Module: Elective Advanced Lectures: Theoretical Physics

Module No.: physics70c

Course: Collider Physics (T)

Course No.: physics7521

Category	Type	Language	Teaching hours	CP	Semester
Elective	Lecture with exercises	English	3+2	7	WT/ST

Requirements for Participation:

Preparation:
Basic understanding of relativistic kinematics, the Standard Model of Particle Physics

Form of Testing and Examination:
Requirement for participation in the final exam (written or oral): successful work with the exercises

Length of Course:
1 semester

Aims of the Course:
This module covers physics at high-energy particle colliders, not physical problems related to the construction or running of such devices. The main emphasis will be in the LHC as well as future collider projects.

Contents of the Course:
Review of relativistic kinematics; review of the Standard Model; simple reactions at ee colliders; jet physics; factorization theorems; simple reactions at hadron colliders; problems of the Standard Model; how to find new particles at colliders.

Recommended Literature:
Barger and Phillips, "Collider Physics"