PHY-M-VS 15

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

1. Module title:	**Computer-aided Mechanical Design**
2. Field / responsibility of:	Physics / the department, the Dean of Studies
3. Module contents:	This course provides an introduction to computer-aided 3D design in mechanical engineering: • Creating 2D drafts, parametric dimensions, dependencies • Creating 3D components, including extrusion and rotation • Rounding, beveling, drilling, threading • Placing components, inserting standard parts (screws, bearings, etc.), moving components • Creating presentation views and exploded view drawings • Creating standardized drawing views, isometric views, detail views and sectional views • Presentation: From CAD construction and CAM programming to CNC production
4. Qualification objectives of the module / competencies to be acquired:	Students will learn all important techniques of computer-based mechanics/3D construction using *AutoDesk Inventor*.
5. Prerequisites for participation:	
a) Recommended knowledge:	None
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:	**Workload:** **Total number of hours: 90** **Allocation:** **1. Attendance: 2 credit hours** **2. Independent study (including exam preparation/ exam): 50 hours** **Credit points: 3**

The successful completion of all assignments listed in items 11 and 12 is a prerequisite for receiving the credit points mentioned in item 10.

11. Module components:

Nr.	Req./req. elective	Form of teaching	Subject area/topic	Credit hours	Coursework
PHY-M -VS 1 5.1	Compulsory	Lecture Practical course	Computer-aided mechanical design	2	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.					