

**Biotechnology major 2018**

**Basic Module**

Code	Subject	Course Director	Faculty	Institute	Semester	Prerequisite	Lec/week	Pra/week	Sem/week	Credit	Grade
OBA-124-T	Applied mathematics and biostatistics	Dr. László Grama	AOK	Department of Biophysics	1		1	0	2	3	midsemester grade
OBA-132-T	Basic Genetics	Dr. Gyula Hoffmann	TTK	Department of Biology	1		1	0	0	1	exam
OBA-108-E	Biochemistry - lecture	Dr. Anikó Takátsy	AOK	Department of Biochemistry and Medical Chemistry	1	Principles of Biochemistry (OBR-201-T) parallel	2	0	0	2	exam
OBA-108-G	Biochemistry - practice	Dr. Anikó Takátsy	AOK	Department of Biochemistry and Medical Chemistry	1	Biochemistry - lecture (OBA-108-E) parallel	0	2	0	2	midsemester grade
OBA-106-E	Biophysics - lecture	Dr. Beáta Bugyi	AOK	Department of Biophysics	1		2	0	0	2	exam
OBA-106-G	Biophysics - practice	Dr. Beáta Bugyi	AOK	Department of Biophysics	1	Biophysics - lecture (OBA-106-E) parallel	0	1	0	1	midsemester grade
OBA-107-E	Cell Biology - lecture	Dr. Marianna Pap	AOK	Department of Medical Biology	1		2	0	0	2	exam
OBA-107-G	Cell Biology - practice	Dr. Marianna Pap	AOK	Department of Medical Biology	1	Cell Biology - lecture (OBA-107-E) parallel	0	1	0	1	midsemester grade
OBA-101-T	Ethics	Dr. Tibor Szolcsányi	AOK	Department of Behavioural Sciences	1		1	0	1	2	midsemester grade
OBA-110-E	Human Physiology - lecture	Dr. Zoltán Karádi	AOK	Department of Physiology	1		2	0	0	2	exam
OBA-125-G	Human Physiology - practice	Dr. Zoltán Karádi	AOK	Department of Physiology	1	Human Physiology - lecture (OBA-110-E) parallel	0	2	0	2	midsemester grade
OBA-111-E	Basic Immunology - lecture	Dr. Péter Németh	AOK	Department of Immunology and Biotechnology	2	Cell Biology - lecture (OBA-107-E)	2	0	0	2	exam
OBA-111-GS	Basic Immunology - practice and seminar	Dr. Péter Németh	AOK	Department of Immunology and Biotechnology	2	Basic Immunology - lecture (OBA-111-E) parallel	0	1	1	2	midsemester grade
OBA-131-T	Genetical Bioinformatics	Dr. Csaba Fekete	TTK	Department of Medical Microbiology and Immunology	2	Basic Genetics - lecture (OBA-132-T)	1	2	0	3	midsemester grade
OBA-126-T	Introduction to Developmental Biology	Dr. Péter Balogh	AOK	Department of Immunology and Biotechnology	2	Human Physiology - lecture (OBA-110-E)	2	0	0	2	exam
OBA-112-E	Microbiology - lecture	Dr. László Szereday	AOK	Department of Medical Microbiology and Immunology	2	Cell Biology - lecture (OBA-107-E)	2	0	0	2	exam
OBA-112-G	Microbiology - practice	Dr. László Szereday	AOK	Department of Medical Microbiology and Immunology	2	Microbiology - lecture (OBA-112-E) parallel	0	1	0	1	midsemester grade
OBA-109-E	Protein Bioanalytics - lecture	Dr. Ferenc Kílár	AOK	Institute of Bioanalysis	2	Biochemistry - lecture (OBA-108-E)	2	0	0	2	exam
OBA-109-G	Protein Bioanalytics - practice	Dr. Ferenc Kílár	AOK	Institute of Bioanalysis	2	Protein Bioanalytics - lecture (OBA-109-E) parallel	0	1	0	1	midsemester grade

