Study programme	Type (cycle)		**Second cycle**	
	Module		**Physics**	
Course title	**ELEMENTARY PARTICLE PHYSICS II**			
Code	Semestar	Status	ECTS	L+E
PTH9661	**I**	**ELECTIVE**	**6**	**2+1**
Lecturer	**Doc. dr. Admir Greljo**			
Aims and intended learning outcomes	The goal of the course is to introduce advanced methods in elementary particle physics. The expected outcome is to enable students to perform scientific research in this area of physics.			

Course contents
Review of the Standard Model of particle physics. Collider physics phenomenology. Monte Carlo methods in collider physics. Statistics for particle physics. Higgs boson production and decay processes at hadron colliders.

Working hours (h)		Exams and marks	
P + V	45	Type	Points
Exams	45	Midterm exam	35
Written	30	Final exam	35
Other		Homeworks	30
Total	120		
		Total	100

Literature

Main:

1. Introductory Lectures on Collider Physics / Tim Tait
2. Practical Statistics for the LHC / Cranmer
3. TASI 2013 lectures on Higgs physics within and beyond the Standard Model / Logan

Extended :

1. Fizika elementarnih čestica / Ivica Picek
2. Simetrije u fizici / Ilja Doršner
3. An introduction to quantum field theory / Michael E. [Edward] Peskin, Daniel V. Schroeder
4. Lie algebras in particle physics / Howard Georgi
5. A Modern Introduction to Quantum Field Theory / Maggiore
6. The Standard Model of Electroweak Interactions / Pich

Other