

## Voices of Students and Professors

*„In the Elite Graduate Programme, a wonderfully collegial atmosphere complements an academically outstanding concept.“*

Maximilian Düll, Student

*“After initial hesitation to apply, I enjoyed the lectures, projects and study weeks of the Elite Graduate Programme so much that I will always be glad that I had the courage to apply.“*

Carmen Roelcke, Student

*„An outstanding programme. As an undergraduate student, I definitely would have applied.“*

Prof. Dr. Gisela Anton, Chair of Experimental Physics

*„The Elite Graduate Programme, with its integrated lectures and serious research projects in particular, has kick-started my physics research career.“*

Norbert Bodendorfer, Alumnus

## Contact

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[www.enb.physik.fau.de](http://www.enb.physik.fau.de)



FRIEDRICH-ALEXANDER  
UNIVERSITÄT  
ERLANGEN-NÜRNBERG  
FACULTY OF SCIENCES

Department of Physics

## Elite Graduate Programme

Physics research training  
towards BSc., MSc., and PhD



Hsgj. Universität Erlangen-Nürnberg, Naturwissenschaftliche Fakultät | Fotos: FAU, Department Physik, Bildarchiv: Thomas Kipl.

Elitenetzwerk  
Bayern



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Study week 2014 in Tramin / South Tyrol

## The Elite Graduate Programme

The regular physics degree courses at the Friedrich-Alexander-Universität Erlangen-Nürnberg (FAU) provide excellent and broad education for physics students who aim for a great variety of ambitious and successful careers in industry, teaching and academia.

However, some students decide, early on, to pursue a career in academic research. They seek suitably tailored courses and additional training in demanding research projects as well as summer and winter schools.

The Elite Graduate Programme in Physics – a unique course of studies funded directly by the Bavarian state government and this university – offers precisely this: exclusive research-focused courses embedded into the standard physics programme at Erlangen which are complemented by an extensive programme of research schools and social activities.

Entry into the programme – from within this university or from other universities worldwide – regularly takes place at the beginning or during the second year of undergraduate studies. Admission is contingent upon very strong academic performance during the first year of university studies, which needs to be demonstrated on paper and in an interview with a panel of university professors. An open mind and a well rounded personality are further requirements for admission.

## Mastering the Art of Research

Research is an art as much as a science. The Elite Graduate Programme teaches both, through the following means:

- **Integrated courses:** Both vision and technical skill are required to conceive of original and relevant research projects and to successfully execute them.

Learning this requires a highly individualized process that strongly benefits from students being taught and supervised intensively in small learning groups.

The programme achieves this by combining the theoretical and experimental standard courses in each semester into one single integrated course – taught by one experimenter and one theorist to only a small number of students – in order to allow for the cross-fertilizations that are so important for conceiving and judging research ideas.

- **Research Projects:** Mastery of any art needs practice galore. Three research projects – injecting students in the programme directly into research teams – will provide for this essential aspect. These take students to the research frontier very early on. Particular emphasis is placed upon gradually enabling students to work independently.
- **Communication:** Masterful communication of great ideas is as important as their conception. Semi-annual Study Days and an annual Study Week provide intensive training for communication of what students have learnt or discovered in their projects. The Study Week will usually highlight one area of physics of foundational importance or an area of current research interest, which will be chosen together by students and professors.

The Study Days and the Study Week are a unique opportunity for students to interact informally with professors, invited guest speakers from all over the world and their fellow research training course students from Regensburg and Erlangen. Many scientific ideas are born in such informal settings.

## Access to Other Lectures and Seminars

There is nothing lost, only opportunities gained. Students admitted to the Elite Graduate Programme of course continue to have full access to the entire spectrum of advanced courses offered at the University beyond the programme. This way, students in the programme can freely combine courses to suit their individual plans.

## Admission to the Programme

Physics students from any university, who have demonstrated outstanding academic performance during their first year of university studies and have a substantial interest in pursuing a research career, are encouraged to apply to the Elite Graduate Programme.

Deadline for entry of a full application (cv, letter of motivation, transcript of records) is 15<sup>th</sup> August (15<sup>th</sup> February for entry after the third semester) each year. These documents must be sent as one PDF file via electronic mail to [physics-elite-programme@fau.de](mailto:physics-elite-programme@fau.de).

Suitable candidates will be invited for interview, and successful applicants will receive their offers shortly afterwards.

## Degrees and Certificates

Regularly the programme is concluded with a Ph.D., but intermediate B.Sc. and M.Sc. degrees and a special certificate by the Bavarian state government are also obtained.

## Language

English is the lingua franca of international science, and thus courses are taught in English throughout.