

Module title		Abbreviation
Field Theoretical Aspects of Solid State Physics		11-FTAS-161-m01
Module coordinator		Module offered by
Managing Director of the Institute of Theoretical Physics and Astrophysics		Faculty of Physics and Astronomy
ECTS	Method of grading	Only after succ. compl. of module(s)
6	numerical grade	--
Duration	Module level	Other prerequisites
1 semester	graduate	--
Contents		
<p>The topics of the course will vary from year to year and may include the description of superconductors through classical field theory (the Higgs mechanism), non-linear sigma models for spin chains, Chern-Simons and axion theories as effective descriptions of quantised Hall fluids and topological insulators, respectively, or the SU(2) level k Wess-Zumino-Witten model as an example of a conformal field theory with a symmetry group (or algebra) beyond the Virasoro algebra.</p>		
Intended learning outcomes		
<p>The students acquire an in-depth understanding of quantum field theory and its fundamental importance for almost all areas of Condensed Matter Physics.</p>		
Courses (type, number of weekly contact hours, language — if other than German)		
<p>V (3) + R (1) Module taught in: German or English</p>		
Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module is creditable for bonus)		
<p>written examination (approx. 90 to 120 minutes) or oral examination of one candidate each (approx. 30 minutes) or oral examination in groups (groups of 2, approx. 30 minutes per candidate) or project report (approx. 8 to 10 pages) or presentation/talk (approx. 30 minutes). If a written examination was chosen as method of assessment, this may be changed and assessment may instead take the form of an oral examination of one candidate each or an oral examination in groups. If the method of assessment is changed, the lecturer must inform students about this by four weeks prior to the original examination date at the latest. Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German and/or English</p>		
Allocation of places		
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Additional information		
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Referred to in LPO I (examination regulations for teaching-degree programmes)		
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Module appears in		
<p>Master's degree (1 major) Mathematics (2016) Master's degree (1 major) Physics (2016) Master's degree (1 major) Mathematical Physics (2016) Master's degree (1 major) Computational Mathematics (2016) Master's teaching degree Gymnasium MINT Teacher Education PLUS, Elite Network Bavaria (ENB) (2016) Supplementary course MINT Teacher Education PLUS, Elite Network Bavaria (ENB) (2016) Master's degree (1 major) Computational Mathematics (2019) Master's degree (1 major) Mathematics (2019)</p>		

