PHY-B-P 5

Effective WS 2011/12

1. Module title:	**Advanced Physics Laboratories I**
2. Field / responsibility of:	Physics / the faculty, the Dean of Studies
3. Module contents:	• AFM (atomic force microscopy) • Fuel cell • Diode-pumped solid-state laser • ESR – ferromagnetic resonance • Fourier spectroscopy • Holography • Nuclear spectroscopy • Laser • Magneto-optics and magnetic anisotropy • NMR (nuclear magnetic resonance) • Operational amplifier • Optical absorption • Optical phase conjugation • Optical pumping • Pockels effect • X-ray diffraction • X-band radar
4. Qualification objectives of the module / competencies to be acquired:	Mostly independent, concrete measuring of physical effects, familiarization with and handling of specific measuring devices and test assemblies, and compiling of a meaningful report, which includes an evaluation and error analysis.
5. Prerequisites for participation:	
a) Recommended knowledge:	See prerequisite courses
b) Prerequisite courses:	Modules PHY-B-P 3, PHY-B-P 4 (laboratories A,B)
6. Module can be used for:	BSc. in Physics. It can also be used for a BSc. in Nanoscience and in Teacher Training in Secondary Education – Physics; it is the standard, however, to attend separate modules according to the corresponding examination regulations.
7. Module is offered:	On a semiannual basis
8. Module can be completed in:	1 semester
9. Recommended semester of study:	Minimum: 4
10. Overall module workload / number of credit points:	**Workload:** **Total number of hours: 240** **Allocation:** **1. Attendance: 10 credit hours** **2. Independent study (including exam preparation / exam): 90 hours** **Credit points: 8**
11. The module is successfully completed when the requirements below have been met.	

12. Module components:

Nr.	Req./req. elective	Form of teaching	Subject area / topic	Credit hours	Coursework
PHY-B -P 5. 1	Compulsory	Laboratories	Advanced physics laboratories I	10	Experiments, lab; experiment setup and execution, experiment reports, regular attendance

13. Module exam:

Nr.	Competence / topic	Type of exam	Duration	Time / notes	Weighting for module grade

14. Notes:

In order to pass the module, proof of course achievements is to be kept (attestation for each experiment). Credit points will not be credited before all course requirements have been completely met.