Disordered systems (T) - Disorder

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

Module	**Elective Advanced Lectures: BCGS Courses**
Module No.	physics70d

Course	**Disordered systems (T)**
Course No.	Disorder

Category	Type	Language	Teaching hours	CP	Semester
Elective	Lecture with exercises	English	4+2	8	ST

Requirements for Participation:

Preparation: Advanced statistical mechanics

Form of Testing and Examination: Oral examination

Length of Course: 1 semester

Aims of the Course: Understanding the novel types of behaviour that arise in systems with quenched disorder, as well as the specific mathematical challenges associated with their theoretical description.

Contents of the Course:

Disorder average

Replica methods

Percolation

Phase transitions in disordered systems

Localization

Glassy dynamics

Recommended Literature:

D. Stauffer and A..Aharony, Introduction to Percolation Theory (Taylor & Francis, London 1994)

K.H. Fischer and J.A. Hertz, Spin Glasses (Cambridge University Press, Cambridge 1991)

K. Binder and W. Kob, Glassy Materials and Disordered Solids (World Scientific, Singapore 2005)

T. Nattermann, lecture notes