Óbuda University		Institute of Sof	tworo Engineering	
John von Neumann Faculty of Informatics		institute of Sol	tware Engineering	
Name and code: Software Design and Development I. (Exam) (NIXSF1EBNE)	Credits: 6	
Computer Science BSc		Daytime 2020/21 year I. semester		
Subject lecturers: Dr. László Csink, Dániel Kiss				
Prerequisites:				
(with code)				
Weekly hours:	Lecture: 0 Seminar: 0 Lab. hours	: 0 Consultation: 0		
Way of assessment:	Examination			
Course description				
Goal: Students will learn the rudiments and main methods of OOP, as well as get an introduction to a modern OC				
programming language.				
Course description: The course is organised in the Internet. Students will get an invitation to join classes via video				
conferencing in the scheduled times.				
The main competences: Algorithm design, control structures. Description of algorithms. Simple and Comopund Basic Pro-				
grams. Combining Basic Programs. The OOP paradigm: objects, classes, encapsulation, hiding, inheritance, polymorphism				
Sorting and searching. Sets. Recursion. Mergesort and Quicksort. Elementary number theoretical algorithms.				

Lecture schedule				
Education	Topic			
week	торіс			
1	The basics of algorithms			
2	Simple and Compund Basic Programs			
3	Value and reference types			
4	Combining Basic Programs			
5	Sorting 1			
6	Sorting 2			
7	Searching			
8	Sets			
9	Recursion			
10	Mergesort and Quicksort			
11	Dynamic Programming			
12	Number Theoretical Algorithms			
13	Summary			
Midterm requirements				
Students mu	st write two midterm tests (computer programs) on weeks 7 and 13 (October 19 and November 30 in lecture			
time $10:45 - 13:20$). Both tests are expected to be at least 50				
Students will get a home project on the week of the first midterm that must be handed in until November 27. It is possible to				
get a one-week extension of this deadline, but in this case, a special fee must be paid. The specification of the requirements				
concerning the home projects will be uploaded to the Moodle.				
To get a signature, students must (i) not miss joining the online lab practice more than 4 times; (ii) complete and upload at				
least 50% of the home works until the deadline; (iii) have both midterm test at least 50% (see above); and (iv) hand in and				
defend the h	defend the home project.			

Midterm Test Scheduling				
Education	Topia			
week	Tobic			
7	FIRST MIDTERM: algorithms in C#			
13	SECOND MIDTERM: OOP in $C#$			
14	REWRITING if necessary			
Midterm grade calculation methods				

Method of replacement

Students are expected to write both midterm tests with a result not lower than 50

Type of exam

The exam will have a written part and an oral part. To pass the written part, you have to complete an online test in the Moodle system. If you fail the written part, you cannot continue the oral part. Your final grade will be determined by taking your lab points as well as your written and oral part results into account, however, the final grade is not simply the arithmetical mean of those grades.

Exam grade calculation methods

	Achieved result	Grade			
	89-100				
	76-88				
	63-75				
	51-62				
	0-50				
References					
Obligatory:					
Al Aho and Jeff Ullman: Foundations of Computer Science					
http://infolab.stanford.edu/ ullman/focs.html					
Thomas H. Cormen, Charles E. Leiserson, Ronald L. Rivest and Clifford Stein: Introduction to Algorithms, The MIT Press;					
3rd edition (July 31, 2009).					
Recommended:					
http://users.nik.uni-obuda.hu/csink/aao					
Others:					