Obligatory credits to obtain in the Basic Module: 35

**Specialised Core Material Module**

Code	Subject	Course Director	Faculty	Institute	Semester	Prerequisite	Lec/week	Pra/week	Sem/week	Credit	Grade
OBA-119-T	Basics in Cell and Tissue Cultures	Dr. Judit Pongrácz	GYTK	Department of Pharmaceutical Biotechnology	1		0	1	1	2	midsemester grade
OBA-128-T	Biological therapies	Dr. Péter Németh	AOK	Department of Immunology and Biotechnology	2	Basic Immunology - lecture (OBA-111-E) parallel	2	0	0	2	exam
OBA-127-T	Genetic Manipulation and GMO	Dr. Krisztián Kvell	GYTK	Department of Pharmaceutical Biotechnology	2		0	2	1	3	midsemester grade
OBA-115-T	Pharmaceutical Biotechnology	Dr. Judit Pongrácz	GYTK	Department of Pharmaceutical Biotechnology	2	Biological therapies (OBA-128-T) parallel	2	1	1	4	exam
OBA-116-T	Industrial Fermentation	Dr. Krisztián Kvell	GYTK	Department of Pharmaceutical Biotechnology	3		2	1	0	3	exam
OBA-117-E	Molecular Pathogenesis, Functional Genomics - lecture	Dr. Csaba Fekete	TTK	Department of Medical Microbiology and Immunology	3	Cell Biology - lecture (OBA-107-E)	2	0	0	2	exam
OBA-117-G	Molecular Pathogenesis, Functional Genomics - practice	Dr. Csaba Fekete	TTK	Department of Medical Microbiology and Immunology	3	Molecular Pathogenesis, Functional Genomics - lecture (OBA-117-E) parallel	0	2	0	2	midsemester grade

Obligatory credits to obtain in the Specialised Core Material Module: 18

### Biotechnology major 2018

#### Thesis Work

Code	Subject	Course Director	Faculty	Institute	Semester		Lec/week	Pra/week	Sem/week	Credit	Grade
OBA-129-T	Diploma thesis work I.	Dr. Péter Balogh	GYTK	Department of Pharmaceutical Biotechnology	3		0	5	0	5	midsemester grade
OBA-130-T	Diploma thesis work II.	Dr. Péter Balogh	GYTK	Department of Pharmaceutical Biotechnology	4	Diploma thesis work I. (OBA-129-T)	0	25	0	25	midsemester grade

Credits to obtain by the Thesis Work: 30

#### Criterion Requirements

Code	Subject	Course Director	Faculty	Institute	Semester		Lec/week	Pra/week	Sem/week	Credit	Grade
OBR-201-T	Principles of Biochemistry	Dr. Anikó Takátsy	AOK	Department of Biochemistry and Medical Chemistry	1		2	0	0	0	signature

#### Specialty in Medical Biotechnology

Code	Subject	Course Director	Faculty	Institute	Semester		Lec/week	Pra/week	Sem/week	Credit	Grade
OBH-015-T	Basics in Economy, Law, Management and Communication	Dr. Judit Pongrácz	GYTK	Department of Pharmaceutical Biotechnology	1		2	0	1	3	midsemester grade
OBH-014-T	Visits in Industry	Dr. Krisztián Kvell	GYTK	Department of Pharmaceutical Biotechnology	1		0	2	0	2	midsemester grade
OBH-005-E	Molecular Targets – Signal Transduction - lecture	Dr. Ferenc Boldizsár	AOK	Department of Immunology and Biotechnology	2	Cell Biology - lecture (OBA-107-E)	2	0	0	2	exam
OBH-005-G	Molecular Targets – Signal Transduction - practice	Dr. Ferenc Boldizsár	AOK	Department of Immunology and Biotechnology	2		0	2	0	2	midsemester grade
OBH-008-E	Advanced Tissue Culture Technologies - lecture	Dr. Judit Pongrácz	GYTK	Department of Pharmaceutical Biotechnology	3		2	0	0	2	exam
OBH-008-S	Advanced Tissue Culture Technologies - seminar	Dr. Judit Pongrácz	GYTK	Department of Pharmaceutical Biotechnology	3	Advanced Tissue Culture Technologies - lecture (OBH-008-E) parallel	0	0	1	1	midsemester grade
OBH-009-G	Applied Biological Therapies	Dr. Péter Németh	AOK	Department of Immunology and Biotechnology	3		0	2	0	2	midsemester grade
OBH-016-T	Biotechnology Quality Assurance	Dr. Judit Pongrácz	GYTK	Department of Pharmaceutical Biotechnology	3		1	0	1	2	midsemester grade
OBH-007-E	Molecular Development and Transdifferentiation - lecture	Dr. Péter Balogh	AOK	Department of Immunology and Biotechnology	3	Introduction to Developmental Biology (OBA-126-T)	3	0	0	3	exam
OBH-007-G	Molecular Development and Transdifferentiation - practice	Dr. Péter Balogh	AOK	Department of Immunology and Biotechnology	3	Molecular Development and Transdifferentiation - lecture (OBH-007-E) parallel	0	2	0	2	midsemester grade
OBH-012-T	Molecular Diagnostics	Dr. Judit Pongrácz	GYTK	Department of Pharmaceutical Biotechnology	3	Biophysics - lecture (OBA-106-E)	1	0	1	2	exam
OBH-011-T	Molecular Medicine - lecture	Dr. Judit Bene	AOK	Department of Medical Genetics	3	Molecular Diagnostics (OBH-012-T) parallel	1	0	0	1	exam
OBH-013-T	Molecular Therapies - lecture -> Molecular Therapies - lecture and seminar	Dr. Judit Pongrácz	GYTK	Department of Pharmaceutical Biotechnology	3		1	0	1	2	exam
OBH-010-E	Molecular Toxicology - lecture	Dr. Zoltán Gregus	AOK	Department of Pharmacology and Pharmacotherapy	3	Molecular Targets – Signal Transduction - lecture (OBH-005-E)	2	0	0	2	exam
OBH-010-G	Molecular Toxicology - practice	Dr. Zoltán Gregus	AOK	Department of Pharmacology and Pharmacotherapy	3	Molecular Toxicology - lecture (OBH-010-E) parallel	0	2	0	2	midsemester grade

