Master’s Programmes:

Agrobiotechnology (M.Sc.)

Insect Biotechnology and Bioresources (M.Sc.)

Transition Management (M.Sc.)

(Taught in English)
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Web Links:

Justus Liebig University (JLU): www.uni-giessen.de/welcome
Information on studying at JLU: www.uni-giessen.de/study
Information for international students: www.uni-giessen.de/international-pages
Faculty 09: www.uni-giessen.de/faculties/f09

All information, given in this brochure is based on the currently effective special study regulations for this course of study. Changes to the special study regulations are announced on the University’s website in the “MUG” (Mitteilungen der Universität): (www.uni-giessen.de/mug/7)

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1. Institutions and Contacts

These Master’s programmes are offered by
JLU Faculty 09 - Agricultural Sciences, Nutritional Sciences and Environmental Management

1. Course Specific Academic Counselling (Studienfachberatung)

Agrobiotechnology
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Prof. Dr. Martin Petrick
Department of Agricultural Policy and Market Research
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Office hours: by appointment
martin.petrick@agrar.uni-giessen.de

2. Section International Students - Student Counselling Office

International Office and Registrar’s Office
Goethestr. 58, 35390 Giessen
Phone +49 (0) 641 99 12143
Office hours:
Monday, Wednesday, Friday 10:00 am – 12:00 pm
studium-international@uni-giessen.de
www.uni-giessen.de/international-pages

3. Board of Examiners / Examination Office (Prüfungsausschuss)

Examination Office, Bismarckstr. 24, 35390 Giessen
Phone +49 (0) 641 9937011, Fax +49 (0) 641 99-39019
pruefungsamt@fb09.uni-giessen.de

Office hours:
Tuesday and Thursday 10:00 am – 1:00 pm

Prof. Dr. Matthias Frisch
Board of Examiners, Chairman
Office hours: by appointment

4. Dean’s Office, Faculty 09 (Dekanats des Fachbereichs 09)
Bismarckstr. 24, 35390 Giessen

Dean: Prof. Dr. Klaus Eder
Vice Dean: Prof. Dr. Lutz Breuer
Study Dean: Prof. Dr. Matthias Frisch

Scientific Assistant: Dr. Claus Mückschel,
Phone +49 (0) 641 9937002
Course Coordinator: Nadine Ackermann,
Phone +49 (0) 641 9937014
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Thursday 10:00 am – 1:00 pm
Mrs. Ohm, Phone +49 (0) 641 9937001 and
Mrs. Zeisset, Phone +49 (0) 641 9939001
www.uni-giessen.de/faculties/f09
2. Field of Studies

2.1. Agrobiotechnology

Biotechnology has produced a new and leading technology that is helping determine the direction of global economic developments and international competitiveness. Since the early 1990s, there has been rapid progress in the sector of biotechnology, caused mainly by the results of genome research and, more recently, by rapid developments in cell biology (cell factories) and technological progresses. It can be assumed that growth in these areas is predicted to accelerate further. It is crucial for our future that the energies resulting from the knowledge explosion taking place in these fundamental domains be harnessed to the development of technologies useful to society at large. Starting in the winter semester 2005/2006, Justus Liebig University Giessen set up a new international Master’s degree program in Agrobiotechnology to cope with the burgeoning worldwide importance of biotechnology, not least in university education, for plant and animal production, and as well as nutritional sciences. Justus Liebig University was the first German university to take up the global challenge of inaugurating an internationally oriented degree course designed to provide the highest level of academic training for entry into the biotechnology and agriculture sector of the world economy. The overall objective of Giessen’s Master’s program in Agrobiotechnology is to equip scientists in both the traditional “pure” disciplines and in the domains of agriculture and nutrition for coping with managerial tasks at the cutting edge of the agricultural and food sector. One important educational goal is to teach students practical methods and expertise on a broad scientific basis. Of critical importance in fulfilling this aim are the following factors:

- research-oriented study
- the solving of problems in current farming practice
- the acquisition of international expertise and the fostering of creativity and a willingness to innovate
- alertness to the need for identifying and assessing the effects of technological processes.

