

Maulana Abul Kalam Azad University of Technology, WB
(Formerly known as West Bengal University of Technology)
Syllabus of B.Sc. in Genetics
Effective from academic session 2023-24

Curriculum structure for B.SC in GENETICS with Minor in Computer Effective from academic session 2023-24

**BMGN=(B=B.Sc, M=Major, GN=Genetics), Level-1=100,2=200,3=300,4=400, Semester-101(Theory),
191(Practical)**

Sem	Major (Offline)	Minor (Blended Mode) (Computer chain)	Inter Disciplinary (Offline)	Ability Enhancement (Offline)	Skill Enhancement (Online /Sessional)	Common Value added Course (SESSIONAL)	Total credits
I	BMGN 1101 Biochemistry BMGN 1191 Lab on Biochemistry 5 credits (3L+2P)	M01: Computer Fundamental (3 credits)	Any one from GE baskets Basket A or D (3 credits)	English & Professional Communication (2 credits)	Life Skills & Personality Development (2 credits)	Yoga/ Health& Wellness/ Sports / Physical Fitness and Wellness/Comm unity Services (2 credits)	22
	BMGN 1102 Cell Biology BMGN1192 Lab on cell Biology 5 credits (3L+2P)						

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II	<p>BMGN 2101 Principles of Transmission Genetics</p> <p>BMGN 2191 Lab on Principles of Transmission Genetics</p> <p>5 credits (3L+2P)</p>	<p>M02: Management Information System (3 credits)</p>	<p>Any one from GE baskets Basket B or E (3 credits)</p>	<p>Modern Indian Languages and Literature (2 credits)</p>	<p>IT Skills / Monetizing Social Media or Design Thinking (2 credits)</p>	<p>Critical Thinking / NSS/ Mental Health/ Environmental Studies (2 credits)</p>	22
	<p>BMGN 2102 Population and Evolutionary Genetics</p> <p>BMGN 2192 Lab on Population and Evolutionary Genetics</p> <p>5 credits (3L+2P)</p>						
III	<p>BMGN 3201 Molecular Biology</p>	<p>M03: Word and PowerPoint &</p>	<p>Any one from GE baskets</p>	<p>The Constitution and Human Rights</p>	<p>Understanding basics of Cyber</p>		21

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	<p>BMGN 3291 Lab on Molecular Biology 5 credits (3L+2P)</p>	<p>Spreadsheet Application with Excel (4 credits)</p>	<p>Basket C or F (3 credits)</p>	<p>(2 credits)/</p>	<p>Security (2 credits)</p>		
	<p>BMGN 3202 Model Organism in Human Genome Project 5 credits (4L+1T)</p>						
IV	<p>BMGN 4201 Plant and Animal Tissue Culture Techniques 4 credits (4L)</p>	<p>M04: Basics of Operating System/ Database Management with SQL (4 credits)</p>		<p>Universal Human Values (UHV) (2 credits)</p>			23
	<p>BMGN 4202 Bio analytical Tools 4 credits (4L)</p>	<p>M05: Graphic Design with Photoshop and Illustrator/ Unix And Shell Programming (4 credits)</p>					
	<p>BMGN 4203 Genetics and Karyotyping</p>						
	<p>BMGN 4293 Lab on Genetics and Karyotyping</p>						

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	5 credits (3L+2P)						
V	BMGN 5301 Recombinant DNA Technology	M06:Cloud Computing /Introduction to Computer Network (4 credits)			Internship to be started after exam of 4 th sem (sem break) and completed within 5 th sem (weekends) (4 credits)		22
	BMGN 5391— Lab on Recombinant DNA Technology 5 credits(3L+2P)	M07:E-commerce and Application (4 credits)					
	BMGN 5302- Immunology and Immunogenetics						
	BMGN 5392- Lab on Immunological techniques 5 credits (3L+2P)						
VI	BMGN 6301 Human Molecular Genetics	M08:Web Development with HTML and CSS (4 credits)					22
	4 credits(3L+1T)						
	BMGN 6302						

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	<p>Developmental Genetics 5 credits (4L+1T)</p>	<p>M09: Internet and Networking /ERP (4 credits)</p>						
	<p>BMGN -6303 Plant Molecular Genetics</p> <p>BMGN 6393 Lab on Plant Genetics</p> <p>5 credits (3L+2P)</p>							
VII	<p>BMGN 7401 Bioinformatics</p> <p>BMGN 7491 Lab on Bioinformatics</p> <p>5 credits (3L+2P)</p>	<p>M10: Software Project Management /Introduction To Cyber Security and Cyber Laws (4 credits)</p>						22
	<p>BMGN 7402 Reproductive and Cancer Genetics and Emerging Technology 5 credits (4L+1T)</p>	<p>M11: Digital Marketing/ Data Analysis and Interpretation (4 credits)</p>						

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	BMGN 7403 Research Methodology 4 credits (4L)						
VIII	BMGN 8401 IPR, Bioethics and Bio-safety 5 credits (4L+1T)				Research project 12 credits		22
	BMGN 8402 Clinical Genetics and Genetic Counselling 5 credits (4L+1T)						
	19 sub - 91 credits	11 sub – 42 credits	3 sub – 09 credits	4 sub – 08 credits	3 sub & Int &Proj - 22 credits	2 sub – 4 credits	176

Note:

Normally all 5 credit courses will be either theory (3) + practical (2) [100+100 marks] or theory (4) + tutorial (1) [100 marks]

Normally all 4 credit courses will be either theory (3) + tutorial (1) or theory (4) [100 marks]

Normally all 3 credit courses will be theory (3) – Inter disciplinary (5 to 6 baskets) [100 marks]

Normally all 2 credit courses AEC/SEC/CVA would be theory or online/sessional course

4th year subjects could be foundation of Master's program (as masters would be of 1 year after 4 years UG)

7/8th semester Major subjects could include Projects in core, if required

100/200/300/400 level should be maintained as per UGC document

For online course (Skill Enhancement Course) 2 credits=30 hours.