

BIOECONOMY

Master of Science

Curriculum

**CHANGE
THE
SYSTEM.
SHAPE
THE
FUTURE.**

Dear students

This curriculum provides you with comprehensive information on the Master's program in Bioeconomy. It contains information on the course structure and summarizes the most important examination regulations.

The information presented reflects the current situation. Titles and contents of compulsory and optional modules are sometimes subject to change. For administrative reasons such changes appear in printed materials with a certain delay. For this reason all information is supplied without liability.

If in doubt, please contact the coordinator of the program, Mr. Sascha Denneler, to obtain up-to-date information. For up-to-date module descriptions we refer you to the online module catalogue at **www.uni-hohenheim.de/module-catalogue**. Time schedules and lecture halls of all courses are displayed in the course catalogue of the University of Hohenheim, available at the beginning of each semester at **www.uni-hohenheim.de/coursecatalogue**.

We hope you enjoy your stay at the University of Hohenheim and wish you all the best for your studies!

Faculty of Agricultural Science

Faculty of Natural Sciences

Faculty of Business, Economics and Social Sciences

Contact

Sascha Denneler

Coordinator Master's program in Bioeconomy

Phone +49 (0)711 / 459 – 22844

Email bioeconomy@uni-hohenheim.de

Table of Contents

Program objectives	1
Program design.....	1
Course of studies	2
Module structure	2
Compulsory modules	3
Semi-elective modules.....	3
Elective modules.....	4
Master's thesis	4
Credit points.....	5
Examinations	5
Examinations of non-block modules	5
Examinations of block modules.....	5
Examination Resits	6
Grades	6
Overall grade	6
Cheating and plagiarism	7
Studying abroad and recognition of credits.....	7
Degree	7
Course evaluations	7
Semester dates.....	8
Teaching Staff.....	9
FAQ.....	10

The Master's program in *Bioeconomy*

Program objectives

The Master's program in Bioeconomy offers a comprehensive and systematic overview of all aspects of the production of (new) biobased products. In this program, you will examine all aspects of renewable resources in the biobased value chain: their production and utilization in agricultural ecosystems in diverse climatic regions, their ecological performance, their properties, means of conservation, and biotechnological and sustainable industrial processes to convert these resources into (new) biobased products. In addition, you will consider the potential market launch of these innovations on an individual and societal basis.

As an interdisciplinary program jointly offered by Hohenheim's three faculties, it enables a systemic analysis of the entire biobased value chain. Consequently, you will acquire the expertise necessary to consider a range of issues in this complex field from the perspectives of producers of new resources and products; of those already producing and seeking to introduce renewable resources and their corresponding products to the market; and of those trying to gauge the need and acceptance of such products. This reconciliation of varying interests is one of the strengths of this program and its graduates.

Program design

During the first year of the program, you are expected to acquire fundamental knowledge of all aspects of the bioeconomy, including their interconnections and interdependencies. Three semi-elective modules are offered in the first semester, which introduce the basic concepts of the agricultural, natural or economic sciences, respectively. This allows you to complement your academic background with the qualifications necessary to successfully complete this interdisciplinary program. Beyond that, you will acquire the knowledge and methods necessary for a systematic analysis of biobased economies in several compulsory modules. Topics range from a natural and agricultural scientific study of the properties of biobased resources to the economic analysis and optimisation of production and processing across the entire biobased value chain.

The second year of studies gives you the opportunity to design your own curriculum by choosing from a range of elective modules and specialising in your preferred areas of the field. In the module "Projects in Bioeconomic Research" you put your acquired skills into practice in cooperation with industry or other organisations by tracing a specific product from inception to market launch in a systematic examination of the entire biobased value chain. You complete the program by writing a research-intensive Master's thesis in the fourth semester.

Course of studies

The following table represents a recommendation for your course of studies:

	1st semester	2nd semester	3rd semester	4th semester
6 credits	Inter- and Transdisciplinary Approaches in Bioeconomics (4301-420)	Sustainable Industrial Processes (1510-410)	Elective modules (30 credits)	Master's thesis (30 credits)
6 credits	Properties of Biobased Resources and Products (3701-470)	Internal and External Costs and Benefits of Biobased Products (4101-420)		
6 credits	Agricultural Production of Biobased Resources (3403-430)	Markets, Innovation and Social Acceptance of Biobased Products (5000-510)		
6 credits	Economics and Management (4201-450)			
6 credits	Natural Science Concepts (1507-400)	Projects in Bioeconomic Research (4903-410)		

compulsory modules
 semi-elective modules

Module structure

There are three types of modules – compulsory, semi-elective and elective modules – which are described in detail on the following pages.

Modules offered at the University of Hohenheim can be either blocked, i.e. offered as compact courses and last four weeks, or non-block, i.e. run for the entire duration of the lecture period. All compulsory modules are non-block modules and last the full length of the lecture period. Elective modules *can* be blocked in which case they are compact courses lasting four weeks. Elective modules may also be offered as non-block modules. Most modules require you to register for them. Please see the module description for more information on each module's registration process!

Detailed information on individual modules, their corresponding courses, the current state of modules on offer, as well as information on how to register for modules may be obtained at www.uni-hohenheim.de/module-catalogue/bioeconomy.

A tool for composing individual timetables is available in the intranet at www.uni-hohenheim.de/schedule. Please note: non-block modules in particular often consist of more than one course!

Compulsory modules

Compulsory modules in the amount of a minimum of 42 credits as well as the Master's thesis (a minimum of 30 credits) have to be completed by all students. The compulsory modules are:

Semester	Code	Module title	Credits	Professor
1st	3701-470	Properties of Biobased Ressources and Products	6	Zörb
1st	4301-420	Inter- and Transdisciplinary Approaches in Bioeconomy	6	Knierim
2nd	1510-410	Sustainable Industrial Processes	6	Hausmann
2nd	4101-420	Internal and External Costs and Benefits of Biobased Products	6	Lippert
2nd	5000-510	Markets, Innovation and Social Acceptance of Biobased Products	6	Ahlheim
2nd-3rd	4903-410	Projects in Bioeconomic Research	12	Birner Hinrichs Kreeb

Semi-elective modules

Semi-elective modules in the amount of a minimum of 12 credits have to be completed by all students. These modules impart basic knowledge in the agricultural, natural and economics sciences and are intended to bridge knowledge gaps regarding the basic processes of the bioeconomy that students with different academic backgrounds may have. Depending on your previous education, you may replace one semi-elective module with an elective module.

If you have a **Bachelor's degree in economics**, you must take the following modules and may replace the module "Economics and Management" with an elective module:

Semester	Code	Module title	Credits	Professor
1st	3403-430	Agricultural Production of Biobased Resources	6	Lewandowski
1st	1507-400	Natural Science Concepts	6	Weiss

If you have a **Bachelor's degree in the natural sciences**, you must take the following modules and may replace the module "Natural Science Concepts" with an elective module:

Semester	Code	Module title	Credits	Professor
1st	3403-430	Agricultural Production of Biobased Resources	6	Lewandowski
1st	4201-450	Economics and Management	6	Grethe

If you have a **Bachelor's degree in the agricultural sciences**, you must take the following modules and may replace the module "Agricultural Production of Biobased Resources" with an elective module:

Semester	Code	Module title	Credits	Professor
1st	4201-450	Economics and Management	6	Grethe
1st	1507-400	Natural Science Concepts	6	Weiss

Elective modules

In addition to compulsory and semi-elective modules, you need to complete elective modules in the amount of a minimum of 30 credits. Elective modules provide you with the opportunity to specialize in an area of the field that corresponds to your personal and professional interests.

A comprehensive list of all elective modules recommended for the Master's program in Bioeconomy may be found online at **www.uni-hohenheim.de/module-catalogue/bioeconomy**.

Moreover, elective modules may also be selected from other Master's programs offered at the University of Hohenheim or from Master's programs offered at other German or foreign universities. In order to do so, a successful petition with the examinations board is required.

Information on all modules offered at the University of Hohenheim is available online at **www.uni-hohenheim.de/module-catalogue**.

Master's thesis

The Master's thesis is intended to show that you are able to work independently on a topic in the field of the bioeconomy within a fixed period of time by applying scientific methods. Thesis work includes a literature review, compilation of new and original data derived from either field or laboratory work or a systems analysis and modelling as well as a period of write-up.

The Master's thesis examination consists of a written part (thesis) as described above and, if applicable, an oral defense (colloquium). Whether a colloquium is part of the Master's thesis or not is decided by your supervisor. In the colloquium, you have to defend the essential arguments, methods and results of your thesis. The colloquium lasts approximately 30-45 minutes. The written part of the Master's thesis has to be completed within a period of six months. It is usually written during the fourth semester. The Master's thesis can be carried out either at the University of Hohenheim or at one of our partner universities.

Credit points You earn credits for each completed module. In order to complete a module, you need to pass the module examination as explained on the following pages.

The Master's program has a requirement of a minimum of 120 credits in total. The credit point system used at the University of Hohenheim corresponds to the European Credit Transfer System (ECTS).

Examinations Every module of the Master's program in Bioeconomy is completed with an examination. Types of examinations offered at the University of Hohenheim include written and oral examinations, protocols of practical courses, reports, preparation and presentation of contributions to seminars as well as colloquia.

You have to register for every examination you decide to take online through *Studium Online* at **www.uhoh.de/studiumonline** during the registration period for exams. Once a registration for a module examination has been completed, the module can no longer be dropped and you have to take the examination.

Coursework may be a prerequisite for taking a module examination. Please see the respective module description at **www.uni-hohenheim.de/module-catalogue** for detailed information on the specific requirements for taking an examination.

Detailed information on the valid examination regulations, deadlines, examination dates, your transcript of records, etc. may be obtained at the examinations office or online at **www.uni-hohenheim.de/exams**.

Examinations of non-block modules

Examinations of non-block modules are usually held in two examination periods that follow the lecture period (see page 8). For the current registration period for exams please visit **www.uni-hohenheim.de/semesterdates**. You may choose whether to take the examination in the first or second examination period. If you decide to withdraw from an examination you have previously registered for, you are automatically registered for the upcoming examination date. If you are not notified of the date, please contact the examinations office or the professor in charge of the module.

Examinations of block modules

Examinations of blocked modules are usually held at the end of the respective block. For blocked modules registration must be completed seven days before the examination takes place at the latest! If you decide to withdraw from an examination you have previously registered for, you are automatically registered for the upcoming examination date. If you are not notified of the date,

please contact the examinations office or the professor in charge of the module.

Examination Resits

It is possible to resit an examination twice for a total of five modules (compulsory, semi-elective or elective). For all other modules it is possible to resit the examination once. It is not possible to resit an examination which has already been passed.

If you fail an examination, you are notified by the examinations office in writing, usually including the resit date for which you are automatically signed up. Examination resits for non-block modules are usually scheduled for the upcoming examination period. Examination resits for blocked modules take place either in the upcoming examination period or are scheduled by the responsible professor. In some cases the resit date has not been set at the time of notification. If this is the case, please check the resit dates with the respective professor or the examinations office.

Grades

The examination result is expressed in grades according to the grading table below. A minimum grade score of 4.0 (D) is required to pass and complete the module. Some modules are not graded and are either passed or failed. These modules do not contribute to the overall grade and are assessed as either “passed” or “fail”.

Grades			
<i>very good</i>	1.0	A	<i>excellent performance</i>
	1.3	A-	
<i>good</i>	1.7	B+	<i>above-average performance</i>
	2.0	B	
	2.3	B-	
<i>satisfactory</i>	2.7	C+	<i>average performance</i>
	3.0	C	
	3.3	C-	
<i>pass</i>	3.7	D+	<i>performance meeting minimum criteria</i>
	4.0	D	
<i>fail</i>	5.0	F	<i>performance not meeting minimum criteria</i>

Overall grade

The overall grade for the Master’s program in Bioeconomy is calculated as the weighted average of all grade scores achieved in all modules, including the Master’s thesis. The module grades and the grade of the Master’s thesis are weighted on the basis of the credits awarded for each completed module. The result is rounded mathematically to one decimal digit. Results above 4.0 (D) are always rounded up to 5.0 (F).

Cheating and plagiarism

If you attempt to influence the result of an examination by cheating or using forbidden aids, the respective examination is assessed with “fail” (5.0). This expressly includes plagiarism, i.e. the use of content taken from the internet or other sources without properly quoting or indicating the source.

Teaching staff may require you to attach a declaration of authorship to written examinations or assignments and demand them to be handed in in digital form. Please ask the respective supervisor before submitting your work.

Please note: a declaration of authorship must always be included with written assignments in the module “Projects in Bioeconomic Research”.

The rules for submitting your Master’s thesis are as follows, regardless of your supervisor: Two bound copies of the Master’s thesis are to be submitted to the examinations office before the deadline. In addition, the thesis is to be submitted on a digital medium (CD/DVD) for further examination purposes. Along with these documents, you have to submit a written declaration of authorship, declaring to be the sole author of the submitted work and that all sources and aids have been indicated as such.

Studying abroad and recognition of credits

Students may spend one semester of the second year abroad to gain additional experience and enhance their professional profile. Credits obtained at another university during an exchange period can be recognized by the University of Hohenheim and thus contribute towards your degree, as long as the awarding institution is equivalent to a German university and the competencies acquired do not exhibit substantial differences to the competencies of the program in Bioeconomy as a whole.

Degree

Upon successful completion of all modules, including the Master’s thesis, you are awarded the degree of Master of Science (M.Sc.). This degree renders you eligible to pursue a doctorate.

Course evaluations

The quality of courses and modules is evaluated by the students of all study programs on a one or two-year basis, depending on the faculty administering the module. These evaluations are always anonymous. The lecturers are notified of the results and asked to discuss the results with the students at the end of their course or module.

Semester dates

Please note: The last block period of each semester overlaps with the first examination period of the non-block modules!

For up-to-date information on the semester dates please visit www.uni-hohenheim.de/semesterdates.

winter semester 14516	First day of <u>non</u> -block modules:	Monday, 12 October 2015
	Last day of <u>non</u> -block modules:	Friday, 05 February 2016
	First day of blocked modules:	Monday, 12 October 2015
	Last day of blocked modules:	Friday, 12 February 2016
	1 st examination period	TBD
	2 nd examination period	TBD
summer semester 16	First day of <u>non</u> -block modules:	Monday, 04 April 2016
	Last day of <u>non</u> -block modules:	Friday, 15 July 2016
	First day of blocked modules:	Monday, 04 April 2016
	Last day of blocked modules:	Friday, 29 July 2016
	1 st examination period	TBD
	2 nd examination period	TBD

No lectures are held on:

- Christmas holidays: Wednesday, December 23, 2015
– Wednesday, January 6, 2016
- Easter holidays: Friday, March 25 – Monday, March 28, 2016
- Ascension Day: Thursday, May 5, 2016
- Whitsun holidays: Monday, May 16, 2016
– Saturday, May 21, 2016 (except excursions)
- Corpus Christi: Thursday, June 26, 2016
- Dies Academicus: date not yet fixed

Teaching Staff

Professors at the University of Hohenheim have extensive experience in international research. Students also benefit from Hohenheim's active links with academic partners worldwide. Guest speakers from partner universities as well as research, development and policy institutions cover additional topics and enrich the curriculum.

The following is a list of professors offering compulsory and semi-elective modules and are thus closely linked to the Master's program in Bioeconomy. However, if you have questions about the program it is best to contact Mr Sascha Denneker at bioeconomy@uni-hohenheim.de.

Faculty of Agricultural Sciences

- **Prof. Dr. Regina Birner**, Institute of Agricultural Economics and Social Sciences in the Tropics and Subtropics, Department of Social and Institutional Change in Agricultural Development (490c)
- **Prof. Dr. Harald Grethe**, Institute of Agricultural Policy and Markets, Department of Agricultural and Food Policy (420a)
- **Prof. Dr. Andrea Knierim**, Institute of Social Sciences in Agriculture, Department of Rural Sociology (430a)
- **Prof. Dr. Iris Lewandowski**, Institute of Crop Science, Department of Biobased Products and Energy Crops (340b)
- **Prof. Dr. Christian Lippert**, Institute of Farm Management, Production Theory and Resource Economics (410a)
- **Prof. Dr. Christian Zörb**, Institute of Crop Science, Quality of plant products (340e)

Faculty of Natural Sciences

- **Prof. Dr. Rudolf Hausmann**, Institute of Food Science and Biotechnology, Department of Bioprocess Engineering (150k)
- **Prof. Dr. Jörg Hinrichs**, Institute of Food Science and Biotechnology, Department of Dairy Science and Technology (150e)
- **Prof. Dr. Jochen Weiss**, Institute of Food Science and Biotechnology, Department of Food Structure and Functionality Laboratories (150g)

Faculty of Business, Economics and Social Sciences

- **Prof. Dr. Michael Ahlheim**, Institute of Economics, Department of Economics, esp. Environmental Economics and Regulatory Policy (520F)
- **Dr. Martin Kreeb**, Institute of Marketing & Management, Department of Environmental Management (570G)

FAQ

Who can I contact with questions regarding my studies?

Your first point of contact is Mr Sascha Denneler, coordinator of the Master's program in Bioeconomy. His contact information is on the first page of this curriculum.

I want to go abroad. What do I have to do?

The Office of International Affairs (AA) is happy to provide you with information and will guide you through the process of organising a stay abroad. For detailed information please visit their website at www.uhoh.de/aaa.

I have completed all modules required for my degree, what happens now?

Once you have successfully completed all required modules, you will be issued your degree certificate. However, please keep the following in mind:

- Only after you have completed all exams and all of your grades have been entered into the system can your diploma be issued. Once all grades have been entered into the system you may exmatriculate yourself and do not need to re-register for the following semester. If you exmatriculate or forego re-registration before all grades have been entered into the system, your studies are considered to have ended prematurely with exams either not taken or not entered into the system.
- If you re-register due to missing entries in the system, you do not have to pay the semester fees.

Contact

University of Hohenheim
Faculty of Natural Sciences
Sascha Denneler
70593 Stuttgart | Germany
Phone +49 (0)711 459-22844
bioeconomy@uni-hohenheim.de
www.uni-hohenheim.de/bioeconomy

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Phone: +49-711 459-22844

Email: bioeconomy@uni-hohenheim.de

Universität Hohenheim, 70593 Stuttgart

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