

**Sechste Ordnung zur Änderung der Prüfungs- und Studienordnung für den konsekutiven Master-Studiengang „Sustainable International Agriculture“ der Universität Kassel und der Georg-August-Universität Göttingen vom 24.10.2018.**

Die Prüfungs- und Studienordnung für den konsekutiven Master-Studiengang „Sustainable International Agriculture“ der Universität Kassel und der Georg-August-Universität Göttingen vom 21. Oktober 2011 (MittBl. 1/2012, S. 26), zuletzt geändert am 25.10.2017 (MittBl. 13/2018, S. 131), wird wie folgt geändert:

**Artikel 1 Änderungen**

1. Die Anlage 1 wird wie folgt neu gefasst:

**Anlage 1: Modulübersicht**

Es müssen insgesamt wenigstens 120 Anrechnungspunkte nach Maßgabe der nachfolgenden Bestimmungen erworben werden.

**a) Studienschwerpunkte**

Es muss ein Studienschwerpunkt im Umfang von insgesamt wenigstens 90 C erfolgreich absolviert werden.

**aa) International Agribusiness and Rural Development Economics**

**i) Pflichtmodule**

Es müssen folgende vier Pflichtmodule im Umfang von insgesamt 24 C erfolgreich absolviert werden:

M.Agr.0086: World agricultural markets and trade (6 C, 6 SWS).

M.SIA.E11: Socioeconomics of Rural Development and Food Security (6 C, 4 SWS)

M.SIA.I12: Sustainable International Agriculture: basic principles and approaches (6 C, 4 SWS)

M.WIWI-QMW.0004: Econometrics I (6 C, 4 SWS)

**ii) Wahlpflichtmodule**

Aus folgenden Modulen müssen fünf Wahlpflichtmodule (davon mindestens ein Modul zur Schulung des methodischen Arbeitens mit einem Code M) im Umfang von insgesamt 30 C erfolgreich absolviert werden:

M.Agr.0124: Environmental economics and policy (6 C, 4 SWS)

M.Agr.0148: Policy analysis of international agri-environmental Schemes

M.SIA.E05M: Marketing research (6 C, 4 SWS)

M.SIA.E12M: Quantitative Research Methods in Rural Development Economics (6 C, 4 SWS)

M.SIA.E13M: Microeconomic Theory and Quantitative Methods of Agricultural Production (6 C, 4 SWS)

M.SIA.E14: Evaluation of rural development projects and policies (6 C, 4 SWS)

M.SIA.E18: Organization of Food Supply Chains (6 C, 4 SWS)

M.SIA.E21: Rural Sociology (6 C, 4 SWS)

M.SIA.E24: Topics in rural development economics I (6 C, 4 SWS)

M.SIA.E31: Strategic management (6 C, 4 SWS)

M.SIA.E33: Responsible and sustainable food business in global contexts (6 C, 4 SWS)

M.SIA.E34: Economic valuation of ecosystem services in developing countries (6 C, 4 SWS)

M.SIA.E36: Institutions and the food system (6 C, 4 SWS)

M.SIA.E37: Agricultural policy analysis (6 C, 4 SWS)

M.SIA.E38: Scientific writing in Agricultural Economics (6 C, 4 SWS)

M.SIA.I1x: Participatory research methods for sustainability (6 C, 4 SWS)

M.WIWI-VWL.0008: Development Economics I: Macro Issues in Economic Development (6 C, 4 SWS)

**iii) Wahlmodule**

Aus folgenden Modulen müssen sechs Wahlmodule im Umfang von insgesamt 36 C erfolgreich absolviert werden. Es können auch die bislang nicht gewählten Wahlpflichtmodule des Studienschwerpunkts gewählt werden:

- M.Agr.0106 China economic development: from an agricultural economy to an emerging economy (6 C, 4 SWS)
- M.Agr. 0118: Applied Microeconomics (6 C, 4 SWS)
- M.Agr 0151 Data Analysis with R in agricultural economics (6 C, 4 SWS)
- M.SIA.A01: Organic livestock farming under temperate conditions (6 C, 4 SWS)
- M.SIA.A05: Aquaculture in the tropics and subtropics (6 C, 4 SWS)
- M.SIA.A06: Global aquaculture production, markets and challenges (6 C, 4 SWS)
- M.SIA.A07: Unconventional livestock and wildlife-management, utilization and conservation (6 C, 4 SWS)
- M.SIA.A08: Socio-ecology in livestock production systems (6 C, 4 SWS)
- M.SIA.A11: Tropical animal husbandry systems (6 C, 4 SWS)
- M.SIA.A12M: Multidisciplinary research in tropical production systems (6 C, 4 SWS)
- M.SIA.E02: Agricultural price theory (6 C, 4 SWS)
- M.SIA.E06: International markets and marketing for organic products (6 C, 4 SWS)
- M.SIA.E17M: Management and management accounting (6 C, 4 SWS)
- M.SIA.E19: Market integration and price transmission I (6 C, 4 SWS)
- M.SIA.E35: Institutional ecological economics (6 C, 4 SWS)
- M.SIA.Exx: Critical and Collective Perspectives on the Global Food System
- M.SIA.Exx: Microfinance for the Rural Poor: A Business Class (6 C, 4 SWS)
- M.SIA.I02: Management of (sub-)tropical landuse systems (6 C)
- M.SIA.I03: Food quality and organic food processing (6 C, 4 SWS)
- M.SIA.I07: International land use systems research - an interdisciplinary study tour (6 C, 8,5 SWS)
- M.SIA.I09: Sustainable diets (6 C, 6 SWS)
- M.SIA.I11M: Free Project (6 C)
- M.SIA.I14M: GIS and remote sensing in agriculture (6 C, 4 SWS)
- M.SIA.I15: Social-ecological analysis and management of agricultural landscapes (6 C, 4 SWS)
- M.SIA.I16 Landuse, ecosystems services and human well-being (6 C, 4 SWS)
- M.SIA.P05: Organic cropping systems under temperate and (sub)tropical conditions (6 C, 4 SWS)
- M.SIA.P21: Energetic use of agricultural crops and field forage production
- M.SIA.P22: Management of tropical plant production systems (6 C, 4 SWS)

**bb) International Organic Agriculture****i) Pflichtmodule**

Folgendes Brückenmodul M.SIA.P07 und folgende vier Module im Umfang von insgesamt 30 C müssen erfolgreich absolviert werden. Das Brückenmodul kann bei entsprechendem Vorstudium auf Antrag durch ein Wahlpflichtmodul ersetzt werden.

