

MOLECULAR BIOLOGY AND GENETICS, BSc

Code	Title	Semester	Compulsory/ Elective	Level	Year	Language	ECTS	Prerequisite
MBG 101	Biology I	Fall	Compulsory	1st Cycle	1	English	6	None
MGB 101L	Biology Lab I	Fall	Compulsory	1st Cycle	1	English	3	None
MATH 101	Calculus I	Fall	Compulsory	1st Cycle	1	English	6	None
PHYS 101	Physics I	Fall	Compulsory	1st Cycle	1	English	4.5	None
PHYS 101L	Physics I Lab	Fall	Compulsory	1st Cycle	1	English	1.5	None
CHEM 101	Chemistry I	Fall	Compulsory	1st Cycle	1	English	5	None
MBG 102	Biology II	Spring	Compulsory	1st Cycle	1	English	6	None
MATH 102	Calculus II	Spring	Compulsory	1st Cycle	1	English	6	None
PHYS 102	Physics II	Spring	Compulsory	1st Cycle	1	English	4.5	None
CHEM 102	Chemistry II	Spring	Compulsory	1st Cycle	1	English	5	None
CHEM 102L	Chemistry Lab I	Spring	Compulsory	1st Cycle	1	English	3	None
IMU 056	Occupational Health and Safety	Spring	Compulsory	1st Cycle	1	English	2	None
MBG 201	Microbiology	Fall	Compulsory	1st Cycle	2	English	6	None
MBG 201L	Microbiology Lab	Fall	Compulsory	1st Cycle	2	English	3	None
MBG 203	Cell Biology	Fall	Compulsory	1st Cycle	2	English	6	None
MATH 203	Linear Algebra	Fall	Compulsory	1st Cycle	2	English	6	None
CHEM 251	Analytical Chemistry	Fall	Compulsory	1st Cycle	2	English	6	None
MBG 202	Genetics	Spring	Compulsory	1st Cycle	2	English	6	None

MBG 202L	Genetics Lab	Spring	Compulsory	1st Cycle	2	English	3	None
MBG 204	Human Physiology	Spring	Compulsory	1st Cycle	2	English	6	None
MATH 206	Biostatistics	Spring	Compulsory	1st Cycle	2	English	6	None
CHEM 252	Organic Chemistry	Spring	Compulsory	1st Cycle	2	English	6	None
MBG 301	Molecular Biology I	Fall	Compulsory	1st Cycle	3	English	6	None
MBG 301L	Molecular Biology Lab	Fall	Compulsory	1st Cycle	3	English	3	None
MBG 303	Biochemistry I	Fall	Compulsory	1st Cycle	3	English	6	None
MBG 305	Ecology	Fall	Elective	1st Cycle	3	English	6	None
MBG 307	Cell Cycle	Fall	Elective	1st Cycle	3	English	6	None
MBG 309	Cell Culture	Fall	Elective	1st Cycle	3	English	6	None
MBG 311	Protein Engineering	Fall	Elective	1st Cycle	3	English	6	None
MBG 313	Signal Transduction	Fall	Elective	1st Cycle	3	English	6	None
MBG 315	Introduction to R programming	Fall	Elective	1st Cycle	3	English	6	None
MBG 302	Molecular Biology II	Spring	Compulsory	1st Cycle	3	English	6	None
MBG 304	Biochemistry II	Spring	Compulsory	1st Cycle	3	English	6	None
MBG 304L	Biochemistry Lab	Spring	Compulsory	1st Cycle	3	English	3	None
MBG 306	Academic Writing and Presentation Skills	Spring	Compulsory	1st Cycle	3	English	6	None
MBG 352	Genomics and Epigenetics	Spring	Elective	1st Cycle	3	English	6	None
MBG 356	Membrane Biology	Spring	Elective	1st Cycle	3	English	6	None
MBG 358	Human Genetics	Spring	Elective	1st Cycle	3	English	6	None
MBG 360	Molecular Life of Plants	Spring	Elective	1st Cycle	3	English	6	None
MBG362	Evolution and Biodiversity	Spring	Elective	1st Cycle	3	English	6	None