2.2. Insect Biotechnology and Bioresources

With more than a million scientifically described species, insects form the largest group of organisms on earth. As an emerging interdisciplinary research area, insect biotechnology explores insects as well as insect-associated micro- and macro-organisms as newly emerging bioresources in the field of medicine, plant protection, pharmacy, industrial food and biotechnology. 

During your studies you will work intensively on the systematics and ecology of insects, acquire specific scientific and technical knowledge, learn about various methodical research approaches in order to investigate insects and their associated organisms as a new resource for food and luxury food, enzymes and bioactive natural products and finally to refine fully-developed products.

The study programme stands out with its strong emphasis on research and practical relevance and as well as with a high level of interdisciplinary approaches and projects.

Insect Biotechnology and Bioresources has become one of the outstanding research areas in life sciences at JLU not least because of the establishment of the LOEWE centre for insect biotechnology and bioresources and of a Fraunhofer institute in Giessen. This focus is strengthened and expanded by the international Master’s programme Insect Biotechnology and Bioresources.

2.3. Transition Management

Transition countries are middle-income countries experiencing radical economic and political change in a short time. Their societies are changing from one political or economic system to an-
other, such as from a state-led command system to a market economy or from autocracy to democracy, or undergo severe economic crises. The group of transition countries includes post-socialist and emerging economies in Europe, Asia, Africa and Latin America.

The Master's Programme Transition Management is an interdisciplinary study programme established by five faculties of Giessen University, headed by the Faculty of Agricultural Sciences, Nutritional Sciences and Environmental Management (Faculty 09). The Center for International Development and Environmental Research (ZEU) at Giessen University contributes topical input and teaching modules specifically tailored to the needs of the programme.

Justus Liebig University Giessen is the first university in Germany addressing the specific problems of transition countries in an international, interdisciplinary study course combining both theory and practical experience.

The Master's Programme enables students:

- to understand the complex processes and specific demands of transition countries,
- to comprehend the various areas of transition, including economic, legal, political, social, agricultural, and environmental aspects and their interlinkages,
- to gain knowledge as well as practical competences in methods and strategies to enhance the transition process,
- to train their soft skills by learning and working in international and interdisciplinary teams.

By the end of the course students will be skilled in devising integrative approaches to transition issues applicable to the private and public sector.

The Master’s Programme appeals to students who are interested in both learning about the complex problems of transition countries as well as developing approaches to overcome these problems by linking economic, political, and environmental aspects. A background in related academic disciplines is required. The central target group for the study programme are primarily graduates from transition countries who want to deepen and broaden their knowledge.

3. Faculty 09:
Agricultural Sciences, Nutritional Sciences and Environmental Management

Securing the global supply of food and establishing a healthy diet with consideration of global environmental factors are the focus of research and teaching within all the departments of Faculty 09. The principle of sustainability as environmental compatibility, efficiency, and social compatibility, must be upheld in all research endeavours along with due consideration of animal welfare and the interests of consumers. The principle of sustainability not only applies to the production of animal products but also of vegetable produce. As the worldwide arable land area is limited, a preferably high increase in harvest yield has to be reached by enhancing the productivity of agricultural crop per square meter. The rapid worldwide change of climate conditions and its consequences for farming also necessitate a quick adaptation of plants and the whole agricultural sector toward the environmentally relevant demands of the future. An increase of stress resistance in the face of biotic and abiotic stress indicators is a big challenge for plant breeding. Therefore, research on the effects of pests and the influence of beneficial organisms as well as on the effects of the interaction of symbionts on plant and environment is essential. Prospective stable crop yields while conserving natural resources needs to be ensured by sustainable concepts including enhanced nutrient use efficiency and improved strategies to control plant pests and pathogens. Also abiotic factors such as enhanced tolerances of plants to water, salt and drought stress are increasingly important in the context of plant health and plant yield influenced by changing environmental conditions caused by climate change.
The scientific, technical and economic implications of a whole raft of questions and problems, ranging from agricultural production to industrial food processing, as well as waste disposal and recycling, must be dealt with.