- M.SIA.A01: Organic livestock farming under temperate conditions (6 C, 4 SWS)
- M.SIA.I10M: Applied statistical modelling (6 C, 4 SWS)
- M.SIA.I12: Sustainable International Agriculture: basic principles and approaches (6 C, 4 SWS)
- M.SIA.P05: Organic cropping systems under temperate and (sub)tropical conditions (6 C, 4 SWS)
- M.SIA.P07: Soil and plant science (6 C, 4 SWS)

**ii) Wahlpflichtmodule**

Aus folgenden Modulen müssen vier Module im Umfang von insgesamt 24 C (davon mindestens ein Modul zur Schulung des methodischen Arbeitens mit einem Code M sowie ein ökonomisches Modul mit einem Code E) erfolgreich absolviert werden:

- M.Agr.0009: Biological Control and Biodiversity (6 C, 6 SWS)
- M.Agr.0056: Plant breeding methodology and genetic resources (6 C, 4 SWS)
- M.SIA.A10M: Livestock nutrition and feed evaluation under (sub)tropical conditions (6 C, 4 SWS)
- M.SIA.A12M: Multidisciplinary research in tropical production systems (6 C, 4 SWS)
- M.SIA.E05M: Marketing research (6 C, 4 SWS)
- M.SIA.E06: International markets and marketing for organic products (6 C, 4 SWS)
- M.SIA.E11: Socioeconomics of Rural Development and Food Security (6 C, 4 SWS)

M.SIA.E14: Evaluation of rural development projects and policies (6 C, 4 SWS)  
 M.SIA.E21: Rural Sociology (6 C, 4 SWS)  
 M.SIA.I03: Food quality and organic food processing (6 C, 4 SWS)  
 M.SIA.I06M: Exercise on the quality of tropical and subtropical products (6 C, 4 SWS)  
 M.SIA.I09: Sustainable diets (6 C, 6 SWS)  
 M.SIA.I14M: GIS and remote sensing in agriculture (6 C, 4 SWS)  
 M.SIA.I15: Social-ecological analysis and management of agricultural landscapes (6 C, 4 SWS)  
 M.SIA.I16 Landuse, ecosystems services and human well-being (6 C, 4 SWS)  
 M.SIA.I1x: Participatory research methods for sustainability (6 C, 4 SWS)  
 M.SIA.P01: Ecology and agroecosystems (6 C, 4 SWS)  
 M.SIA.P03: Ecological soil microbiology (6 C, 4 SWS)  
 M.SIA.P04: Plant nutrition in the tropics and subtropics (6 C, 4 SWS)  
 M.SIA.P06: Soil and water (6 C, 4 SWS)  
 M.SIA.P13: Agrobiodiversity and plant genetic resources in the tropics (6 C, 4 SWS)  
 M.SIA.P15M: Methods and advances in plant protection (6 C, 4 SWS)  
 M.SIA.P16M: Crop Modelling for Risk Management (6 C, 4 SWS)  
 M.SIA.P17M: Nutrient dynamics: long-term experiments and modelling (6 C, 4 SWS)  
 M.SIA.P20: Plant Nematology (6 C, 4 SWS)

### iii) Wahlmodule

Aus folgenden Modulen müssen sechs Module im Umfang von insgesamt 36 C erfolgreich absolviert werden. Es können auch die bislang nicht gewählten Wahlpflichtmodule des Studienschwerpunkts gewählt werden.:

M.Agr.0086: World agricultural markets and trade (6 C, 6 SWS)  
 M.Agr.0124: Environmental economics and policy (6 C, 4 SWS)  
 M.Agr.0127: Breeding schemes and programs in plant and animal breeding (6 C, 4 SWS)  
 M.Agr.0148: Policy analysis of international agri-environmental Schemes  
 M.Forst.1512: International forest policy and economics (6 C, 4 SWS)  
 M.Forst.1521: Ecopedology of the tropics and subtropics (6 C, 4 SWS)  
 M.Forst.1615: Forest growth and tree-based land use in the tropics (6 C, 4 SWS)  
 M.SIA.A02M: Epidemiology of international and tropical animal infectious diseases (6 C, 4 SWS)  
 M.SIA.A03M: International and tropical food microbiology and hygiene (6 C, 4 SWS)  
 M.SIA.A04: Livestock reproduction physiology (6 C, 4 SWS)  
 M.SIA.A05: Aquaculture in the tropics and subtropics (6 C, 4 SWS)  
 M.SIA.A06: Global aquaculture production, markets and challenges (6 C, 4 SWS)  
 M.SIA.A07: Unconventional livestock and wildlife-management, utilization and conservation (6 C, 4 SWS)  
 M.SIA.A08: Socio-ecology in livestock production systems (6 C, 4 SWS)  
 M.SIA.A11: Tropical animal husbandry systems (6 C, 4 SWS)  
 M.SIA.A13M: Livestock-based sustainable land use (6 C, 4 SWS)  
 M.SIA.E02: Agricultural price theory (6 C, 4 SWS)  
 M.SIA.E12M: Quantitative Research Methods in Rural Development Economics (6 C, 4 SWS)  
 M.SIA.E13M: Microeconomic Theory and Quantitative Methods of Agricultural Production (6 C, 4 SWS)  
 M.SIA.E17M: Management and management accounting (6 C, 4 SWS)  
 M.SIA.E18: Organization of Food Supply Chains (6 C, 4 SWS)  
 M.SIA.E24: Topics in Rural Development Economics I (6 C, 4 SWS)  
 M.SIA.E31: Strategic management (6 C, 4 SWS)  
 M.SIA.E33: Responsible and sustainable food business in global contexts (6 C, 4 SWS)  
 M.SIA.E34: Economic valuation of ecosystem services in developing countries (6 C, 4 SWS)  
 M.SIA.E35: Institutional ecological economics (6 C, 4 SWS)  
 M.SIA.E36: Institutions and the food system (6 C, 4 SWS)  
 M.SIA.E37: Agricultural policy analysis (6 C, 4 SWS)  
 M.SIA.Exx: Critical and Collective Perspectives in the Global Food System  
 M.SIA.I02: Management of (sub-)tropical landuse systems (6 C)  
 M.SIA.I06M: Exercise on the quality of tropical and subtropical products (6 C, 4 SWS)  
 M.SIA.I07: International land use systems research - an interdisciplinary study tour (6 C, 8,5 SWS)  
 M.SIA.I11M: Free Project (6 C)  
 M.SIA.P08: Pests and diseases of tropical crops (6 C, 6 SWS)  
 M.SIA.P10: Tropical agro-ecosystem functions (6 C, 4 SWS)  
 M.SIA.P19M: Experimental Techniques in Tropical Agronomy (6 C, 4 SWS)  
 M.SIA.P21: Energetic use of agricultural crops and field forage production (6 C, 4 SWS)

M.SIA.P22: Management of tropical plant production systems (6 C, 4 SWS)  
 M.SIA.P23M: Modern Plant Nutrition - Application of Molecular Methods in Plant Nutrition Research (6 C, 4 SWS)  
 M.WIWI-VWL.0008: Development Economics I: Macro Issues in Economic Development (6 C, 4 SWS)

### cc) Tropical Agricultural and Agroecosystems Sciences

#### i) Pflichtmodule

Folgendes Brückenmodul M.SIA.P07 und folgende vier Module im Umfang von insgesamt 30 C müssen erfolgreich absolviert werden. Das Brückenmodul kann bei entsprechendem Vorstudium auf Antrag durch ein Wahlpflichtmodul ersetzt werden.:

M.SIA.A11: Tropical animal husbandry systems (6 C, 4 SWS)  
 M.SIA.I10M: Applied statistical modelling (6 C, 4 SWS)  
 M.SIA.I12: Sustainable International Agriculture: basic principles and approaches (6 C, 4 SWS)  
 M.SIA.P07: Soil and plant science (6 C, 4 SWS)  
 M.SIA.P22: Management of tropical plant production systems (6 C, 4 SWS)

