



# Study and research for a sustainable future



University of Applied Forest Sciences  
Rottenburg

University of Applied Sciences

„EXZELLENZHOCHSCHULE“  
Stifterverband  
für die Deutsche Wissenschaft

5x OFFIZIELLES  
PROJEKT DER  
WELTDEKADE  
2006 - 2014

*Real close. Far ahead.*



## Learning for the needs of tomorrow!

With nearly 1,100 students, the University of Applied Forest Sciences (HFR) is a small but future-oriented University of Applied Sciences. The curricula are based on employment-related fields of the future.

In its courses, the university develops cross-sectoral solutions in the fields of forest management, timber industry, nature and environmental protection, landscape planning, water management, sustainable regional management, resource-efficient building and renewable energies. These programmes focus on transferring knowledge and skills for the material and energetic use of renewable resources and responsible use of scarce resources.

Graduates have excellent employment prospects.

The HFR was awarded UNESCO prizes every year from 2006 to 2014 for their forward looking educational offer. It is thus one of 16 institutions from over 1,800 award-winning projects. It also won the university competition "Excellence strategies", organised for small and medium universities by the German science foundation.

## Sustainability as a theme

Within the country, HFR is among the universities with the clearest training and research profiles due to its consistent orientation of all programmes towards the principle of sustainability. It prepares students for their professional career with a comprehensive academic education (key skills and expertise).

As a result, the application-oriented combination of research and teaching forms a solid unit. HFR offers 5 Bachelor's and 3 Master's programmes.



## Partners with practitioners

The university has partnerships all over the world. Collaborations with companies, associations and institutions enable optimum linking of theory and practice. Accredited programmes are offered to students.

Professors, besides their academic careers, have many years of professional experience in commercial business and management. Together with more than 80 practitioners from different disciplines, lecturers guarantee the high practical relevance of the programmes.

The many field trips and study tours not only strengthen the cooperation between the students but are also directly related to practice. A 6 month internship in Germany or abroad is integrated into the programme. Students are able to make contact with potential employers. Many final theses deal with very concrete practical questions.

In graduate surveys, former students attest the excellent quality of the HFR teaching and the outstanding preparation for professional life.





## Strong on research, and practical

The consistent focus on practical, i.e. applied research is an important element of the overall profile of the university. The number of publications and the sum of research funds raised have been above-average for years. The university has qualified with several professorships for inclusion in the national centre for cutting-edge research at universities for applied research in Baden-Württemberg. This underscores and reinforces the position of the HFR as one of the most active research universities in the country.

In order to meet response of the research results with scientists and practitioners, many projects arise in an interdisciplinary or cross-disciplinary context as collaborative projects with other research partners. In this way the university is in close contact with renowned universities, colleges and research institutes in Germany and abroad. In particular, the cooperation of scientists at the university with numerous business enterprises, practitioners as well as the involvement of other partners from government and politics promotes close interaction between science and practice.

## Research skills and innovation

At the university, the Institute for Applied Research is the central coordination point for research activities. These include internal consulting and support in initiation, implementation and legal formulation of research and development activities.

Through the institute, which guides and supports research activities in partnership with companies and external institutions, the application and development of scientific methods and technologies are promoted and concepts for solving new problems developed.

The university particularly has corresponding research focuses in the following skills areas:

- The forestry and timber industry - processes, technology, added value
- Biomass - logistics and conversion
- Management and development of rural areas

The Rottenburg University of Applied Forest Sciences , as a partner for sustainable development, can consistently turn these highly contemporary themes into current research questions.



The thematic focus is supported by 2,500 ha of teaching and research forest, an innovative laboratory building and a modern pilot plant. Together, they create the best prerequisites to meet the needs of application-oriented research on international markets.





## Water Resource Management B. Sc.

### The most precious resource on earth

Although the earth as a blue planet has extensive water reserves, only a very small proportion is suitable as drinking water and its availability extremely different from one region to another. Access to clean drinking water is missing for 1.2 billion people, 2.5 billion people lack sanitation and adequate waste water disposal. Due to high population growth, an intensification of agriculture and a changed consumer behaviour, the demand for high quality water is rising worldwide. There is already an extreme water crisis, especially in many developing countries. But even in water-rich countries such as Germany, guaranteeing high standards in water supply is becoming increasingly problematic.

The Water Resource Management (B.Sc.) programme offered at Rottenburg is unique in form since it addresses both natural and social science and technical aspects of sustainable water management and links them.

Students deal with current and future national and international water issues and try to find interdisciplinary solutions for existing and emerging challenges in the water sector.

Since sustainable use of water resources is possible only with interdisciplinary approaches, particular emphasis is placed on transmitting knowledge about interfaces and methodological skills.



## Sustainable Regional Management B. Sc.

### Develop and shape the countryside

In rural areas, there has been a proliferation of structural problems. Sustainable Regional Management is particularly necessary. An important component in this regard would be a valorisation of the rich variety of resources in rural areas.

Modern regional management means developing regions in an economically and environmentally sustainable way. For this purpose, regional and touristic models must be created, conservation measures be implemented and economic analyses be carried out, for example.

It is important to take the interests of business representatives, environmental and social organisations, and not least the population into account when dealing with this matter, because sustainable regional management takes place in all strata of society and on all political levels.

Tourism plays an especially important role in securing employment opportunities for people in rural areas. Especially in peripheral areas and large protected areas, it is primarily nature-based tourism and recreational activities that safeguard added value. In courses on tourist product development, quality management and brand management, students acquire a sound basis for touristic development and the competitive positioning of rural areas.



## Renewable Energies B. Sc.

## Wood Management and Technology B. Sc.

### Energy solutions for our future

Mitigating climate change is the greatest challenge for the present and the future. Its ecological, economic and political consequences directly jeopardise our livelihood. A drastic reduction of the use of fossil fuels within the next few years is thus indispensable. This is only achievable through energy savings, a significant increase in energy efficiency and the coverage of the remaining energy needs with renewable energy sources such as solar, hydro, wind and biomass.

The contribution of renewable energies to a climate-friendly and reliable energy supply is becoming increasingly important.

In 7 semesters, wide natural-scientific, technical engineering and economic knowledge is taught.

These include in-depth knowledge in the areas of energy and plant engineering, energy economics, energy law and biomass processing and logistics.

Moreover, the importance of social skills and social responsibility is transmitted.

After broad-based basic studies, in the third semester there is a choice of specialisation. By opting for "Energy Systems Technology" or "Raw Materials and Plant Management" knowledge is focussed and deepened. The foundations are thus laid for a sound, qualified career in the professional field of renewable energies.

### Wood - modern building raw material

Wood is indispensable as a renewable raw and building material. Wood is one of the oldest versatile raw materials in the world. Its economic use potential is enormous. From the economic and labour market-policy point of view, the timber industry is one of Germany's most productive economic performers.

The timber industry focuses on resource-efficient and economical use of the raw material wood. A variety of actors such as the timber trade, the timber industry and wood crafts use the raw wood according to their individual product range and company philosophy. To remain competitive and future-capable, the timber industry is constantly striving to optimise the value chain of their raw material in the triad of economy, ecology and technology.

Through sustainable management and use, wood is a CO<sub>2</sub>-neutral raw material. Thus, finite and fossil raw materials are preserved or replaced by the use of wood products.

The knowledge acquired during the programme enables graduates to take the unique properties of wood into account in the product development phase. It also enables them to meet the special challenges of this modern raw and building material and to achieve the highest product quality.



## Forest Management B.Sc.

## Forest Management M.Sc.

### Conserve and shape

Forest management in the 21<sup>st</sup> century is an extremely modern production and service sector with a wide variety of tasks and social obligations.

Sustainable forest management guarantees the preservation of our forests and safeguards their multiple functions. Various demands are placed on forests. Sawyers, for instance, see the forest with different eyes than hunters.

The perception of somebody jogging or mountain biking will be different from that of a biologist or ecologist. These examples could be continued almost indefinitely. What they all have in common is that, despite different interests, they all make demands on the forest and want to preserve it. These various demands must be coordinated and their implementation organised.

In addition to the local and regional approaches, global aspects must also be considered.

Forests significantly affect living conditions on our planet. In sustainably managed forests, the raw material wood is produced. Its properties are valued worldwide, for example in the form of timber, as paper or fuels or as part of many other commodities.

The world's forests make a major contribution to climate stabilisation and species protection. Responsible management through the sustainable use and protection of the resource "forest" is therefore called for. Sustainable, regulated forest management thus creates structures for the responsible use of forest ecosystems.

### Strategically managing forestry businesses

Forestry is undergoing far-reaching changes. Changes to the specifications at a national and international level are likely to lead to a decentralisation of organisational units. The requirements for the strategic management of the smaller units will rise, hierarchical structures will become flatter. This results in marked changes in the skills expectations with regards to operational managers of future organisational units.

The Master's programme in Forestry is based on the requirements of forestry practice. There is a clear commitment on the part of the HFR to the core competence and to multi-functional forestry. Taking into account specific requirements and public perceptions, the main focuses are strategic management, management, control and planning skills in forest management and nature conservation, taught in a practical way.

Graduates will have a high degree of leadership and decision-making skills. They think strategically and globally (and have a highly practical orientation). As future forestry managers at home and abroad, in public forest administrations and private sector employers, they are thus in a position to make strategic decisions, take on personnel and assume responsibility for results. They are able to consistently develop forest enterprises in the interests of forest owners and society, manage sustainably and steer actively towards the future.



