

Graduate Program of the Albert Einstein Center for Fundamental Physics

1 Preamble

The Albert Einstein Center for Fundamental Physics (AEC) at the University of Bern carries out high-level teaching and research in fundamental physics. Its graduate program provides the doctoral students of the participating institutes a framework of academic training by offering advanced courses from the wide range of research topics covered at the AEC. This document details the organization of the graduate program and specifies the course requirements and their validation.

2 Goals

The goal of the AEC graduate program is to strengthen graduate education at the AEC.

- i. To this end, the AEC offers high-level courses and seminars to the graduate students. These cover advanced topics in theoretical and experimental particle physics and its applications, beyond the bachelor's and master's physics curriculum.
- ii. In addition, the program fosters the exchange between AEC graduate students by organizing regular meetings where they can present and discuss their thesis work.
- iii. The AEC graduate students are encouraged to attend further academic training that complements the AEC graduate program.

3 Administration

- i. The AEC graduate program is administered by the AEC.
- ii. It is organized jointly by two program coordinators, which are appointed by the AEC Scientific Board.
- iii. In case of disputes, final decisions regarding matters of the graduate program are taken by the AEC Scientific Board.

4 Members and Course Attendance

- i. All graduate students of the AEC are automatically members of the AEC graduate program. Active participation in the program at the level defined below is expected as part of successful thesis work within the AEC.
- ii. Master students at the AEC can attend courses offered by the program after approval by their supervisors and the graduate program coordinators.

- iii. External graduate students (from other institutes at Bern University, or other Universities) may enroll in the program after approval by the graduate program coordinators.
- iv. Physics graduate students at the University of Bern from institutes which are not members of the AEC are encouraged to attend courses.

5 Program offered by the AEC

- i. The AEC offers three graduate courses per semester. Typically, two of the courses will cover theoretical topics, one will be experimental. Ideally, courses cover both experimental and theoretical aspects of a given subject. If appropriate, courses can be taught jointly by faculty members working in experimental and theoretical areas. The courses can include seminar talks by the participants.
- ii. A course consists of about 15 lectures (of 45 minutes each), corresponding to an expected workload of 1 ECTS point. Typically, a course runs distributed over a semester, but it can also be offered as a block course running over a shorter time period.
- iii. The courses are given by AEC researchers or by external experts.
- iv. At most one course per semester can simultaneously be offered as a specialized master's course in the general curriculum and an AEC graduate course, provided that the course is specialized and not given on a regular basis. Attendance of such a course counts as one credit towards the successful participation in the program.
- v. An AEC graduate student seminar is held once per semester, for the duration of one half day. Selected graduate students will present their thesis work to their peers and discuss it with the AEC members and students (25'+5' presentations).

6 Requirements

- i. Over the duration of the thesis, every AEC graduate student is expected
 - to participate in at least 6 courses,
 - to regularly attend the AEC graduate student seminars and to present a talk on his or her thesis work at least once,
 - to participate in at least one PhD school (CHIPP, CERN, etc).
- ii. In general, successful participation in a course requires that more than 75% of the lectures are attended. The course instructor attests the successful participation by signing the course attendance form. In special circumstances, the graduate program coordinators can decide upon the successful participation together with the course instructor.
- iii. AEC graduate students are encouraged to attend (not more than two) advanced courses outside the AEC graduate program, after consultation with their thesis advisor. The same minimal requirements of 1 ECTS point apply. The instructor of the external course confirms the successful participation.

7 Course Selection and Attendance

- i. Graduate program members are free to select any AEC graduate course. Advanced course work outside the AEC can be part of the graduate program if approved by the thesis advisor or the program coordinators.
- ii. At the beginning of their PhD studies, students get a course attendance form to record the participation in the program.

8 Certification

- i. Upon successful participation in the program, as demonstrated by the course attendance form, the graduate student is issued a certificate by the AEC. The certificate attests the successful completion of the program and lists the successfully attended courses. The certificate is signed by the directorate of the AEC.
- ii. Non-AEC participants can request a certificate of attendance for successfully attended courses from the AEC graduate program coordinators. The certificate states the title and the duration of the course.
- iii. Students who do not finish their PhD studies but have successfully participated in the AEC graduate program can be granted the certificate.

9 Start of the Graduate Program, Interim Regulations

- i. The AEC graduate program starts in the fall semester 2013 (HS2013).
- ii. AEC graduate students who obtain their degree over the course of the next two years (before HS2015) can successfully finish the AEC graduate program provided that they will have participated in at least 4 graduate courses.
- iii. Participation in AEC graduate courses offered in previous semesters can be counted towards the completion of the program if the course instructors are able to certify the successful participation.

Bern, September 03, 2013



Prof. Dr. Jean-Pierre Derendinger
President of the AEC Scientific Board

Bern, September 03, 2013



Prof. Dr. Antonio Ereditato
Director of the AEC