#### ii) Wahlpflichtmodule

Aus folgenden Modulen müssen vier Module im Umfang von insgesamt 24 C (davon mindestens ein Modul zur Schulung des methodischen Arbeitens mit einem Code M sowie ein ökonomisches Modul mit einem Code E) erfolgreich absolviert werden:

M.Agr.0056: Plant breeding methodology and genetic resources (6 C, 4 SWS)  
 M.Forst.1521: Ecopedology of the tropics and subtropics (6 C, 4 SWS)  
 M.SIA.A02M: Epidemiology of international and tropical animal infectious diseases (6 C, 4 SWS)  
 M.SIA.A03M: International and tropical food microbiology and hygiene (6 C, 4 SWS)  
 M.SIA.A04: Livestock reproduction physiology (6 C, 4 SWS)  
 M.SIA.A05: Aquaculture in the tropics and subtropics (6 C, 4 SWS)  
 M.SIA.A06: Global aquaculture production, markets and challenges (6 C, 4 SWS)  
 M.SIA.A10M: Livestock nutrition and feed evaluation under (sub)tropical conditions (6 C, 4 SWS)  
 M.SIA.A12M: Multidisciplinary research in tropical production systems (6 C, 4 SWS)  
 M.SIA.A13M: Livestock-based sustainable land use (6 C, 4 SWS)  
 M.SIA.E11: Socioeconomics of Rural Development and Food Security (6 C, 4 SWS)  
 M.SIA.I06M: Exercise on the quality of tropical and subtropical products (6 C, 4 SWS)  
 M.SIA.I14M: GIS and remote sensing in agriculture (6 C, 4 SWS)  
 M.SIA.I15: Social-ecological analysis and management of agricultural landscapes (6 C, 4 SWS)  
 M.SIA.I16 Landuse, ecosystems services and human well-being (6 C, 4 SWS)  
 M.SIA.I1x: Participatory research methods for sustainability (6 C, 4 SWS)  
 M.SIA.P01: Ecology and agroecosystems (6 C, 4 SWS)  
 M.SIA.P04: Plant nutrition in the tropics and subtropics (6 C, 4 SWS)  
 M.SIA.P05: Organic cropping systems under temperate and (sub)tropical conditions (6 C, 4 SWS)  
 M.SIA.P08: Pests and diseases of tropical crops (6 C, 6 SWS)  
 M.SIA.P10: Tropical agro-ecosystem functions (6 C, 4 SWS)  
 M.SIA.P13: Agrobiodiversity and plant genetic resources in the tropics (6 C, 4 SWS)  
 M.SIA.P15M: Methods and advances in plant protection (6 C, 4 SWS)  
 M.SIA.P16M: Crop Modelling for Risk Management (6 C, 4 SWS)  
 M.SIA.P17M: Nutrient dynamics: long-term experiments and modelling (6 C, 4 SWS)  
 M.SIA.P19M: Experimental Techniques in Tropical Agronomy (6 C, 4 SWS)

#### iii) Wahlmodule

Aus folgenden Modulen müssen sechs Module im Umfang von insgesamt 36 C erfolgreich absolviert werden. Es können auch die bislang nicht gewählten Wahlpflichtmodule des Studienschwerpunkts gewählt werden.:

M.Agr.0009: Biological control and biodiversity (6 C, 6 SWS)  
 M.Agr.0086: World agricultural markets and trade (6 C, 6 SWS)  
 M.Agr.0124: Environmental economics and policy (6 C, 4 SWS)  
 M.Agr.0127: Breeding schemes and programs in plant and animal breeding (6 C, 4 SWS)  
 M.Agr.0148: Policy analysis of international agri-environmental Schemes  
 M.Forst.1512: International forest policy and economics (6 C, 4 SWS)  
 M.Forst.1615: Forest growth and tree-based land use in the tropics (6 C, 4 SWS)

M.SIA.A01: Organic livestock farming under temperate conditions (6 C, 4 SWS)  
 M.SIA.A07: Unconventional livestock and wildlife-management, utilization and conservation (6 C, 4 SWS)  
 M.SIA.A08: Socio-ecology in livestock production systems (6 C, 4 SWS)  
 M.SIA.E02: Agricultural price theory (6 C, 4 SWS)  
 M.SIA.E05M: Marketing research (6 C, 4 SWS)  
 M.SIA.E06: International markets and marketing for organic products (6 C, 4 SWS)  
 M.SIA.E12M: Quantitative Research Methods in Rural Development Economics (6 C, 4 SWS)  
 M.SIA.E13M: Microeconomic Theory and Quantitative Methods of Agricultural Production (6 C, 4 SWS)  
 M.SIA.E14: Evaluation of rural development projects and policies (6 C, 4 SWS)  
 M.SIA.E17M: Management and management accounting (6 C, 4 SWS)  
 M.SIA.E18: Organization of Food Supply Chains (6 C, 4 SWS)  
 M.SIA.E21: Rural Sociology (6 C, 4 SWS)  
 M.SIA.E24: Topics in Rural Development Economics I (6 C, 4 SWS)  
 M.SIA.E31: Strategic management (6 C, 4 SWS)  
 M.SIA.E33: Responsible and sustainable food business in global contexts (6 C, 4 SWS)  
 M.SIA.E34: Economic valuation of ecosystem services in developing countries (6 C, 4 SWS)  
 M.SIA.E35: Institutional ecological economics (6 C, 4 SWS)  
 M.SIA.E36: Institutions and the food system (6 C, 4 SWS)  
 M.SIA.E37: Agricultural policy analysis (6 C, 4 SWS)  
 M.SIA.Exx: Critical and Collective Perspectives on the Global Food System  
 M.SIA.I02: Management of (sub-)tropical landuse systems (6 C)  
 M.SIA.I03: Food quality and organic food processing (6 C, 4 SWS)  
 M.SIA.I07: International land use systems research - an interdisciplinary study tour (6 C, 8,5 SWS)  
 M.SIA.I09: Sustainable diets (6 C, 6 SWS)  
 M.SIA.I11M: Free Project (6 C)  
 M.SIA.P03: Ecological soil microbiology (6 C, 4 SWS)  
 M.SIA.P06: Soil and water (6 C, 4 SWS)  
 M.SIA.P21: Energetic use of agricultural crops and field forage production (6 C, 4 SWS)  
 M.SIA.P20: Plant Nematology (6 C, 4 SWS)  
 M.SIA.P23M: Modern Plant Nutrition - Application of Molecular Methods in Plant Nutrition Research (6 C, 4 SWS)  
 M.WIWI-VWL.0008: Development Economics I: Macro Issues in Economic Development (6 C, 4 SWS)

#### **b) Masterarbeit**

Durch die erfolgreiche Anfertigung der Masterarbeit werden 24 C erworben.

#### **c) Kolloquium zur Masterarbeit**

Durch das erfolgreiche Absolvieren des Kolloquiums zur Master-Arbeit werden 6 C erworben.

### **Ergänzende Modulübersicht für Studierende des Double-Degree-Programms mit der Universität Talca**

#### **a) Studium an den Universitäten Kassel und Göttingen im 1. und 2. Semester**

##### **aa) Studium an den Universitäten Kassel und Göttingen**

Studierende absolvieren während der ersten zwei Studiensemester an den Universitäten Kassel und Göttingen nachfolgendes Studienprogramm.

