PHY-M-VF 6

Effective WS 2011/12

1. Module title:	**Magnetism**
2. Field / responsibility of:	Physics / the faculty, the Dean of Studies
3. Module contents:	• Introduction and overview • Atomic magnetism • Magnetism of nearly free electrons • Ferromagnetism • Thermal excitations, phase transitions • Experimental methods • Magnetization curves, magnetic energy contributions • Domain walls • Magnetization dynamics • Magnetic resonance • Ultrathin magnetic films and their applications • Magnetic data storage
4. Qualification objectives of the module / competencies to be acquired:	Acquiring knowledge of fundamental characteristics of magnetic systems. There will be a discussion of atomic magnetism, paramagnetism and diamagnetism as well as long-range ordered systems. Several modern applications will be presented.
5. Prerequisites for participation:	
a) Recommended knowledge:	Atomic physics, solid-state physics
b) Prerequisite courses:	None
6. Module can be used for:	MSc. in Physics, MSc. in Nanoscience, MSc. in Comp. Science; BSc. in Nanoscience, BSc. in Comp. Science
7. Module is offered:	On a yearly basis
8. Module can be completed in:	1 semester
9. Recommended semester of study:	Minimum: 1
10. Overall module workload / number of credit points:	**Workload:** **Total number of hours: 240** **Allocation:** **1. Attendance: 4 credit hours** **2. Independent study (including exam preparation/ exam): 180 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-M -VF 6 .1	Required elective	Lecture	Magnetism	4	

13. Module exam:

Nr.	Competence / topic	Type of exam	Duration	Time / notes	Weighting for module grade
PHY-M -VF 6 .1	Magnetism			Type of exam: Oral or written; duration: 20 min, or 105 min, 135 min or 210 min (if it consists of two parts); time: Lecture period to end of semester	1

14. Notes:

Further information will be provided by the instructors at the beginning of the course.