# Study plan

# Name of study plan: Biomedical Laboratory Methods

Faculty/Institute/Others: Department: Branch of study guaranteed by the department: Welcome page Garantor of the study branch: Program of study: Biomedical Laboratory Methods Type of study: Follow-up master full-time Required credits: 120 Elective courses credits: 0 Sum of credits in the plan: 120 Note on the plan:

Name of the block: Compulsory courses Minimal number of credits of the block: 106 The role of the block: Z

Code of the group: F7PML POV 24 Name of the group: Biomedical Laboratory Methods compulsory course Requirement credits in the group: In this group you have to gain 106 credits Requirement courses in the group: In this group you have to complete 24 courses Credits in the group: 106 Note on the group:

Note on the gr						
Code	Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members)	Completion	Credits	Scope	Semester	Role
	Tutors, <b>authors</b> and guarantors (gar.)					
F7PMLAS	Applied Statistics Anna Hor áková Anna Hor áková Anna Hor áková (Gar.)	Z,ZK	4	2P+2C	L	Z
17BOZP	Occupational Safety and Health, Fire Protection and First Aid Petr Kudrna Petr Kudrna (Gar.)	Z	0	1P	Z	Z
F7PMLBCH	Biochemistry Pavla Bojarová, Jaroslav Racek Jana Jarošová Pavla Bojarová (Gar.)	Z,ZK	6	2P+2L	Z	Z
F7PMLBAS	Biomedical Applications of Light Petr Písa ík, Jan Mikšovský, Jan Remsa Petr Písa ík Petr Písa ík (Gar.)	Z,ZK	4	2P+1L	L	Z
F7PMLDP1	Diploma Project I Daniela Obitková Daniela Obitková (Gar.)	Z	4	0P+3L	Z	Z
F7PMLDP2	Diploma Project II Pavla Bojarová, Daniela Obitková Daniela Obitková Pavla Bojarová (Gar.)	Z	4	0P+4L	L	Z
F7PMLDP3	Diploma Project III Daniela Obitková	Z	4	0P+7L	Z	Z
F7PMLDP4	Diploma Project IV	Z	10	0P+12L	L	Z
F7PMLFG	Forensic Genetics	Z,ZK	6	2P+2L	Z	Z
F7PMLFSW	Fundamentals of Scientific Work	Z	4	0P+1S	L	Z
F7PMLILP1	Individual Laboratory Practice I Jana Jarošová Jana Jarošová Jana Jarošová (Gar.)	Z	4	80XH	L	Z
F7PMLILP2	Individual Laboratory Practice II Jana Jarošová	Z	4	80XH	Z	Z
F7PMLIMB1	Instrumental Methods in Biomedicine I Petr Písa ík, Jan Mikšovský, Vladimíra Petráková, Marie Pospíšilová, Ta ána Jarošíková, Romana Široká <b>Ta ána Jarošíková</b> Vladimíra Petráková (Gar.)	Z,ZK	5	2P+2L	Z	Z
F7PMLIMB2	Instrumental Methods in Biomedicine II Alena Zavadilová, Martin VIk Martin VIk Alena Zavadilová (Gar.)	ZK	5	3P+0C	L	Z
F7PMLMFLP	Mathematics and Physics for Laboratory Practice Petr Písa ík, Milan Ši or, David Vrba, Jana Urzová Petr Písa ík David Vrba (Gar.)	Z,ZK	6	2P+2C	Z	Z
F7PMLMMM	Molecular Medicine Methods Milan Jakubek Milan Jakubek Pavel Martásek (Gar.)	Z,ZK	5	2P+2L	L	Z
F7PMLMBG	Molecular Biology and Genetics Ta ána Jarošíková Ta ána Jarošíková Ta ána Jarošíková (Gar.)	Z,ZK	5	2P+2L	Z	Z
F7PMLNTB	Nanotechnology in Biomedicine Vladimíra Petráková	Z,ZK	5	2P+1L	Z	Z

F7PMLPIM	Practical Training in Instrumental Methods Alena Zavadilová, Martin Vlk Martin Vlk Alena Zavadilová (Gar.)	Z	2	0P+3L	L	Z
F7PMLPFCE	Preparation for the FCE Exam Eva Moty ková Eva Moty ková (Gar.)	Z	2	0P+2C	L	Z
F7PMLSDP	Diploma Thesis Seminar	Z	2	0P+1S	Z	Z
F7PMLSVV	Statistics and Results Evaluation Marek Piorecký, Jan Štrobl, Michaela Mrázková, Tomáš Nagy <b>Michaela</b> Mrázková Marek Piorecký (Gar.)	Z,ZK	4	2P+2C	Z	Z
F7PMLZBTI	Fundamentals of Cellular and Tissue Engineering	Z,ZK	5	1P+2L	Z	Z
F7PMLZDP	Diploma Thesis Preparation	Z	6	160XH	L	Z