The broad disciplinary base of Faculty 09, encompassing scientific, social and economic matters, serves to facilitate links with areas of mutual interest in a variety of other university faculties, creating plenty of opportunity for interdisciplinary projects.

Some 37 professors teach and conduct research in the following 14 departments:

- Department of Agricultural Policy and Market Research
- Department of Applied Microbiology
- Department of Business Administration of the Agricultural and Food Sector
- Department of Soil Science and Soil Conservation
- Department of Nutritional Sciences
- Department of Insect Biotechnology
- Department of Landscape Ecology and Resources Management
- Department of Plant Nutrition
- Department of Agronomy and Plant Breeding I
- Department of Agronomy and Plant Breeding II
- Department of Phytopathology
- Department of Animal Nutrition and Nutritional Physiology
- Department of Animal Breeding and Pet Genetics
- Department of Household Science

Approximately 3500 students are enrolled at Faculty 09.

4. Studying in Giessen – Justus Liebig University

Giessen is located almost in the centre of Germany, about 70 km north of Frankfurt am Main. Nestling between the low mountain ranges of the Vogelsberg, Taunus and Westerwald, the city is situated in the picturesque setting of the Lahn river valley. The broad spectrum of cultural activities on offer and the attractive environs make Giessen a focus for leisure-time and sporting activities.

In this city of young people, the cost of living is comparatively low, and the transport connections in all directions are excellent (Autobahn, bus and train networks, and close proximity to Frankfurt International Airport). Some 28,800 students are enrolled at Justus Liebig University and further students are studying at the Technische Hochschule Mittelhessen - University of Applied Science, resulting in the highest density of students in the whole of Germany, complement Giessen’s total population of about 85,000 inhabitants. The student presence makes a considerable contribution to shaping the personality and flair of the townscape, its cultural activities, and its nightlife with its lively student pub-scene and multicultural cuisine.

The second-largest university in the state of Hesse and the largest employer in the region, Justus Liebig University, Giessen (JLU), founded in 1607, is an institution that is both rich in tradition and forward-looking in its curricula. It offers a broad spectrum of subjects – law; economics, commerce and management studies; the humanities; the natural and social sciences; agricultural and nutritional sciences; medicine, dentistry and veterinary science. The University has eleven faculties and five scientific centres and offers a comprehensive range of degree courses within the humanities (languages and literature, theatre studies and art, teacher training, history, sociology, political science, psychology, sport). The structure of the University’s science- and technology-oriented faculties, departments and institutes affords unique opportunities for inter- and cross-disciplinary study and research.
5. **Structure of the Degree Course**

The Master’s degree programme is designed to be completed within 4 semesters (2 years). The programme starts every year in the winter semester (October). All courses are taught in English.

5.1. **Courses**

The courses are offered in the form of modules. The modules themselves are discrete study units which can be combined in building-block fashion. This allows for an individually tailored but nonetheless rounded curriculum.

Each module covers 4 semester hours of instruction per week (SWS; 1 semester hour = 45 minutes) and concludes with an examination. 6 credit points are awarded for each module passed. The credit points assigned to each module indicate the workload involved, as set out in the European Credit Transfer System (ECTS). The workload for a module comprising 4 SWS is set at an average of 180 hours (60 hours of lectures and tutorials, 120 hours of independent study).

Various forms and combinations of teaching and study methods may be included in a module (e.g. lecture, exercise, laboratory practical, seminar, excursion, colloquium, project work, group assignment). Some modules, especially laboratory courses, can be offered as block seminars (1-2 weeks) which take place during the semester break.

5.2. **Module Examinations**

At the end of the lecture period, the student sits an examination in each of the modules that he/she was enrolled in. Therefore, continuous course preparation and revision is required throughout the semester. Possible forms of examination include: written examinations, oral examinations, oral presentations (with or without a written summary) and/or seminar papers or comparable modes of examination.

Each module examination requires a timely online registration via the electronic examination management system FlexNow (https://flexnow.uni-giessen.de/). The deadline for registration is made public by the Board of Examiners and announced online on the faculty’s webpage for each individual semester.

