GENERAL INFORMATION		
Course name	**Ultrasound and Other Imaging Methods in Clinical Practice 2**	
Course director	**Prof. Jure Mirat, MD, PhD**	
Assistants	Prof. Ivan Mihaljević, MD, PhD Prof. Robert Smolić, MD, PhD Asst. Prof. Tamer Salha, MD, PhD	
Study program	**Integrated undergraduate and graduate university study program Medical Studies in German**	
Course status	Elective	
Year of study, semester	4th year, 8th 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

The acquisition of knowledge and skills regarding imaging methods, their capabilities, limitations and rational choice in specific clinical situations.
Familiarizing students with the potential risks of using specific imaging methods and their place in clinical practice.
Familiarizing students with economic moments in the broad application of imaging methods.

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

1.2., 2.1., 2.2., 2.3., 3.1., 3.2., 3.3., 3.4., 3.5., 4.1., 4.2.

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

Upon successful completion of this course, the student will be able to:

1. Use imaging methods in view of the expected capabilities
2. Assess the risk eligibility
3. Distinguish comparative advantages of individual imaging methods
4. Understand the place of individual imaging methods in existing diagnostic algorithms
5. Rationally use individual methods in view of economic aspects.

Course content

- Classical propedeutics in light of modern imaging technology.
- X-ray diagnostics – scope and risks.
- Echocardiography techniques
- Modern echocardiography techniques
- Heart CT scan
- Heart MRI scan
- Coronography and angiography
- Contrast agents in cardiac diagnostics
- Scintigraphic techniques
- Hybrid techniques
- Electromagnetic mapping systems

	☒lectures ☒seminars and workshops ☒exercises	☒individual assignments ☒multimedia and internet ☐laboratory

Form of instruction	☐distance learning ☐field course	☐mentoring activities ☐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	x	Oral exam	x	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. Schäberle W. Ultraschall in der Gefäßdiagnostik. Springer; 2016
2. Schmidt G, Görg C Kursbuch Ultraschall Nach den Richtlinien der DEGUM und der KBV. Thieme; 2015
3. Hohn HP, Scheperjans U, Schumann S. Ultraschallanatomie des Abdomens Ein Basiskurs der Sonografie. Lehmanns Media; 2018

Additional reading

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*
1. Schäberle W. Ultraschall in der Gefäßdiagnostik. Springer; 2016 2. Schmidt G, Görg C Kursbuch Ultraschall Nach den Richtlinien der DEGUM und der KBV. Thieme; 2015 3. Hohn HP, Scheperjans U, Schumann S. Ultraschallanatomie des Abdomens Ein Basiskurs der Sonografie. Lehmanns Media; 2018	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.