

From student to researcher: undergraduate physics labs at the universities of Amsterdam

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Abstract

Over the years a lot has changed with regard to the undergraduate physics labs that have been offered at the two Amsterdam universities. At first the emphasis was mainly on skills and concepts, while in recent years the focus shifted to process labs where students perform open inquiry experiments. In a process lab students get an opportunity to apply concepts, cognitive processes and lab skills to set up an experimental investigation to answer questions and solve problems.

Conducting undergraduate physics laboratory work in this manner is a challenging task for students, can be very motivating (can also be very frustrating) and puts high demands on guidance and supervision of students. Through a number of examples, I will illustrate how we succeed in running our undergraduate physics labs as process labs.