Characteristics of the courses of this group of Study Plan: Code=F7PML POV 24 Name=Biomedical Laboratory Methods compulsory course

F7PMLAS		i i	
	Applied Statistics	Z,ZK	4
17BOZP	Occupational Safety and Health, Fire Protection and First Aid	Z	0
F7PMLBCH	Biochemistry	Z,ZK	6
F7PMLBAS	Biomedical Applications of Light	Z,ZK	4
F7PMLDP1	Diploma Project I	Z	4
F7PMLDP2	Diploma Project II	Z	4
F7PMLDP3	Diploma Project III	Z	4
F7PMLDP4	Diploma Project IV	Z	10
F7PMLFG	Forensic Genetics	Z,ZK	6
F7PMLFSW	Fundamentals of Scientific Work	Z	4
F7PMLILP1	Individual Laboratory Practice I	Z	4
F7PMLILP2	Individual Laboratory Practice II	Z	4
F7PMLIMB1	Instrumental Methods in Biomedicine I	Z,ZK	5
F7PMLIMB2	Instrumental Methods in Biomedicine I	ZK	5
F7PMLMFLP	Mathematics and Physics for Laboratory Practice	Z,ZK	6
F7PMLMMM	Mathematics and Thysics for Laboratory Tractice	Z,ZK	5
	u je prohloubit znalosti student o nové technologické p ístupy ve zpracovávání a analýze nukleových kyselin. Vysv tlení poji	1 1	-
	nt m zcela nové obzory ve zpracování a interpretaci genetických dat v b žné biomedicínské praxi.	in percentaiizevai	
F7PMLMBG	Molecular Biology and Genetics	Z,ZK	5
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	Nanotechnology in Biomedicine	Z.ZK	5
F7PMLNTB	Nanotechnology in Biomedicine Practical Training in Instrumental Methods	Z,ZK Z	5
F7PMLNTB F7PMLPIM	Practical Training in Instrumental Methods	Z	5 2 2
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Name of the block: Compulsory elective courses Minimal number of credits of the block: 14 The role of the block: S

Code of the group: F7PML PV 3S 24 Name of the group: Biomedical Laboratory Methods compulsory optional course Requirement credits in the group: In this group you have to gain at least 4 credits (at most 8) Requirement courses in the group: In this group you have to complete at least 1 course (at most 2) Credits in the group: 4

### Note on the group:

Code	Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) Tutors, authors and guarantors (gar.)	Completion	Credits	Scope	Semester	Role
F7PMLGKB	Glycoconjugates in Biomedicine	ZK	4	2P+0C	Z	S
F7PMLPSMB	Advanced Spectroscopic Methods in Biomedicine	ZK	4	2P+0C	Z	S

Characteristics of the courses of this group of Study Plan: Code=F7PML PV 3S 24 Name=Biomedical Laboratory Methods compulsory optional course

	Glycoconjugates in Biomedicine ZK 4	
F7PMLPSMB         Advanced Spectroscopic Methods in Biomedicine         ZK	Advanced Spectroscopic Methods in Riomedicine	

## Code of the group: F7PML PV 4S 24

Name of the group: Biomedical Laboratory Methods compulsory optional course

Requirement credits in the group: In this group you have to gain at least 10 credits (at most 20) Requirement courses in the group: In this group you have to complete at least 2 courses (at most 4) Credits in the group: 10

### Note on the group:

Code	Name of the course / Name of the group of courses (in case of groups of courses the list of codes of their members) Tutors, authors and guarantors (gar.)	Completion	Credits	Scope	Semester	Role
F7PMLBIOMA	Biomaterials and Biomaterial Characterization Petr Písa ík	Z,ZK	5	2P+1L	L	S
F7PMLBIOR	Biointerface	Z,ZK	5	2P+1L	L	S
F7PMLCPSP	Clean Rooms and Proper Practices for Modern Pharmaceutical Preparations	Z,ZK	5	2P+1L	L	S
F7PMLIMUNH	Imunohematologie	Z,ZK	5	1P+2L	L	S

### Characteristics of the courses of this group of Study Plan: Code=F7PML PV 4S 24 Name=Biomedical Laboratory Methods compulsory ontional course

optional course			
F7PMLBIOMA	Biomaterials and Biomaterial Characterization	Z,ZK	5
F7PMLBIOR	Biointerface	Z,ZK	5
F7PMLCPSP	Clean Rooms and Proper Practices for Modern Pharmaceutical Preparations	Z,ZK	5
Students will gain expe	rt insight into the functioning of superclean spaces, isolators, and the basics of gas dynamics. Students will also become famili	ar with the require	ments of clinical
evaluations for medicin	al products of modern therapy, with the design and division of superclean spaces for the production of these products; they w	ill learn about the	theoretical
	sary components of quality assurance systems and, using the example of Good Manufacturing Practice (a system common i		• •
	uction and control pharmaceutical operations of modern companies developing medicinal products for modern therapies. The		
	ts for validation and qualification of instruments, they will acquire the basics of metrology. In the theoretical part, students will be in		est technologies
of cell and gene therap	y, which are tested in clinical evaluations. In the practical part, students will try the production steps for cell preparations in su	per clean rooms.	
F7PMLIMUNH	Imunohematologie	Z,ZK	5

