

Module title		Abbreviation
FOKUS Research Module Relativistic Quantum Field Theory		11-FM-RQFT-092-m01
Module coordinator		Module offered by
chairperson of examination committee		Faculty of Physics and Astronomy
ECTS	Method of grading	Only after succ. compl. of module(s)
12	numerical grade	--
Duration	Module level	Other prerequisites
1 semester	graduate	Lectures Theoretische Physik (Theoretical Physics); Quantenmechanik 2 (Quantum Mechanics 2) recommended.
Contents		
Specific and advanced knowledge of independent scientific work in the specialist field of Relativistic Quantum Field Theory. Symmetries, Lagrange formalism for fields, field quantisation, gauge principle and interaction, perturbation theory, Feynman rules, quantum electrodynamic processes in Born approximation, radiative corrections, renormalisation.		
Intended learning outcomes		
The students have special and advanced knowledge of independent scientific work in the field of relativistic quantum field theory. They know the principles and mathematical basics of relativistic quantum field theory and are able to apply perturbation theory and Feynman rules. They are able to summarise the acquired knowledge in an oral presentation.		
Courses (type, number of weekly contact hours, language — if other than German)		
Relativistische Quantenfeldtheorie (Relativistic Quantum Field Theory): V (4 weekly contact hours) + Ü/P (2 weekly contact hours), German or English, once a year (winter semester) Kompaktseminar Relativistische Quantenfeldtheorie (Block Taught Seminar Relativistic Quantum Field Theory): S (2 weekly contact hours), German or English, details on availability to be announced (block taught seminar (1 to 3 days) held towards the end of semester break or at the beginning of the subsequent semester)		
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>This module has the following assessment components</p> <ol style="list-style-type: none"> Topics covered in lectures and exercises: written examination (approx. 90 minutes) or talk (approx. 30 minutes) or oral examination of one candidate each or oral examination in groups (approx. 30 minutes) or project report (approx. 8 pages) Seminar: talk (approx. 30 to 45 minutes) <p>Assessment components 1 and 2 will be offered in German or English. Students must register for assessment components 1 and 2 online (details to be announced). Assessment component 1 will be offered once a year in the winter semester; details on when assessment component 2 will be offered to be announced. To pass this module, students must pass both assessment component 1 and assessment component 2.</p>		
Allocation of places		
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Additional information		
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Workload		
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Teaching cycle		
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Referred to in LPO I (examination regulations for teaching-degree programmes)		
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Module appears in
Master's degree (1 major) FOKUS Physics (2010)
Master's degree (1 major) FOKUS Physics (2011)