## Module title

**Advanced Laboratory Course Master Part 2**

### Abbreviation

11-P-FM2-161-m01

### Module coordinator

Managing Director of the Institute of Applied Physics

### Module offered by

Faculty of Physics and Astronomy

### ECTS

3

### Method of grading

Only after succ. compl. of module(s)

### Duration

1 semester

### Module level

Graduate

### Other prerequisites

Preparation and safety briefing.

### Contents

Principles of Nuclear, Atomic and Molecular Physics, experiments on cryogenic temperatures and correlated systems, properties of solids, surfaces and interfaces. Experiments on the following topics: X-rays - nuclear magnetic resonance (NMR) - quantum Hall effect - optical pumping and spectroscopy in the field of optics - Hall effect - superconductivity - laser - solid-state optics

### Intended learning outcomes

Knowledge of conducting experiments, analysing and documenting experimental results, basic knowledge of issuing scientific publications, application of modern evaluation systems. The students are familiar with modern experimental methods. They are able to work on a task on the basis of publications, to conduct and evaluate an experiment and to present and discuss their results in a scientific publication.

### Courses

(P (3))

### Method of assessment

**practical examination**

Students must successfully prepare, perform, document (lab notebook) and evaluate (in the form of a scientific publication) an experiment to be considered to have successfully completed this experiment. Students must successfully complete two experiments to be considered to have successfully completed this module. Detailed regulations are laid down in the respective module description.

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) Physics (2016)
- Master's degree (1 major) Nanostructure Technology (2016)
- Master's degree (1 major) Nanostructure Technology (2020)
- Master's degree (1 major) Physics (2020)
- Master's degree (1 major) Quantum Technology (2021)