##### **i) Pflichtmodule**

Die folgenden vier Pflichtmodule müssen erfolgreich abgelegt werden:

M.Agr.0086: World agricultural markets and trade (6 C, 6 SWS)  
 M.SIA.E11: Socioeconomics of Rural Development and Food Security (6 C, 4 SWS)  
 M.SIA.I12: Sustainable International Agriculture: basic principles and approaches (6 C, 4 SWS)  
 M.WIWI-QMW.0004: Econometrics I (6 C, 4 SWS)

##### **ii) Wahlpflichtmodule**

Von den folgenden Wahlpflichtmodulen müssen drei erfolgreich erbracht werden:

M.SIA.E05M: Marketing research (6 C, 4 SWS)  
 M.SIA.E12M: Quantitative Research Methods in Rural Development Economics (6 C, 4 SWS)  
 M.SIA.E13M: Microeconomic Theory and Quantitative Methods of Agricultural Production (6 C, 4 SWS)  
 M.SIA.E14: Evaluation of rural development projects and policies (6 C, 4 SWS)  
 M.SIA.E18: Organization of food supply chains (6 C, 4 SWS)

M.SIA.E21: Rural Sociology (6 C, 4 SWS)  
 M.SIA.E31: Strategic management (6 C, 4 SWS)  
 M.SIA.E33: Responsible and sustainable food business in global contexts (6 C, 4 SWS)  
 M.SIA.E34: Economic valuation of ecosystem services in developing countries (6 C, 4 SWS)  
 M.SIA.E36: Institutions and the food system (6 C, 4 SWS)  
 M.SIA.E37: Agricultural policy analysis (6 C, 4 SWS)  
 M.WIWI-VWL.0008: Development Economics I: Macro Issues in Economic Development (6 C, 4 SWS)

### iii) Wahlmodule

Von den folgenden Modulen (oder bisher nicht gewählten Wahlmodule der Spezialisierungsrichtung) müssen drei Module erfolgreich erbracht werden:

M.SIA.A01: Organic livestock farming under temperate conditions (6 C, 4 SWS)  
 M.SIA.A05: Aquaculture in the tropics and subtropics (6 C, 4 SWS)  
 M.SIA.A06: Global aquaculture production, markets and challenges (6 C, 4 SWS)  
 M.SIA.A07: Unconventional livestock and wildlife-management, utilization and conservation (6 C, SWS)  
 M.SIA.A08: Social-ecology in livestock production systems (6 C, 4 SWS)  
 M.SIA.A11: Tropical animal husbandry systems (6 C, 4 SWS)  
 M.SIA.A12M: Multidisciplinary research in tropical production systems (6 C, 4 SWS)  
 M.SIA.E02: Agricultural price theory (6 C, 4 SWS)  
 M.SIA.E06: International markets and marketing for organic products (6 C, 4 SWS)  
 M.SIA.E17M: Management and management accounting (6 C, 4 SWS)  
 M.SIA.E19: Market integration and price transmission I (6 C, 4 SWS)  
 M.SIA.I02: Management of (sub-)tropical landuse systems (6 C)  
 M.SIA.I03: Food quality and organic food processing (6 C, 4 SWS)  
 M.SIA.I07: International land use systems research - an interdisciplinary study tour (6 C, 8,5 SWS)  
 M.SIA.I09: Sustainable diets (6 C, 6 SWS)  
 M.SIA.I11M: Free Project (6 C)  
 M.SIA.I14M: GIS and Remote Sensing in Agriculture (6 C, 4 SWS)  
 M.SIA.I15: Social-ecological analysis and management of agricultural landscapes (6 C, 4 SWS)  
 M.SIA.P05: Organic cropping systems under temperate and (sub)tropical conditions (6 C, 4 SWS)  
 M.SIA.P21: Energetic use of agricultural crops and Field forage production (6 C, 4 SWS)  
 M.SIA.P22: Management of tropical plant production systems (6 C, 4 SWS)

### bb) Studium an der Universität Talca

Während der letzten zwei Semester an der Universität Talca müssen Studierende folgende Module absolvieren:

#### i) Wahlpflichtmodule

Von den folgenden Modulen müssen zwei Wahlpflichtmodule erfolgreich erbracht werden:

M.SIA.UT-C-11: Managerial Economics (6 C, 6 SWS)  
 M.SIA.UT-C-12: Marketing in Agribusiness I (Strategic Marketing) (6 C, 6 SWS)  
 M.SIA.UT-M-40: Applied Econometrics (6 C)  
 M.SIA.UT-M-41: Innovation Management in the Agroindustry and Food Chain (6 C)  
 M.SIA.UT-M-42: Quality Management and Food Safety (6 C)

#### ii) Wahlmodule

Von den folgenden Modulen müssen drei Wahlmodule erfolgreich erbracht werden:

M.SIA.UT-O-13: Strategic Management (6 C, SWS)  
 M.SIA.UT-O-15: Technologies in Fruit and Wine Production (6 C, 6 SWS)  
 M.SIA.UT-O-16: Development Economics in Latin America (6 C, 5 SWS)  
 M.SIA.UT-O-28: Financial Management II (6 C)  
 M.SIA.UT-O-29: Formulation and Project Appraisal for Agricultural and Agroindustry (6 C)  
 M.SIA.UT-O-30: Environmental Economics and Environmental Impact Analysis of Agribusiness Projects (6 C)

### b) Studium an den Universitäten Kassel und Göttingen im 1. und 4. Semester

Erstes Semester an den Universitäten Göttingen und Kassel, zwei Semester an der Universität Talca, das letzte Semester in Göttingen und Kassel.

#### aa) Studium an den Universitäten Kassel und Göttingen

Studierende müssen während des ersten Semesters an den Universitäten Göttingen und Kassel absolvieren:

**i) Pflichtmodule**

Die folgenden drei Pflichtmodule müssen erfolgreich erbracht werden:

M.SIA.E11: Socioeconomics of Rural Development and Food Security (6 C, 4 SWS)

M.SIA.I12: Sustainable International Agriculture: basic principles and approaches (6 C, 4 SWS)

M.WIWI-QMW.0004: Econometrics I (6 C, 4 SWS)

**ii) Wahlpflichtmodule**

Von den folgenden Wahlpflichtmodulen muss ein Modul erfolgreich erbracht werden:

M.SIA.E05M: Marketing research (6 C, 4 SWS)

M.SIA.E12M: Quantitative Research Methods in Rural Development Economics (6 C, 4 SWS)

M.SIA.E13M: Microeconomic Theory and Quantitative Methods of Agricultural Production (6 C, 4 SWS)

M.SIA.E14: Evaluation of rural development projects and policies (6 C, 4 SWS)

M.SIA.E18: Organization of food supply chains (6 C, 4 SWS)

M.SIA.E21: Rural Sociology (6 C, 4 SWS)

M.SIA.E31: Strategic management (6 C, 4 SWS)

M.SIA.E33: Responsible and sustainable food business in global contexts (6 C, 4 SWS)

M.SIA.E34: Economic valuation of ecosystem services in developing countries (6 C, 4 SWS)

M.SIA.E36: Institutions and the food system (6 C, 4 SWS)

M.SIA.E37: Agricultural policy analysis (6 C, 4 SWS)

M.WIWI-VWL.0008: Development Economics I: Macro Issues in Economic Development (6 C, 4 SWS)

**iii) Wahlmodule**

Von den folgenden Wahlmodulen muss ein Modul erfolgreich erbracht werden:

M.SIA.A01: Organic livestock farming under temperate conditions (6 C, 4 SWS)

M.SIA.A05: Aquaculture in the tropics and subtropics (6 C, 4 SWS)

M.SIA.A06: Global aquaculture production, markets and challenges (6 C, 4 SWS)

M.SIA.A07: Unconventional livestock and wildlife-management, utilization and conservation (6 C, SWS)

M.SIA.A08: Social-ecology in livestock production systems (6 C, 4 SWS)

M.SIA.A11: Tropical animal husbandry systems (6 C, 4 SWS)

M.SIA.A12M: Multidisciplinary research in tropical production systems (6 C, 4 SWS)

M.SIA.E02: Agricultural price theory (6 C, 4 SWS)

M.SIA.E06: International markets and marketing for organic products (6 C, 4 SWS)

M.SIA.E17M: Management and management accounting (6 C, 4 SWS)

M.SIA.E19: Market integration and price transmission I (6 C, 4 SWS)

M.SIA.I02: Management of (sub-)tropical landuse systems (6 C)

M.SIA.I03: Food quality and organic food processing (6 C, 4 SWS)

M.SIA.I07: International land use systems research - an interdisciplinary study tour (6 C, 8,5 SWS)

M.SIA.I09: Sustainable diets (6 C, 6 SWS)

M.SIA.I11M: Free Project (6 C)

M.SIA.I14M: GIS and Remote Sensing in Agriculture (6 C, 4 SWS)

M.SIA.I15: Social-ecological analysis and management of agricultural landscapes (6 C, 4 SWS)

M.SIA.P05: Organic cropping systems under temperate and (sub)tropical conditions (6 C, 4 SWS)

M.SIA.P21: Energetic use of agricultural crops and Field forage production (6 C, 4 SWS)

M.SIA.P22: Management of tropical plant production systems (6 C, 4 SWS)

**bb) Studium an der Universität Talca**

Studierende absolvieren während der ersten zwei Studiensemester an der Universität Talca nachfolgendes Studienprogramm:

**i) Pflichtmodule**

Das folgende Pflichtmodul muss erfolgreich erbracht werden:

M.Agr.0086: World agricultural markets and trade (6 C, 6 SWS)

**ii) Wahlpflichtmodule**

Von den folgenden Wahlpflichtmodulen müssen vier Module erfolgreich erbracht werden:

M.SIA.UT-C-11: Managerial Economics (6 C, 6 SWS)

M.SIA.UT-C-12: Marketing in Agribusiness I (Strategic Marketing) (6 C, 6 SWS)

M.SIA.UT-C-21M: Methods for Socio-Economic Analysis (6 C, SWS)

M.SIA.UT-C-22: Financial Management I (6 C, 6 SWS)

M.SIA.UT-O-27: Introduction into Agricultural Policy (6 C)

**iii) Wahlmodule**

Von den folgenden Modulen (oder bisher nicht gewählte Wahlmodule der Spezialisierungsrichtung) müssen fünf Module erfolgreich erbracht werden:

- M.SIA.UT-O-13: Strategic Management (6 C, SWS)
- M.SIA.UT-O-14: Agricultural Price Theory (6 C, SWS)
- M.SIA.UT-O-15: Technologies in Fruit and Wine Production (6 C, 6 SWS)
- M.SIA.UT-O-16: Development Economics in Latin America (6 C, 5 SWS)
- M.SIA.UT-O-23: Human Resources Management (6 C, SWS)
- M.SIA.UT-O-24M: Marketing in Agribusiness II (Marketing Research) (6 C, SWS)
- M.SIA.UT-O-25: Principles, Monitoring and Methods of Agricultural Projects Development Policies (6 C, 6 SWS)
- M.SIA.UT-O-26: Agricultural Innovation and Extension (6 C, 6 SWS)
- M.SIA.UT-O-27: Introduction into Agricultural Policy (6 C)

**c) Studium an den Universitäten Kassel und Göttingen im 3. und 4. Semester****aa) Studium an der Universität Talca**

Studierende absolvieren während der ersten zwei Studiensemester an der Universität Talca nachfolgendes Studienprogramm.

**i) Pflichtmodule**

Es sind folgende fünf Module im Umfang von insgesamt 30 C erfolgreich zu absolvieren:

- M.Agr.0086: World agricultural markets and trade (6 C, 6 SWS)
- M.SIA.UT-C-11: Managerial Economics (6 C, 6 SWS)
- M.SIA.UT-C-12: Marketing in Agribusiness I (Strategic Marketing) (6 C, 6 SWS)
- M.SIA.UT-C-21M: Methods for Socio-Economic Analysis (6 C, 6 SWS)
- M.SIA.UT-C-22: Financial Management I (6 C, 6 SWS)

**ii) Wahlpflichtmodule**

Aus folgenden Modulen müssen 5 Wahlmodule im Umfang von insgesamt 30 C (bzw. nicht absolvierte Wahlpflichtmodule) erfolgreich absolviert werden.

- M.SIA.UT-O-13: Strategic Management (6 C, 6 SWS)
- M.SIA.UT-O-14: Agricultural Price Theory (6 C, 4 SWS)
- M.SIA.UT-O-15: Technologies in Fruit and Wine Production (6 C, 6 SWS)
- M.SIA.UT-O-16: Development Economics in Latin America (6 C, 5 SWS)
- M.SIA.UT-O-23: Human Resources Management (6 C, 6 SWS)
- M.SIA.UT-O-24M: Marketing in Agribusiness II (Marketing Research) (6 C, 6 SWS)
- M.SIA.UT-O-25: Principles, Monitoring and Methods of Agricultural Projects Development Policies (6 C, 6 SWS)
- M.SIA.UT-O-26: Agricultural Innovation and Extension (6 C, 6 SWS)

**bb) Universitäten Kassel und Göttingen**

Während ihres Studiensemesters an den Universitäten Kassel und Göttingen müssen die Studierenden aus dem folgenden Modulangebot Module absolvieren.

**i) Pflichtmodule**

Folgende drei Module im Umfang von insgesamt 18 C müssen erfolgreich absolviert werden.

- M.SIA.E11: Socioeconomics of Rural Development and Food Security (6 C, 4 SWS)
- M.SIA.I12: Sustainable International Agriculture: basic principles and approaches (6 C, 4 SWS)
- M.WIWI-QMW.0004: Econometrics I (6 C, 4 SWS)

**ii) Wahlpflichtmodule**

Aus folgenden Modulen muss ein Wahlpflichtmodul im Umfang von 6 C erfolgreich absolviert werden.

