Deutscher Akademischer Austauschdienst
German Academic Exchange Service

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Master's degree

Solar Energy Engineering MSc

University of Freiburg • **Freiburg im Breisgau**

Overview

Degree	Master of Science in Solar Energy Engineering and Certificates of Advanced Studies on Solar Energy Engineering
In cooperation with	Fraunhofer Institute for Solar Energy Systems, ISE
Teaching language	• English
Languages	All courses are held in English.
Full-time / part-time	• part-time (study alongside work)
Mode of study	Fully online
Programme duration	5 semesters, 7 semesters
Beginning	Winter and summer semester
Additional information on beginning, duration and mode of study	• Semester start: mid-October and mid-April • Study duration: five or seven semesters depending on the study track • Mode of study: online learning with one week of on-campus events per year
Application deadline	For details about the application process, please have a look at the FAQs on our website: • The application period for the winter semester intake is **from 1 June until 31 August** • The application period for the summer semester intake is **from 1 December until 28 February**.
Tuition fees per semester in EUR	3,650 EUR
Additional information on tuition fees	The state of Baden-Württemberg implemented study fees for international students as well as students earning a second degree starting in the 2017/18 winter semester. Here you will find further information about tuition fees: www.studium.uni-freiburg.de/en.
Combined Master's degree / PhD programme	No

Joint degree / double degree programme	No

Description/content

Solar Energy Experts – Made in Germany

Solar Energy Engineering is a Master's of Science (MSc) degree programme in Solar Energy Engineering (SEE). Our range of certificates in advanced studies allow you to take steps towards the aforementioned MSc and/or specialise in a particular topic pertaining to solar energy.

All our programmes are offered in cooperation with one of the world's leading research institutes in solar energy, Fraunhofer ISE. Students will enjoy innovative, insightful and tailor-made training from lecturers who are leading scientists in their field.

During the course of this programme, students will acquire subject-relevant skills, from developing and producing photovoltaic and solar thermal systems to the assembly of complex plants, power stations and energy networks plants.

This programme offers the opportunity to specialise in one (or more) topics in solar energy, such as solar cell technologies, photovoltaic systems and power plants, solar thermal energy, grid integration, and electricity networks.

Thriving Career Prospects in a Rewarding Occupational Field

Solar energy is a growing global market, which requires a workforce with a strong technological and engineering background. The MSc Solar Energy Engineering degree will qualify you for positions in research and development, project or engineering management and technology assessment. The degree is also a jump-start for any career change into the solar energy sector.

- We provide close mentoring and support throughout.
- We offer a great student experience through regular voluntary campus phases.

Join our voluntary campus phase in autumn to:

- discover Freiburg, the "Green City" and solar capital of Europe
- meet fellow students and lecturers face-to-face
- complete hands-on training in the high-tech labs of Fraunhofer ISE

Course Details

Course organisation

The MSc Solar Energy Engineering programme focuses on physics, technology and system design to convey expertise in solar energy engineering. The lectures go deeply into the technological and engineering aspects of photovoltaic and solar thermal systems.

The module structure is split into fundamental modules, mandatory modules, elective modules, research projects, and the Master's thesis.

1. Fundamental Modules

Fundamental Modules contain basic knowledge about solar energy (photovoltaic, thermal, and energy systems), physics, semiconductors, and electrical engineering fields. Fundamentals provide the knowledge needed to understand and apply solar energy engineering expertise and skills in practice. Fundamental Modules are recommended for students who do not have previous essential knowledge, experience, or training in the field of solar energy as well as for those who would like to improve or brush up on their existing foundational understanding.

2. Mandatory Modules

Mandatory modules contain advanced knowledge in solar energy (photovoltaics and energy systems), physics, semiconductors, and electrical engineering fields. The courses in these modules are designed to teach in-depth knowledge and specialised applications of solar energy engineering.

4. Elective Modules

Elective modules contain advanced and specialised knowledge in photovoltaic and thermal energy systems, physics, semiconductor, and electrical engineering fields.

There are five elective tracks:

- Solar Thermal Energy
- Solar Cell Technology
- Solar Energy Integration into the Power Grid
- Photovoltaic Power Plants
- Applied Research

Students must choose two out of five tracks to complete the elective module.

