

Modules: physics700 **Elective Advanced Lectures**
physics730 **Theoretical Physics**

Course:  **Group Theory (T)**

Course No.: physics751

Category	Type	Language	Teaching hours	CP	Semester
Elective	Lecture with exercises	English	3+2	7	WT

Requirements:

Preparation:

physik421 (Quantum Mechanics)

Form of Testing and Examination:

Requirements for the examination (written): successful work with the

Length of Course:

1 semester

Aims of the Course:

Acquisition of mathematical foundations of group theory with regard to applications in theoretical physics

Contents of the Course:

Mathematical foundations:

Finite groups, Lie groups and Lie algebras, highest weight representations, classification of simple Lie algebras, Dynkin diagrams, tensor products and Young tableaux, spinors, Clifford algebras, Lie super algebras

Recommended Literature:

B. G. Wybourne; Classical Groups for Physicists (J. Wiley & Sons 1974)

H. Georgi; Lie Algebras in Particle Physics (Perseus Books 2. Aufl. 1999)

W. Fulton, J. Harris; Representation Theory (Springer, New York 1991)