HIGH ENERGYSIMULATIONTECHNIQUES I

1	Course Title:	HIGH ENERGYSIMULATIONTECHNIQUES I
2	Course Code:	FZK5608
3	Type of Course:	Optional
4	Level of Course:	Second Cycle
5	Year of Study:	1
6	Semester:	2
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:	None
12	Language:	Turkish
13	Mode of Delivery:	Face to face
14	Course Coordinator:	Dr. Ögr. Üyesi FATMA KOÇAK
15	Course Lecturers:	Doç. Dr. Nilgün Demir
16	Contact information of the Course Coordinator:	fkocak@uludag.edu.tr (0224) 2941709 Dr. Ögr. Üyesi Fatma KOÇAK, Uludağ Üniversitesi Fen Edebiyat Fakültesi, Fizik Bölümü 16059 Nilüfer/Bursa
17	Website:	
18	Objective of the Course:	
19	Contribution of the Course to Professional Development:	
20	Learning Outcomes:	

	1	Linux operating system, its use and simple scipting
	2	Interaction of particle with matter
	3	Simple Fortran programming
	4	Simulation tools used in high energy physics, FLUKA, FLAIR
	5	Analysis tools used in high energy physics, PAW
	6	
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21	Course Content:	

Course Content:	

Week	Theoretical	Practice
1	Unix and Linux operating systems	
2	Use of Linux operating system	
3	Linux commands and samples	
4	Simple scripting	
5	Interaction of particle with matter	
6	Simple Fortran programming	

7	Simulation tools widely used in high energy physics (FLUKA); geometry, material definitions	
8	Simulation tools widely used in high energy physics (FLUKA); physics, scorings	
9	Simulation tools widely used in high energy physics (FLUKA); user routines	
10	Simulation tools widely used in high energy physics (FLUKA); analysis (PAW)	
11	FLAIR interface - 1	
12	FLAIR interface - 2	
13	Sample applications	
14	Sample applications	

22	Textbooks, References and/or Other Materials:	[1] Linux İşletim Sistemi, Görkem Çetin, Seçkin Yayıncılık, Ankara. [2] Basic / Fortran Programlama, Bülent Bulut, Çağlayan Kitabevi, İstanbul [3] FLUKA Online Manual [4] Physics Analysis Workstation (PAW) Online Manual
23	Assesment	

TERM LEARNING ACTIVITIES	NUMBER	WEIGHT
Midterm Exam	1	25.00

Activites	Number	Duration (hour)	Total Work Load (hour)
Theoretical	14	3.00	42.00
Total	7	100.00	
Practicals/Labs	0	0.00	0.00
Self study and preperation			
Success Grade			
Homeworks			
Projects	100.00		
Total			
Field Studies			
Midterm exams			
Course			
Others			
Final Exams			
Total Work Load			
Total work load/ 30 hr			
ECTS Credit of the Course			6.00

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	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ÖK2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ÖK3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ÖK4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

ÖK5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

LO: Learning Objectives   PQ: Program Qualifications

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