



**VIT**<sup>®</sup>  
Vellore Institute of Technology  
(Deemed to be University under section 3 of UGC Act, 1956)

**SCHOOL OF BIO SCIENCES AND TECHNOLOGY**

**DEPARTMENT OF BIOMEDICAL SCIENCES**

**M.Sc., BIOMEDICAL GENETICS**

**(Specialization in Genetic Counselling)**

**CURRICULUM**

*(2021-2022 admitted students)*

## **VISION STATEMENT OF VELLORE INSTITUTE OF TECHNOLOGY**

- Transforming life through excellence in education and research.

## **MISSION STATEMENT OF VELLORE INSTITUTE OF TECHNOLOGY**

- **World class Education:** Excellence in education, grounded in ethics and critical thinking, for improvement of life.
- **Cutting edge Research:** An innovation ecosystem to extend knowledge and solve critical problems.
- **Impactful People:** Happy, accountable, caring and effective workforce and students.
- **Rewarding Co-creations:** Active collaboration with national & international industries & universities for productivity and economic development.
- **Service to Society:** Service to the region and world through knowledge and compassion.

## **VISION STATEMENT OF THE SCHOOL OF BIO SCIENCES AND TECHNOLOGY**

- To nurture high-quality bioengineers and science graduates with the potential to innovate, invent and disseminate knowledge for the benefit of society and environment.

## **MISSION STATEMENT OF THE SCHOOL OF BIO SCIENCES AND TECHNOLOGY**

- To create opportunities for multi-disciplinary education, training and research in biotechnology and bio-sciences.
- To instill a spirit of innovation and creativity in young minds from across the globe with sound research aptitude.
- To foster ethically strong biologists who effectively contribute towards the growth of the nation.

## **M.Sc., Biomedical Genetics**

### **Programme Educational Objectives (PEO)**

<b>PEO</b>	<b>Statements</b>
PEO1	Graduates will be practitioners and leaders in their chosen field
PEO2	Graduates will function in their profession with social awareness and responsibility
PEO3	Graduates will interact with their peers in other disciplines in their work place and society and contribute to the economic growth of the country
PEO4	Graduates will be successful in pursuing higher studies in their chosen field
PEO5	Graduates will pursue career paths in teaching or research

## **M.Sc., Biomedical Genetics**

### **Programme Outcomes (POs)**

<b>POs</b>	<b>PO Statements</b>
PO_1	Having a clear understanding of subject-related concepts and contemporary issues
PO_2	Having problem-solving ability for social issues
PO_3	Having a clear understanding of professional and ethical responsibility
PO_4	Having cross-cultural competency exhibited by working in teams
PO_5	Having a good working knowledge of communicating in English

## M.Sc., Biomedical Genetics

### Programme Specific Outcomes (PSOs)

On completion of M.Sc., (Biomedical Genetics) programme, graduates will be able to

PSO 1: Apply knowledge of genetic principles and understand how they contribute to etiology, clinical features, and disease expression.

PSO 2: Exhibit the knowledge of ethical legal and social issues pertaining to genetic counselling.

PSO 3: Ability to independently carry out research and development work to solve the practical problems.

### Category-wise Credit distribution

CREDIT INFO		
S.no	Category	Credit
1	Programme Core	23
2	Programme Elective	22
3	University Core	29
4	University Elective	6
<b>Total Credits</b>		<b>80</b>



### Programme Core

Sl.No	Course Code	Course Title	Course Type	Version	L	T	P	J	C
1	BMG5001	Biochemistry	Embedded Theory and Lab	1.1	3	0	2	0	4
2	BMG5002	Principles of Genetics	Theory Only	1.1	3	0	0	0	3
3	BMG5003	Human Immunology	Theory Only	1	3	0	0	0	3
4	BMG5004	Human Molecular Genetics	Theory Only	1.1	3	0	0	0	3
5	BMG5007	Developmental Genetics	Theory Only	1	3	0	0	0	3
6	BMG5008	Cancer Genetics	Theory Only	1.1	3	0	0	0	3
7	BMG6002	Clinical Cytogenetics and Prenatal Diagnosis	Embedded Theory, Lab and Project	1	2	0	2	4	4



Programme Elective									
Sl.No	Course Code	Course Title	Course Type	Version	L	T	P	J	C
1	BMG5005	Human Anatomy and Physiology	Embedded Theory and Project	1	2	0	0	4	3
2	BMG5006	Advanced Analytical Techniques	Theory Only	1.1	3	0	0	0	3
3	BMG5009	Genetics of Human Infertility	Embedded Theory and Project	1	2	0	0	4	3
4	BMG5010	Radiation Genetics	Embedded Theory and Project	1	2	0	0	4	3
5	BMG5011	Cognitive and Behavioral Genetics	Embedded Theory and Project	1	2	0	0	4	3
6	BMG5012	Forensic Science	Embedded Theory and Project	1	2	0	0	4	3
7	BMG5013	Stem Cell Biology	Theory Only	1.1	3	0	0	0	3
8	BMG5014	Environmental Genetics	Embedded Theory and Lab	1.1	3	0	2	0	4
9	BMG5015	Introduction to Human Psychology	Theory Only	1.1	3	0	0	0	3
10	BMG5016	Bioinformatics	Embedded Theory, Lab and Project	1	2	0	2	4	4
11	BMG5017	Enzymology	Theory Only	1.1	3	0	0	0	3
12	BMG6001	Human Biochemical Genetics	Embedded Theory and Project	1	2	0	0	4	3
13	BMG6003	Medical Biochemistry	Theory Only	1.1	3	0	0	0	3
14	BMG6004	Genetic Engineering	Embedded Theory and Lab	1.1	3	0	2	0	4
15	BMG6005	Genetic Counseling	Embedded Theory and Project	1	2	0	0	4	3
16	BMG6006	Ethical, Legal and Social Issues in Genetic Counseling	Theory Only	1	3	0	0	0	3
17	BMG6007	Clinical Rotation	Project	1.1	0	0	0	8	2



University Core									
Sl. No	Course Code	Course Title	Course Type	Version	L	T	P	J	C
1	BMG 6099	Master's Thesis	Project	1	0	0	0	0	14
2	EFL6097	English and Foreign Language	Basket	1	0	0	0	0	2
3	MSM5001	Biostatistics	Embedded Theory and Lab	1.1	2	0	2	0	3
4	RES5001	Research Methodology	Embedded Theory and Project	1	1	0	0	4	2
5	SET5001	Science, Engineering and Technology Project - I	Project	1	0	0	0	0	2
6	SET5002	Science, Engineering and Technology Project - II	Project	1	0	0	0	0	2
7	SET5003	Science, Engineering and Technology Project – III	Project	1	0	0	0	0	2
8	LFS4777	Soft Skills-M.Sc Biotechnology 2 yr Programme 2020 onwards	Basket	1	0	0	0	0	2
9	STS4777	Soft Skills	Basket	1	0	0	0	0	2

### University Electives (6 credits)

Sl. No.	Course Code	Course Title	L	T	P	J	C
1	UE	Any course offered to M.Tech ( Subject to CGPA Conditions) / M.Sc., Programme					6