

**The study plan for the follow-up master study programme BMCT, field of study Instruments and Methods for Biomedicine in English (full-time study)**

17AMP\_17 (0)

**Valid for students who entered the study from the academic year 2017/18 and next**

**Guaranteeing department:** Department of Natural Sciences - KPO 17101, Head of the department: prof. Ing. Miroslava Vrbová, CSc.

**Guarantor of the field of study:** prof. Ing. Miroslava Vrbová, CSc.

Code	Lecturer	Obligation	Load	Credits	Conclusion	Guaranteeing department
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**1st year 1st semester (14 weeks)**

17AMPZAM	Fundamentals of Applied Mathematics	P	2+2	4	Z,ZK	KPO
17AMPMB	Molecular Biology for Biomedical Engineering	P	2+2	4	Z,ZK	KPO
17AMPVKF	Selected Chapters in Physics	P	2+2	4	Z,ZK	KPO
17AMPOGV	Geometric and Wave Optics	P	2+1	4	Z,ZK	KPO
17AMPAMF	Nuclear and Molecular Physics	P	2+2	4	Z,ZK	KPO
17AMPSP1	Seminar to Project 1	P	0+1	2	Z	KPO
17AMPPJ1	Project 1	P	0+2	4	Z	KPO
17ABOZP	Occupational safety and health, fire protection and first aid	P	1+0	0	Z	KBT
17AMP???	Compulsory optional course - see the list below	PV		4/2+2		FBMI

**1st year 2nd semester (14 weeks)**

17AMPOCH	Organic Chemistry	P	2+2	4	Z,ZK	KPO
17AMPLT	Laser Technology	P	2+1	4	Z,ZK	KPO
17AMPPLB	Solid Substances for Biomedicine	P	2+1	4	Z,ZK	KPO
17AMPZBCH	Fundamentals of Biochemistry and Clinical Analytical Methods	P	2+1+1	4	Z,ZK	KPO
17AMPBF	Biophysics	P	2+2	4	Z,ZK	KPO
17AMPSP2	Seminar to Project 2	P	0+1	2	Z	KPO
17AMPPJ2	Project 2	P	0+3	4	Z	FBMI
17AMP???	Compulsory optional course - see the list below	PV		4/2+2		FBMI

**2nd year 3rd semester (14 weeks)**

17AMPBTR	Biotransport	P	2+1	4	Z,ZK	KPO
17AMPOEL	Optoelectronics	P	2+2	4	Z,ZK	KPO
17AMPBFT	Advanced Biophotonics	P	2+1	4	Z,ZK	KPO
17AMPSDP1	Seminar to Diploma Thesis 1	P	0+1	2	Z	KPO
17AMPDP1	Diploma Thesis 1	P	0+7	8	Z	FBMI
17AMP???	Compulsory optional course - see the list below	PV		4+4/2+2+4		FBMI

**2nd year 4th semester (14 weeks)**

17AMPSDP2	Seminar to Diploma Thesis 2	P	0+1	2	Z	KPO
17AMPDP2	Diploma Thesis 2	P	0+12	14	Z	KPO
17AMP???	Compulsory optional course - see the list below	PV		4+4+4+2/2+2 +2+2+2+4/4+ 4+2+2+2		FBMI

**List of offered compulsory optional courses in 1st semester - selection in total value 4 credits**

17AMPOOP	Object - Oriented Programming	PV	0+2	2	KZ	KBI
17AMPMMM	Microscopy in Medicine	PV	2+0	2	KZ	KPO
17AMPTPN	Technological Procedures in Nanotechnologies	PV	2+2	4	KZ	KPO
17AMPVMA	Selected Chapters in Mathematics	PV	2+0	2	KZ	KPO

**List of offered compulsory optional courses in 2nd semester - selection in total value 4 credits**

17AMPAIZ	Applications of Ionizing Radiation	PV	2+2	4	KZ	KPO
17AMPMSB	Mathematical Software for Biomedicine	PV	1+1	2	KZ	KPO
17AMPEL	Electrotechnology	PV	2+2	4	KZ	KBT
17AMPUPD	Biomedical Data Storage and Presentation	PV	0+2	2	KZ	KBI

**List of offered compulsory optional courses in 3rd semester - selection in total value 8 credits**

17AMPTVP	Vacuum Technology and Work with Gases	PV	1+1	2	KZ	KPO
17AMPZDD	Data Processing, Mining and Software Data Analysis	PV	0+2	2	KZ	KBI
17AMPVOB	Fibre Optics in Biology a Medicine	PV	2+1+1	4	Z,ZK	KPO
17AMPZMM	Basics of Measurement and Simulation in Mechanics	PV	2+2	4	Z,ZK	KPO
17AMPZAO	Image Processing and Analysis	PV	2+2	4	Z,ZK	KBI
17AMPNCM	Nanoparticles and Nanomaterials - Properties and Biomedical Applications	PV	2+2	4	Z,ZK	KPO
17AMPTBH	Thrombogenicity and Hemocompatibility	PV	2+0	2	KZ	KPO

**List of offered compulsory optional courses in 4th semester - selection in total value at least 14 credits**

17AMPALM	Laser Applications in Medicine	PV	2+1	4	Z,ZK	KPO
17AMPBKM	Biocompatible Materials	PV	2+1	4	Z,ZK	KPO
17AMPGCG	Genetics and Cytogenetics	PV	2+0	2	KZ	KPO
17AMPIBD	Introduction to Immunology and to Cell Diagnostics	PV	2+2	4	Z,ZK	KPO
17AMPFSB	Fluorescence Spectroscopy in Biology and Medicine	PV	2+0	2	KZ	KPO
17AMPBBM	Advanced Biomechanics	PV	2+2	4	Z,ZK	KPO
17AMPAEM	Electromagnetic Field in Medicine	PV	2+2	4	Z,ZK	KPO
17AMPLMS	Ultrafast Laser Methods in Optical Spectroscopy	PV	2+0	2	KZ	KPO
17AMPBSA	Mass Spectroscopy and its Application in Biomedicine	PV	2+0	2	KZ	KPO
17AMPBLM	Biological Membranes - Structure , Functions and Methods of Study	PV	2+0	2	KZ	KPO

**P** Compulsory course  
**PV** Compulsory optional course

**z** assessment  
**kl.z.** graded assessment  
**zk** examination