

Óbudai University Donát Bánki Faculty of Mechanical and Safety Engineering			Institute of Mechatronics and Vehicle Engineering		
Course name and Neptun-code: Programming I. BMXI2YHBNE					Credits: 6
<i>Full time, 2nd Semester of the Academic year 2022/23.</i>					
Faculties in which the subject is taught: BSc in Mechatronics					
Supervised by: Dr. Laufer Edit					
Prerequisites conditions: (Neptun Codes)				Basics of informatics, BMXIAYHBNE	
Lessons per week:	Theory: 2	Practice (in Auditorium): 0	Lab: 3	Consultation:	
Exam type (s,v,f):	exam				
The Syllabus					
Aim: Developing algorithmic thinking, introducing the basic tools of programming, which are needed during engineering work. The acquisition of basic algorithms and data structures. Show basic computer programming techniques and approaches. Students learn about the basic algorithms and data structures using an easy to learn programming language. This subject helps to solve complex engineering problems.					
Schedule					
Weeks	Topics				
1.	<i>Theory:</i> The aim and tools of computer programming. Structured programming. Event-driven programming. <i>Practice:</i> Visual Studio environment Basic methods of Console class. Variables.				
2.	<i>Theory:</i> Basic data structures and their operations. (integers, real, boolean). Conditional statement. <i>Practice:</i> Application of mathematical functions. Conditional statement.				
3.	Holiday				
4.	<i>Theory:</i> Loops. Array data structure. <i>Practice:</i> Loops. Random number generator.				
5.	<i>Theory:</i> Elementary programming theorems (result is a value) <i>Practice:</i> Array data structure. Operations with arrays.				
6.	<i>Theory:</i> Methods. Value and reference types. <i>Practice:</i> Methods. Elementary programming items.				
7.	<i>Theory:</i> Holiday <i>Practice:</i> Test 1				
8.	<i>Theory:</i> Character and string type. <i>Practice:</i> Character operations. Strings as character arrays.				
9.	<i>Theory:</i> File management. <i>Practice:</i> Holiday				
10.	<i>Theory:</i> Holiday <i>Practice:</i> : String operations.				
11.	<i>Theory:</i> Object oriented programming (abstraction, encapsulation) <i>Practice:</i> File management basics.				
12.	<i>Theory:</i> Object oriented programming (properties, publicity levels, object arrays) <i>Practice:</i> File management. Delimited text file.				
13.	<i>Theory:</i> Object oriented programming in practice. <i>Practice:</i> Test 2				
14.	<i>Theory:</i> Holiday <i>Practice:</i> Retake test				
Requirements					
Weeks	Tests				
2,4,5,6.	small tests				
7	Test I. (lab)				
8,10,11,12	small tests				
13	Test II. (lab)				
14	Preliminary exam (theory) Retake test (lab)				

The evaluation criterias

The participation is governed by TVSZ III.23.§ (1)-(4).

All main areas of the course are evaluated by test papers. The course is to be considered successfully executed and a **signature** is obtained if and only if both tests (separately), and the average of the small tests are higher than 40%.

Signature is **denied** if the student cannot justify the absence for the test, has failed to write both tests, or smalls tests more then twice, or absences exceed the number of classes specified in TVSZ.

During the semester, the signature requirements can be **replaced** in the following cases: one of the laboratory tests failed; illness. In this way, only one of the tests can be rewrite.

Based on the Study Regulations III.6.(4), the student receive **offered grade** if he/she has written all the tests with grades minimum 2 and passed the preliminary exam.

Final grade is calculated in the following way: 40% average score of the lab tests, 10% average of the small tests, 50% oral exam. The oral exam must first be taken from a programming theorem. If it was successful, then a theory question follows.

All matters which are not covered in this document, the Study and Examination Rules and the provisions of the Study Regulations, valid at Óbuda University, prevails.

The semester closing method (method of examination: written, oral, testing, etc.).

Oral exam

Literature: Moodle

Quality Assurance: