

Module Name Quantum Field Theory II						
Type of Module Advanced Module				Module Code AM-QFT2		
Identification Number MN-CS-QFT2	Workload 270 Hours	Credit Points 9 CP	Term 1. – 3. Semester	Offered Every WiSe	Start Winter Term Only	Duration 1 Semester
1	Course Types a) Lecture b) Problem Class		Contact Time 60 h 30 h	Private Study 90 h 90 h		Planned Group Size 30 Students
2	Module Objectives and Skills to be Acquired Quantum field theory is one of the main tools of modern physics with many applications ranging from high-energy physics to solid state physics. A central topic of this course is the concept of spontaneous symmetry breaking and its relevance for phenomena like superconductivity, magnetism or mass generation in particle physics.					
3	Module Content - Correlation functions: formalism, and their role as a bridge between theory and experiment - Renormalization - Topological concepts					
4	Teaching Methods The module consists of a lecture course, supplemented by a problem class.					
5	Prerequisites (for the Module) Quantum Field Theory I					
6	Type of Examination Written or oral examination					
7	Credits Awarded The module is passed by passing the examination. The grade given for the module is equal to the grade of the examination.					
8	Compatibility with other Curricula The module is part of the Master of Science in Physics.					
9	Proportion of Final Grade 9/114					
10	Module Coordinator A. Altland, A. Rosch, M. Zirnbauer					
11	Further Information Literature: A. Altland and B.D. Simons, Condensed Matter Field Theory (Cambridge University Press, Cambridge, second edition: 2010)					