MBG 401	Molecular Genetics	Fall	Compulsory	1st Cycle	4	English	6	None
MBG 403	Biotechnology	Fall	Compulsory	1st Cycle	4	English	6	None
MBG 405	Instrumental Methods in Molecular Biology	Fall	Compulsory	1st Cycle	4	English	6	None
MBG 451	Microbial Genetics	Fall	Elective	1st Cycle	4	English	6	None
MBG 453	Cancer Biology	Fall	Elective	1st Cycle	4	English	6	None
MBG 457	Plant Biochemistry	Fall	Elective	1st Cycle	4	English	6	None
MBG 455	Bioinformatics	Fall	Elective	1st Cycle	4	English	6	None
MBG 459	Biophysics	Fall	Elective	1st Cycle	4	English	6	None
MBG 461	Recombinant DNA Technologies	Fall	Elective	1 st Cycle	4	English	6	None
MBG465	Internship	Fall	Elective	1 st Cycle	4	English	6	None
MBG 402	Immunology	Spring	Elective	1st Cycle	4	English	6	None
MBG 452	Introduction to Stem Cells	Spring	Elective	1st Cycle	4	English	6	None
MBG 454	Structural Biology	Spring	Elective	1st Cycle	4	English	6	None
MBG 456	Systems Biology	Spring	Elective	1st Cycle	4	English	6	None
MBG458	Tissue Engineering	Spring	Elective	1st Cycle	4	English	6	None
MBG 460	Neurodegenerative Diseases	Spring	Elective	1st Cycle	4	English	6	None
MBG 464	Plant Physiology and Development	Spring	Elective	1st Cycle	4	English	6	None
MBG466	Developmental Biology	Spring	Elective	1st Cycle	4	English	6	None
MBG468	Rhythms of Life	Spring	Elective	1st Cycle	4	English	6	None

MBG470	Experimental approaches and designs in molecular biology	Spring	Elective	1st Cycle	4	English	6	None
MBG472	Molecular Biology of Viruses	Spring	Elective	1st Cycle	4	English	6	None
MBG 490	Graduation Project	Spring	Compulsory	1st Cycle	4	English	6	None

MOLECULAR BIOLOGY AND GENETICS , MSc

Code	Title	Semester	Compulsory/ Elective	Level	Year	Language	ECTS	Prerequisite
MBG 501	Advanced Molecular Biology	Fall	Compulsory	2nd Cycle	1	English	7	None
MBG 503	Advanced Techniques in Molecular Biology and Genetics	Fall	Elective	2nd Cycle	1	English	7	None
MBG 505	Antibody Engineering	Fall	Elective	2nd Cycle	1	English	7	None
MBG 507	Molecular Biology of Cancer	Fall	Elective	2nd Cycle	1	English	7	None
MBG 509	Molecular Genetics	Fall	Elective	2nd Cycle	1	English	7	None
MBG 511	Cellular Signal Transduction	Fall	Elective	2nd Cycle	1	English	7	None
MBG 513	Physiological Functions of The Cell	Fall	Elective	2nd Cycle	1	English	7	None
MBG 515	Cellular Excitability	Fall	Elective	2nd Cycle	1	English	7	None
MBG 517	Biostatistics	Fall	Elective	2nd Cycle	1	English	7	None
MBG 519	Industrial Microbiology	Fall	Elective	2nd Cycle	1	English	7	None

MBG 521	Scientific Research Methods	Fall	Elective	2nd Cycle	1	English	7	None
MBG 523	Protein Purification Techniques	Fall	Elective	2nd Cycle	1	English	7	None
MBG 525	Laboratory Project	Fall	Elective	2nd Cycle	1	English	7	None
MBG 527	The Biological Clock	Fall	Elective	2nd Cycle	1	English	7	None
MBG 529	Advanced Human Genetics	Fall	Elective	2nd Cycle	1	English	7	None
MBG 551	Scientific Research Techniques and Ethics	Fall	Compulsory	2nd Cycle	1	English	7	None
MBG 531	Food Microbiology	Fall	Elective	2nd Cycle	1	English	7	None
MBG 535	Algae	Fall	Elective	2nd Cycle	1	English	7	None
MBG 537	Introduction to Drug Delivery	Fall	Elective	2nd Cycle	1	English	7	None

