GENERAL INFORMATION		
Course name	**Basic Medical Laboratory Diagnostics 2**	
Course director	**Prof. Ljubica Glavaš-Obrovac, PhD**	
Assistants	Asst. Prof. Sanja Mandić, PhD Asst. Prof. Stana Tokić, PhD	
Study program	**Integrated undergraduate and graduate university study program Medical Studies in German**	
Course status	Elective	
Year of study, semester	3rd year, 6th semester	
Credits allocated and form of instruction	ECTS student workload	**1**
	Number of teaching hours (L+S+E)	**15** (5+5+5)

COURSE DESCRIPTION

Course objectives

Familiarize students with the principles of the operation of a biomedical laboratory and the use of modern biochemical methods in diagnostics and research

Course requirements

There are no specific requirements for this course except those defined in the study program curriculum.

Learning outcomes relevant to the study program

1.1., 1.2., 2.1., 3.4.

Expected learning outcomes *(5-10 learning outcomes)*

Upon completing the course, the student will be able to:

1. Understand the principle of the operation of a molecular diagnostics laboratory
2. Apply the acquired knowledge in preparing samples for molecular analysis
3. Independently analyze DNA sample by using PCR technique
4. Interpret obtained results

Course content

Organization of a molecular diagnostics laboratory. Source and sample preparation for molecular biological analysis. Modern methods of analyzing DNA sequences and gene expression. DNA and RNA isolation techniques. Nucleic acid electrophoresis. Southern Blot hybridization technique. Polymerase chain reaction. Single-strand conformation polymorphism (SSCP) analysis. Determination of the nucleotide sequence in a DNA molecule (DNA sequencing). DNA analysis in diagnostics and therapy. Interpretation of electropherograms obtained by automatic sequencing. Use of DNA analysis methods in forensics.

Form of instruction		
	☒lectures	☐individual assignments
	☒seminars and workshops	☐multimedia and internet
	☒exercises	☐laboratory
	☐distance learning	☐mentoring activities
	☐field course	☐other

Student obligations

Come to class prepared by studying the recommended literature for each unit and actively participate in all forms of instruction. The student must participate in at least 70% of classes to pass the course.

Monitoring student learning

Attendance	x	Active participation	x	Seminar paper		Experimental work	
Written exam		Oral exam		Essay		Research	

Project		Continuous assessment		Paper		Practical work	x
Portfolio							

Assessment and evaluation of students during class and on the final exam

Students' performance will be evaluated during class and on the final exam. Students are evaluated numerically and descriptively (insufficient (1), sufficient (2), good (3), very good (4), excellent (5)). During classes, a student can earn a maximum of 100 points. Students can earn a maximum of 20 points during classes through different types of activities. On the final exam, students can earn a maximum of 80 points. The final grade represents the sum of the points earned during classes and on the final exam.

Mandatory reading

1. T.Reinard. **Molekularbiologische Methoden, 2. Auflage, Ulmer UTB; 2010.**

Additional reading

1. Rolf Knippers. Molekulare Genetik. Georg Thieme Verlag KG; 2015.

The number of copies of mandatory reading in proportion to the number of students currently taking this course

Title	*Number of copies*	*Number of students*
A purchased license for online textbooks shall be used https://bfdproxy48.bfd-online.de/login.htm?back=http%3a%2f%2fpartner.bfd-online.info.bfdproxy48.bfd-online.de%2fameos%2fbfdAboGateway%3faboId%3d264117 Access will be granted to all students enrolled in the study program		

Quality monitoring methods ensuring the acquisition of knowledge upon completion, skills and competences

The quality of course performance is monitored through an anonymous student survey on the quality of the organization and conduction of classes, the course content and the work of professors. The usefulness of the lectures from the students' perspective, the curriculum content, the professor preparedness, the clarity of the presentation, the amount of new content and the quality of the presentation are evaluated. The curriculum and its execution are administratively compared. The participation of students in lectures and exercises, as well as the excuses for missing classes, are controlled and analyzed.