MSC IN MOLECULAR BIOLOGY

Year of enrollment: **2018**
Valid from: **2018/2019/1. semester**

27/01/2020

Semester	Neptun code	Subjects	Department	Coordinator	Exam	Lessons per semester			Crd	Type	Prerequisites of taking the subject
						L	P	S			
1. Semester											
1	AO_MBE_ACS01	Biochemistry of Metabolism	Department of Biochemistry and Molecular Biology	Zoltán Balajthy M.Sc., Ph.D.	special ESE	28	0	14	4	Compulsory	
1	AO_MBE_BIF01	Biophysics	Department of Biophysics and Cell Biology	Andrea Dóczy-Bodnár M.Sc., Ph.D.	ESE	28	0	0	3	Compulsory	
1	AO_MBE_HET01	Human Physiology I.	Department of Physiology	János Magyar M.D.,Ph.D.,D.Sc.	special ESE	28	0	0	3	Compulsory	
1	AO_MBE_GRB01	Medical Genome Biology	Department of Human Genetics	László Takács M.D., Ph.D., D.Sc., M.H.A.Sc.	special ESE	28	0	0	3	Compulsory	
1	AO_MBE_GRG01	Medical Genome Biology Practicals	Department of Human Genetics	László Takács M.D., Ph.D., D.Sc., M.H.A.Sc.	AW5	0	42	0	2	Compulsory	
1	AO_MBE_MBE01	Methods of Molecular Biology	Department of Medical Chemistry	Viktor Dombrádi M.Sc.,Ph.D., D.Sc.	special ESE	28	0	0	3	Compulsory	
1	AO_MBE_GEN01	Molecular Genetics	Department of Human Genetics	Krisztina Szirák M.Sc., Ph.D.	special ESE	28	28	0	4	Compulsory	
1	AO_MBE_IMM01	Molecular Immunology	Department of Immunology	Árpád Lányi M.Sc.,Ph.D.	special ESE	28	0	10	3	Compulsory	
1	AO_MBE_ITE01	Radioisotope Techniques in Biomedicine	Department of Medical Imaging, Division of Nuclear Medicine	József Varga M.Sc.,Ph.D.	ESE	28	0	0	3	Compulsory	
1	AO_MBE_ITG01	Radioisotope Techniques in Biomedicine Practical	Department of Medical Imaging, Division of Nuclear Medicine	József Varga M.Sc.,Ph.D.	AW5	0	14	0	1	Compulsory	together with Radioisotope Techniques in Biomedicine (AO_MBE_ITE01)
1	AOFOGY_WFS	Work and Fire Safety			signature	1	0	0	0	Compulsory	
						1	84	24	**29**		
Required Elective Courses											
1	AO_MBE_BKG3	Biochemistry Practical I.	Department of Medical Chemistry	Beáta Lontay M.Sc., Ph.D.	AW5	0	42	0	2	Required Elective	

