Lecture: Particle Physics WS 2025/26

Lecturers: Prof. S. Degenkolb
Prof. U. Uwer
Prof. T. Plehn (Theory blocks)

Venue: INF 227, HS2
Time: Thursdays, 14:15 - 16:00,
Fridays, 14:15 - 16:00

Web Page: https://uebungen.physik.uni-heidelberg.de/vorlesung/20252/2121

The web-page contains a table with the week to week topics and the uploaded lecture material.

You can also find the links to the tutorial groups and the exercise sheets on the lecture page.

Tutorials: Thursdays 16:15-18:00 (3 groups)
Fridays, 09:15-11:00 (2 groups) and 11:15-13:00 (2 groups)
Will start next week!

Exercise sheets: Appear on the web always on Tuesdays (1st next week)
Need to be handed in by Tuesday, 18:00, the week after:
Upload in the Übungsgruppenverwaltung

Will be discussed in the tutorials following the hand-in date.

The exercises will not be corrected in detail, but you will get 0 or 1 point depending if you did a decent attempt to solve the problem even if the solution is not 100% correct.

You can hand-in your exercises in groups of maximal three students. Please put always all names on the sheet. We expect every student of the group to be able to present and explain the solutions she/he has handed in.

60% of the points on the sheets are required to be admitted for the exam.
Admissions to exams from previous years are not valid this year.

Date of written exam will announced later (we foresee it in the week of 2 Feb)

Lecture concept and topics:

Since last year, the lecture concept is slightly modified w/r to earlier years where the lecture followed closely the book from M. Thomson.

We have included now three blocks of “light theory”, each block w/ 3 lectures. Thomson’s book is still covering large fractions of the lecture material.

Theory blocks: given by T. Plehn.

- QED Lagrangian and Fenyman rules, calculation of ee→ff
- Electroweak interactions, Feynman graphs for W, Z
- QCD Lagrangian and Feynman rules

This term’s lecture will be followed next semester by a new lecture “Particle Physics II” which will also contain theory blocks.