

# Nuclear and Particle Physics

Module No.: MN-P-SP-Nuc, MN-P-PN-Nuc, MN-P-WaMa

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## Course: Particle Physics (II)

Lecturers: D. Gotta, H. Ströher  
Email: d.gotta@fz-juelich.de

Category	Type	Language	Teaching Hours	CP	Semester
Core Course	Lecture	English	3	4.5	SuSe

### Requirements for participation:

Nuclear Physics I, Quantum Mechanics.

### Type of module examinations:

One oral examination at the end of the module

### Duration of the course:

1 semester

### Aims of the course:

To deepen knowledge in particle physics.

### 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