

| |
|---|
| <p>Secondary Area of Specialization</p> <p>Nuclear and Particle Physics</p> |
|---|

Module No.: MN-P-PN-Nuc

status quo 08.05.2012

| | HPW | estimated effort (h) | credit points |
|-----------------------|------------|-----------------------------|----------------------|
| Lecture Course | 3 + 2(3) | 240 | 8 |
| Problem Class | | | |
| Total | 5 (6) | 240 | 8 |

Contents

The module is subdivided into core courses and specialized courses:

1. Core Courses
 - Nuclear Physics II (3 hpw) : Reactions in nuclear und particle physics
 - Detector physics (3 hpw): Interaction of particles and radiation with matter, detectors, treatment of electronical signals
 - Particle physics (3 hpw)
2. Specialized courses according announcement

Literature

Mayer-Kuckuk, Kernphysik (Teubner)
 Krane, Introductory Nuclear Physics (Wiley & Sons)
 Casten, Nuclear Structure from a Simple Perspective (Oxford University Press)
 Heyde, The nuclear shell model (Springer)
 Leo, Techniques for nuclear and particle physics experiments (Springer)
 Povh Rith Scholz Zetsche, Teilchen und Kerne (Springer)
 Machner, Einführung in die Kern und Elementarteilchenphysik (Wiley)

Organization

Students have to take one of the core courses as well as one the specialized courses (in total 5 hpw). Alternatively another core course can be chosen instead of the specialized course.

Examinations

1. Participation in the lectures
2. Oral examination over the courses

The grade given for the module is equal to the grade of the oral examination.

Aims

The courses bring a deeper knowledge in nuclear and particle physics.

Prerequisites for Participation

None

Prerequisites

Basic knowledge in atomic, nuclear and particle physics and quantum mechanics at the level of the bachelor courses in physics

Frequency

Nuclear Physics II is offered in the winter semester, Particle Physics and Detector physics are offered in the summer semester. At least one special courses is offered in each semester.

Soft Skills

None

Use in Other Courses of Study

As elective subject in other M.Sc. programs

Coordinators

J. Jolie, P. Reiter