


<b>Module:</b>	<b>Specialization: Advanced Theoretical Physics</b>
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Module No.: physics62c

<b>Course:</b>		<b>Advanced Theoretical Hadron Physics</b>
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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)