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2. Semester											
2	AO_MBE_BIE02	Bioinformatics	Department of Biochemistry and Molecular Biology	Endre Barta M.Sc.,Ph.D.	ESE	28	0	0	3	Compulsory	
2	AO_MBE_BIG02	Bioinformatics Practicals	Department of Biochemistry and Molecular Biology	Endre Barta M.Sc.,Ph.D.	AW5	0	14	0	1	Compulsory	together with Bioinformatics (AO_MBE_BIE02)
2	AO_MBE_BST02	Biostatistics	Department of Biophysics and Cell Biology	László Mátyus M.D.,Ph.D., D.Sc.	ESE	14	0	0	1	Compulsory	
2	AO_MBE_CBI02	Cell and Organ Biochemistry	Department of Biochemistry and Molecular Biology	Zoltán Balajthy M.Sc., Ph.D.	special ESE	28	14	14	4	Compulsory	Biochemistry of Metabolism (AO_MBE_ACS01)
2	AO_MBE_SBI022	Cell Biology	Department of Biophysics and Cell Biology	György Vereb M.D., Ph.D., D.Sc.	special ESE	28	0	0	3	Compulsory	
2	AO_MBE_HET02	Human Physiology II.	Department of Physiology	János Magyar M.D.,Ph.D.,D.Sc.	special ESE	28	0	0	3	Compulsory	Human Physiology I. (AO_MBE_HET01)
2	AO_MBE_HEG02	Human Physiology Practicals	Department of Physiology	János Magyar M.D.,Ph.D.,D.Sc.	AW5	0	28	0	2	Compulsory	Human Physiology I. (AO_MBE_HET01) together with Human Physiology II. (AO_MBE_HET02)
2	AO_MBE_MBG01	Methods in Molecular Biology Practicals	Department of Medical Chemistry	Viktor Dombrádi M.Sc.,Ph.D., D.Sc.	AW5	0	46	0	2	Compulsory	Methods of Molecular Biology (AO_MBE_MBE01)
2	AO_MBE_PRO02	Physiology of Prokaryotes and Molecular Virology	Department of Medical Microbiology	József Kónya M.D.,Ph.D.	ESE	28	14	0	4	Compulsory	
2	AO_MBE_NBI02	Plant Molecular Biology	Department of Botany	Csaba Máthé M.Sc.,Ph.D.	ESE	28	0	28	4	Compulsory	
2	AO_MBE_PMF02	Problem-solving Exercises in Molecular Biology	Department of Botany	János Kerékgyártó M.Sc.,Ph.D.	AW5	0	45	0	2	Compulsory	
						182	161	42	**29**		
Required Elective Courses											
2	AO_MBE_SBG42	Cell Biology Practice	Department of Biophysics and Cell Biology	Katalin Goda M.Sc., Ph.D.	AW5	0	15	0	3	Required Elective	together with Cell Biology (AO_MBE_SBI022)
2	AO_MBE_PRO04	Proteomics	Department of Biochemistry and Molecular Biology	Éva Csősz M.Sc., Ph.D.	ESE	28	28	0	4	Required Elective	
2	AO_MBE_MMS02	Structure and Function of Macromolecules	Department of Biochemistry and Molecular Biology	Mónika Fuxreiter M.Sc.,Ph.D., D.Sc.	ESE	14	30	0	3	Required Elective	Medical Genome Biology (AO_MBE_GRB01)

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3. Semester											
Required Elective Courses											
3	AO_MBE_GES03	Gene Expression Regulation – Functional Genomics	Department of Biochemistry and Molecular Biology	Beáta Scholtz M.Sc.,Ph.D.	ESE	14	0	28	3	Required Elective	Medical Genom Biology (AO_MBE_GRB01)
3	AO_MBE_BGI02	Genomic Bioinformatics	Department of Biochemistry and Molecular Biology	Endre Barta M.Sc.,Ph.D.	ESE	14	28	0	3	Required Elective	Medical Genome Biology (AO_MBE_GRB01)
3	AO_MBE_IMM03	Introduction to Molecular Medicine	Department of Biochemistry and Molecular Biology	Beáta Scholtz M.Sc.,Ph.D.	ESE	25	0	0	2	Required Elective	
3	AO_MBE_SJF03	Signalling Pathways in the Cells	Department of Medical Chemistry	Ferenc Erdődi M.Sc.,Ph.D., D.Sc.	ESE	28	0	0	3	Required Elective	Cell and Organ Biochemistry (AO_MBE_SBK02)
Module-specific Freely Choosen Courses											
3	AO_MBE_ABI03	Biochemistry of Apoptosis	Department of Biochemistry and Molecular Biology	Zsuzsa Szondy M.D., Ph.D., D.Sc.	ESE	28	0	0	3	Module-specific Freely Choosen	Cell and Organ Biochemistry (AO_MBE_SBK02)
3	AO_MBE_BSZ03	Bioinorganic Chemistry	Department of Medical Chemistry	Ferenc Erdődi M.Sc.,Ph.D., D.Sc.	ESE	28	0	0	3	Module-specific Freely Choosen	
Freely Choosen Courses											
3	AOG337801	Basics of Molecular Biology and its application	Division of Clinical Physiology	Attila Tóth, MSc., Ph.D., D.Sc.	AW5	30	30	0	5	Freely Choosen	
3	AO_MBE_ITZ03	Impaired Signal Transduction in the Immune System	Department of Immunology	Tamás Bíró M.D.,Ph.D., D.Sc.	ESE	15	0	0	2	Freely Choosen	Molecular Immunology (AO_MBE_IMM01)
3	AOG24950	Introduction to Ayurveda and Integrative Practice of Clinical Medicine I.	Department of Pharmacology and Pharmacotherapy	Asmita Ashish Wele	AW5	16	0	10	2	Freely Choosen	
3	AO_MBE_NPR03	Nobel prize and molecular biology	Department of Radiology	Teréz Nagy M.Sc., Ph.D.	ESE	14	0	0	1	Freely Choosen	

