Recomended pass through the study plan

Name of the pass: Biomedical Laboratory Methods 24/25, 25/26, 26/27

Faculty/Institute/Others:

Department:

Pass through the study plan: Biomedical Laboratory Methods Branch of study guranteed by the department: Welcome page

Guarantor of the study branch:

Program of study: Biomedical Laboratory Methods

Type of study: Follow-up master full-time

Note on the pass: Informaci o předepsaném minimálním počtu PV předmětů pro konkrétní jednotlivé semestry

najdete v odpovídajícím studijmín plánu programu.

Coding of roles of courses and groups of courses:

P - compulsory courses of the program, PO - compulsory courses of the branch, Z - compulsory courses, S - compulsory elective courses, PV - compulsory elective courses, F - elective specialized courses, V - elective courses, T - physical training courses

Coding of ways of completion of courses (KZ/Z/ZK) and coding of semesters (Z/L):

KZ - graded assesment, Z - assesment, ZK - examination, L - summer semester, Z - winter semester

Number of semester: 1

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
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
F7PMLDP1	Diploma Project I Daniela Obitková Daniela Obitková (Gar.)	Z	4	0P+3L	Z	Z
F7PMLIMB1	Instrumental Methods in Biomedicine I Vladimíra Petráková, Marie Pospíšilová, Taťána Jarošíková, Romana Široká, Jan Mikšovský, Petr Písařík Taťána Jarošíková Vladimíra Petráková (Gar.)	Z,ZK	5	2P+2L	Z	Z
F7PMLMFLP	Mathematics and Physics for Laboratory Practice Petr Pisařík, Milan Šiňor, David Vrba, Jana Urzová Petr Pisařík David Vrba (Gar.)	Z,ZK	6	2P+2C	Z	Z
F7PMLMBG	Molecular Biology and Genetics Taťána Jarošíková Taťána Jarošíková (Gar.)	Z,ZK	5	2P+2L	Z	Z
F7PMLSVV	Statistics and Results Evaluation Marek Piorecký, Jan Štrobl, Michaela Mrázková, Tomáš Nagy Michaela Mrázková Marek Piorecký (Gar.)	Z,ZK	4	2P+2C	Z	Z

Number of semester: 2

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
F7PMLPFCE	English Language Eva Motyčková Eva Motyčková (Gar.)	Z	2	0P+2C	L	Z
F7PMLAS	Applied Statistics Anna Horňáková Anna Horňáková (Gar.)	Z,ZK	4	2P+2C	L	Z
F7PMLBAS	Biomedical Applications of Light Jan Mikšovský, Petr Písařík, Jan Remsa Petr Písařík Petr Písařík (Gar.)	Z,ZK	4	2P+1L	L	Z
F7PMLDP2	Diploma Project II Pavla Bojarová, Jana Jarošová, Daniela Obitková Jana Jarošová Pavla Bojarová (Gar.)	Z	4	0P+4L	L	Z
F7PMLILP1	Individual Laboratory Practice I Jana Jarošová Jana Jarošová Jana Jarošová (Gar.)	Z	4	80XH	L	Z
F7PMLIMB2	Instrumental Methods in Biomedicine II Alena Zavadilová, Martin VIk Martin VIk Alena Zavadilová (Gar.)	ZK	5	3P+0C	L	Z
F7PMLMMM	Molecular Medicine Methods Milan Jakubek Milan Jakubek Pavel Martásek (Gar.)	Z,ZK	5	2P+2L	L	Z
F7PMLPIM	Practical Training in Instrumental Methods Alena Zavadilová, Martin VIk Martin VIk Alena Zavadilová (Gar.)	Z	2	0P+3L	L	Z

