Advanced Quantum Field Theory (T) - physics7501

Course	**Advanced Quantum Field Theory (T)**
Course No.	physics7501

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

Requirements for Participation:

Preparation: 3-year theoretical physics course with extended interest in theoretical physics and mathematics

Form of Testing and Examination: Requirements for the module examination (written examination): successful work with exercises

Length of Course: 1 semester

Aims of the Course: Introduction to modern methods and developments in Theoretical Physics in regard to current research

Contents of the Course:

Selected Topics in Modern Theoretical Physics for example:

Anomalies

Solitons and Instantons

Quantum Fluids

Bosonization

Renormalization Group

Bethe Ansatz

Elementary Supersymmetry

Gauge Theories and Differential Forms

Applications of Group Theory

Recommended Literature:

M. Nakahara; Geometry, Topology and Physics (Institute of Physics Publishing, London 2nd Ed. 2003)

R. Rajaraman; Solitons and Instantons, An Introduction to Solitons and Instantons in Quantum Field Theory (North Holland Personal Library, Amsterdam 3rd reprint 2003)

A. M. Tsvelik; Quantum Field Theory in Condensed Matter Physics (Cambridge University Press 2nd Ed. 2003)

A. Zee; Quantum Field Theory in a Nutshell (Princeton University Press 2003)

PDF version of this page.