Obligatory credits to obtain in the Specialty in Medical Biotechnology: 30

### Biotechnology major 2018

#### Specialty in Pharmaceutical Biotechnology

Code	Subject	Course Director	Faculty	Institute	Semester		Lec/week	Pra/week	Sem/week	Credit	Grade
OBI-017-T	Basics in Economy, Law, Management and Communication	Dr. Judit Pongrácz	GYTK	Department of Pharmaceutical Biotechnology	1		2	0	1	3	midsemester grade
OBI-015-T	Visits in Industry	Dr. Krisztián Kvell	GYTK	Department of Pharmaceutical Biotechnology	1		0	2	0	2	midsemester grade
OBI-008-E	Molecular Targets – Signal Transduction - lecture	Dr. Ferenc Boldizsár	AOK	Department of Immunology and Biotechnology	2	Cell Biology - lecture (OBA-107-E)	2	0	0	2	exam
OBI-008-G	Molecular Targets – Signal Transduction - practice	Dr. Ferenc Boldizsár	AOK	Department of Immunology and Biotechnology	2		0	2	0	2	midsemester grade
OBI-016-T	Biotechnology Quality Assurance	Dr. Judit Pongrácz	GYTK	Department of Pharmaceutical Biotechnology	3		1	0	1	2	midsemester grade
OBI-010-E	Immunology in Pharmaceutical Biotechnology for Medical Diagnostics and Therapy - lecture	Dr. Judit Pongrácz	GYTK	Department of Pharmaceutical Biotechnology	3		1	0	0	1	exam
OBI-010-G	Immunology in Pharmaceutical Biotechnology for Medical Diagnostics and Therapy - practice	Dr. Judit Pongrácz	GYTK	Department of Pharmaceutical Biotechnology	3		0	1	0	1	midsemester grade
OBI-006-E	Medical Plant Biotechnology - lecture	Dr. Györgyi Horváth	GYTK	Department of Pharmacognosy	3		2	0	0	2	exam
OBI-013-G	Medical Plant Biotechnology - practice	Dr. Györgyi Horváth	GYTK	Department of Pharmacognosy	3		0	2	0	2	midsemester grade
OBI-009-E	Molecular Toxicology - lecture	Dr. Zoltán Gregus	AOK	Department of Pharmacology and Pharmacotherapy	3	Molecular Targets – Signal Transduction - lecture (OBI-008-E)	2	0	0	2	exam
OBI-009-G	Molecular Toxicology - practice	Dr. Zoltán Gregus	AOK	Department of Pharmacology and Pharmacotherapy	3	Molecular Toxicology - lecture (OBI-009-E) parallel	0	2	0	2	midsemester grade
OBI-014-T	Pharmaceutical Technology	Dr. Szilárd Pál	GYTK	Institute of Pharmaceutical Technology and Biopharmacy	3		2	1	0	3	exam
OBI-001-T	Pharmacology and Biotechnology in Medical Practice	Dr. Éva Szőke	AOK	Department of Pharmacology and Pharmacotherapy	3		2	0	0	2	exam
OBI-011-T	Protein Biotechnology	Dr. Katalin Sipos	GYTK	Department of Pharmaceutical Biology	3		1	0	0	1	exam
OBI-012-E	Proteins: Industrial Production, Application in Therapy - lecture	Dr. Krisztián Kvell	GYTK	Department of Pharmaceutical Biotechnology	3		1	0	0	1	exam
OBI-012-G	Proteins: Industrial Production, Application in Therapy - practice	Dr. Krisztián Kvell	GYTK	Department of Pharmaceutical Biotechnology	3		0	2	0	2	midsemester grade

Obligatory credits to obtain in the Specialty in Pharmaceutical Biotechnology: 30

Total obligatory credits to obtain: 113

Optional credits to obtain: 7

Credits to obtain for the diploma: 120