

Module No.:
Credit Points (CP):
Category:
Semester:

physics600
7
Required
7.



Module: Base Module Laboratory Course

Module Elements:

Nr.	Course Title	Number	CP	Type	Workload	Sem.
1.	Advanced Laboratory Course	physics601	7	Laboratory	210 hrs	WT

Requirements:

Preparation:

Content:

Every student has to complete this Laboratory Course. The course consists of advanced experiments introducing into important subfields of contemporary experimental physics

Aims/Skills:

The students shall gain insight in the conceptual and complex properties of relevant contemporary experiments. The students gain experience in setting up an experiment, data logging and data analysis. They experience the intricacies of forefront experimental research

Form of Testing and Examination:

Before carrying out an experiment, the students shall demonstrate to have acquired the necessary preparatory knowledge. Experiments are selected from the catalogue of laboratory set-ups offered. (Cumulative credit points ≥ 7 are required)

Requirements for the submodule examination (written report for every laboratory): successful completion of the experiment and initial oral questioning

Length of Module: 1 semester

Maximum Number of Participants: ca. 100

Registration Procedure:

s. <https://basis.uni-bonn.de> u. <http://bamawww.physik.uni-bonn.de>

Module: Base Module Laboratory Course

Module No.: physics600



Course: Advanced Laboratory Course

Course No.: physics601

Category	Type	Language	Teaching hours	CP	Semester
Required	Laboratory	English	3+2	7	WT

Requirements:

Preparation:

Form of Testing and Examination:

Experiments are selected from the catalogue of laboratory set-ups offered. (Cumulative credit points =7 are required)

Requirements for the module examination (written report for every laboratory): successful completion of the experiment and initial oral questioning

Length of Course:

1 semester

Aims of the Course:

The student shall gain insight in the intricate workings of physics in relevant advanced experiments. The student gains experience in the setting up of a proper experimental environment and experiences the intricacies of forefront experimental research

Contents of the Course:

Advanced experiments are carried out. Experimenting time in units of 8 hrs, preparation time and report writing each ~15 hrs. Further details are listed in the catalogue of laboratories. The experiments are chosen among those being offered and after consultation with the head of the course.

Recommended Literature:

Hand outs and literature will be distributed with the registration for an experiment

Catalogue of laboratories (related to physics601)

1. Properties of Elementary Particles (Bubble Chamber events): 3 units; 1,5 CP
2. Analysis of Decays of the Heavy Vector Boson Z0: 3 units; 1,5 CP
3. Holography: 2 units; 1 CP
4. Photovoltaic and Fuel Cell: 2 units; 1 CP
5. Optical Frequency doubling: 2 units; 1 CP
6. Laser Spectroscopy: 2 units; 1 CP
7. Photonic Crystals: 2 units; 1 CP
8. Mößbauer-Effect / Debye-Scherrer Method: 2 units; 1 CP
9. Nuclear Gamma-Gamma Angular Correlations / Beta+ Annihilation: 2 units; 1 CP
10. Wave propagation on coaxial cables and waveguides / Setup of a radio-astronomical receiver: 2 units; 1 CP