Modules:

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

Course: Selected Topics in Modern Condensed Matter Theory (T)

Course No.: physics7503

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

Requirements:

Preparation:
+ Introductory Condensed Matter Theory
+ Quantum Mechanics
+ Statistical Physics

Form of Testing and Examination:
oral or written examination

Length of Course:
1 semester

Aims of the Course:
Knowledge of topics of contemporary condensed matter research
Knowledge of theoretical methods of condensed matter physics

Contents of the Course:
Covers topics and methods of contemporary research, such as
+ Feynman diagram technique
+ Phase transitions and critical phenomena
+ Topological aspects of phenomena in condensed matter physic

Recommended Literature:
R. D. Mattuck, A Guide to Feynman Diagrams in the Many-Body Problem
N. Goldenfeld, Lectures on Phase Transitions and the Renormalization Group
B. A. Bernevig, Topological Insulators and Topological Superconductors

The course can be taken in parallel to physics617 Theoretical Condensed Matter Physics.