Number of semester: 3

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
F7PMLDP3	Diploma Project III Daniela Obitková Daniela Obitková Daniela Obitková (Gar.)	Z	4	0P+7L	Z	Z
F7PMLFG	Forensic Genetics Ivan Mazura, Petr Hollý, Vlastimil Stenzl Ivan Mazura Ivan Mazura (Gar.)	Z,ZK	6	2P+2L	Z	Z
F7PMLILP2	Individual Laboratory Practice II Jana Jarošová Jana Jarošová Jana Jarošová (Gar.)	Z	4	80XH	Z	Z
F7PMLNTB	Nanotechnology in Biomedicine Vladimíra Petráková, Václav Petrák Vladimíra Petráková Vladimíra Petráková (Gar.)	Z,ZK	5	2P+1L	Z	Z
F7PMLSDP	Diploma Thesis Seminar Monika Donevová Monika Donevová (Gar.)	Z	2	0P+1S	Z	Z
F7PMLZBTI	Fundamentals of Cellular and Tissue Engineering Jana Matějková, Roman Matějka Roman Matějka Roman Matějka (Gar.)	Z,ZK	5	1P+2L	Z	Z
F7PMLGKB	Glycoconjugates in Biomedicine	ZK	4	2P+0C	Z	S
F7PMLPSMB	Advanced Spectroscopic Methods in Biomedicine Eva Urbánková Eva Urbánková (Gar.)	ZK	4	2P+0C	Z	S

Number of semester: 4

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
F7PMLDP4	Diploma Project IV	Z	10	0P+12L	L	Z
F7PMLFSW	Fundamentals of Scientific Work	Z	4	0P+1S	L	Z
F7PMLZDP	Diploma Thesis Preparation	Z	6	160XH	L	Z
F7PMLBIOMA	Biomaterials and Biomaterial Characterization Jan Mikšovský, Petr Písařík, Jan Remsa Petr Písařík Petr Písařík (Gar.)	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	Ĺ	S
F7PMLIMUNH	Imunohematologie	Z,ZK	5	1P+2L	L	S

List of groups of courses of this pass with the complete content of members of individual groups

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 insight 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
Hlavním cílem před	mětu je prohloubit znalosti studentů o nové technologické přístupy ve zpracovávání a analýze nukleových kyselin. Vysvětlení pojmů p	personalizovaná či	molekulárn
	medicína otevírá studentům zcela nové obzory ve zpracování a interpretaci genetických dat v běžné biomedicínské praxi.		
F7PMLNTB	Nanotechnology in Biomedicine	Z,ZK	5
F7PMLPFCE	English Language	Z	2
F7PMLPIM	Practical Training in Instrumental Methods	Z	2
F7PMLPSMB	Advanced Spectroscopic Methods in Biomedicine	ZK	4
F7PMLSDP	Diploma Thesis Seminar	Z	2
F7PMLSVV	Statistics and Results Evaluation	Z,ZK	4
The aim of the cours	se is to get acquainted with the basic concepts of probability theory and mathematical statistics. The student is introduced to the probab	ility model, the basi	c definitions
•	ory of probability and inductive statistics. They can apply these definitions to practical problems that arise in other areas of professio		
- ' '	or example, doctors), they are familiar with the basic methods of inductive statistics and they can choose a suitable method for stand		
F7PMLZBTI	Fundamentals of Cellular and Tissue Engineering	Z,ZK	5
•	ect is to acquaint students with the basics and methods of working with cell culture and their use both as a model replacement for in	•	
	ring artificial tissue and organ replacements using tissue engineering methods. From the point of view of basic procedures, the issue	•	
	, suitable cultivation conditions, cultivation media, and instrumentation will be addressed. Substrates, biomaterials and decellularized of systems and bioreactors in terms of simulating physiological conditions and their contribution to supporting cell proliferation and dif		•
	tissue and organ replacements and 3D bioprinting technology will be addressed for application. The subject will also address the issu		
	tissue and organ replacements and 3D biophinting technology will be addressed for application. The subject will also address the issi ction with the use of tissue engineering for the preparation of artificial substitutes and modern therapy preparations. As part of practic	•	
	of working with cell culture, working in sterile conditions will be implemented; preparation of culture media; imaging of cell morphology	=	-
	aining; cell culture isolation; preparation of two- and three-dimensional carriers based on nanofibers and hydrogels and their deployn 3D bioprinting.	-	
	oo sopriming.		

Diploma Thesis Preparation

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For updated information see http://bilakniha.cvut.cz/en/FF.html Generated: day 2025-12-02, time 03:44.

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