**Module title**  
Cosmology

**Abbreviation**  
11-AKM-161-m01

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

**Module offered by**  
Faculty of Physics and Astronomy

**ECTS**  
6

**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**

Expanding space-time, Friedmannian cosmology, basics of general relativity, the early universe, inflation, dark matter, primordial nucleosynthesis, cosmic microwave background, structure formation, galaxies and galaxy clusters, intergalactic medium, cosmological parameters.

**Intended learning outcomes**

The students have basic knowledge of cosmology. They know the theoretical methods of cosmology and are able to relate them to observations. They have gained insights into current research topics and are able to process scientific questions.

**Courses**

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<tr>
<th>Type</th>
<th>Number of weekly contact hours</th>
<th>Language</th>
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<td>V</td>
<td>3</td>
<td>German or English</td>
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Module taught in: German or English

**Method of assessment**

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)
- Master's degree (1 major) Computational Mathematics (2019)
- Master's degree (1 major) Mathematics (2019)
- Master's degree (1 major) Physics (2020)