

**Modules:**

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

**Course:**

## Advanced Topics in Field and String Theory (T)

**Course No.:** physics764

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

**Requirements:**

Prerequisite knowledge of Quantum Field Theory, Superstring Theory, and General Relativity is helpful.

**Preparation:**

Quantum Field Theory (physics755)  
 Advanced Theoretical Physics (physics607) / Advanced Quantum Field Theory (physics7501)  
 Superstring Theory (physics752)

**Form of Testing and Examination:**

active participation in exercises, oral or written examination

**Length of Course:**

1 semester

**Aims of the Course:**

An introduction into modern topics in Mathematical High Energy Physics in regard to current research areas

**Contents of the Course:**

String and Supergravity Theories in various dimensions  
 Dualities in Field Theory and String Theory  
 Topological Field Theories and Topological Strings  
 Large N dualities and integrability

**Recommended Literature:**

Selected review articles on arXiv.org [hep-th]  
 J. Polchinski: String Theory I & II  
 S. Weinberg: Quantum Theory of Fields