Superstring Theory (T) - physics752

Degree - M.Sc. in Physics (PO von 2014)

Module	**Elective Advanced Lectures: Theoretical Physics**
Module No.	physics70c

Course	**Superstring Theory (T)**
Course No.	physics752

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

Requirements for Participation:

Preparation:

Quantum Field Theory (physics755)

Group Theory (physics751)

Advanced Theoretical Physics (physics607) / Advanced Quantum Field Theory (physics7501)

Theoretical Particle Physics (physics615)

Form of Testing and Examination: Requirements for the examination (written): 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. Reps. 110 C (1984) 1)

J. Polchinski; String Theory I & II (Cambridge University Press 2005)