

CURRICULUM

RENEWABLE ENERGY

Centre for Bioeconomy

Degree

Degree Title	Master of Engineering Master of Natural Resources
Extent	60 cr / 1-2 years

Typical Tasks for Graduates

After graduation you are a renewable energy expert, who has competences and ability to be in charge of promoting renewable energy utilisation. You recognize the potentials and development needs of renewable energy and are able to use your skills in tasks of your field.

The studies provide you with competences to work in various expert, supervising and tutoring tasks in enterprises, public administration and in the third sector. Your tasks may be connected with supply of renewable energy, heating business, planning and developing activities or teaching in the energy field.

Implementation of Studies

Renewable energy education improves your abilities to work in different positions in the companies or organisations of the field. You are also better prepared to maintain your capabilities and to develop your expertise continuously. In your studies you strengthen your professional knowledge, learn to understand challenges and potentials connected to utilisation of renewable energy and to act in a changing environment.

In organising the studies the aim is to take into consideration the time management challenges of mature students and thus the studies are implemented as blended learning, each month consisting of 2-4 contact teaching days. In the beginning of the studies each student will draw up a personal study plan instructed by the head lecturer in charge.

Structure and Content of Studies

Your studies contain a common core (55 credits) and optional studies (5 credits). The objective of the common studies is to deepen the ability to apply theory to the practises of your own organisation or other organisation, chosen by you. In addition, the studies develop your analysing, project management, R&D participation and social skills. The common studies contain a thesis (30 credits), which is based on a current work-connected development idea or problem and is implemented in cooperation with working life.

Contents of studies are: renewable energy sources, supply of forest biomass and planning and acquisition of energy solutions. In addition to those, the studies contain sustainable management and know-how in development activities. Optional studies may comprise e.g. leadership studies.

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Renewable Energy Competence | Sustainable Management Competence | Development Competence | Ethical Competence | Internationalisation Competence | Learning Skills | Innovation Competence | Working Community Competence

2 nd year	RENEWABLE ENERGY EXPERT			
Thesis	15/30 cr	Thesis	15/30 cr	
1 st year	RENEWABLE ENERGY DEVELOPER			
Optional Studies	5 cr	Supply of Forest Biomass	5 cr	
Renewable Energy Sources	5 cr	Planning and Acquisition of Energy Solutions	5 cr	
Sustainable Management	5 cr	Know-How of Development Activity	5 cr	

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Competence Requirements

Area of Competence	Description of Competence Master of Engineering Master of Natural Resources (Forestry)
Renewable Energy Competence	<ul style="list-style-type: none"> - knows the international operational environment of renewable energy, climate and energy policy as well as potential renewable energy as part of energy production - knows the present technologies of production and use of renewable energy and its application opportunities - knows total planning and quality control of renewable energy solutions as well as can estimate energy production profitability
Sustainable Management Competence	<ul style="list-style-type: none"> - knows the principles of the enterprise's societal and environmental responsibility as part of strategic company management - can estimate and promote the implementation of different sustainability aspects in company management
Development Competence	<ul style="list-style-type: none"> - can recognise development needs in organisations and assess and choose appropriate development actions - can manage, plan and implement development work as part of organisational activities - has versatile knowledge of development methods and is able to apply them at work
Ethical Competence	<ul style="list-style-type: none"> - is able to assume responsibility for actions of society and their consequences - is able to apply the principles of the professional ethics of his/her field as an expert and developer of working life - is able to make decisions taking into consideration individual and societal views - is able to promote the principles of equality in working society - is able to promote the principles of sustainable development and societal responsibility - is able to direct societally influential activities based on ethical values
Innovation Competence	<ul style="list-style-type: none"> - is able to produce new knowledge, renew ways of action by connecting the know-how of different fields - is able to direct projects - is able to manage research and development projects and knows the methods of R&D activities - is able to develop customer-oriented, sustainable and profitable actions
Internationalisation Competence	<ul style="list-style-type: none"> - knows international communication in his/her work and in development of actions - is able to communicate in international environment - is able to anticipate effects and opportunities provided by international development in his/her own field

Learning Skills	<ul style="list-style-type: none">- is able to assess and develop one's competences and learning methods- is able to retrieve/ search, process and analyse information critically- can assume responsibility for team learning and knowledge sharing
Work Community Competence	<ul style="list-style-type: none">- is able to function as a member of a work community and contribute to its work well-being.- is able to function in various communication and interaction situations at work.- is able to use information and communication technology in the tasks of one's field.- is able to establish personal occupational contacts and to work in networks.- is able to make decisions in new and unforeseen situations.- is able to manage one's work and to work independently in tasks requiring expertise.- has developed entrepreneurial skills/ abilities.