Advanced Theoretical Hadron Physics - physics637

Degree - M.Sc. in Physics (PO von 2014)

Module	**Specialization: Advanced Theoretical Physics**
Module No.	physics62c

Course	**Advanced Theoretical Hadron Physics**
Course No.	physics637

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

Requirements for Participation:

Preparation: physics616 (Theoretical Hadron Physics)

Form of Testing and Examination: Requirements for the examination (written): successful work with the exercises

Length of Course: 1 semester

Aims of the Course: Survey of methods of theoretical hadron physics in regard to current research

Contents of the Course:

Quantum Chromodynamics: Nonperturbative Results, Confinement

Lattice Gauge Theory

Chiral Perturbation Theory

Effective Field Theory for Heavy Quarks

Recommended Literature:

F. E. Close; An Introduction Quarks and Partons (Academic Press 1980)

F. Donoghue, E. Golowich, B. R. Holstein, Dynamics of the Standard Model (Cambridge University Press 1994)

C. Itzykson, J.-B. Zuber; Quantum Field Theory (Dover Publications 2006)

A. V. Manohar, M. B. Wise; Heavy Quark Physics (Cambridge University Press 2000)

S. Weinberg; The Quantum Theory of Fields (Cambridge University Press 1995)