There are three periods for examinations concluding a module:

a) First examination period: generally in the last week of the lecture period and in the first week of the lecture-free period of a semester

b) Second examination period: generally in the week prior to commencement of the lecture period of the following semester

c) Third examination period (retake examinations): generally in the sixth week after lectures have commenced in the following semester

Students may sit examinations concluding a module in the first or second examination period. Retest tests are possible in the second or third examination period. Failed attempts have to be repeated in the next possible examination period. Registration for the exams via FlexNow is only required for the first attempt in each module (first or second examination period).

Examination periods are determined annually by the Board of Examiners and published on the University webpage of the examination office (www.uni-giessen.de/faculties/f09/studies/examinations-and-doctorate/deadlines).

All exams can be repeated twice.
5.3. Structure of the Master’s Degree Course

The Master’s degree courses consist of 16 modules (120 CP):

<table>
<thead>
<tr>
<th>Competence</th>
<th>Modules</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Core competence</td>
<td>8</td>
<td>48</td>
</tr>
<tr>
<td>Profile competence</td>
<td>8</td>
<td>48</td>
</tr>
<tr>
<td>Master’s thesis</td>
<td>1</td>
<td>24</td>
</tr>
<tr>
<td>Total</td>
<td>16</td>
<td>120</td>
</tr>
</tbody>
</table>

Students have to create a profile module plan with their choice of profile modules via the electronic registration system FlexNow. The profile module plan is created during the first semester of study and lists the profile modules and their respective allocation by semester. In order to set up a profile module plan the student can, if desired, arrange a consultation appointment with the degree programme coordinator. The profile module plan may be changed by the student. Modules with completed examinations listed in the profile module plan and modules which are registered for the exam without the possibility to withdraw after the deadline cannot be removed from the profile module plan.

The course of studies is regarded as successfully completed if all required modules have been passed. The final grade is calculated from the average grades of the individual modules with the grade of the Master’s thesis being weighted by a factor of four.

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**Master’s Degree Course**

<table>
<thead>
<tr>
<th>Semester</th>
<th>Modules</th>
<th>Core Modules (Mandatory Modules)</th>
<th>Profile Module (Optional Modules)</th>
<th>Master’s thesis</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
<td><img src="image1" alt="Core Modules (Mandatory Modules)" /></td>
<td><img src="image2" alt="Profile Module (Optional Modules)" /></td>
<td><img src="image3" alt="Master’s thesis" /></td>
</tr>
<tr>
<td>2.</td>
<td></td>
<td><img src="image1" alt="Core Modules (Mandatory Modules)" /></td>
<td><img src="image2" alt="Profile Module (Optional Modules)" /></td>
<td><img src="image3" alt="Master’s thesis" /></td>
</tr>
<tr>
<td>3.</td>
<td></td>
<td><img src="image1" alt="Core Modules (Mandatory Modules)" /></td>
<td><img src="image2" alt="Profile Module (Optional Modules)" /></td>
<td><img src="image3" alt="Master’s thesis" /></td>
</tr>
<tr>
<td>4.</td>
<td><img src="image1" alt="Core Modules (Mandatory Modules)" /></td>
<td><img src="image2" alt="Profile Module (Optional Modules)" /></td>
<td><img src="image3" alt="Master’s thesis" /></td>
<td></td>
</tr>
</tbody>
</table>

Degree awarded: Master of Science (M.Sc.)

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Core Modules (Mandatory Courses)

The core modules must be attended by all students; completion of a given module involves successful performance in a module examination.

