

**Module: Specialization II**

Module No.: physics630

**Course:**  **Physics of Hadrons**

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Category	Type	Language	Teaching hours	CP	Semester
Elective	Lecture with exercises	English	3+1	6	ST

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

Completed B.Sc. in Physics, with experience in electrodynamics, quantum mechanics, atomic- and nuclear physics

**Form of Testing and Examination:**

Requirements for the examination (written or oral): successful work with the exercises

**Length of Course:**

1 semester

**Aims of the Course:**

Understanding the many-body structure of hadrons, understanding structural examinations with electromagnetic probes, introduction into experimental phenomenology

**Contents of the Course:**

Structure Parameters of baryons and mesons; hadronic, electromagnetic and weak probes; size, form factors and structure functions; quarks, asymptotic freedom, confinement, resonances; symmetries and symmetry breaking, hadron masses; quark models, meson and baryon spectrum; baryon spectroscopy and exclusive reactions; missing resonances, exotic states

**Recommended Literature:**

B. Povh, K. Rith C. Scholz, F. Zetsche; Teilchen und Kerne (Springer, Heidelberg 6. Aufl. 2004)  
Perkins; Introduction to High Energy Physics (Cambridge University Press 4. Aufl. 2000)  
K. Gottfried, F. Weisskopf; Concepts of Particle Physics (Oxford University Press 1986)