

Module: Elective Advanced Lectures: BCGS Courses

Module No.: physics70d

Course:



Quantum Field Theory II (T)

Course No.:

Category	Type	Language	Teaching hours	CP	Semester
Elective	Lecture with exercises	English	4+2	8	ST

Requirements for Participation:

Preparation:

Quantum Field Theory I

Form of Testing and Examination:

Written or oral examination

Length of Course:

1 semester

Aims of the Course:

Quantum field theory is one of the main tools of modern physics with many applications ranging from high-energy physics to solid state physics. A central topic of this course is the concept of spontaneous symmetry breaking and its relevance for phenomena like superconductivity, magnetism or mass generation in particle physics.

Contents of the Course:

Correlation functions: formalism, and their role as a bridge between theory and experiment
Renormalization
Topological concepts

Recommended Literature:

A. Altland and B.D. Simons, Condensed Matter Field Theory (Cambridge University Press, Cambridge, second edition: 2010)