



**Fraunhofer**  
ACADEMY

Part-time Course of Study

# M.SC. SOLAR ENERGY ENGINEERING

STUDY ONLINE FROM ANYWHERE IN THE WORLD



Offered by

UNI  
FREIBURG



## LEARN FROM GERMANY'S LEADING EXPERTS IN SOLAR ENERGY

Come and join the worldwide growing solar community and become part of our successful and renowned society of solar scientists and engineers. We offer continuing education courses and a Master of Science degree program which will allow you to gain scientific and technical knowledge in solar energy. You will study part-time with our renowned experts in solar energy through e-learning and online courses as well as hands-on workshops in the facilities of the Fraunhofer Institute for Solar Energy Systems ISE.

Our program provides not only in-depth knowledge and a suitable and flexible learning environment for working professionals but also enjoyable events and networking meetings with R & D and industry experts. Thanks to our enthusiastic and well-versed lecturers, I am convinced that you will maximize your knowledge in solar energy and become an expert yourself.

Yours faithfully

Prof. Dr. Stefan Glunz

Program Director Master of Science Solar Energy Engineering

## PROGRAM OVERVIEW AND TARGET GROUP

### Study Part-Time – From Anywhere In the World

You want to improve your skills and your knowledge in the field of solar energy – and at the same time continue working in your job? This Master of Science program is ideal for professionals like you. During the last decade we created an innovative and flexible online learning environment – adapted to your needs.

### Become an Expert in Solar Energy

Germany's most renowned experts in solar energy will give you insights into the physics, technology and system design of solar energy engineering.

### Boost Your Career and Join the Global Solar Community

Become part of our successful and renowned community of solar scientists and engineers. You are invited to join our regular campus phases here in Freiburg to meet fellows, lecturers and experts face-to-face. There is even the option of an intensive research internship on site as part of your studies.

### Our Study Offer is Made For You

Whether you are:

- In the PV and solar energy – industry or sales
- A solar energy newcomer with another background

This program is your chance to make a change!



## MASTER OF SCIENCE DEGREE

Our Master of Science provides in-depth knowledge in all aspects of solar energy engineering. The Preparation Modules provide you with the basics for success in the Mandatory Modules. Later on, Elective Modules allow for further specialization in the topics of your choice. During several Research Projects you will develop the scientific skills that leave you best prepared for your Master Thesis.

### Preparation Modules

The Global Energy Needs in a Nutshell	5 ECTS
Fundamentals of Maths & Physics	10 ECTS
Fundamentals of Semiconductors	12 ECTS
Electrical Engineering and Power Electronics	3 ECTS

### Research Projects

30 ECTS

### Mandatory Modules

Solar Cells & Photovoltaic Systems	10 ECTS
Solar Thermal Systems	10 ECTS
Crystalline Silicon Photovoltaics	10 ECTS

### Topics for Elective Modules

Characterization & Modelling	10 ECTS
Photovoltaic Systems & Grids	10 ECTS
Advanced Solar Cell Technologies	10 ECTS

### Master Thesis

15 ECTS

"I recommend the program because it is a great opportunity to start a new career in the PV sector."  
*Roberto Vitale, Italy. Alumnus of the M.Sc. Solar Energy Engineering*

You will gain profound insights into the physics, technology and system design of solar cells, photovoltaic systems and solar thermal devices. The program will enable you to develop, design and optimize devices and systems with respect to efficiency, cost and lifetime. Excellent researchers from the Fraunhofer Institute for Solar Energy Systems ISE and the Albert-Ludwigs-University of Freiburg will be your teachers. Our courses are based on the latest scientific and technological knowledge.

### Hands-On Experience at Fraunhofer ISE Labs

The highlight of the program is a voluntary campus phase offered every 6 months. You get the chance to meet teachers and fellow students face-to-face and experience hands-on training in the labs of Fraunhofer ISE. Invited speakers from science and industry will deepen your understanding and connect you to the growing global community of solar energy practitioners.

### Your Master Thesis

The final semester of your studies is dedicated to the writing of your Master Thesis. We offer you the unique opportunity to be part of our motivated research community. Join one of our research teams for 3 – 8 month and experience working in our high-end labs. Of course – you are also welcome to prepare your thesis in your home country. We always find the best solution for you and we will support you all the way.



## GENERAL INFORMATION

**Start:** Mid October

**Duration:**

2-3 years depending on your previous degrees and experience

**Course fee:** €12,500 – €22,500 (depending on your previous degree)

**Admission Criteria:**

- First academic degree in engineering, science or related field of studies
- One year of professional experience
- English language proficiency

**Study Format:**

- E-learning and online courses as well as hands-on workshops
- Exams in study centers close to where you live
- Join our voluntary Campus Phase here in Freiburg, Germany

**Degree:** Fully accredited German Master of Science degree

**Application:** [www.studysolar.uni-freiburg.de](http://www.studysolar.uni-freiburg.de)

In scientific cooperation with



## YOUR BENEFITS AT A GLANCE

- »» Graduate with a fully accredited German Master of Science degree
- »» Learn from Germany's leading experts in industry, research and development
- »» Study online from anywhere in the world – be part of an international student group
- »» Keep working in your job and study part-time – take your exams in study centers close to where you live
- »» Become an expert in solar energy engineering and start your new career
- »» Enjoy the flexibility of our program – benefit from our decade of experience in global online education



## DO YOU HAVE ANY QUESTIONS FOR US?

About content related issues?

About the registration process/general issues?

About further similar programs?

### **Prof. Stefan Glunz**

Program Director  
Fraunhofer Institute for  
Solar Energy Systems ISE  
contact@studysolar.  
uni-freiburg.de

### **Philipp Bucher**

Program Coordinator  
University of Freiburg  
P +49 761 203-7213  
contact@studysolar.  
uni-freiburg.de

### **Lena Kurtz**

Program Manager  
Fraunhofer Academy  
P +49 89 1205-1526  
lena.kurtz@  
zv.fraunhofer.de

[www.academy.fraunhofer.de/solar-energy-engineering](http://www.academy.fraunhofer.de/solar-energy-engineering)  
[www.studysolar.uni-freiburg.de](http://www.studysolar.uni-freiburg.de)