

GENERAL INFORMATION		
Course name	Medical Informatics 2	
Course director	Asst. Prof. Ivan Miškulin, PhD	
Assistants	Terezija Berlančić, MD	
Study program	Integrated undergraduate and graduate university study program Medical Studies in German	
Course status	Elective	
Year of study, semester	5 th year, 10 th semester	
Credits allocated and form of instruction	ECTS student workload	1
	Number of teaching hours (L+S+E)	15 (5+0+10)
COURSE DESCRIPTION		
Course objectives		
<p>The objective of the course is to prepare the students, future healthcare practitioners, to take a systematic approach to the organization, communication and processing of data, information and knowledge in medicine and healthcare. Acquaint students with the latest achievements in the field of information and communication technologies so that they can use and apply them correspondingly, responsibly and critically. The objective of this course is to make students aware of the existence and necessity for the development of standards, classifications and ethical principles in the application of information and communication technologies in medicine and healthcare, so that they can use them ethically and responsibly and are prepared to actively participate in their further improvement and harmonization. Teach students to identify information flows in medical practice and the need and opportunities for evaluating IT solutions and communication with IT professionals in building and improving health information systems. The objective is to raise students' awareness of the implementation of new technologies in medical practices, the need to evaluate health technologies and to certify application solutions, especially mobile health apps used for both individualized treatment and health interventions. Teach students the importance of information for decision making in medicine and healthcare, including the importance of data for research.</p>		
Course requirements		
There are no specific requirements for this course except those defined in the study program curriculum.		
Learning outcomes at the Programme level		
2.1., 2.2., 2.3., 3.4., 3.5., 4.2.		
Expected learning outcomes (5-10 learning outcomes)		
<p>Upon successful completion of this course, the student will be able to:</p> <ol style="list-style-type: none"> 1. Identify the key parameters of healthcare systems 2. Provide an example of a healthcare data model in line with the globally leading standards for health information systems (HL7, IHE, openEHR, Continua) 3. Define solution architectures in mobile health and telemedicine 4. Identify basic modules of an integrated hospital information system 5. Identify basic modules and functionalities of national eHealth systems 6. Identify basic components of electronic health records 		
Course content		
<p>Participation of students in medical informatization, evaluating their own work based on data and information that students collect and process, critical assessment of eHealth applications and recognizing both the potential and need for the assessment of mobile applications for healthcare (mHealth), presentation and analysis of the results of their scientific research using information technology, Internet-based learning (and in particular for continuing medical education).</p>		

Form of instruction	<input checked="" type="checkbox"/> lectures <input type="checkbox"/> seminars workshops <input checked="" type="checkbox"/> exercises <input type="checkbox"/> distance learning <input type="checkbox"/> field course	and	<input type="checkbox"/> individual assignments <input type="checkbox"/> multimedia and Internet <input type="checkbox"/> laboratory <input type="checkbox"/> mentoring activities <input type="checkbox"/> 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	Active participation	x	Seminar paper	x	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. Dugas M, Medizinische Informatik und Bioinformatik: Ein Kompendium Für Studium Und Praxis, Springer, Deutschland, 2013.						
Additional reading						
1. van Bommel JH, Musen MA, editors. Handbook of Medical Informatics. Heidelberg: Springer-Verlag; 1997 2. Coiera E. Guide to Health Informatics. London: Arnold; 2003 3. Shortliffe E, Cimino JJ, editors. Biomedical Informatics: Computer Applications in Health Care and Biomedicine. New York: Springer; 2006						
The number of copies of mandatory reading in proportion to the number of students currently taking this course						
<i>Title</i>		<i>Number of copies</i>		<i>Number of students</i>		
Dugas M, Medizinische Informatik und Bioinformatik: Ein Kompendium Für Studium Und Praxis, Springer, Deutschland, 2013		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%3fabold%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.