### List of courses of this pass:

Code	Name of the course	Completion	Credits	
17BOZP	Occupational Safety and Health, Fire Protection and First Aid	Z	0	
F7PMLAS	Applied Statistics	Z,ZK	4	
F7PMLBAS	Biomedical Applications of Light	Z,ZK	4	
F7PMLBCH	Biochemistry	Z,ZK	6	
F7PMLBIOMA	Biomaterials and Biomaterial Characterization	Z,ZK	5	
F7PMLBIOR	Biointerface	Z,ZK	5	
F7PMLCPSP	Clean Rooms and Proper Practices for Modern Pharmaceutical Preparations	Z,ZK	5	
Students will gain expert insight into the functioning of superclean spaces, isolators, and the basics of gas dynamics. Students will also become familiar with the requirements of clinical evaluations for medicinal products of modern therapy, with the design and division of superclean spaces for the production of these products; they will learn about the theoretical foundations and necessary components of quality assurance systems and, using the example of Good Manufacturing Practice (a system common in pharmacy), they will gain insigh into the activity of production and control pharmaceutical operations of modern companies developing medicinal products for modern therapies. They will learn about the necessary				
legislation, requirements for validation and qualification of instruments, they will acquire the basics of metrology. In the theoretical part, students will be introduced to the latest technologies of cell and gene therapy, which are tested in clinical evaluations. In the practical part, students will try the production steps for cell preparations in super clean rooms.				
F7PMLDP1	Diploma Project I	Z	4	
F7PMLDP2	Diploma Project II	Z	4	

F7PMLDP3	Diploma Project III	Z	4
F7PMLDP4	Diploma Project IV	Z	10
F7PMLFG	Forensic Genetics	Z,ZK	6
F7PMLFSW	Fundamentals of Scientific Work	Z	4
F7PMLGKB	Glycoconjugates in Biomedicine	ZK	4
F7PMLILP1	Individual Laboratory Practice I	Z	4
F7PMLILP2	Individual Laboratory Practice II	Z	4
F7PMLIMB1	Instrumental Methods in Biomedicine I	Z,ZK	5
F7PMLIMB2	Instrumental Methods in Biomedicine II	ZK	5
F7PMLIMUNH	Imunohematologie	Z,ZK	5
F7PMLMBG	Molecular Biology and Genetics	Z,ZK	5
F7PMLMFLP	Mathematics and Physics for Laboratory Practice	Z,ZK	6
F7PMLMMM	Molecular Medicine Methods	Z,ZK	5
	m tu je prohloubit znalosti student o nové technologické pístupy ve zpracovávání a analýze nukleových kyselin. Vysv tlení pojm p		
	medicína otevírá student m zcela nové obzory ve zpracování a interpretaci genetických dat v b žné biomedicínské praxi.		
F7PMLNTB	Nanotechnology in Biomedicine	Z,ZK	5
F7PMLPFCE	Preparation for the FCE Exam	Z	2
The aim of the cou	rse is to prepare students for the FCE exam (B2 First) as the most widespread of the Cambridge English exams. Passing this exam $ ho$	proves the ability to	o speak and
write at the B2 leve	I. Within the subject, students focus on all parts of the exam: writing, Use of English, reading, listening. The same emphasis is placed	on the developme	nt of spoken
English, with the h	elp of conversational exercises and other activities that improve the fluency of speech and therefore increase self-confidence when o	communicating in	the English
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language. The su	bject further focuses on a comprehensive overview of important grammatical phenomena and their use in written and spoken speech	-	-
	bject further focuses on a comprehensive overview of important grammatical phenomena and their use in written and spoken speech nension and at the same time a creative expansion of vocabulary and idioms. The acquired vocabulary is used in the simulation of rea	h. There is a devel	lopment of
reading compret	introduces students to important techniques and strategies for the exam during practical practice of exam tasks.	h. There is a devel	lopment of
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reading compret	nension and at the same time a creative expansion of vocabulary and idioms. The acquired vocabulary is used in the simulation of rea introduces students to important techniques and strategies for the exam during practical practice of exam tasks. Practical Training in Instrumental Methods	n. There is a devel al life situations. Th Z	lopment of he course
F7PMLPIM F7PMLPSMB	Advanced Spectroscopic Methods in Biomedicine	n. There is a devel al life situations. Th Z ZK	lopment of he course 2 4
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