- M.SIA.E05M: Marketing research (6 C, 4 SWS)
- M.SIA.E12M: Quantitative Research Methods in Rural Development Economics (6 C, 4 SWS)
- M.SIA.E13M: Microeconomic Theory and Quantitative Methods of Agricultural Production (6 C, 4 SWS)
- M.SIA.E14: Evaluation of rural development projects and policies (6 C, 4 SWS)
- M.SIA.E18: Organization of food supply chains (6 C, 4 SWS)
- M.SIA.E21: Rural Sociology (6 C, 4 SWS)
- M.SIA.E24: Topics in Rural Development Economics I (6 C, 4 SWS)
- M.SIA.E31: Strategic management (6 C, 4 SWS)
- M.SIA.E33: Responsible and sustainable food business in global contexts (6 C, 4 SWS)
- M.SIA.E34: Economic valuation of ecosystem services in developing countries (6 C, 4 SWS)
- M.SIA.E36: Institutions and the food system (6 C, 4 SWS)
- M.SIA.E37: Agricultural policy analysis (6 C, 4 SWS)



**iii) Wahlmodule**

Aus folgenden Modulen (oder den bislang nicht gewählten Wahlpflichtmodulen des Studienschwerpunkts) muss ein Wahlmodul im Umfang von insgesamt 6 C erfolgreich absolviert werden.

- M.Forst.1512: International forest policy and economics (6 C, 4 SWS)
- M.SIA.A01: Organic livestock farming under temperate and tropical conditions (6 C, 4 SWS)
- M.SIA.A05: Aquaculture in the tropics and subtropics (6 C, 4 SWS)
- M.SIA.A06: Global aquaculture production, markets and challenges (6 C, 4 SWS)
- M.SIA.A07: Unconventional livestock and wildlife-management, utilization and conservation (6 C, 4 SWS)
- M.SIA.A08: Socio-ecology in livestock production systems (6 C, 4 SWS)
- M.SIA.A11: Tropical animal husbandry systems (6 C, 4 SWS)
- M.SIA.A12M: Multidisciplinary research in tropical production systems (6 C, 4 SWS)
- M.SIA.E02: Agricultural price theory (6 C, 4 SWS)
- M.SIA.E06: International markets and marketing for organic products (6 C, 4 SWS)
- M.SIA.E17M: Management and management accounting (6 C, 4 SWS)
- M.SIA.E19: Market integration and price transmission I (6 C, 4 SWS)
- M.SIA.I02: Management of (sub-)tropical landuse systems (6 C)
- M.SIA.I03: Food quality and organic food processing (6 C, 4 SWS)
- M.SIA.I07: International land use systems research - an interdisciplinary study tour (6 C, 8,5 SWS)
- M.SIA.I09: Sustainable diets (6 C, 6 SWS)
- M.SIA.I11M: Free Project (6 C)
- M.SIA.I14M: GIS and remote sensing in agriculture (6 C, 4 SWS)
- M.SIA.I15: Social-ecological analysis and management of agricultural landscapes (6 C, 4 SWS)
- M.SIA.P05: Organic cropping systems under temperate and (sub)tropical conditions (6 C, 4 SWS)
- M.SIA.P21: Energetic use of agricultural crops and field forage production (6 C, 4 SWS)
- M.SIA.P22: Management of tropical plant production systems (6 C, 4 SWS)

**cc) Masterarbeit**

Durch die erfolgreiche Anfertigung der Masterarbeit werden 24 C erworben.

**dd) Kolloquium zur Masterarbeit**

Durch das erfolgreiche Absolvieren des Kolloquiums zur Master-Arbeit werden 6 C erworben.

## 2. Das Modulhandbuch wird um folgende Modulbeschreibungen ergänzt:

<b>Georg-August-Universität Göttingen, Universität Kassel/Witzenhausen</b>		6 C
<b>Modul M.SIA.Exx Critical and Collective Perspectives on the Global Food System</b>		4 SWS
<b>Learning outcome, core skills:</b> Students <ul style="list-style-type: none"> <li>• will be aware of development tendencies of the global food system</li> <li>• will be able to critically analyse the global food system informed by political ecology</li> <li>• will be introduced to collective action theory and critical approaches advocating the spread of "Commoning" in the Global Food System</li> <li>• will be familiar with different conceptions of society-nature relationships</li> <li>• will be acquainted with methods of political ecology</li> <li>• will be acquainted with transition and transformation studies</li> <li>• will be acquainted with food regime studies</li> <li>• will be able to critically evaluate and apply the corresponding approaches</li> </ul>		<b>Weekly lecture hours in total:</b>  Attendance time:  60 h  Self-study time: 120 h
<b>Course: Critical and Collective Perspectives on the Global Food System</b> Lecture, Seminar, Group work <i>Contents:</i> The course introduces students to critical and commoning approaches and studies of the global food system. It introduces the concepts, theories and methods of political ecology, food regime theory collective action theory and transitions studies and discusses these in relation to empirical studies worldwide.		4 SWS
<b>Examination:</b> presentation 20 min. + 25 minutes guided discussion (student-led seminar) (40%) and term paper (15 pages, 3000 words) (60%); Students will need to demonstrate: <ul style="list-style-type: none"> <li>• Understanding of political ecology, collective action and commoning perspectives, transition approaches and critical perspectives</li> <li>• Understanding of a food systems approach</li> <li>• Ability to apply political ecology approaches to the food system and its change</li> <li>• Knowledge of global drivers of food and agricultural production systems</li> <li>• Academic presentation, discussion and writing skills</li> </ul>		
<b>Examination prerequisites:</b> submission of protocols (literature-related questions) in regard to 80% of assigned readings (max 8 articles)		
<b>Admission requirements:</b> none	<b>Recommended previous knowledge:</b> Background in agricultural and environmental policy and economics	
<b>Language:</b> English	<b>Person responsible for module:</b> Prof. Dr. Andreas Thiel, N.N.	
<b>Course frequency:</b> Annually, SoSe (summer term); Witzenhausen	<b>Duration:</b> 1 Semester	
<b>Number of repeat examinations permitted:</b> twice	<b>Recommended semester:</b>	
<b>Maximum number of students:</b>		
<b>Additional notes and regulations:</b> <b>Literature:</b> Literature will be circulated to students at the beginning of term and throughout		

<b>Georg-August-Universität Göttingen, Universität Kassel/Witzenhausen</b> <b>M.SIA.I09: Sustainable diets</b>	6 C 6 WLH
<b>Learning outcome, core skills:</b> Students are able to describe the interactions of diets, sustainability and human nutrition/health. Students are able to assess the impacts of a dish/meal (as unit) on sustainability and nutrition parameters..	<b>Workload:</b> Attendance time: 60 h  Self-study time: 120 h
Course: Sustainable diets (Lecture, Excursion) <b>Contents:</b> <ul style="list-style-type: none"> <li>• Culture and cultural patterns of diets</li> <li>• Interactions of food quality and lifestyle on sustainability and human health</li> <li>• Healthy diets within sustainable food systems</li> <li>• Model diets such as Med. Diet and New Nordic Diet</li> <li>• Optimization of a dish/meal according sustainability and nutrition impacts</li> <li>• Role of organic food systems</li> </ul>	6 WLH
<b>Examination:</b> Presentation (ca. 15 minutes, 50%) with written outline (max. 15 pages, 50%) Examination requirements: Kenntnis von Ernährungsstilen und Lebensmittelqualität (in ausgewählten Ländern)  Kenntnis von Methoden zur Erfassung von umwelt- und ernährungsrelevanten Parametern  Kenntnis rechtlicher Vorgaben zur Kennzeichnung von Lebensmitteln sowie Vorgaben zur Verarbeitung von nachhaltig produzierten Lebensmitteln	6 C
<b>Admission requirements:</b> none	<b>Recommended previous knowledge:</b> Basic knowledge on nutrition, statistics and environmental issues
<b>Language:</b> English	<b>Person responsible for module:</b> Prof. Dr. Johannes Kahl
<b>Course frequency:</b> each winter semester; Witzenhausen	<b>Duration:</b> 1 semester[s]
<b>Number of repeat examinations permitted:</b> twice	<b>Recommended semester:</b> Winter term
<b>Maximum number of students:</b> 40	
<b>Additional notes and regulations:</b> Literature: Will be provided via the system2teach platform.	

<b>Georg-August-Universität Göttingen, Universität Kassel/Witzenhausen</b> <b>Module M.SIAXXX: Participatory research methods for sustainability</b>	6 C 4 WLH
<b>Learning outcome, core skills:</b> This course will look at the importance of place-based, participatory and trans-disciplinary research methods in sustainability science. Students will learn different participatory methods to capture the knowledge and aspirations of the different agents that operate in agricultural landscapes and will be able to integrate this knowledge in practical outcomes for sustainable land management. After successfully completing this module students should: <ul style="list-style-type: none"> <li>• comprehend the fundamentals of participatory research</li> <li>• be familiar with the different types of participatory research methods</li> <li>• be able to design and implement participatory processes</li> </ul> This module contributes to the following skills: <ul style="list-style-type: none"> <li>• performance of transdisciplinary processes</li> <li>• integration of knowledge and aspirations of different agents towards sustainable land management</li> <li>• data collection and analysis using participatory methods</li> <li>• group work techniques (organization of working schedule, team work)</li> <li>• presentation skills and communication of main research results</li> </ul>	<b>Workload:</b> Attendance time: 56 h Self-study time: 124 h
<b>Course:</b> Lecture, Seminar <b>Contents:</b> The course is structured in three parts. An introductory part focuses on research principles of sustainability science, paying particular attention to the role of transdisciplinary and ethics in the participation processes. A second part showcases a broad suite of different participatory research methods (e.g. photo-voice, participatory mapping, storytelling) for sustainable landscapes management and land-use conflict resolution. The full research process is addressed, from participatory process design, the approaching and involvement of participants and the organisation and facilitation of participatory activities, to the analysis, integration and presentation of the outcomes. In the third part of the course, students have the opportunity to choose and design a protocol for a participatory study, applied to a specific geographical location and a specific problem, and share the insights of the process with the class. The first part will be outlined in lectures, the second part will take the form of seminars and the third part will consist of group work with a final presentation to the class where the different experiences will be critically discussed.	4 WLH
<b>Examination:</b> Presentation (30 minutes, 50%) and Term paper (max. 20 pages, 50%) <b>Examination requirements:</b> Presentation and critical analysis of a participatory research approach applied to a land-use topic of the students' choice.	6 C
<b>Admission requirements:</b> none	<b>Recommended previous knowledge:</b> none
<b>Language:</b> English	<b>Person responsible for module:</b> Prof. Dr. Tobias Plieninger
<b>Course frequency:</b> Each winter semester	<b>Duration:</b> 1 semester[s]

<b>Number of repeat examinations permitted:</b> Twice	<b>Recommended semester:</b> winter term
<b>Maximum number of students:</b> 25	
<b>Additional notes and regulations:</b> Literature: Bergmann, M. et al. (2012). Methods for Transdisciplinary Research: A Primer for Practice. Campus Verlag. Course materials to be provided.	

<b>Georg-August-Universität Göttingen, Universität Kassel/Witzenhausen</b>		6 C
<b>Modul M.SIA.I16: Land use, ecosystem services, and human well-being</b>		4 SWS
<b>Learning outcome, core skills:</b> This course will introduce students into the concepts of ecosystem services and human well-being, with a particular focus on their relevance for agriculture and other land uses. By writing and presenting a term paper, students will learn to perform a case study, to carry out a review of the literature, and to improve their scientific writing and presentation skills. The course aims to foster the ability of students to assume an interdisciplinary research perspective (including ecological, socio-cultural, and economic approaches) and to critically discuss and analyse the concept of ecosystem services in its multiple scientific, political and practical meanings.		<b>Arbeitsaufwand:</b>  Präsenzzeit: 56 hours  Selbststudium: 124 hours
<b>Lehrveranstaltungen:</b> (Lecture, Seminar, Project work)  <i>Contents:</i> Global environmental assessments (e.g., those of the Intergovernmental Platform on Biodiversity and Ecosystem Services (IPBES) have highlighted that human well-being is critically dependent on ecosystem services – the benefits that nature provides to people. Depending on the particular land-use system and its social-ecological context, agriculture can either degrade or enhance such ecosystem services. This course gives an overview on the rising field of ecosystem services science. Focus will be on : <ul style="list-style-type: none"> <li>• techniques for decision support,</li> <li>• practical applications of the approach in agriculture and other land-use sectors, and</li> <li>• linkages to other sustainability issues (e.g., biodiversity, climate change, water security, poverty).</li> </ul> These topics will be outlined in lectures and deepened in seminars, where key issues will be critically discussed.		4 SWS
<b>Prüfung: Presentation (30 minutes, 50%) and Term paper (max. 20 pages, 50%)</b> Presentation and critical analysis of a case study that takes a particular ecosystem services problem in a land-use setting and geographic location of the participants' choice into focus.		
<b>Zugangsvoraussetzungen:</b> None	<b>Empfohlene Vorkenntnisse:</b> None	
<b>Sprache:</b> English	<b>Modulverantwortliche[r]:</b> Prof. Dr. Tobias Plieninger	
<b>Angebotshäufigkeit:</b> Each summer term in Witzenhausen	<b>Dauer:</b> 1 Semester	
<b>Wiederholbarkeit:</b> Twice	<b>Empfohlenes Fachsemester:</b>	
<b>Maximale Studierendenzahl:</b> 25		
<b>Bemerkungen:</b> Literature: Potschin, M., Haines-Young, R., Fish, R. and Turner, R.K. (2016) Roundledge Handbook of Ecosystem Services. Routledge-Earthscan; London, New York.		

<b>Georg-August-Universität Göttingen, Universität Kassel/Witzenhausen</b>		6 C
<b>Module M.SIA.Exx: Microfinance for the Rural Poor: A Business Class</b>		
<b>Learning outcome, core skills</b> Students learn concepts of different microfinance instruments, such as micro-credit, microsaving, and microinsurance. Students can critically evaluate the potentials and drawbacks of microfinance tools for the rural poor. Designing their own business model, students learn how to properly <ul style="list-style-type: none"> <li>-work in groups</li> <li>-brainstorm an idea</li> <li>-pitch and argue for their business idea</li> <li>-write a business plan</li> </ul>		<b>Workload:</b> Attendance time: 66 h  Self-study time: 114 h
<b>Course: Socioeconomics of rural development and food security (Lecture) Contents:</b> This module provides students with an overview of microfinance instruments. In groups, the students will be given case studies involving rural poor from different regions, facing different problems. The challenge is to apply a microfinance instrument to the respective case study, making it a business model. Being supported, the groups will need to create their own business idea, pitch and argue for it and write a business plan to prove it is a thought through idea.		
<b>Examination:</b> Pitch & Discussion (oral) 40% Business Plan (written) 60%		
<b>Admission requirements:</b> none	<b>Recommended previous knowledge:</b> none	
<b>Language:</b> English	<b>Person responsible for module:</b> Prof. Dr Oliver Mußhoff, Selina Bruns	
<b>Course frequency:</b> each winter semester; Göttingen	<b>Duration:</b> 2 weeks Block course	
<b>Number of repeat examinations permitted:</b> twice	<b>Recommended semester:</b>	
<b>Maximum number of students:</b> 30		

<b>Georg-August-Universität Göttingen</b>		6 C
<b>Modul M.Agr.0151: Data Analysis with R in Agricultural Economics</b>		
<b>Lernziele/Kompetenzen:</b> Students learn the basic functionality of the statistical software package R how to retrieve, manage and analyze datasets an independent and autonomous usage of online resources (e.g. packages, support, R-literature) with regard to topics in agricultural economics. The course aims at providing a toolset for the successful completion of final thesis with quantitative focus.		<b>Arbeitsaufwand:</b> Präsenzzeit: 55 Stunden Selbststudium: 125 Stunden
<b>Lehrveranstaltung: Data Analysis with R in Agricultural Economics</b> (Blockveranstaltung, Übung) The course is split into two main components: The first one is mainly concerned with R programming while the second part deals with applied analysis of datasets connected to agricultural economics: 1. Programming in R: Introduction and basic functionalities, data management, data visualization, coding styles, functions and programming, dynamic report generation 2. Applied Data Analysis: data sources in agricultural economics and related API packages, application of selected econometric techniques		
<b>Prüfung: Hausarbeit (max. 15 Seiten)</b> <b>Prüfungsanforderungen:</b> Students proof that they are capable of finding relevant data, manage and manipulate datasets applying an appropriate econometric or statistical method and create a corresponding code which is comprehensive and clean interpreting data and results through the use of graphical tools. The produced code has to handed in along with the paper and will also be subject to the evaluation.		
<b>Zugangsvoraussetzungen:</b> Econometrics I (M.WIWI-QMW.004) or equivalent	<b>Empfohlene Vorkenntnisse:</b> Basic econometric techniques	
<b>Sprache:</b> Englisch	<b>Modulverantwortliche[r]:</b> Prof. Dr. Bernhard Brümmer	
<b>Angebotshäufigkeit:</b> jedes Sommersemester	<b>Dauer:</b> 1 Semester	
<b>Wiederholbarkeit:</b> zweimalig	<b>Empfohlenes Fachsemester:</b>	
<b>Maximale Studierendenzahl:</b> 15		



<b>Georg-August-Universität Göttingen, Universität Kassel/Witzenhausen</b>		9 C
<b>Modul M.SIA.P23M: Modern Plant Nutrition - Application of Molecular Methods in Plant Nutrition Research</b>		8 SWS
<b>Lernziele/Kompetenzen:</b> Den Studenten werden neben den theoretischen Hintergründen, den Vor- und Nachteilen der einzelnen Methoden auch instrumentelle (analytische) Kompetenzen vermittelt. Sie erlernen, die ermittelten Daten zu interpretieren, untereinander in Beziehung zu setzen und im Kontext zu analysieren. Weiterhin werden sie befähigt, im Team zu arbeiten, sich gegenseitig über Informationen, Probleme und Lösungen auszutauschen und Methoden zielgerichtet einzusetzen. Zu den hier vermittelten Methoden gehören u.a. die Extraktion von DNA, RNA und Proteinen aus verschiedenen Proben, PCR und qPCR inklusive des Primerdesigns, 2D-Gelelektrophorese, sowie Methoden zur Sequenzierung und aktuelle Tools zur Datenauswertung		<b>Arbeitsaufwand:</b> Präsenzzeit: 120 Stunden Selbststudium: 150 Stunden
<b>Lehrveranstaltung: Modern Plant Nutrition - Application of Molecular Methods in Plant Nutrition Research</b> (Blockveranstaltung, Praktikum, Vorlesung) <i>Inhalte:</i> Im Rahmen dieses Blockmoduls werden den Studenten aktuelle molekulare Methoden und deren Anwendung zur Beantwortung pflanzenernährerischer Fragestellungen vermittelt. Dazu werden die Studenten in die theoretischen Hintergründe der jeweiligen Methoden eingewiesen und anschließend diese Methoden praktisch anhand einer gezielten Fragestellung auch angewendet. Ziel ist es dabei Methodenkompetenz im Bereich der molekularen Analyse von mikrobiellen Gemeinschaften, mikrobiellen und pflanzlichen Genen und ihren Transkripten, sowie zur Analyse von Proteinen zu vermitteln. Beginnend bei der Planung und Vorbereitung solcher Analysen, über die Durchführung bis hin zur Auswertung und Interpretation der so gewonnenen Daten		8 SWS
<b>Prüfung: Klausur (90 Minuten, 75%) und mündliche Prüfung (ca. 15 Minuten, 25%)</b> <b>Prüfungsanforderungen:</b> Kenntnisse über die im Modul vermittelten Methoden, sowie die theoretischen Hintergründe, Vor- und Nachteile, sowie die Anwendungsbereiche der jeweiligen Methoden. Des Weiteren Wissen über die Zusammenhänge von molekularen Mechanismen innerhalb der Pflanze und dem Einfluss der Verfügbarkeit einzelner Nährstoffe auf pflanzenphysiologische Parameter. Kenntnisse über die Rolle mikrobieller Gemeinschaften für die Pflanzenernährung und über Methoden zur Analyse dieser mikrobiellen Gemeinschaften und deren Aktivität, in Boden und Pflanze.		
<b>Zugangsvoraussetzungen:</b> keine	<b>Empfohlene Vorkenntnisse:</b> Grundkenntnisse (B.Sc.Niveau) in Boden- und Pflanzenwissenschaften	
<b>Sprache:</b> Englisch	<b>Modulverantwortliche[r]:</b> Jun.-Prof. Merle Tränkner	
<b>Angebotshäufigkeit:</b> jedes Sommersemester; Göttingen	<b>Dauer:</b> 1 Semester	
<b>Wiederholbarkeit:</b> zweimalig	<b>Empfohlenes Fachsemester:</b>	
<b>Maximale Studierendenzahl:</b> 15		

### **Artikel 2 Übergangs- und Schlussbestimmungen**

Studierende, die vor Inkrafttreten dieser Änderungsordnung ihr Studium begonnen haben, werden auf Antrag nach dieser Änderungsordnung geprüft.

### **Artikel 3 Inkrafttreten**

Diese Änderungsordnung tritt nach ihrer Bekanntmachung in den Amtlichen Mitteilungen der Universität Göttingen und im Mitteilungsblatt der Universität Kassel in Kraft.

Witzenhausen, den

Der Dekan  
des Fachbereichs Ökologische Agrarwissenschaften

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