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**Agrobiotechnology**

1. **Semester** (3 Core Modules + 2 Profile Modules)
   - MK 002 Biostatistics and Experimental Design
   - MK 015 Plant Protection and Bioengineering
   - MK 057 Molecular Phytopathology

2. **Semester** (4 Core Module + 1 Profile Modules)
   - MK 011 Special Biochemistry II
   - MK 016 Biotechnology and Genomics
   - MK 018 Microbial Food Biotechnology
   - MK 007 Animal Nutrition and Feed Science
### Insect Biotechnology and Bioresources

<table>
<thead>
<tr>
<th>Semester</th>
<th>(4 Core Modules + 1 Profile Module)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>MK 002  Biostatistics and Experimental Design</td>
</tr>
<tr>
<td></td>
<td>MK 087  Natural Product Chemistry</td>
</tr>
<tr>
<td></td>
<td>MK 088  Entomology I</td>
</tr>
<tr>
<td></td>
<td>MK 089  Insect Biotechnology and Integrated Pest Management</td>
</tr>
<tr>
<td>2.</td>
<td>MK 090  Bioresources for Natural Product Discovery</td>
</tr>
<tr>
<td></td>
<td>MK 091  Entomology II</td>
</tr>
<tr>
<td></td>
<td>MK 092  Food Technology</td>
</tr>
<tr>
<td></td>
<td>MK 093  Bioprocess Engineering I</td>
</tr>
</tbody>
</table>

### Transition Management

<table>
<thead>
<tr>
<th>Semester</th>
<th>(3 Core Modules + 2 Profile Modules)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>MK 067  Theory and Practice of Economic Development</td>
</tr>
<tr>
<td></td>
<td>MK 068  Empirical Research Methods</td>
</tr>
<tr>
<td></td>
<td>MK 101  Law in Transition</td>
</tr>
<tr>
<td></td>
<td>MK 102  Global Food Markets</td>
</tr>
<tr>
<td>2.</td>
<td>MK 100  Transition in Practice</td>
</tr>
<tr>
<td></td>
<td>MK 070  Economics, Organization and Management in Agriculture and Food Industries</td>
</tr>
<tr>
<td></td>
<td>02-Wiw: NF/MVWL-1 Transition and Integration Economics</td>
</tr>
<tr>
<td></td>
<td>MK 103  Power and Democracy</td>
</tr>
</tbody>
</table>

### Other

- **MK** = **Master Kernmodul** (Master Core Module)
- **MP** = **Master Profilmodul** (Master Profile Module)
### Profile Modules (Optional Courses)

