Carl von Ossietzky
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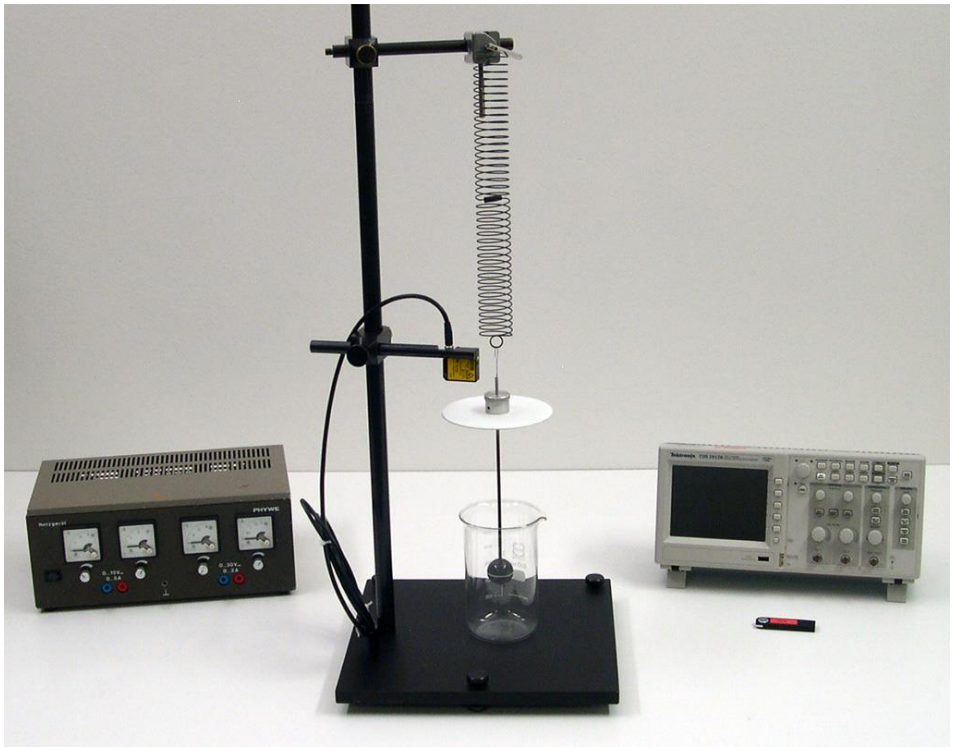
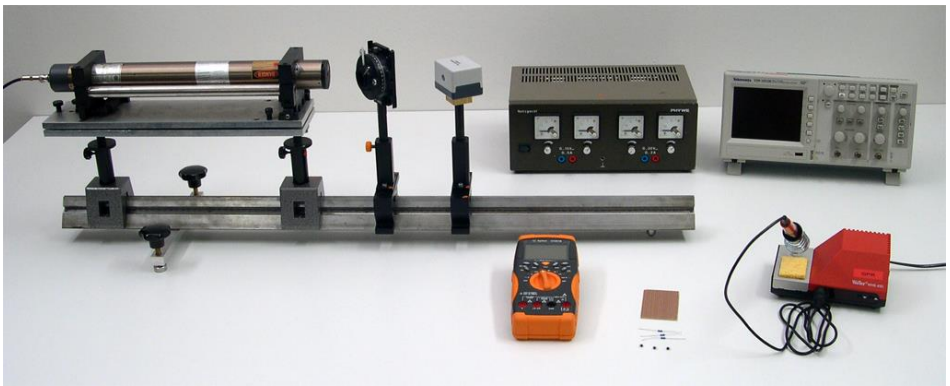
Introductory Laboratory Course Physics

Part I (Winter term)





Contents

Succession of the experiments

Schedule	Week	Remarks	Subject
1	42		General remarks on the module *Introductory Laboratory Course Physics*, the preparation of reports, and the usage of computers. Exercises to `Origin` and `Matlab` (Introductory Script)
2	43		Oscilloscope and function generator (Introductory Script) **(Extra seminar: Error theory,** the time will be announced**);** Excercises in error theory
3	44		Measurement of ohmic resistances, bridge circuits, and internal resistances of voltage sources
4	45		Measurement of capacities – Charging and discharging of capacitors
5	46		Sensors for force, pressure, distance, angle and light intensity
6	47		Force, momentum and impulse of force
7	48		Data acquisition and data processing using a PC
8	49		Characterization of a transreceiver system
9	50		Conservation of momentum and energy - Law of collision
10	51/1		Moment of inertia - Steiner's theorem
11	2		Forced mechanical oscillations
12	3		Fourier analysis
13	4		Surface tension, minimal surfaces and coffee stains
14	5		Viscosity and Reynolds numbers

The first experiments performed in the introductory laboratory course in physics serve to become acquainted with measuring instruments, function generators, sensors and data acquisition as well as data processing using a PC and to carry out introductory quantitative measurements. Only part of the subjects treated in these experiments are dealt with in the lecture, too. A sound school knowledge of physics, however, will do all right to understand them.

The following experiments are thematically coupled to the lecture contents that are dealt with synchronously.

An ***Open Lab*** is offered at a time announced on the notice-board of the laboratory course. During this time the labs are opened and the devices are placed at the students' disposal. By this, the possibility is offered to the students to deepen and improve experimental abilities independently and to repeat experiments if necessary. Supervision is done in turns by one of the tutors and technical assistants.