MBG 502	Seminar	Spring	Compulsory	2nd Cycle	1	English	7	None
MBG 504	Genetic Engineering	Spring	Elective	2nd Cycle	1	English	7	None
MBG 506	Immunogenetics	Spring	Elective	2nd Cycle	1	English	7	None
MBG 508	Molecular Techniques in Biotechnology	Spring	Elective	2nd Cycle	1	English	7	None
MBG 510	Special Topics in Molecular Biology & Genetics	Spring	Elective	2nd Cycle	1	English	7	None
MBG 512	Plant Biotechnology	Spring	Elective	2nd Cycle	1	English	7	None
MBG 514	Modern Concepts in Biochemistry	Spring	Elective	2nd Cycle	1	English	7	None
MBG 516	Pharmacological Biotechnology	Spring	Elective	2nd Cycle	1	English	7	None
MBG 518	Biosensors	Spring	Elective	2nd Cycle	1	English	7	None

MBG 520	Biomolecule Assays and Analysis	Spring	Elective	2nd Cycle	1	English	7	None
MBG 522	Bioreaction Kinetics and Reactor Design	Spring	Elective	2nd Cycle	1	English	7	None
MBG 524	Bioenvironment Engineering	Spring	Elective	2nd Cycle	1	English	7	None
MBG 526	Microbial Biotechnology	Spring	Elective	2nd Cycle	1	English	7	None
MBG 528	Advanced Epigenetics	Spring	Elective	2nd Cycle	1	English	7	None
MBG 530	Molecular Cloning and Gene Manipulation Techniques	Spring	Elective	2nd Cycle	1	English	7	None
MBG 532	Neurodegeneration	Spring	Elective	2nd Cycle	1	English	7	None
MBG 536	Nanodrug Delivery Approaches	Spring	Elective	2nd Cycle	1	English	7	None
	Intermediate R	Spring	Elective	2nd Cycle	1	English	7	None
MBG 500	Field Specialization Selective	Fall/ Spring	Compulsory	2nd Cycle	1	English	10	None
MBG 599	Masters Thesis	Fall/ Spring	Compulsory	2nd Cycle	1	English	50	None

MOLECULAR BIOLOGY AND GENETICS , PhD

Code	Title	Semester	Compulsory/ Elective	Level	Year	Language	ECTS	Prerequisite
MBG 701	Advanced Techniques in Molecular Biology	Fall	Compulsory	3rd Cycle	1	English	7	None
MBG 703	Biology Scientific Research Techniques and Ethics	Fall	Compulsory	3rd Cycle	1	English	7	None
MBG 705	Molecular Neurodegeneration	Fall	Elective	3rd Cycle	1	English	7	None
MBG 707	Animal Cell Culture and Applications	Fall	Elective	3rd Cycle	1	English	7	None
MBG 709	Nuclear receptors and Transcriptional regulation	Fall	Elective	3rd Cycle	1	English	7	None
MBG 711	Plant Metabolism	Fall	Elective	3rd Cycle	1	English	7	None
MBG 713	Principles of Immunotherapy	Fall	Elective	3rd Cycle	1	English	7	None
MBG 715	Drug Discovery	Fall	Elective	3rd Cycle	1	English	7	None
MBG 717	Advanced Bioinformatics	Fall	Elective	3rd Cycle	1	English	7	None
MBG 702	Advanced Techniques in Human Genetics	Fall	Compulsory	3rd Cycle	1	English	7	None
MBG 704	Seminar	Fall	Compulsory	3rd Cycle	1	English	4	None
MBG 706	Molecular Techniques for Neurodegeneration Research	Fall	Elective	3rd Cycle	1	English	7	None
MBG 708	Molecular Techniques for Cancer Research	Fall	Elective	3rd Cycle	1	English	7	None
MBG 710	Molecular Biology of Metastasis	Fall	Elective	3rd Cycle	1	English	7	None
MBG 712	Microalga Biotechnology	Fall	Elective	3rd Cycle	1	English	7	None

MBG 714	Cancer genetics	Fall	Elective	3rd Cycle	1	English	7	None
MBG 716	Innovative Cancer Treatment Strategies	Fall	Elective	3rd Cycle	1	English	7	None
MBG 718	R for Geneticists	Fall	Elective	3rd Cycle	1	English	7	None