The student must choose 8, in Agrobiotechnology 6 further modules from among the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>MP 007</td>
<td>International Food Security</td>
</tr>
<tr>
<td>MP 020</td>
<td>Plant Breeding: Special Topics of Resistance and Quality Breeding</td>
</tr>
<tr>
<td>MP 029</td>
<td>Plant-Microbe Interactions</td>
</tr>
<tr>
<td>MP 044</td>
<td>Economy of Rural Institutions</td>
</tr>
<tr>
<td>MP 075</td>
<td>Host-Intestine-Microbe Interactions for Nutrition and Health</td>
</tr>
<tr>
<td>MP 076</td>
<td>Laboratory Course: Tissue Culturing and Genetic Transformation</td>
</tr>
<tr>
<td>MP 077</td>
<td>Laboratory Course: Methods in Molecular Phytopathology</td>
</tr>
<tr>
<td>MP 087</td>
<td>Global Nutrition and Agriculture</td>
</tr>
<tr>
<td>MP 090</td>
<td>Biotechnology for pest control</td>
</tr>
<tr>
<td>MP 097</td>
<td>Microbial Diagnostics</td>
</tr>
<tr>
<td>MP 098</td>
<td>Molecular Plant Breeding</td>
</tr>
<tr>
<td>MP 100</td>
<td>Bioinformatics</td>
</tr>
<tr>
<td>MP 126</td>
<td>Selection for disease resistance in farm animals</td>
</tr>
<tr>
<td>MP 145</td>
<td>Methods of Regional Analysis and Planning</td>
</tr>
<tr>
<td>MP 149</td>
<td>Molecular Techniques</td>
</tr>
<tr>
<td>MP 150</td>
<td>Milestones of Insect Biotechnology &amp; Bioresources</td>
</tr>
<tr>
<td>MP 151</td>
<td>Antibiotics: Present, Past and Future</td>
</tr>
<tr>
<td>MP 152</td>
<td>Trends and Advances in Natural Product Research</td>
</tr>
<tr>
<td>MP 153</td>
<td>Instrumental, Biochemical and Trace Analytical Methods in Food Analysis</td>
</tr>
<tr>
<td>MP 154</td>
<td>Method Development in Food Analysis and Food Biotechnology</td>
</tr>
<tr>
<td>MP 156</td>
<td>Laboratory Course I</td>
</tr>
<tr>
<td>MP 157</td>
<td>Laboratory Course II</td>
</tr>
<tr>
<td>MP 158</td>
<td>Insects for Food and Feed Production Systems</td>
</tr>
<tr>
<td>MP 163</td>
<td>Python for Environmental Scientists</td>
</tr>
<tr>
<td>MP 164</td>
<td>Geomatics for Development</td>
</tr>
<tr>
<td>MP 165</td>
<td>Land Potential Evaluation Systems, Strategies and Tools</td>
</tr>
<tr>
<td>MP 166</td>
<td>Mapping and Monitoring Landscape</td>
</tr>
<tr>
<td>MP 168</td>
<td>GIS for Socio-Economic Analysis</td>
</tr>
<tr>
<td>MP 169</td>
<td>Humanitarian Disasters and its Impact on Transition Management</td>
</tr>
<tr>
<td>MP 170</td>
<td>Capacity Development – Organisational and Institutional Strengthening</td>
</tr>
<tr>
<td>MP 175</td>
<td>Effect-directed Analysis by HPTLC-Assay-HRMS</td>
</tr>
<tr>
<td>MP 176</td>
<td>Food Systems</td>
</tr>
<tr>
<td>MP 178</td>
<td>Empirical Research Methods for Natural Resource Analysis</td>
</tr>
<tr>
<td>MP 179</td>
<td>Natural Resources and Ecosystem Services</td>
</tr>
<tr>
<td>MP 181</td>
<td>Gender and Development</td>
</tr>
<tr>
<td>MP 185</td>
<td>Renewable Energy Transition</td>
</tr>
<tr>
<td>MP 186</td>
<td>Business Administration for Scientists</td>
</tr>
<tr>
<td>MP 187</td>
<td>Climate Change and Development</td>
</tr>
<tr>
<td>MP 189</td>
<td>Clinical Nutrition in Gastrointestinal Disease</td>
</tr>
<tr>
<td>MP 190</td>
<td>Clinical Nutrition in Paediatric Disease</td>
</tr>
<tr>
<td>MP 199</td>
<td>Farming Systems in the Tropics</td>
</tr>
<tr>
<td>MP 208</td>
<td>Concepts of Ecological Economics</td>
</tr>
<tr>
<td>MP 209</td>
<td>Field Work in Agricultural and Environmental Economics</td>
</tr>
<tr>
<td>THM 01</td>
<td>Pharmaceutical Basics</td>
</tr>
<tr>
<td>THM 02</td>
<td>Quality Management</td>
</tr>
<tr>
<td>THM 03</td>
<td>Bioprocess Engineering II – Advanced</td>
</tr>
<tr>
<td>THM 04</td>
<td>Selected Chapters of Pharmaceutical &amp; Industrial Biotechnology</td>
</tr>
</tbody>
</table>
Internship

The international Master's degree programme Agrobiotechnology contains a compulsory (industrial) internship. The other international study programmes offer a voluntary internship that enables our students to gain an initial insight into the various areas of professional activity in which they hope to pursue in the future. The internship also enables them to collect hands-on professional experience and establish contacts with potential employers. The internship can be conducted in various areas such as the chemical industry, agricultural corporations, the foodstuffs industry, government agencies or NGOs. The variety of contacts that our faculty possesses allow us to provide expert support to students seeking an internship. More information can be found at: www.uni-giessen.de/f09/internship

Master’s Thesis

Purpose of the Master’s Thesis
The purpose of the Master’s thesis is to demonstrate that a student can, within a maximum period of six months, show that he/she is capable of independently solving a problem from the relevant field of study by the application of scientific methods.

Form of the Master’s Thesis
The Master’s thesis consists of a written part (Master’s Thesis) and an oral presentation. The thesis shall be written in English.
The presentation takes place within the framework of a colloquium and must be at least 30 minutes and shall not exceed 45 minutes. The prerequisite for admittance to the Master’s thesis is the successful completion of 6 core modules.

