

Graduate Programme

Cellular and Molecular Biology of Plants (ZMBP)

Summary

The Integrated Research Training Programme for Graduates offers all doctoral students at the ZMBP a broad interdisciplinary education in the molecular life sciences, and facilitates their acquisition of diverse key qualifications. Supervision by individual doctoral committees and evaluation by the International Scientific Advisory Board (ISAB) of the ZMBP guarantee the quality of training in the Graduate Programme. The programme is organized by a coordinator and monitored by an executive board, and it cooperates with Graduate Academy of the Faculty of Science of the University of Tübingen. Manifold possibilities to pursue a career in the academic or non-academic sectors will be open to graduates who have completed this training.

Profile of the ZMBP Graduate Programme

The aim of the Graduate Programme is to provide its participants with a unique training that integrates the acquisition of key qualifications into a modern, interdisciplinary research environment. The training in the Graduate Programme aims to promote the scientific independence of the doctoral students and to provide them with wider expertise and qualifications for the employment market than would be possible in individual projects.

The priority objectives of the GPs are:

1. The provision of a modern, high quality professional training, which will furnish students with above-average qualifications for the competitive employment market
2. Supervision by an individual doctoral committee, which guides and advises the students throughout the entire training period
3. The acquisition of soft skills through training programmes and workshops in collaboration with the Graduate Academy of the Faculty of Science of the University of Tübingen
4. Communication and interaction with internationally renowned scientists to promote the acquisition of further scientific qualification and the establishment of national and international contacts.
5. The establishment of an internal scientific network among the participating students

These training courses should take up a maximum of 10% of the doctoral student's study time. The teaching and communication language is English, which also encourages foreign students to apply and to pursue a doctoral degree and prepares the students for their future work in an international setting.

At the end of this programme doctoral students have, thanks to their very broad specialist training, their very wide-ranging method portfolio and the strengthening of their key qualifications, excellent chances of success in competition with other candidates, whether in universities, independent research institutes or firms engaging in research.

Required Credits

For the successful acquisition of the final ZMBP Graduate Programme Certificate, supplementary courses to the value of 18 credit points (ECTS) are necessary.

Overview of curriculum:

Type	Duration	Frequency	Content	CPs	Workload Contact/Self studies
Progress Report	30 min	Once a week	Informal exchange of information on progress of the project in the work group	3	60h/30h
Doctoral Researchers' Seminar	2 h	Once a month	Lecture given by doctoral students on their work. The project leader is explicitly excluded from participation in order to create an internal forum for discussion. This promotes both the culture of discussion and internal networking.	3	72h/20h
ZMBP GP Symposium	One entire day	Once a year	Poster and short lecture by doctoral students on the subject of their work	1	24h/8h
Method Training	40 h	During the period of doctoral studies	Doctoral students acquire a supplementary professional qualification by learning the latest methods currently used in different research areas.	2	40h/20h
Lectures/Seminars	1 h	2, once a week during the semester	Doctoral students can choose lectures and seminars from the range offered	2	30h/30h
Journal Club	30 min	once a week during the semester	Presentation of current work from leading journals on molecular biology	2	45h/15h

Mentoring	80 h	During the period of doctoral studies	The 80 h can also be absolved by combining different mentoring opportunities	3	80h/10h
Training Courses	One entire day	3 courses offered by the Graduate Academy of the Faculty of Science during the period of doctoral studies	Diverse training courses are possible to strengthen the key qualifications of the doctoral students. The following subjects and skills are to be taught: scientific writing, posters, talks, lectures, language courses etc.	2	24h/36h

Furthermore, it is intended that every doctoral student should actively participate in at least one international congress during the course of his/her doctoral studies and present a poster on the occasion of the evaluation of the ZMBP by the ISAB.

Attendance at the respective courses is certified for each doctoral researcher on a pre-printed form, which must be completely filled in and submitted in order to receive the certificate.

Supervision Concept

At the acceptance as a doctoral student the dean assigns supervisors to the student according to the requirements of the “Rules and Guidelines for Doctoral Studies in the Faculty of Science of the University of Tübingen”. The project leader and two further supervisors from among the ZMBP research and project group leaders and a possible direct laboratory supervisor (post doctoral researcher) make up the individual supervisory committee of the doctoral student. This individual supervisory committee monitors the doctoral student throughout the entire dissertation and supports him/her in dealing with conceptual and methodological issues or other problems that may arise. Six months at the latest after the doctoral studies start, the supervisory committee holds a first meeting with the doctoral student, at which a supervision agreement is completed and signed. At least once a year, and if necessary, more often, the doctoral student meets with the committee to give a talk or present a poster describing the current state of the project and plans for its continuation. The scientific progress is assessed and, if necessary, constructive advice is given on how the work should continue. A short protocol of the discussion is drawn up and signed by all the participants to ensure that all points under discussion have been properly understood. A copy

is sent to the Coordinator. In the third year, specific advice on a successful final examination and on the defence of the dissertation is provided. On this occasion career plans and possibilities are discussed so that the doctoral student is encouraged to think about planning his/her career in good time.

Supervision Agreement

All doctoral students participating in the programme complete a written supervision agreement with their mentors. The agreement is drawn up according to the recommendations of the DFG. It implements the DFG guidelines for good research practice and regulates, among other things, the rights and responsibilities of the doctoral students and their supervisors. It also contains a short thematic overview of the dissertation.

Further Qualifying Measures

The individual supervisory committee also determines whether it is expedient for the doctoral student to spend time in another laboratory for research purposes. Financial support for such a research visit can be applied for from the Reinhold-und-Maria-Teufel-Stiftung (<http://www.teufel-stiftung.se/start.htm>).

Final Certificate

After completion of the doctoral degree and successful participation in the Graduate Programme, the students can be awarded a certificate confirming participation and stating the supplementary credits gained. This certificate is signed by the ZMBP Director.

Organization

Every two years the members of the ZMBP Research Group Leader Assembly elect a coordinator for the Graduate Programme. Shortly after election he/she organizes a general meeting of all doctoral students, who then elect two student members for the two-year period. These two doctoral students, together with the Coordinator, the ZMBP Director and his deputy, make up the Graduate Programme Executive Board. The board is responsible for the

recognition of academic performance and changes in the study programme. All the members of the board are equally entitled to vote and a simple majority decides every issue.

Furthermore, the board ensures that the evaluation of the Graduate Programme takes place every two years during the visit of the ISAB to the ZMBP.

The Coordinator ensures that an individual supervisory committee is set up for every doctoral student and that each student signs a supervision agreement. He/she makes sure that a sufficiently wide spectrum of courses is available, advises the doctoral students on their choice of courses and ensures that every doctoral student receives a form for the certification of academic achievement.

This Graduate program was unanimously adopted by the Research Group Leader Assembly on 18th of June, 2012.

The graduation committee agreed on this graduate program on 31st of October, 2012.

The faculty council of the Faculty of Science agreed on this graduate program on 16th of January, 2013.