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						L	P	S			
4. Semester											
Required Elective Courses											
4	AO_MBE_ENZ03	Enzymology	Department of Medical Chemistry	Viktor Dombrádi M.Sc.,Ph.D., D.Sc.	AW5	10	42	0	4	Required Elective	Biochemistry of Metabolism (AO_MBE_ACS01)
4	AO_MBE_FPT04	Post-translational Modification of Proteins	Department of Medical Chemistry	Ilona Farkas M.Sc.,Ph.D.	ESE	28	0	0	3	Required Elective	Cell and Organ Biochemistry (AO_MBE_SBK02)
4	AO_MBE_REB04	Retroviral biochemistry	Department of Biophysics and Cell Biology	József Tőzsér M.Sc., Ph.D., D.Sc.	ESE	22	0	0	3	Required Elective	
Module-specific Freely Choosen Courses											
4	AO_MB_STC04	Selected topics in Cell Biology	Department of Biophysics and Cell Biology	György Vereb M.D., Ph.D., D.Sc.	ESE	24	0	0	2	Module-specific Freely Choosen	Cell Biology (AO_MBE_SBI02)
Freely Choosen Courses											
4	AOG167906	Adipose tissue biology and molecular mechanisms in the pathogenesis of obesity	Department of Biochemistry and Molecular Biology	Endre Károly Kristóf M.D.	AW5	20	0	0	1	Freely Choosen	
4	AO_MBE_HBI03	Basis of Conventional and Biological Immunotherapies	Department of Immunology	Árpád Lányi M.Sc.,Ph.D.	ESE	30	0	0	2	Freely Choosen	Impaired Signal Transduction in the Immune System (AO_MBE_ITZ03)
4	AO_MBE_IMM02	Immunological Methods In Molecular Biology	Department of Immunology	Péter Gogolák M.Sc.,Ph.D.	ESE	15	15	0	3	Freely Choosen	Molecular Immunology (AO_MBE_IMM01)
4	AOG24951	Introduction to Ayurveda and Integrative Practice of Clinical Medicine II.	Department of Pharmacology and Pharmacotherapy	Asmita Ashish Wele	AW5	16	0	10	2	Freely Choosen	Introduction to Ayurveda and Integrative Practice of Clinical Medicine I. (AOG24950)
4	AO_MBE_UPI02	New System Biology Paradigms in Immunology	Department of Immunology	Kitti Pázmándi M.Sc., Ph.D.	ESE	0	0	11	3	Freely Choosen	Molecular Immunology (AO_MBE_IMM01)

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						L	P	S			
Prescribed in the program: 1 semester											
	SI-003	Physical Education			AW5	0	28	0	-	Compulsory	
Thesis courses											
2	AO_MB_DD02	Thesis project work I.			AW5	0	70	0	5	Compulsory	
3	AO_MB_DD03	Thesis project work II.			AW5	0	150	0	10	Compulsory	Thesis I. (AO_MB_DD02)
4	AO_MB_DD04	Thesis project work III.			AW5	0	210	0	15	Compulsory	Thesis II. (AO_MB_DD03)

Students have collected during their studies (Credit points):	
Compulsory Courses	58
Required Elective Courses	19
Module-specific Freely Choosen Courses	7
Freely Choosen Courses	6
Thesis project work	30
Together	120

Special Exams:	
Subjects	Semester
Biochemistry of Metabolism	1
Medical Genom Biology	1
Human Physiology I.	1
Methods of Molecular Biology	1
Molecular Genetics	1
Molecular Immunology	1
Human Physiology II.	2
Cell and Organ Biochemistry	2
Cell Biology	2