Institute of Cyber-physical Systems						
Name of the subject:	Code of the subject:	Credits:		Weekly hours:		
				lec	sem	lab
Introduction to financial technologies by Excel	NIVIF1EBNE	4	full-time	1	0	2
Responsible person for the subject: Enikő Nagy PhD			Classification: associate professor			
Subject lecturer(s): Enikő Nagy PhD						
Prerequisites:	Szakmai szigorlat (Professional exam) NIXSS1HBNE					
Way of the assessment:	Term grade					

Course description	
Goal:	The aim of the course is to introduce the basic concepts and processes of financial technologies in a practical way with the help of the Excel spreadsheet. Students gain the necessary knowledge and routine through real-life application examples taken from practical life. The fundamental goal of financial technologies is to increase the efficiency of financial services with innovative IT solutions. Therefore, by completing this course, the student will be prepared to understand the specific Fintech environments located between interdisciplinary financial and engineering activities.
Course description:	Thematic: Lectures: Samples, cases and theories. Financial foundations in context of Excel. Data cleaning, financial functions (IRR, FV, PV, NPV, RATE, PMT etc.), filters, Optimal calculation, Charts, Statements, Pivot table, opportunity analysis, Solver, advanced data management, macros and writing algorithms. Practice: With the help of tasks that can be solved in Excel, students get to know innovative financial solutions, which they are able to analyse and understand that how they work.

Lecture schedule	
Education week	Topic
1.	Introduction, Options for using Excel Spreadsheet, Warm-up tasks
2.	Data cleaning, formula writing, simple functions in the context of basic financial statements
3.	Useful functions, statistical, financial functions, main categories of ratios
4.	Transferring data from another system, web, online database
5.	Filtering, Optimal calculation, Creating Drop Down Menus, Chart details
6.	Visualizing the data, Chart types, Combined charts, Trend lines, Financial forecasting
7.	Create summary tables from large data lists, Use Pivot table for financial statements
8.	Scenario manager, Goal seek and Finding optional capital budget with Solver
9.	Advanced data management, spreadsheets sharing, protection against modifications
10.	Introduction to macros, using the macro recorder, present value worksheet
11.	Absolute and relative references in macros, writing algorithms, rewriting fixed operations
12.	Complex exercises: Trended historical financials, yearly income statements
13.	Tests
14.	Replacement tests

Mid-term requirements	
Conditions for obtaining a mid-term grade/signature	During the semester, students will write a two-part test (multiple-choice test and practical assignments with Ms Excel) on the week 13 of the course material. With the test you can get 50-50 points, the sum of these makes up the final score (max. 100 points). A minimum of 26 points must be passed on both tests to pass successfully.

	Participation at practical classes is compulsory. If the student's absences exceed 30% of the total number of semesters in the subject, the student may not receive a signature or a mid-year grade. Absence does not provide an exemption from meeting the subject requirements.

Assessment schedule

Education week	Topic
13	Test in theory and practise
14	Replacement Labor Test, Lecture Test

Method used to calculate the *mid-term grade* (to be filled out only for subjects with mid-term grades)

The semester-final grade is based on the scores of the two tests, for which a maximum of 100 points can be obtained. 52 points must be scored for a sufficient grade, 63 for a medium grade, 74 for a good grade and 85 points for an excellent grade.

Type of the replacement

Type of the replacement of written test/mid-term grade/signature	On the week 14, during the last practical classes, one of the tests can be replaced. For the complex, semester grade replacement, both tests can be replaced with an appropriate (medical) absence certificate. Minimum of 26 points must be scored also on both tests. Improvement is also available on the week 14. It is important to know that by writing an improvement test, the result obtained on the latter test is always included in the final grade.

Type of the exam (to be filled out only for subjects with exams)

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Calculation of the exam mark (to be filled only for subjects with exams)

Final grade calculation methods:

References

Obligatory:	Notes in the Moodle Timothy R. Mayes (2019) Financial Analysis with Microsoft Excel 9th Edition
Recommended:	Wayne Winston (2019) Microsoft Excel 2019 Data Analysis and Business Modeling (Business Skills) 6th Edition Susanne Chishti - Janos Barberis (2016) The FinTech Book, Wiley
Other references:	