Óbuda University John von Neumann Faculty of Informatics	Institute of Software Engineering
Name and code: Advanced development techniques (NSXHF1EBNE)	**Credits:** 4
Computer Science BSc	*Daytime 2021/22 year I. semester*

Subject lecturers: Sipos Miklós László				
Prerequisites: (with code)				
Weekly hours:	Lecture: 0	Seminar: 0	Lab. hours: 3	Consultation: 0
Way of assessment:	Midyear grade			

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Course description

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Goal: Familiarize the students with the advanced topics of C# programming. One lesson from the weekly three is held as a lecture

Course description: Advanced techniques of the C# language (Lambda expressions, LINQ, Entity Framework, Attributes, Reflection, DLL, Unit tests, Mock, Processes and threads)

Lecture schedule	
Education week	Topic
1	*Előadás*: Introduction, LINQ/XML *Labor*: Func/Action, Anonymous methods, Lambda expressions
2	*Előadás*: Layering/ORM *Labor*: LINQ + XLINQ
3	*Előadás*: DLL, Reflection, Layering. *Labor*: Reflection, DLL
4	*Előadás*: Version Control Systems *Labor*: Entity Framework
5	*Előadás*: Unit testing *Labor*: Layered application development
6	*Előadás*: Mock framework, Dependency Injection *Labor*: Unit testing with nUnit
7	*Előadás*: CI/CD pipelines *Labor*: Mocking with MOQ framework
8	*Előadás*: Data exchange protocols *Labor*: Layered application development with unit testing
9	*Előadás*: Parallel programming I. *Labor*: Written examination (practice)
10	*Előadás*: Parallel programming II. *Labor*: API endpoint and consumer development
11	*Előadás*: Half term break *Labor*: Half term break
12	*Előadás*: Parallel programming III. *Labor*: Parallel programming in the practice (Thread and Task)
13	*Előadás*: Written examination (theory) + Deployment techniques *Labor*: Thread sync
14	*Előadás*: Written examination (theory) retake + .NET versions *Labor*: Written examination (practice) retake and project work inspection
Midterm requirements	

Students write two exams, one on the 9th week during lab occasion and one on the 13th week during lecture occasion. Writing the exams is obligatory. In order to pass the lab exam, at least 50% should be reached. If the student does not write the exam or does not reached 50% then it can be re-written during the last lab occasion. In order to pass the lecture exam, minimum 50% should be reached. If the student does not write the exam or does not reached 50% then it can be re-written during the last lecture occasion. Both of them is possible to be re-written. If there were re-writing, then the final result will be the re-written exam's result.

The student can re-write the exam (lab and lecture) even if on the first try 50% was reached. In this case the final result will be the re-written exam's result.

Students have to create a project work on their own, that shows how they mastered the semester's knowledge materials and key topics. During the creation of the project work students have to meet specific requirements and pass milestones. Project works will be evaluated on a 0-20 scale by the lab teacher. In order to pass the project work at least 10 points (50%) should be acquired. Details will be described during the semester around the 4th week.

Project work has to be submitted until the given deadline. If the project work has not been submitted, or the teacher does not accept the quality of the work, or it simply does not fulfil the minimum requirements, then the project work has to be corrected and re-presented again. The first submission's date is during the 13th week of the semester, Thursday, 2021.12.02. 23:59. If the student was not able to submit the work or it was rejected (as previously stated) then one week later, during the 14th week of the semester, Thursday, 2021.12.09. 23:59 it can be fixed and re-submitted. If during the second try the project work was not submitted or was not accepted, during the exam season it can be re-presented again.

By the end of the 14th week, students should have a successful lab exam and a successful lecture exam and an accepted project work. If any of these components is missing, then the student can correct the missing component only in the exam season (even all three of them can be corrected).

Midterm Test Scheduling

Education week	Topic
9	Written examination (practice)
13	Written examination (theory)
14	Written examination retake (practice AND theory)

Midterm grade calculation methods

Mid-semester grade can only be given to a student who passed both lab and lecture exams, and who has an accepted project work. One possible scale for the semester: lab exam 40 points, lecture exam 40 points, project work 20 points. Based on this, the exams's 50% means 20 points, and the project work's 50% means 10 points. These are the minimum requirements which needs to be acquired. Note that both the lecture and the lab exam needs to reach at least 50% of the points. Considering this scale, student's grade will be calculated: excellent (86-100), good (74-85), average (63-73), satisfactory (50-62), failed (0-49).

Students will receive "Letiltva" (banned) status in the system, if they miss 30% (or more) of the lecture occasions. Students will receive "Letiltva" (banned) status in the system, if they miss 30% (or more) of the lab occasions. In this case according to the law of the institution (TVSZ) there is no possibility to complete the subject in the current semester.

Method of replacement

At the 14th week of the semester both the lecture and the lab exam can be re-written.

At the 14th week the project work can be re-presented to be accepted.

During the exam season, student can correct the missing component (lab exam and/or lecture exam and/or project work) if there is any.

Type of exam

Exam grade calculation methods

References

Obligatory:

The lecture and lab materials provided to the students

Materials on the official site of the subject: https://nikprog.hu

Recommended:

Others: