UP Faculty of Mathematics, Natural Sciences and Information Tehnologies

MATHEMATICS IN ECONOMIS AND FINANCE – undergraduate study programme, 1st Bologna cycle

Course structure for studets enrolled in the academic years 2013/2014 - 2016/2017 (MF-13)

During their studies, students must complete 26 compulsory courses, 1 internal elective course and 2 external elective course. Students also have to prepare a final project paper.

All courses are awarded 6 ECTS-credits. One ECTS-credit encompasses 30 hour of student work. In addition to the student's presence (at lectures, seminars, in-class and laboratory practical work) this also includes independent work (literature study, preparation for examinations, home assigments, seminar and project work, etc.). The courses require 90 hours of a student's presence (contact hours).

In 2017 changes occurred in the course plan:

- Students enrolled for the first time in the 3rd year of study in the academic year 2017/18 have to prepare a final project paper;
- While students, in the academic year 2018/19 first enrolled in the 3rd year of study programme, choose another external elective course insetad of Seminar – Final Project Paper.

Table 1: Structure of the study programme (MF-13)

Year of study	Study obligation	Number	ECTS-credits (ECTS)	
			ECTS	ECTS/Year of study
1.	Compulsory Course	10	60	60
2.	Compulsory Course	8	48	60
	External Elective Course	2	12	
3.	Compulsory Course	8	48	60
	Internal Elective Course	1	6	
	Seminar – Final Project Paper*	1	6	

**Students, in the academic year 2018/19 first enrolled in the 3rd year of study programme, choose another external elective course (6 ECTS) instead of Seminar – Final Project Paper.*

Table 2: Structure of the study programme (content area) (MF-13)

Year of study	Mathematical area	Applied-mathematical area	Economic-financial area	Practical area
1st year	Algebra I – Matrix Calculus Algebra II – Linear Algebra Analysis I – Foundations of Analysis Analysis II – Infinitesimal Calculus Discrete Mathematics I – Set Theory Discrete Mathematics II - Combinatorics Mathematical Topics in English I	Mathematical Practicum I		Computer Science I Computer Practicum
2nd year	Analysis III – Functions of Many Variables Algebra III - Abstract Algebra Probability	Introduction to Numerical Calculations	Microeconomics Macroeconomics Economic Philosophy	Computer Science II External Elective Course I External Elective Course II
3rd year		Financial Mathematics Stohastic processes I Game Theory Statictics Internal Elective Course I	Econometrics Finance Modelling in Macroeconomics Financial Topics in English	Seminar – Final Project Paper

Table 3: Fisrt year of study (MF-13)

No.	Course	ECTS	Form of contact hour				
			L	T	SE	LW	Total
1.	Analysis I – Foundations of Analysis	6	60	30	-	-	90
2.	Analysis II – Infinitesimal Calculus	6	60	30	-	-	90
3.	Algebra I – Matrix Calculus	6	60	30	-	-	90
4.	Algebra II – Linear Algebra	6	60	30	-	-	90
5.	Discrete Mathematics I – Set Theory	6	60	30	-	-	90
6.	Discrete Mathematics II - Combinatorics	6	60	30	-	-	90
7.	Mathematical Practicum I	6	45	-	-	45	90
8.	Mathematical Topics in English I	6	60	30	-	-	90
9.	Computer Science I	6	45	-	-	45	90
10.	Computer Practicum	6	-	30	-	60	90

Legend:
L = lectures, T = tutorials, SE = seminars, LW = laboratory work
ECTS – ECTS-credits

Table 4: Second year of study (MF-13)

No.	Course	ECTS	Form of contact hour				
			L	T	SE	LW	Total
1.	Analysis III – Functions of Many Variables	6	60	30	-	-	90
2.	Algebra III – Abstract Algebra	6	60	30	-	-	90
3.	Probability	6	60	30	-	-	90
4.	Microeconomics	6	45	30	-	-	75

5.	Macroeconomics	6	45	30	-	-	75
6.	Introduction to Numerical Calculations	6	60	30	-	-	90
7.	Computer Science II	6	45	-	-	45	90
8.	Economic Philosophy	6	30	45	-	-	75
9.	External Elective Course I	6					
10.	External Elective Course II	6					

Table 5: Third year of study (MF-13)

No.	Course	ECTS	Form of contact hour				
			L	T	SE	LW	Total
1.	Financial Mathematics	6	45	30	-	-	75
2.	Game Theory	6	45	30	-	-	75
3.	Econometrics	6	45	30	-	-	75
4.	Stohastic Processes I	6	45	30	-	-	75
5.	Finance	6	30	45	-	-	75
6.	Modelling in Macroeconomics	6	45	30	-	-	75
7.	Statistics	6	45	30	-	-	75
8.	Financial Topics in English	6	30	30	-	-	60
9.	Internal Elective Course I	6					
10.	Seminar – Final Project paper*	6	-	-	30	-	30

**Students, in the academic year 2018/19 first enrolled in the 3rd year of study programme, choose another external elective course (6 ECTS) instead of Seminar – Final Project Paper*

Table 6: Internal Elective Courses (MF-13)

(The list shows only elective courses offered in the last two academic years.)

No.	Course	ECTS	Form of contact hour				
			L	T	SE	LW	Total
1.	Mathematical Modelling	6	45	30	-	-	75
2.	Actuarial Mathematics	6	45	30	-	-	75
3.	Algebra IV – Algebraic Structures	6	45	30	-	-	75
4.	Analysis IV – Real Analysis	6	45	30	-	-	75