Óbuda University John von Neumann Faculty of Informatics	Institute of Software Engineering

Name and code: Web programming and advanced programming techniques (NIXWH1EBNE) **Credits:** 5

Computer Science BSc *Daytime 2019/20 year II. semester*

Subject lecturers: Dr. Habil. Szénási Sándor, Balázs Elemér, Kovács András, Sánta Róbert, Jenei András, Kertész Gábor, Pintér Ádám, Romhányi Ármin, Simon-Nagy Gabriella, Sipos Miklós, Szabó-Resch Zsolt

Prerequisites: (with code)				
Weekly hours:	Lecture: 2	Seminar: 0	Lab. hours: 3	Consultation: 0
Way of assessment:	Examination			

Course description

Goal: Familiarize the students with the advanced topics of C# and Java programming

Course description: Advanced techniques of the C# language (Lambda expressions, LINQ, Entity Framework, Attributes, Reflection, DLL, Unit tests, Mock, Processes and threads); webprogramming in Java (Classes, exceptions, collections, client-server communication, serialization, servlets, forms, session handling, JSP)

Lecture schedule

Education week	Topic
1	JAVA: Java syntax, differences from C# C#: Func/Action, Anonymous methods, Lambda expressions
2	JAVA: Classes, objects C#: Linq to Objects, Linq to XML
3	JAVA: Exception handling, collections C#: Linq to Entities
4	JAVA: Java streams, filters C#: Attributes, reflection
5	JAVA: TCP-IP client, server, serialization C#: Managed and unmanaged DLL
6	JAVA: 1st test C#: 1st test
7	JAVA: Java servlet / form C#: Unit test (nUnit)
8	JAVA: Java servlet / form C#: Moq, Dependency Injection
9	JAVA: Java session handling, JSP C#: Process
10	JAVA: Java session handling, JSP C#: Thread, Task
11	JAVA: Java session handling, JSP C#: Thread Synchronization (Lock), interlocked
12	JAVA: 2nd test C#: 2nd test
13	JAVA: Re-test C#: Re-test

Midterm requirements

Attendance on the practices is obligatory.

From each languages, the students will write two mid-semester tests (week 6 and 12). Writing the mid-semester tests is obligatory. If a student doesn't write or doesn't pass the mid-semester test, a re-test is possible on the last week. A re-test is also possible if a student wants to re-write one of the tests. In this case, it is always the re-test grade is taken into account.

If a student doesn't have four passed tests at the end of the regular semester, a last re-test is possible in the exam season.

The students have to create a project work on their own, that shows both the Java webprogramming and advanced C# programming skills:

- The expectations must be met that are mentioned in the prog3_requirements document:
- Stylecop/Fxcop-valid code, Doxygen developer documentation
- Single-user, single-branch GIT repository
- Usage of a database + Entity Framework to access it
- Usage of LINQ
- Layered architecture (minimum 3 sub-projects: Console app + business logic DLL + data access DLL)
- Unit tests (typically for the logic classes)
- The app must request some kind of data from a Java backend

The project work has to be submitted until 05/DEC 23:59. If that deadline is not met, or the teacher doesn't accept the quality of the project work or it doesn't fulfil the bare minimum expectations listed above, then the student will have to present their project work in the exam season.

Midterm Test Scheduling

Education week	Topic
7	18/Oct - FIRST MIDTERM
13	06/Dec - SECOND MIDTERM
14	13/Dec - RE-TEST if necessary

Midterm grade calculation methods

Félévközi jegyet az a hallgató kaphat, aki mindhárom zárthelyit legalább 50-50%-os szinten, valamint a beadandó feladatot megfelelően teljesítette. A hallgató érdemjegye a három zárthelyi átlaga lesz.

"Letiltva" bejegyzést kap az a hallgató, aki az előadások vagy a laborfoglalkozások több mint 30%-áról hiányzik. Szintén "Letiltva" bejegyzést kap az a hallgató, aki egyáltalán nem adott le féléves feladatot.

"Elégtelen" bejegyzést kap és félévközi jegy pótláson vehet részt az a hallgató, aki a fentiek alapján nem teljesíti a három zárthelyit 50%-os szinten, vagy a féléves feladatra kapott osztályzata elégtelen.

Method of replacement

In a mid-semester re-test, one test can be rewritten from both languages.

In the exam season re-test, the Java and C# parts will have separate re-tests. From both languages, students will have to solve a combined task.

Presentation of the project works will be done afterwards, if necessary.

Type of exam

Exam grade calculation methods

Mid-semester grade can only be given to a student who passed all three tests and who submitted an accepted project work. The grade will be the average of the four test grades.

"Signature refused" entry will be given to any student who misses more than 30% of the practice sessions. (TVSZ 23.§). Also "Signature refused" entry will be given to any student who did not submit a project work.

"Failed" grade will be given to any student who doesn't have the four successful practice tests or the project grade is "Fail".

References

Obligatory:

Lab presentations, practice materials
http://nik.uni-obuda.hu/prog3/

Recommended:

Others: