

Renewable resources do have a future

Fossil raw materials and energy sources are limited and their exploitation affects the climate and environment in a negative way. Among the most promising alternatives is the use of renewable resources from agriculture and forestry. They can be transformed into versatile solid, liquid or gaseous sources of energy. Alternatively, they can serve as raw materials for dyes, insulating material and packaging, as well as for basic and fine chemicals. New professions are emerging at the interface between nature, agriculture and industry in the field of renewable resources. The demand for qualified experts is high and will continue to grow in the future. This translates into a wide array of versatile career opportunities for graduates of the master's degree program Renewable Resources.

A great place to study

Five Bavarian universities concentrate their competencies at the Straubing Center of Science (Technische Universität München, Weihenstephan-Triesdorf University of Applied Sciences, Universität Regensburg, Regensburg University of Applied Sciences, Deggendorf University of Applied Sciences). Because of the inherently trans-disciplinary nature of renewable resources, representatives of natural sciences, engineering, ecosystem sciences and economics collaborate at the Straubing Center of Science. This opens the door to a concentration of expertise in topics ranging from molecules to the marketing of renewable resources, both in teaching and in research.



Further information about the degree program

Technische Universität München
Straubing Center of Science

Student advisory services

Dipl. oec. troph. Sandra Feigl
Schulgasse 16
94315 Straubing
Tel +49.9421.187.166
Fax +49.9421.187.130
s.feigl@wz-straubing.de
www.wz-straubing.de

Center for Life and
Food Sciences Weihenstephan
Department of Agricultural and
Horticultural Sciences
Alte Akademie 12
85354 Freising

Dean of Studies

Prof. Dr. agr. habil. Kurt-Jürgen Hülsbergen
Tel +49.8161.71.3032
Fax +49.8161.71.3031
huelsbergen@wzw.tum.de
www.wzw.tum.de



Technische Universität München
Wissenschaftszentrum Weihenstephan
für Ernährung, Landnutzung und Umwelt

Hochschule Weihenstephan-Triesdorf
Abteilung Weihenstephan
Fakultät Land- und Ernährungswirtschaft

Master's Degree Program Renewable Resources

Fotos ©: iStockphoto.com/Kadir Barcin/Karl Dolenc/LianeM; TU München/Herbert Stolz/Uli Benz/Susanne Papeja; BLE; Bonn/Thomas Stephan; Kurt Fuchs; Titelfoto: ©iStockphoto.com/Ulrich Knaupe



The interdisciplinary master's degree program

Master's Degree Program Renewable Resources

Duration of study: 4 Semester
Degree: Master of Science (M.Sc.)
Structure: Compulsory and elective modules
Campus: Straubing Center of Science (WZS)

Target group

The master's degree program is targeted at qualified students with a degree in natural sciences, life sciences and engineering. It provides an excellent interdisciplinary education in the field of renewable resources.

Interdisciplinary degree program

The master's degree program covers the entire value chain of biogenic resources. Thanks to the close interconnection between both pure and applied research and teaching the degree program prepares students for the challenges of this future-oriented field in an optimal way.

The master's degree program is a collaboration project between the Technische Universität München and Weihenstephan-Triesdorf University of Applied Sciences. Due to cooperation with the Universität für Bodenkultur Wien students have the option to do the third semester at the Universität für Bodenkultur in Wien and so receive a double degree.





Program overview

With its combination of compulsory and elective modules, this master's degree program provides an excellent and comprehensive education in the field of renewable resources. The immediate proximity to Straubing Center of Science guarantees that the program topics are always aligned with the cutting edge of research.

Requisite basic knowledge is reviewed and taught in the first part of this degree program. The focus of the second and third semesters lies on the recovery energy and material use of renewable resources. Power generation, energy storage, energy distribution and heat generation are treated, as are the characteristics of various combustibles and fuels.

Biogas technology and geothermal energy issues are also addressed. With regard to material utilization, students learn about natural fiber materials, technologies for and characterization of natural materials, as well as about biopolymers and biorefineries.

Ecological and economic topics are also handled: Sustainability and cost-effectiveness, as well as exploitation and marketing of renewable resources are important aspects.

At the end of the degree program, students will apply the acquired knowledge in a master thesis. The master thesis can be written at the Straubing Center of Science or at one of the other involved research institutions.



Course of studies

Renewable Resources is a four-semester interdisciplinary master's degree program. The first semester focuses on building up a solid base of knowledge in biology and chemistry, as well as in engineering sciences and process engineering. Specific emphasis is put on the energy and material use of renewable resources, and ecological and economic issues.

Students have the option of selecting special areas of emphasis within in the program according to their personal interests and orientation. Depending on their choice of elective subjects, students can concentrate on the natural sciences or, for example, the fields of engineering, agribusiness, biotechnology and nature conservation

Master's degree program Renewable Resources

	<i>Main topics</i>	<i>Compulsory modules</i>	<i>Compulsory electives</i>
1 st semester	<i>Fundamentals and cultivation of renewable resources</i>	<i>Cultivation Energy and material recovery Basic Economics</i>	<i>Chemistry and biology Renewable resources and agro-ecological systems Engeneering Analytical methods</i>
2 nd semester	<i>Energy recovery from and economics of renewable resources</i>	<i>Energy technology Energy recovery Markets and marketing Basic policy and legal conditions Macroeconomic significance Business management and analysis</i>	<i>International agricultural market Agribusiness and sustainability General education module</i>
3 rd semester	<i>Material recovery from renewable resources</i>	<i>Raw materials Natural raw materials from renewable resources Wood as a raw material Fuels and combustibles</i>	<i>Plant biotechnology Special biotechnology Renewable resources and nature conservation Stress physiology and ecophysiology</i>
4 th semester	<i>Master thesis</i>		

Unique job opportunities

Graduates of the master's degree program Renewable Resources have excellent job opportunities: Around half a million new work places related to the production and use of renewable resources are expected to be created by the year 2020.

Graduates of this degree program are sought after by energy suppliers, the manufacturing industry, and the plant and machine construction industries, as well as producers of renewable resources. Further occupational fields are consultancy, training and administration, and positions in organizations, municipalities and research.