

**Modules:**

physics700 **Elective Advanced Lectures**  
 physics730 **Theoretical Physics**

**Course:****Physics of Higgs Bosons (T)**

**Course No.:** physics766

Category	Type	Language	Teaching hours	CP	Semester
Elective	Lecture with exercises	English	3+2	7	WT

**Requirements:****Preparation:**

Theoretical Particle Physics (physics615)

**Form of Testing and Examination:**

Requirement for the examination (written or oral): successful participation in the exercises

**Length of Course:**

1 semester

**Aims of the Course:**

Understanding the physics of electroweak symmetry breaking, and the interpretations of the recently discovered signals for the existence of a Higgs boson

**Contents of the Course:**

Spontaneous symmetry breaking  
 The Higgs mechanism  
 The Higgs boson of the Standard Model  
 Experimental situation  
 Extended Higgs sectors  
 Precision calculations

**Recommended Literature:**

J. Gunion, H.E. Haber, G.L. Kane and S. Dawson: The Higgs Hunter's Guide (Frontiers of Physics, 2000)  
 A. Djouadi: Anatomy of Electroweak Symmetry Breaking I (Phys. Rep. 457 (2008) 1, hep-ph/0503173)  
 A. Djouadi: Anatomy of Electroweak Symmetry Breaking II (Phys. Rep. 459 (2008) 1, hep-ph/0504090)