5. Research Projects

In this module, students work on three research projects (RP), distributed as one for each semester. During this process, students develop their scientific writing and presentation skills and familiarise themselves with the standards and methods of scientific work.

6. Master's Thesis

There are several ways to complete the Master's thesis:

1. In Freiburg: We offer a wide range of collaborations with the University of Freiburg and the Fraunhofer ISE. You can relocate to Freiburg for six or more months, join a research group in one of our high-end labs and become part of our international research community. There is also the possibility to cooperate with several research institutions located all around the world.
2. In the workplace: If you are already working in a related field, you can carry out your Master's thesis in your company. Necessary technical equipment should be in place for carrying out tests or any other hands-on work for your thesis.
3. The students can carry out the Master's thesis at home and work on a simulation or a theoretical topic.

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A Diploma supplement will be issued	Yes
Certificates for specific modules are awarded	Yes
Integrated internships	**Gain First-Hand Research Experience at Fraunhofer ISE** Come to Freiburg on a long-term basis to work on cutting-edge solar research. Join one of the research teams at Fraunhofer ISE, where you will acquire hands-on experience and gain additional skills.
Course-specific, integrated German language courses	No
Course-specific, integrated English language courses	No

Online learning

Pace of course	Mixed (e.g. fixed exam dates and duration, study content can be studied at any time)
Phase(s) of attendance in Germany (applies to the entire programme)	None
Types of online learning elements	• Access to databases with study material • Discussion forums and / or groups • Online sessions • Video learning (Pre-recorded videos, Vlogs, Video-Podcasts)

Costs / Funding

Tuition fees per semester in EUR	3,650 EUR
Additional information on tuition fees	The state of Baden-Württemberg implemented study fees for international students as well as students earning a second degree starting in the 2017/18 winter semester. Here you will find further information about tuition fees: www.studium.uni-freiburg.de/en.
Semester contribution	180 EUR per semester: • Administrative fee: 70 EUR • Contribution to the constituted student body: 7 EUR • Contribution to the student union: 103 EUR
Funding opportunities within the university	No

Requirements / Registration

Academic admission requirements	**The admission requirements for the MSc degree are:** • Bachelor's or Master's degree in mathematics, physics, engineering or any related field • English language skills (details below) • Professional experience of at least one year after graduation **To apply for admission, please follow these steps:** A. Create an account 1.1 Please go to the university's portal at:https://campus.uni-freiburg.de 1.2 Set the language to: English (top right corner) 1.3 Select: Application (next to the "Home" tab) 1.4 Select: Registration 1.4.1 For first time registration click: OK 1.5 Fill out the form from the "Personal data" section all the way to the bottom of the page. 1.6 After registering you will receive an activation e-mail. You can click the link of that e-mail or enter the activation code manually. 1.7 When you have successfully created and activated your account, please log in with the user

	name and password you created in the registration phase. B. Start the online application 2.1 Select: Start application 2.2 Select: Add application During your the application process, you will need to upload the following documents to the application platform: • Bachelor's degree certificate and transcript of records • Translation of Bachelor's degree certificate and transcript of records (in English or German) • Proof of English proficiency of at least B2 level • Proof of at least one year of work experience after graduation (signed letter from your employer confirming your position and work experience)
Language requirements	English language skills (at least level B2 according to the CEFR)
Application deadline	For details about the application process, please have a look at the FAQs on our website: • The application period for the winter semester intake is **from 1 June until 31 August** • The application period for the summer semester intake is **from 1 December until 28 February**.
Submit application to	Portal of the University of Freiburg: https://campus.uni-freiburg.de

Services

Accommodation	As Freiburg is an attractive city, finding a suitable and affordable place to live can take a little while. The University of Freiburg offers all newly enrolled international students the possibility to apply for student housing via the International Office. In addition to these dormitories, which are run by the Studierendenwerk Freiburg (www.swfr.de/en), several independent residence halls are listed on the university website (http://www.housing.uni-freiburg.de). The Studierendenwerk Freiburg and the International Office also offer a list of available private rooms.

Contact

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