

## Information for doctoral researchers in STEM (MINT) subjects

This booklet provides information about the postgraduate curriculum offered by the Center for Doctoral Studies Lübeck (CDSL). You are required to complete **24 credit points** successfully.

1 CP is equivalent to 1 ECTS, which is equivalent to roughly 30 working hours.

The smallest unit of CPs is 0.25, which is equivalent to 7.5 working hours in total.

Our postgraduate training is divided into the following educational areas:

1. Disciplinary skills, where you must take at least 5 CPs;
2. Scientific basics and communication, plus skills in supervision and teaching, where you must take at least 7 CPs; and
3. Interdisciplinary skills, where you must take at least 2 CPs.

As indicated, you are required to earn a minimum number of CPs in each area. Each area may also have a number of compulsory modules.

We can also accept CPs gained from external training sessions (see § 5 subparagraph 3 of the "Framework of Study Regulations and Examination Regulations (PromRPO) of the University of Lübeck for Students of the Doctoral Degree Preparatory Program").

### 1. Disciplinary skills: You should select your training from the following:

- a) *Seminar series including your own presentation*: A seminar series comprises a number of project-specific presentations, especially scientific reports by an institute's research group, doctoral researchers or members of a graduation programme. 1 CP = 15 hours in attendance, including a session in which you give a presentation. Half of the CPs are awarded for attendance and half for additional independent study.
- b) *Journal club with your own presentation about a third-party publication*: Participation in a journal club includes the presentation and critical analysis of a third-party's scientific article related to your research. 1 CP = 15 hours in attendance, including a session in which you give a presentation. Half of the CPs are awarded for attendance and half for additional independent study.
- c) *Colloquium with external speakers*: A colloquium includes scientific talks by external guest speakers. 1 CP = 15 hours participation plus a similar duration of independent study. Half of the CPs are awarded for attendance and half for independent study.
- d) *Active participation at an international conference*: You can receive up to 4 CPs in total for active participation at two international conferences. 'Active' means you must give a talk or present a poster about your research. 2 CPs is available for giving a talk at one conference and 2 CPs for presenting a poster at another. If you receive 2 CPs for active participation at a conference, you cannot receive additional CPs for publishing a conference proceeding associated with the same event (see 2(g)). If you receive 2 CPs for active participation at a conference presenting a poster, you cannot receive additional CPs for a poster walk using the same poster (see 2o)).
- e) *Project-related lecture course or module (1 ECTS  $\triangleq$  1 CP)*: You can receive CPs for taking project-related degree programme modules offered by the faculties of Computer Science / Engineering and Natural Sciences, as well as Medicine. Modules can only be credited once. By this we mean, if you took a module as an integral part of your undergraduate degree, you cannot use it for a second time as part of your doctoral degree.

- f) **Project-related workshop or workshop series** (e.g. addressing animal welfare and laboratory animal science, radiation protection, genetic engineering, HPLC techniques): You must receive a certificate of attendance to confirm your successful participation in any given workshop or workshop series. The certificate should indicate the length of time you participated and the academic content studied. Half of the CPs are awarded for attendance and half for independent study.
- g) **Practical training:** Practical training takes place face to face. 15 hours in attendance (with no independent study) corresponds to 0.5 CP. It provides practical experiences and explores scientific methods of working (e.g. in molecular biology, microbiology, chemistry, robotics, genetics etc.). You will receive an additional 0.5 CP if you write up the training exercise or its method in a report. In this case, half of the CPs are awarded for attendance and half for independent study.
- h) **Professional internship / industrial internship:** Your internship can last between 1 month and 6 months. You will receive 1 CP for each month, up to a maximum of 6 CPs. Your internship can take place in industry or in a public research institution.

**2. Scientific basics, scientific communication, supervision and teaching:** You should select your training from the following:

- a) **Project exposé:** You must submit a project exposé no later than 6 months after the start of your doctorate. The exposé will be discussed critically in a meeting with your supervisors. You receive 2 CPs in total for presenting the exposé and for discussing it in the meeting.
- b) **Progress reports (at least yearly):** A meeting should take place between yourself and your supervisors at least once a year. You will write a progress report and submit it to your supervisors in advance of the meeting. One of your supervisors will minute each meeting. The progress report, the meeting and the minutes should all focus on your academic (professional) and personal development. The progress report should be signed by all participants. Together, the progress report and minutes constitute 0.5 CP.
- c) **Good Scientific Practice (recommended for the first year of your doctorate):** Good Scientific Practice is compulsory to a value of 0.75 CP for doctoral researchers in STEM subjects. Half of the CPs are awarded for attendance and half for independent study. External courses, which are comparable in terms of time and subject matter, can be credited in the place of Good Scientific Practice.
- d) **Ethics in Science (recommended for the second year of your doctorate):** Ethics in Science is compulsory to a value of 0.5 CP for doctoral researchers in STEM subjects. Half of the CPs are awarded for attendance and half for independent study. External courses, which are comparable in terms of time and subject matter, can be credited in the place of Ethics in Science.
- e) **Publication as first author:** The exact number of CPs available here are governed by the relevant examination regulations, either for Biomedicine (PromSPO biomed) or for Informatics in Medicine and Life Science (PromSPO CMLS). In order for you to receive between 2 and 4 CPs, a publication containing a substantial proportion of work contributed by you must be accepted by an (international) peer reviewed journal. If the publication does not show you clearly to be the lead author (e.g. by putting your name first or last in the list of authors), then you must show that your contribution is equivalent to that expected of a first author in a biomedical journal.
- f) **Publication as co-author:** You will receive 1 CP if you are co-author of a publication accepted by an (international) peer reviewed journal. As co-author, you are expected to make a substantial contribution to the publication. This must be confirmed in writing by the first author.
- g) **Publication in conference proceedings:** The exact number of CPs available here are governed by the relevant examination regulations, either for Biomedicine (PromSPO biomed, 0.5 CP) or for

Informatics in Medicine and Life Science (PromSPO CMSL, 0.5-4 CPs). You will receive credit as the first author of a publication in peer reviewed conference proceedings. You cannot, however, receive CPs both for active participation in a conference and for publication in the same conference's proceedings (see (1) d).

- h) ***Successful fellowship / travel grant proposal:*** You can receive 1 CP for a successful research travel grant proposal supporting conference attendance or residency at another (international) research institution. Your application should have been assessed by a process of peer review.
- i) ***Successful third-party grant proposal:*** You can receive 3 CPs for a successful research grant application to a third-party funder which uses a process of peer review. The application should be linked to your research project. If you are not named specifically as the applicant, then the applicant must confirm that you made a significant contribution to the proposal.
- j) ***Workshops on scientific communication:*** You can receive CPs for attending workshops on scientific writing, the drafting of third-party funding applications and presentation skills. Half of the CPs are awarded for attendance and half for additional independent study.
- k) ***Organisation of a conference:*** You can receive 2 CPs for the organisation of a conference, symposium or equivalent. 'Organisation' includes the independent planning and implementation of an event which should last at least 8 hours in total.
- l) ***Supervision of a bachelor's / master's thesis or guest scientist's internship (recommended for year 2-3 of the doctorate):*** The comprehensive professional supervision of a bachelor's / master's thesis or of a guest scientist's internship can be credited with 1 CP for every 3 months of supervision time. The supervision activities must be confirmed by your doctoral supervisor.
- m) ***Teaching (recommended for year 2-3 of the doctorate):*** You will receive 0.5 CP for supervising a course (involving lectures, practical training, tutorials or exercises) which is worth 0.5 ECTS or 0.5 semester week hours (SWS).
- n) ***Summer school/winter school/scientific retreat:*** You can receive 0.5 CP for a full day event, and 0.25 CP for a half day event.
- o) ***Posterwalk:*** You can receive 0.25 CP for the presentation of your poster. A poster can only be recognized once. If you receive 0.25 CP for a poster walk, you cannot receive additional CPs for active conference participation presenting the same poster (see 1d)).

### 3. **Interdisciplinary skills:** You should select your training from the following:

- a) ***Workshop participation:*** The basic requirements are the same as for a disciplinary workshop [(1) f)]. In addition, the workshop's interdisciplinary character must be displayed by its subject-matter having a clearly different focus to that of your doctorate. Half of the CPs are awarded for attendance and half for independent study.
- b) ***Interdisciplinary lecture/module incl. exam (1 ECTS  $\leq$  1 CP):*** The basic requirements are the same as for a disciplinary lecture or a module [(1) e)]. In addition, the workshop's interdisciplinary character must be displayed by its subject-matter having a clearly different focus to that of your doctorate. Half of the CPs are awarded for attendance and half for independent study.
- c) ***Language courses (German as a foreign language, scientific English or another foreign language):*** Half of the CPs are awarded for attendance and half for independent study.