# Module title
Spintronics

| Abbreviation | 11-SPI-161-m01 |

<table>
<thead>
<tr>
<th>Module coordinator</th>
<th>Managing Director of the Institute of Applied Physics</th>
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<tbody>
<tr>
<td>Module offered by</td>
<td>Faculty of Physics and Astronomy</td>
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<tr>
<td>ECTS</td>
<td>6</td>
</tr>
<tr>
<td>Method of grading</td>
<td>Only after succ. compl. of module(s)</td>
</tr>
<tr>
<td>numerical grade</td>
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<tr>
<td>Duration</td>
<td>1 semester</td>
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<tr>
<td>Module level</td>
<td>graduate</td>
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<td>Other prerequisites</td>
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## Contents
This lecture covers the basic principles of spin transport, with a particular emphasis on the phenomena of giant magnetoresistance and tunnel magnetoresistance. As a last point, we discuss new phenomena from the field of spin dynamics and current-induced spin phenomena.

## Intended learning outcomes
The students know the basic principles of spin transport models and the applications of spin transport in information technology. They have gained an overview of current findings in this field (giant magnetoresistance, tunnel magnetoresistance).

## Courses
(V (3) + R (1))
Module taught in: German or English

## Method of assessment
(2016)
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 four weeks prior to the original examination date. 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) Nanostructure Technology (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) Nanostructure Technology (2020)
Master's degree (1 major) Physics (2020)