
Preface

This handout is intended for first-year Master students, specializing in Theoretical Physics. This educational material contains the basic elements necessary for learning the subject "Quantum Field Theory I". In addition to a detailed course, the handout contains a series of corrected exercises, capable of introducing the student to the field of relativistic quantum mechanics.

The handout is written in accordance with the ministry program, it offers students the opportunity to deepen their previously acquired knowledge in the field of both quantum mechanics and special relativity theories, while taking into account the contributions of electromagnetism theory and analytical mechanics theory.

Title of the Master's Degree : Theoretical Physics

Semester : 1

Title of UE : Fundamental UEF1.1

Title of the subject : Quantum Field Theory I

Credits : 6

Coefficients : 3

Educational objectives:

- Understanding the concept of global and local symmetry in quantum field theory and their implications.

Recommended prior knowledge:

- Quantum mechanics,
- analytical mechanics,
- electromagnetism,
- and special relativity.