Grading of the Master’s Thesis
The final grade of the Master’s thesis is made up of the average calculated from the grade awarded to the thesis and the grade resulting from the oral presentation; the thesis grade being weighted by a factor of three, while oral presentation is counted by the factor of one. The final grade of the Master’s thesis is an essential part of the final grade of the Master programme and is worth 24 ECT credits.

6. Job Perspectives

6.1. Job Perspectives for Graduates of Agrobiotechnology
Despite the persistently high unemployment rates existing in some parts of Europe, this high-tech exporting region still does not have enough qualified candidates to meet the new challenges in science, technology and social policy. There is a clear need for people with the well-founded knowledge required to implement technological developments responsibly and to move society forward. The new international degree program Agrobiotechnology has been designed specifically to meet such needs.

Due to its compatibility with other international degrees, the degree of Master of Science in Agrobiotechnology offers an ideal qualification for working abroad. The chief emphasis of the University is on international cooperation with Eastern Europe, India, China and the USA.

The industrial internship that forms part of the Agrobiotechnology degree provides students with the opportunity of coming into direct contact with potential employers, thereby opening the way towards a successful professional career in such areas as the chemical, agriculture, and food industries, as well as in public sector jobs in municipal administration and the like.
The job opportunities open to graduates are optimised by the emphasis on internationalization within the degree course, which offers a curriculum taught in English, and helps provide cooperative access to international biotechnology companies and the options of a period of study abroad. Those who have planned their degree wisely will be able to present a profile characterized by broad knowledge, analytical capability, and – most important of all – a high degree of flexibility. Computer and online skills, as well as a good working knowledge of foreign languages and experience gained from time spent abroad are all designed to optimize professional qualifications. Thanks to the higher-than-average pan-European growth in the domain of biotechnology, graduates have an excellent chance of obtaining a public sector job as an expert on environmental questions, or as a consultant in the research and development division of a commercial firm. A broad spectrum of jobs is open to graduates interested in research, product development and quality management within such areas as chemistry, pharmaceuticals, foodstuffs, and livestock feed, as well as in animal and plant breeding. Communicative and outgoing graduates will find their dream job as a project manager in engineering offices and consulting companies. Further job perspectives can be found in the research and teaching facilities of universities and international organisations, including programs in international development cooperation.

6.2. Job Perspectives for Graduates of Insect Biotechnology and Bioresources

Graduates of Insect Biotechnology and Bioresources are trained to work on all levels of agricultural production and pest control, medical biotechnology, bioinformatics, food production, business management and marketing.

A great number of employment opportunities are offered in the agricultural industry (seeds, fertilizer, pesticides), the areas of biomedicine, pharmacy, food biotechnology and the healthcare sector. Furthermore, producers and professional organisations, research institutes, consultancies, development services and international organisations are potential employers.

Graduates with a Master’s degree take on management positions in national and international authorities and associations. Additional vocational fields of activity are quality management, further education, consulting and research, public relations or marketing.

6.3. Job Perspectives for Graduates of Transition Management

Graduates of this Master’s Programme work as project managers and consultants in private and public organisations involved in transition and development cooperation at national, supranational and international levels. They find employment as managers and specialists in private enterprises active in industry, the agricultural- and nutritional sector, trade, banks, and financial services. The graduation also allows entering a career as (junior) scientist in universities and non-university research institutions or as chief executive or public officer in national public administrations, ministries, EU institutions as well as in non-governmental organisations in the non-profit sector, think-tanks, or representations of interest groups.
7. Application

The Master’s courses can only be commenced in the winter semester (October). The admission prerequisite for a Master’s degree course is a Bachelor’s degree with a relevant subject profile. The decision on whether or not the prior course of studies matches the required profile is taken by the faculty Board of Examiners (see Fehler! Textmarke nicht definiert. above) when the application has reached the faculty.

