

**Modules:**

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

**Course:****Superstring Theory (T)**

Course No.: physics752

Lecturers:

Prof. of theoretical physics

Email:

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

**Requirements:****Preparation:**

Quantum Field Theory (physics755)  
 Group Theory (physics751)  
 Advanced Theoretical Physics (physics607)  
 Theoretical Particle Physics (physics616)

**Form of Testing and Examination:**

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

**Length of Course:**

1 semester

**Aims of the Course:**

Survey of modern string theory as a candidate of a unified theory in regard to current research

**Contents of the Course:**

Bosonic String Theory, Elementary Conformal Field Theory  
 Kaluza-Klein Theory  
 Crash Course in Supersymmetry  
 Superstring Theory  
 Heterotic String Theory  
 Compactification, Duality, D-Branes  
 M-Theory

**Recommended Literature:**

D. Lüst, S. Theisen; Lectures on String Theory (Springer, New York 1989)  
 S. Förste; Strings, Branes and Extra Dimensions, Fortsch. Phys. 50 (2002) 221, hep-th/0110055  
 C. Johnson, D-Brane Primer (Cambridge University Press 2003)  
 M. Green, J. Schwarz, E. Witten; Superstring Theory I & II (Cambridge University Press 1988)  
 H.P. Nilles, Supersymmetry and phenomenology (Phys. Repts. 110 C (1984) 1)  
 J. Polchinski; String Theory I & II (Cambridge University Press 2005)