

Óbuda University Bánki Donát Faculty of Mechanical and Safety Engineering		Insitute of Mechatronics and Vehicle Engineering			
Subject title and code:		Basics of Informatics, BMXIIEHBNE, BMXIAYHBNE			Credits: 3
Full-time study		2023/2024 ac. I. semester year			
The course is available at:		mechatronical engineering			
Supervised by:		Dr. Laufer Edit		Instructors: Dr. Laufer Edit	
Prerequisite (neptun code):		-			
Weekly number of lessons					
Lecture: 2	Group seminar: 0	Lab: 0	Consultation:		
Way of assessment:		Exam (Written)			
Online consultation (in case it's required): ... (BBB link)					
Educational goal:	<i>Informatics is the science of information. Accordingly, the purpose of the subject is to familiarize with the concept of information and its management options. Presentation of the basic methods of lossless compression and secure data transmission. Proper preparation for learning programming, presentation of the background necessary to understand the problems that arise there.</i>				
Schedule					
Education week	Topics				
1.	Concept of informatics. Emergence, development trends. Basic concepts of informatics.				
2.	Concept, and quantity of information. Number systems. Transformation between number systems.				
3.	Negative numbers. Operations. Numeric, alphanumeric codes.				
4.	Real numbers. Operations.				
5.	Concept of entropy. Searching theory.				
6.	Concept of redundancy. Information coding process. Variable code length.				
7.	Test I				
8.	Code tree. Prefix code.				
9.	Statistics-based data compression I.				
10.	Statistics-based data compression II.				
11.	Heuristic information-based methods. Dictionary-based data compression.				
12.	Basics of fault tolerant systems. Error detecting and correcting.				
13.	Test II.				
14.	Retake				
Mid-semester requirements					
Test		Assignment to be submitted		Lab measurement	
amount	dates	amount	deadlines	amount	dates
2	Week 7, 13	0		0	
<i>According to the Study and Examination regulations of Óbuda University attendance of group seminars and lab exercises are mandatory.</i>					
Other requirements for participation in sessions not covered by the regulations and restrictions on substitutions:					
The course is to be considered successfully completed if and onl if both tests are written minimum 40%, as a prerequisite for obtaining a signature .					
Students may receive an offered grade if they have written both tests successfully and the average is minimum 55%					

Test		Assignment to be submitted		Lab measurement	
maximum points available	minimum score required to pass /test	maximum points available	minimum score required to pass / assignment	maximum points available	minimum score required to pass /lab
100 points	40 points	...points	...points	...points	...points

Total number of points achievable in semester: ...points				
Grading thresholds	satisfactory 40 % and above	average 55 % and above	good 70 % and above	excellent 85 % and above
Other evaluation criteria:				
Receive a signature denied entry:	Signature is denied if the student cannot justify the absence for the tests, has failed to write both tests, or absences exceed the number of classes specified in <i>Study and Examination regulations of Óbuda University</i> .			
Required references:	Moodle electronic materials			
Recommended references:				
Quality assurance methods of the subject:				

Things, that are not included, can be found within the regulations of Óbuda University.