Module: Specialization: Advanced Experimental Physics

Module No.: physics62a

Course: Physics of Hadrons

Course No.: physics632

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

Requirements for Participation:

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)