

# Practical Introduction to Experimental High Energy Physics

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## Contents

Foreword	1
I Phenomenology of Collider Physics	2
II Detectors	3
III Statistical Methods	4
IV Extracting physics from LHC data	5
1 Data acquisition and preparation	6
2 Particle reconstruction	7
3 Particle identification	8
4 Detector calibration	9
5 Cross section measurements	10
5.1 Inclusive cross section	10
5.1.1 lol?	10
5.2 Differential and Fiducial cross-section	10
V Searches for physics beyond the Standard Model	11

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# Foreword

These notes were crafted by me as a beginning master's student at Mainz. My professors Lucia Masetti and Volker Buescher at JGU taught me the content while field-testing a specialized course “Practical Introduction to Experimental High Energy Physics”.

# Phenomenology of Collider Physics

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I

# Detectors

PART

II

# Statistical Methods

PART

III

# Extracting physics from LHC data

PART

IV

## **1 Data acquisition and preparation**



## 2 Particle reconstruction

### **3 Particle identification**

**4    Detector calibration**

## **5 Cross section measurements**

### **5.1 Inclusive cross section**

#### **5.1.1 lol?**

### **5.2 Differential and Fiducial cross-section**

# Searches for physics beyond the Standard Model

PART

V