### Module title
Quantum Field Theory II

### Abbreviation
11-QFT2-161-m01

### Module coordinator
Managing Director of the Institute of Theoretical Physics and Astrophysics

### Module offered by
Faculty of Physics and Astronomy

### ECTS
8

### Method of grading
numerical grade

### Only after succ. compl. of module(s)
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### Duration
1 semester

### Module level
graduate

### Other prerequisites
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### Contents
1. Generating Functionals  
2. Path Integrals  
3. Renormalization  
4. Renormalization group  
5. Gauge theories  
6. Spontaneous Symmetry Breaking  
7. Effective Field Theory (optional)

### Intended learning outcomes
The students have advanced knowledge of the methods and concepts of quantum field theory. They have mastered the principles, especially of renormalisation and gauge theories. They are able to formulate and solve problems of quantum field theory by using the acquired calculation methods.

### Courses
(type, number of weekly contact hours, language — if other than German)

V (4) + R (2)  
Module taught in: German or English

### Method of assessment
(type, scope, language — if other than German, examination offered — if not every semester, information on whether module is creditable for bonus)

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

### 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
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)
<table>
<thead>
<tr>
<th>Module description</th>
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</thead>
<tbody>
<tr>
<td>Master's degree (1 major) Computational Mathematics (2019)</td>
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