

PHY-M-VS 09

Effective WS 2011/12 / Please also read the comments in item 13.

1. Module title:	Programming of Portable Graphical Applications
2. Field / responsibility of:	Physics / the department, the Dean of Studies
3. Module contents:	<p>Professional, object-oriented software development, currently using the language C++ and the class library Qt:</p> <p>a) Object-oriented programming in C++:</p> <ul style="list-style-type: none"> • Classes • Virtual functions • Templates <p>b) The class library Qt of the KDE project:</p> <ul style="list-style-type: none"> • Signal/slot mechanisms • Introduction to GUI techniques • From Unix to Windows • The Qt designer (GUI programming using drag & drop)
4. Qualification objectives of the module / competencies to be acquired:	Learning of object-oriented programming techniques of C++, practicing these techniques using a complete class library as an example. At the end of the course, the participants fulfill all prerequisites to develop professional, platform-independent software.
5. Prerequisites for participation:	
a) Recommended knowledge:	Good knowledge of the programming language C
b) Prerequisite courses:	None
6. Module can be used for:	M.Sc.(and B.Sc.) in Physics, Nanoscience, Computational Science
7. Module is offered:	On a semiannual basis
8. Module can be completed in:	1 semester
9. Recommended semester of study:	1
10. Overall module workload / number of credit points:	<p>Workload:</p> <p>Total number of hours: 180</p> <p>Allocation:</p> <p>1. Attendance: 4 credit hours</p> <p>2. Independent study (including exam preparation/ exam): 110 hours</p> <p>Credit points: 6</p>
The successful completion of all assignments listed in items 11 and 12 is a prerequisite for receiving the credit points mentioned in item 10.	

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11. Module components:						
Nr.	Req./req. elective	Form of teaching	Subject area/topic	Credit hours	Coursework	
PHY-M-VS 09 .1	Compulsory	Lecture Practical course	Programming of portable graphical applications	4	Successful completion of the practical exercises (with the instructor signing off each course session); project work	
12. Module exam:						
Nr.	Competence / topic		Type of exam	Duration	Time / notes	Weighting for module grade
13. Notes:						
Successful participation in the practical course is a prerequisite for taking the module exam.						