MATHEMATIC WITH PYTHON

1	Course Title:	MATHEMATIC WITH PYTHON
2	Course Code:	MAT4110
3	Type of Course:	Optional
4	Level of Course:	First Cycle
5	Year of Study:	4
6	Semester:	8
7	ECTS Credits Allocated:	6.00
8	Theoretical (hour/week):	3.00
9	Practice (hour/week):	0.00
10	Laboratory (hour/week):	0
11	Prerequisites:	
12	Language:	English
13	Mode of Delivery:	Face to face
14	Course Coordinator:	Prof. Dr. BASRİ ÇELİK
15	Course Lecturers:	Öğr. Gör. Dr. Abdurrahman DAYIOĞLU
16	Contact information of the Course Coordinator:	Prof. Dr. Basri ÇELİK Dahili Tel: 41762 Matematik Bölümü Oda No: 134 e-posta: basri@uludag.edu.tr
17	Website:	
18	Objective of the Course:	Sudents taken this course can design and coding for the solution of math problems with Python programming language.
19	Contribution of the Course to Professional Development:	To be able to practice the professional applications of mathematical and geometric concepts with using computer.
20	Learning Outcomes:	

	1	Knows the preparing of solution steps of mathematical problems.
	2	Knows the differences between algorithm and flow chard and makes a designs for problem solving.
	3	Konows basic Python commans.
	4	Knows the Python loop techniques and adapts them to mathematical problems.
	5	Can produce Python codes for arrays and series.
	6	Using matrix operations in Python codes.
	7	Can write Python codes about counting problems and prime numbers.
	8	Can create web forms with Python and add some functions to forms.
	9	
	10	

21	Course Content:

Course Content:

Week	Theoretical	Practice
1	Presentation of the course. What is Python? What can be done with Python?	

2	What is Algorithm? Differences and similarities between algorithm in computer programming and mathematical problem solving algorithm.
3	Suppling and installation of open-source Python program. Usage of Python interfaces.
4	Mathematical operations, simple use of print command, strings and operations with strings.
5	Variables, assignments, lists and operations with them.
6	input command, conditional expressions (if-elif-then) and their application examples.
7	Loops and their usage.
8	For and While loops and differences between these loops.
9	Defining and using functions with Python.
10	Midterm and solutions of the midterm questions.
11	Solution of the equations and equation systems with Python.
12	Operations of arrays, series and vectors with Python.
13	Matrix operations with Python.
14	Writing and reading data files with Python.

Activites	Number	Duration (hour)	Total Work Load (hour)
Theoretical	Springer, 2016, Singapore 14	3.00	42.00
Practicals/Labs	0	0.00	0.00
Self study and preperation	SOLEM, O. VERDIER, Pact, 2016, Birmingham-Mumbai. 14	3.00	42.00
Homeworks	0	0.00	0.00
Projects	0	0.00	0.00
Field Studies	0	0.00	0.00
Midterm exams	0	5.00	5.00
Others	14	6.00	84.00
Final Exams	1	10.00	10.00
Total Work Load			188.00
Total work load/30 hr			6.10
ECTS Credit of the Course			6.00

TERM LEARNING ACTIVITIES	NUMBER	WEIGHT
Quiz	0	0.00
Contribution of Term (Year) Learning Activities to		40.00
Contribution of Final Exam to Success Grade	60.00	
Total	100.00	
Measurement and Evaluation Techniques Used in the Course	Homeworks and online exams	

24	ECTS / WORK LOAD TABLE

25	CONTRIBUTION OF LEARNING OUTCOMES TO PROGRAMME QUALIFICATIONS															
	PQ1	PQ2	PQ3	PQ4	PQ5	PQ6	PQ7	PQ8	PQ9	PQ10	PQ11	PQ12	PQ13	PQ14	PQ15	PQ16
ÖK1	0	0	5	0	0	0	4	0	4	4	0	0	0	0	0	0

ÖK2	0	0	5	0	0	1	4	2	4	5	0	0	0	0	0	0
ÖK3	0	0	5	3	0	1	3	3	4	4	0	0	0	0	0	0
ÖK4	0	0	5	2	0	1	4	2	5	4	0	0	0	0	0	0
ÖK5	0	0	5	2	0	1	4	2	5	4	0	0	0	0	0	0
ÖK6	0	0	5	3	0	1	4	3	5	5	0	0	0	0	0	0
ÖK7	0	0	5	3	0	1	4	2	4	5	0	0	0	0	0	0
ÖK8	0	0	5	2	0	1	5	2	5	5	0	0	0	0	0	0

LO: Learning Objectives   PQ: Program Qualifications

Contrib ution Level:	1 very low	2 low	3 Medium	4 High	5 Very High