

Particle physics (E) - Particles

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

<i>Module</i>	Elective Advanced Lectures: BCGS Courses
<i>Module No.</i>	physics70d

<i>Course</i>	Particle physics (E)
<i>Course No.</i>	Particles

Category	Type	Language	Teaching hours	CP	Semester
Elective	Lecture	English	3	4	ST

Requirements for Participation:

Preparation: Quantum Mechanics

Form of Testing and Examination: Part of the obligatory courses for area of specialisation Nuclear and Particle Physics, separate oral examination is possible exceptionally.

Length of Course: 1 semester

Aims of the Course: Introduction into particle physics, accelerators and detectors

Contents of the Course:

- Relativistic kinematics
- Interaction of radiation with matter
- Particle accelerators
- Targets and detectors
- Symmetries in particle physics
- QED
- Weak interaction, neutrinos
- Quark model
- QCD
- Standard model
- Cosmology

Recommended Literature:

A script for course will be available on-line

D.H. Perkins: Introduction to High Energy Physics, Cambridge University Press, ISBN 0521621968

H. Frauenfelder, E.M. Henley: Subatomic Physics, Prentice Hall, ISBN 0138594309

F. Halzen: A.D. Martin: Quarks and Leptons, John Wiley and Sons, ISBN 0471887412

D. Griffiths: Introduction to Elementary Particles, John Wiley and Sons ISBN: 0471603864
B. Povh, K. Rith, C. Scholz, F. Zetsche: Teilchen und Kerne, Springer-Verlag, ISBN 3540659285
C. Berger: Elementarteilchenphysik, Springer-Verlag, ISBN 3-540-41515-7