

**Modules:**

physics700 **Elective Advanced Lectures**  
 physics710 **Experimental Physics**

**Course:**

## Statistical Methods of Data Analysis (E)

Course No.: physics716

Category	Type	Language	Teaching hours	CP	Semester
Elective	Lecture with exercises	English	2+1	4	ST

**Requirements:****Preparation:****Form of Testing and Examination:**

Requirements for the examination (written): successful work with the exercises

**Length of Course:**

1 semester

**Aims of the Course:**

Provide a foundation in statistical methods and give some concrete examples of how the methods are applied to data analysis in particle physics experiments

**Contents of the Course:**

Fundamental concepts of statistics, probability distributions, Monte Carlo methods, fitting of data, statistical and systematic errors, error propagation, upper limits, hypothesis testing, unfolding

**Recommended Literature:**

R. Barlow: A Guide to the Use of Statistical Methods in the Physical Sciences; J. Wiley Ltd. Wichester 1993

S. Brandt: Datenanalyse (Spektrum Akademischer Verlag, Heidelberg 4. Aufl. 1999)