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 Outcomes, Course Content and Mode of Assessment of the said courses in the Fourth semester syllabus of **Bachelor of Science (Honours) Botany and Biotechnology (Double Major)** programme stands modified to this extent.

Orders are issued accordingly.

SUDHA MENON J

ASSISTANT REGISTRAR III
(ACADEMIC)
For REGISTRAR

Copy To

1. PS to VC
2. PA to Registrar/CE
3. Convenors, Expert Committees, Biotechnology (UG) and Botany (UG)
4. JR 2 (Admin)/DR 2, AR 3 (Academic)
5. JR/DR/AR (Exam)
6. Tabulation/Academic Sections concerned
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File No. 85255/AC A16-3/2025/ACA 16.

Forwarded / By Order

Section Officer

Annexure

Semester IV

Course Name: MOLECULAR BIOLOGY
Course Code: MG4DSCBBT201

COURSE OUTCOMES (CO)

CO No.	Expected Course Outcome(Modified)	Learning Domains (Modified)	PO No (Modified)	Page No
3	Describe the central dogma of molecular biology.	No Change	No Change	126,127
5	Able to perform DNA isolation,electrophoresis of DNA and protein, estimation of DNA and RNA and restriction digestion.	A	2,3	
6	Removed			

COURSE CONTENT
Content for Classroom Transaction (Units)

Module	Units	Course Description	Hrs.	CO No. (Modified)	Page No
2	2.1	No Change	No Change	3	127,128
	2.2			3	
	2.3			3	
	2.4			3	
	2.5			4	
3	3.1			3	
	3.2			3	
	3.3			3	
	3.4			4	
	3.5			4	
	3.6			4	
4	4.1			5	
	4.2			5	
	4.3			5	
	4.4			5	
	4.5			5	
	4.6			5	
	4.7			5	

5	Teacher Specific Content	

MODE OF ASSESSMENT (Modified)

A. Continuous Comprehensive Assessment (CCA)

Theory	Page No
20+5 (for Teacher Specific Content) = 25 Marks .	128

B. End Semester Evaluation (ESE)

1.Theory			
Max.Marks: 50			**Duration: 1.5Hrs**
Type of Questions	**Number of Questions to be answered**	**Marks**	**Page No**
One Word Answer	10 out of 12	10 x 2 = 20	128
Short Essay	5 out of 7	5 x 4 = 20	
Essay	1 out of 2	1 x 10 = 10	

Course Name: IMMUNOLOGY
Course Code: MG4DSCBBT202

COURSE OUTCOMES (CO)

CO No.	Expected Course Outcome (Modified)	Learning Domains (Modified)	PO No	Page No
1	Students will be able to identify and describe the major cells and organs involved in the immune system, antigen, haptens and immune responses.	K	No Change	130,131
2	Students will be able to communicate effectively about advanced immunological techniques and antigen-antibody reactions.	No Change		
3	Students will describe the Type I to Type IV hypersensitivity reactions			
4	Students will evaluate therapeutic interventions and immune-techniques in therapeutic applications and will learn the steps			

	involved in generating and characterizing hybridomas for the production of monoclonal antibodies			
5	Students will gain practical exposure to blood cell counting, blood grouping and typing and agglutination and antigen-antibody reactions.			
6	Removed			
7				
8				

COURSE CONTENT
Content for Classroom Transaction (Units)

Module	Units	Course Description	Hrs.	CO No(Modified)	Page No
1	1.1	No Change	No Change	1	131,132
	1.2			1	
	1.3			1	
	1.4			1	
2	2.1			2	
	2.2			2	
	2.3			2	
3	3.1			3	
	3.2			3	
	3.3			4	
4	4.1			5	
	4.2			5	
	4.3			5	
	4.4			5	
	4.5			5	
5	Teacher Specific Content				

MODE OF ASSESSMENT (Modified)

A. Continuous Comprehensive Assessment (CCA)

Theory	Page No
20+5 (for Teacher Specific Content) = 25 Marks	133

B. End Semester Evaluation (ESE)

1.Theory			
Max.Marks: 50			**Duration: 1.5Hrs**
Type of Questions	**Number of Questions to be answered**	**Marks**	**Page No**
One Word Answer	10 out of 12	10 x 2 = 20	133
Short Essay	5 out of 7	5 x 4 = 20	
Essay	1 out of 2	1 x 10 = 10	

2. Practical		Page No
Marks	**Duration**	133
35	3 Hrs	

Course Name: BIOFERTILIZERS AND BIOCONTROL AGENTS
Course Code: MG4SECBBT200

COURSE CONTENT
Content for Classroom Transaction (Units)

Module	Units	Course Description	Hrs.	CO No. (Modified)	Page No.
3	3.2	No Change	No Change	6	136

Course Name: QUALITY CONTROL IN BIOLOGY
Course Code: MG4SECBBT201

Programme	BSc (Hons) Botany and Biotechnology (Double Major)	**Page No** : 139

COURSE CONTENT
Content for Classroom Transaction (Units)

Module	Units	Course Description	Hrs.	CO No. (Modified)	Page No
2	2.1	No Change	No Change	3	140
	2.2			3	
3	3.1			4	
	3.3			4	
	3.4			5	
4	Teacher Specific Content				

MODE OF ASSESSMENT (Modified)

A. Continuous Comprehensive Assessment (CCA)

Theory	Page No
20+5 (for Teacher Specific Content) = 25 Marks .	141

B. End Semester Evaluation (ESE)

1.Theory			
Max.Marks: 50			**Duration: 1.5Hrs**
Type of Questions	**Number of Questions to be answered**	**Marks**	**Page No**
One Word Answer	10 out of 12	10 x 2 = 20	141
Short Essay	5 out of 7	5 x 4 = 20	
Essay	1 out of 2	1 x 10 = 10	

Course Name: CONSERVATION BIOLOGY AND SUSTAINABLE DEVELOPMENT
Course Code: MG4VACBBT200

COURSE CONTENT
Content for Classroom Transaction (Units)

Module	Units	Course Description	Hrs.	CO No. (Modified)	Page No.
3	3.3	No Change	No Change	3,6	145

Course Name: HUMAN RESOURCE MANAGEMENT IN BIOTECHNOLOGY
Course Code: MG4VACBBT201

Programme	BSc (Hons) Botany and Biotechnology (Double Major)	**Page No** : 147

COURSE OUTCOMES (CO)

CO No.	Expected Course Outcome (Modified)	Learning Domains	PO No	Page No
6	Removed			147

COURSE CONTENT
Content for Classroom Transaction (Units)

Module	Units	Course Description	Hrs.	CO No. (Modified)	Page No
1	1.2	No Change	No Change	2	148,149
3	3.2			4	
	3.3			4	
	3.4			4	
	3.5			4	
4	Teacher Specific Content				

MODE OF ASSESSMENT (Modified)

A. Continuous Comprehensive Assessment (CCA)

Theory	Page No
20+5 (for Teacher Specific Content) = 25 Marks .	149

B. End Semester Evaluation (ESE)

1.Theory			
Max.Marks: 50			**Duration: 1.5Hrs**
Type of Questions	**Number of Questions to be answered**	**Marks**	**Page No**
One Word Answer	10 out of 12	10 x 2 = 20	149
Short Essay	5 out of 7	5 x 4 = 20	
Essay	1 out of 2	1 x 10 = 10	

Existing	Modified	Suggested Readings	Page No
3	1	Pavitt, C. & Curtis, E. (2001). Small group discussion: A theoretical approach (3rd ed.). Retrieved from http://www.uky.edu/~drlane/teams/149avitt	149