## Sustainable Energy Competence (SENCE) M. Sc.

## Resource Efficient Building M. Sc.

### Sustainable Energy Competence

A study and research programme has been condensed from the most important topics as well as from current research activities. It covers the key aspects of the technology and management of regenerative energies. In a cooperation between the universities of Rottenburg (competence centre biomass), Stuttgart (competence centre for solar energy) and Ulm (competence centre for solar thermal energy), this leads to SENCE. The University Rottenburg coordinates administrative issues of the SENCE Master's programme.

SENCE rests on the foundation of three equal teaching areas: natural sciences, technical sciences, and economic and social sciences. They are reflected in the various phases and modules of the course of studies.

A special focus of the programme is self-directed, project-oriented work and research. Students practise these at the cooperating universities or in the private sector.

More than 30 lecturers at SENCE provide competent and up-to-date coverage of the curriculum in the field of sustainable energy and energy technologies. Among them are professors from relevant university disciplines and further research institutes, as well as experts from business and industry.

### Resource-efficient Building

The Master's programme in Resource-efficient Building is aimed at graduates of Bachelor's programmes in architecture, civil engineering, forest management, renewable energies and related disciplines who wish to acquire comprehensive knowledge and network skills in resource-efficient building management.

The building industry as well as building itself are key engines of modern national economies. Performance in the sector vitally depends on environmentally protective handling and efficient use of materials.

Thus, especially renewable raw materials such as wood offer enormous potential thanks to their exemplary environmental performance and specific technological properties.

Sustainability and resource-efficiency are key skills for future-capable building.

Resource-efficient building means using raw materials along the entire building cycle in a sensible way. The aim is to keep the use of sustainable resources as low as possible.

Resource-efficient building is the decisive qualifying characteristic when it comes to the integrated planning and implementation of sustainable building concepts.

Our team of university professors, external lecturers and guest lecturers guarantees a competent education that is geared to dealing with today's realities and tomorrow's needs.

For us, technical and didactic excellence, value-creating thinking and action, practical teaching and research, plus personalised attention, go hand in hand.



## Strong partners and the best international contacts

Apart from expertise and practical knowledge, HFR graduates above all have international experience and social skills.

The HFR offers advice and support to students who wish to take a semester abroad while studying, to increase their professional and personal skills in an international environment, as well as boost their career prospects.

The university deals with questions of international and intercultural dimensions, both in its teaching and research.

Much of the programme contents is relevant worldwide and HFR graduates are increasingly also finding professional positions abroad.

The university maintains close contacts with numerous partner universities in many European countries and worldwide. These collaborations primarily serve international student exchange.

The HFR is a member of the university region Tübingen-Hohenheim and also works closely together with numerous other universities both at home and abroad.

## Nature on the doorstep

The campus of the HFR is anything but huge and impersonal. The few buildings amidst a landscape featuring woods and orchards create a family atmosphere and above all short distances. The short distances and manageable size enable an individual approach to every student and thus effective study. All lectures take place directly on the campus: there are no outstations.

Directly bordering the campus of the „smallest university of excellence in Germany“ is the separate teaching and research forest with almost 2,500 hectares. This is used by all courses for practical and scientific training.



## In the heart of Baden-Württemberg

Halfway between Stuttgart and Lake Constance and between the Black Forest and the Swabian Alb is the episcopal and Roman town of Rottenburg.

Featuring buildings from eight centuries idyllically by the Neckar, the Cityscape includes churches both Gothic and from the Middle Ages, as well as baroque chapels.

Thanks to the good connection to the motorway, Rottenburg is the ideal starting point for trips into the region, both close by and further afield.

The state capital is only 50 km away, and the university town of Tübingen is 12 km away. Both towns are easily accessible by train.





## The University in statistics

Students	1,100
Professors	32
Members of staff	70+
Programmes	8 (5 B.Sc./3 M.Sc)
Teaching forest	2,500 ha
Fishing waters for teaching purposes	5,000 m
Arboretum	2,6 ha
Tree and shrub species in the arboretum	170+
Partner universities	32
Current research projects	31
Third party income acquired per professor	€ 27,021

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### University collaborations

UNIVERSITÄT HOHENHEIM



EBERHARD KARLS  
UNIVERSITÄT  
TÜBINGEN



Hochschule Ulm



University of Applied Sciences



Hochschule für  
Wirtschaft und Umwelt  
Nürtingen-Geislingen



Hogeschool  
**VHL**  
University of Applied Sciences

Hochschule  
für Technik  
Stuttgart

**Hochschule Esslingen**  
University of Applied Sciences



Hochschule  
Albstadt-Sigmaringen  
Albstadt-Sigmaringen University



Hochschule Reutlingen  
Reutlingen University