

# SYLLABUS

M. Sc. Course In

## MOLECULAR BIOLOGY AND HUMAN GENETICS

*(With effect from the session 2021–2023)*

[CHOICE BASED CREDIT SYSTEM]



THE UNIVERSITY OF BURDWAN  
BURDWAN, WEST BENGAL  
713104, INDIA

**Semester III [Credits – 24]**

Course code	Type	T/P	Name	Lect. Hr /week	Dur. of Exam (in H)	Marks			Credit
						I.A.	E.T	Total	
MSMHG301	Core	T	Bioinformatics & Omics	4T	2T	10	40	50	4
MSMHG302	Core	T	Clinical Genetics & Genetic Counselling	4T	2T	10	40	50	4
MSMHG303	Core	P	Lab work based on courses MSMHG301 & MSMHG302	4T	4P	10	40	50	4
MSMHG304	GE	T	Basic Principle of Genetics	2T	1T	5	20	25	2
MSMHG305	DEC	T	Discipline-centric Elective	4T	2T	10	40	50	4
MSMHG306	DEC	P	Lab work based on courses MSMHG305	4T.	4P	10	40	50	4
MSMHG307	CE	NA	Community Engagement Or Clinical Assignments	N.A.	N.A.	5	20	25	2
								Total credit	24

T/P: Theory/Practical

CE: Community Engagement Activities; DE: Discipline-centric Elective; GE: Generic elective

**\* Discipline-centric Elective (Student need to take any one of these Discipline-centric Elective)**

1. CANCER BIOLOGY (**CORSE CODE: MSMHG 305-DE1**)
2. INFECTION BIOLOGY (**CORSE CODE: MSMHG 305-DE2**)
3. MOLECULAR DIAGNOSTICS (**CORSE CODE: MSMHG 305-DE3**)
4. NANOBIOTECHNOLOGY (**CORSE CODE: MSMHG 305-DE4**)
5. STEM CELL AND REGENERATIVE MEDICINE (**CORSE CODE: MSMHG 305-DE5**)
- 6. One course of 4 credits from SWAYAM may be opted**

*\*Based on the Departmental resource, student may be offered all, some or one DE for the particular session. If more than One DE courses are offered students may opt any of these DE course as per given selection criteria. New discipline-centric elective may be included, as per Departmental resource and appropriate steps. The concerned teachers and Department committee will formulate the detail content and take necessary modality for this purpose at that time.*

**\*\* CORSE CODE: MSMHG 306-DE1, 306-DE2, 306-DE3, 306-DE4, 306-DE5,**

**## Community Engagement:** Based on Discipline-centric Elective

### Semester IV [Credits – 24]

Course code	Type	T/P	Name	Lect. Hr /week	Dur. of Exam (in H)	Marks			Credit
						I.A.	E.T	Total	
MSMHG401	Core	T	Neurogenetics and Pharmacogenetics	4T	2T	10	40	50	4
MSMHG402	Core	T	Intellectual Property Rights, Biosafety and Bioethics	4P	2P	10	50	50	4
MSMHG403	Core	T	Project Proposal Preparation	2T	1T	10	40	50	4
MSMHG404	DE	T	Journal Club/ Communication Skills and Seminar Presentation	NA	NA	10	40	50	4
MSMHG405	DE	P	Research Lab / Biotech Industry visit and internship	NA	NA	10	40	50	4
MSMHG406	Project/Term paper	NA	Dissertation	NA	NA	0	50	50	4
Total credit									24

#### Notes on marks distribution:

1. In each course, 20% marks is allotted for Internal Assessment (for both theory and practical's), i.e., 10 marks for a paper of 50 marks and 5 marks for a paper of 25 marks.
2. Marks distribution for each paper will be as follows:

1. For **40** marks of **NON-UNIT** based paper:

*Four questions (out of six) of 2 marks each, four questions (out of six) of 4 marks each and two questions (out of four) of 8 marks each are to be answered*

2. For **40** marks of **UNIT** based paper:

**UNIT I** (Total Marks 20): *Four questions (out of six) of 1 mark each, two questions (out of four) of 4 marks each and one question (out of two) of 8 marks are to be answered*

**UNIT II** (Total Marks 20): *Four questions (out of six) of 1 mark each, two questions (out of four) of 4 marks each and one question (out of two) of 8 marks are to be answered*

3. For 20 marks of **NON-UNIT** based paper:

*Four questions (out of six) of 1 mark each, two questions (out of four) of 4 marks each and one question (out of two) of 8 marks are to be answered*