For detailed online information on the application process, consult: www.uni-giessen.de/international-pages/study/application/ug

Foreign applicants outside the European Union who do not have a German ‘Abitur’ (university entrance certificate) submit their application to JLU Giessen via uni-assist. They will check your application to make sure it is complete and correct and then forward it to JLU Giessen. Detailed information on how to apply can be found on their website: www.uni-assist.de/en/

Prerequisite for admission to the Master’s programme is also a proof of sufficient language proficiency in English. This may be evidenced by

a) either: TOEFL test iBT (internet-based test) with at least 80 points, or IELTS test with a minimum grade of 6 in the academic test;
b) or: proof of university entrance qualification awarded by one of the following countries: Australia, Ireland, Canada, Aotearoa/New Zealand, the USA, the UK, South Africa.
c) or: proof of completion of an English-language Bachelor’s degree course.
d) or: UNIcertII

8. Commencement of Studies

8.1. Commencement of the Semester/Lectures

After enrolment you are officially registered as a student at the University from the 1st of October. Your student ID card can be used as a travel concession ticket for the Rhein-Main Public Transport Network (RMV) as well as Nordhessischen Public Transport (NVV) from 1 September onwards (for information on the ‘semester ticket’ or Consolidated Fee, see under AStA (Student Union Committee) www.uni-giessen.de/organization/students2019-self-administration/students2019-union-asta).

In the winter semester, lectures generally commence mid-October and end mid-February. In the summer semester they generally begin mid-April and end mid-July (exact dates can be found under: www.uni-giessen.de/international-pages/termdates).

8.2. Accommodation

There are numerous affordable rooms on offer in flat-sharing communities in the public residential market. Please note: enrolment at Justus Liebig University does not include a room reservation. All students have to organize their accommodation on their own.

Information on finding a flat as well as links to the classifieds and the housing market can be found at: www.uni-giessen.de/international-pages/study/around-gi/accommodation/where-to-live-in-giessen

However, it may be difficult to organise a private accommodation from your home country. So if you are looking for some private room in a shared apartment, it should be noted that it might take some time to find something suitable. You would have to sleep in a hotel or a hostel until then.
The student welfare service (Studentenwerk Giessen) offers a wide range of types of accommodation, e.g. single rooms, double apartments, shared apartments etc. at various locations. There is a long waiting list (2-4 months!) for an accommodation via the Giessen student welfare service, so it is recommended that rooms be applied for as soon as possible.

Information on our halls of residence can be found on the homepage of the Studentenwerk Giessen at: [www.studentenwerk-giessen.de/International/English_Version/](http://www.studentenwerk-giessen.de/International/English_Version/)

### 8.3. Orientation Days for Master Students

Some Master’s students are faced with a new university and possibly moving to a new city or even a foreign country when commencing their graduate degree. The orientation days (Master StET) support Master’s students who are new to Giessen and give them a smooth start into the new course of studies before the lectures begin.

Master’s students from higher semesters function as mentors during the orientation days who will show you around the campus and give insight into what it is like to study at JLU Giessen. You are going to be introduced to all of the important university services, like the central examination administration system (FlexNow) and the university’s e-learning/teaching platform (Stud.IP). Furthermore, you will learn how to sign up for classes and many other things in order to have a successful start.

All Master’s students will gain a deep insight into the order of study as well as the modules and receive support and guidance in creating a timetable. It is a great opportunity to ask questions about different modules and also talk about subject-related topics. The exact dates and more detailed information can be found at: [www.uni-giessen.de/f09/start](http://www.uni-giessen.de/f09/start)

### 9. List of Abbreviations

- AStA: Student Union Committee
- FB: Faculty
- JLU: Justus Liebig University, Giessen
- M.Sc.: Master of Science
- MK: Master Core Module
- MP: Master Profile Module
- SWS: Hours per Week per Semester

### 10. Examination Regulations

- German language version of the examination regulations: [www.uni-giessen.de/mug/7/findex36.html/7_36_09_1_AOeU](http://www.uni-giessen.de/mug/7/findex36.html/7_36_09_1_AOeU)

(The English translation serves solely for purposes of information. The German language version of the examination regulations is the legally binding version.)