

# Module: Elective Advanced Lectures: BCGS Courses

Module No.: physics70d

Course:



## Quantum Field Theory I (T)

Course No.:

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

### Requirements for Participation:

#### Preparation:

Training in theoretical physics at the B.Sc. level

#### Form of Testing and Examination:

Written or oral examination

#### Length of Course:

1 semester

### Aims of the Course:

Methods of quantum field theory are in use in almost all areas of modern physics. Strongly oriented towards applications, this course offers an introduction based on examples and phenomena taken from the area of solid state physics.

### Contents of the Course:

Second quantization and applications  
Functional integrals  
Perturbation theory  
Mean-field methods

### Recommended Literature:

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