### Module title

**Particle Physics (Standard Model)**  

**Abbreviation**  

11-TPS-092-m01

### Module coordinator

Managing Directors of the Institute of Applied Physics and 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

Certain prerequisites must be met to qualify for admission to assessment. The lecturer will inform students about the respective details at the beginning of the course. Registration for the course will be considered a declaration of will to seek admission to assessment. If students have obtained the qualification for admission to assessment over the course of the semester, the lecturer will put their registration for assessment into effect. Students who meet all prerequisites will be admitted to assessment in the current or in the subsequent semester. For assessment at a later date, students will have to obtain the qualification for admission to assessment anew.

### Contents

Introduction to the theory of electroweak interaction and spontaneous symmetry breaking. Experiments on the standard model and determination of model parameters.

### Intended learning outcomes

The students know the theoretical fundamental laws of the standard model of Particle Physics and the key experiments that have established and confirmed the standard model. They are able to interpret experimental or theoretical results in the framework of the standard model and know its validity and limits.

### Courses

**R + V** (no information on SWS (weekly contact hours) and course language available)

### Method of assessment

**a)** written examination (approx. 90 minutes) or **b)** oral examination of one candidate each or oral examination in groups (approx. 30 minutes per candidate, for modules with less than 4 ECTS credits approx. 20 minutes) or **c)** project report (approx. 8 to 10 pages, time to complete: 1 to 4 weeks) or **d)** presentation/seminar presentation (approx. 30 minutes)

Assessment offered: When and how often assessment will be offered depends on the method of assessment and will be announced in due form under observance of Section 32 Subsection 3 ASPO (general academic and examination regulations) 2009.

Language of assessment: German, 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

- Bachelor' degree (1 major) Physics (2010)
- Bachelor' degree (1 major) Physics (2012)
- Bachelor' degree (1 major) Mathematical Physics (2009)
- Bachelor' degree (1 major) Mathematical Physics (2012)
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